INSTITUTIONAL REGIMES IN TRANSPORT: CASE STUDIES OF RAIL AND ROAD IN NSW AND QUEENSLAND 1850 - 2000

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Abstract

This thesis is about institutions and their regimes. It seeks to extend our understanding of how institutional environments (systems of formal rules and regulations and informal norms, conventions, customs and social routines) and institutional arrangements (specific organisational forms and structures) mould local economic outcomes in different places at different scales. The basic stance of the thesis is that the analysis of institutional arrangements and their regimes provides an appropriate framework for understanding and explaining the trajectories of long historical processes of economic change. The thesis is situated within the ontological institutional turn in economic geography discourse.

The institutional perspective is used to shed light on five key questions about land transport policy in NSW and Queensland from 1850 to 2000. What are the main themes of change in institutional arrangements in the management and delivery of land transport by government road and rail agencies? What were the drivers of key changes? How have the different politico-administrative settings of NSW and Queensland shaped similarities and difference? What factors contribute to an understanding of these differences? And, finally, what have been the outcomes for infrastructure governance, service delivery and spatial economic development in regions and cities?

The interrogation of these questions through an institutional framework lent itself to exhaustive historical research coupled with in-depth qualitative interviews. Lengthy interviews were conducted with 37 senior policy makers and other key informants as a tool to understand the evolution of institutional regimes. Interviews were supplemented by less formally constituted discussions with industry

informants.   Two States were selected as case studies to enable the impact of different geographies to be considered.

A lengthy, historically anchored institutional approach provides a framework to tease out and identify the similarities and differences between road and rail systems in the two states. The thesis finds that these similarities and differences are a result of the emergence of ideas that capture advocacy within policy networks which themselves are part of the institutional structure. The speed and extent of the implementation of these ideas depends on the relative strength of individual actors as agents of policy change. The actual nature of the implementation processes is modified by the relative strength of the policy arena and of the key institutions within it. Hence, institutional architectures, even if they come from the wellspring of global trends, can differ markedly as they are modified by the "local" through the advocacy of interest groups. The overwhelming evidence from the case studies is that geography in its historical context is the critical variable in explaining different responses and outcomes in the road and rail trajectories of NSW and Queensland.

Acknowledgments

Preface

This thesis began as a search for knowledge based on the need to understand what was happening in a particular section of the economy – transport infrastructure. In NSW, at the time (2004), many approaches to improving community outcomes from expenditure in transport had been tried and had been found wanting. This experience was similar to that of many other jurisdictions in the English speaking Western World.

A number of these experiences had been documented (especially those in Great Britain). The focus of a large number of these studies was on the challenge of attempting to draw policy conclusions from the available empirical evidence. Over time the approach of these studies became increasingly preoccupied with relatively narrowly-constructed conceptions of governance.[1] There was a general lack of an attempt to comprehensively interpret experienced reality in terms of broad theoretical approaches in the social sciences. There were two major exceptions to this captivation with empiricism.   The first was a range of studies that related policy developments to the impact of a single philosophy - i.e. neo liberalism. The second was a number of studies by economists and geographers[2] who attempted to explain policy development and outcomes in terms of the spatial allocation of development, the institutional governance of regions and industries, and the impact of networks. These limitations in the literature provided the context

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[1] See for example Henshaw, 1991; Wolmar, 1998, 2001, 2002; Murray, 2001; Watson, 2001.
2 Especially prolific were the British Geographers for example Charlton, Gibb and Lowndes, 1995; Charlton, Gibb and Shaw, 1997; Nash 1993, Bradshaw 1997; Docherty, 1999, 2000, 2000a, 2000b, 2003, 2004; Docherty, Shaw, Gather, 2004; Knowles, 1998, 2004; Haywood, 1999, 2003; Freeman and Shaw, 2000; Shaw, 2000a, 2001; Shaw, MacKinnon, Docherty, 2009; Shaw, Walton, Farrington, 2003; Cowie, 2002, 2009; Watson, 2001; Lodge, 2002, 2003; Shaoul, 2004, 2006; Tyrrall, 2003; Tyrrall and Parker, 2005; Smith 2006; Burnham, 2006.

and justification for the broadly conceived, institutional analysis of the evolution of NSW and Qld transport infrastructure undertaken in this thesis.

In pursuit of this aspiration, the researcher was guided by a central belief that the employment of a geographical perspective was critical to the full inclusion and analysis of relevant variables. Economic and transport geographers have always been interested in the links between transport, the spatial allocation of activities and institutional governance. There is an established ability to explain outcomes in terms of a spatial analysis of the economic, environmental, social and political aspects of policy.

This thesis found that large investments in transport infrastructure in both modes (road and rail) had significant implications for urban form, regional development and the performance of the economy more generally. Most important large transport investments locked in a range of related industries at all levels of scale (local, regional and global). This industrial lock-in included institutionalised path dependent processes which circumscribed and limited future investment, and urban and regional development decisions. The embedded nature of the path dependent processes also acted as significant inhibitors to change. The lock-in effect was most acute and lengthier for railway investments where the investments are more 'lumpy' and the life of the resulting asset can be extended for three generations.

In the two jurisdictions (NSW and Qld) examined in this thesis, there was strong evidence of intergenerational learning and knowledge transfer within particular cultures (such as institutes of engineers) as described by North (1971, 1974, 1976, 1979, 1983, 1987, 1989, 1990, 1991a, 1991b, 1994, 1995, 1997).

These mechanisms further embedded the impact of prior significant decisions. Major change occurred only at times of punctuated equilibrium created by a significant event (for example, a major innovation, a serious railway accident, a major shift in the political and / or economic landscape). The change transmission mechanism was fuelled by ideas which took hold in policy communities and achieved legitimacy in political, industrial and financial networks. The hegemonic positioning of the associated discourse meant that in all instances of major policy change, the ideas which drove change were transmitted into Australia from broader themes implemented in the United Kingdom and United States, and modified by the activities and policy influence of local advocacy networks.

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1. Introduction

"We have come to appreciate - against the idea of the economy as mechanic order - that economic action is mediated by recurrent practices of varied constitution, from legal rules, state policies, and technological standards, to informal habits, codes of conduct, organisational cultures, and semantic or ideological conventions. Economic agents act through such institutions, rather than as blind followers of rules or as fully autonomous actors." (Amin, 2001: 1238)

"The nature of the transport sector itself leads to a focus on the importance of institutions, key actors within them, policy discourses, policy communities, arenas for policy discussions, and the formal and informal networks that exist between institutions/key actors involved. In addition, as many transport initiatives are being driven by central government, attention also needs to be placed upon the role of the state in deriving and implementing (transport) policy through particular institutions and individuals operating at a range of geographical scales. " (Pemberton, 2000: 3)

1.1.   Introduction

This thesis presents an analysis of land transport policy trends in road and rail modes in the Australian states of New South Wales (NSW) and Queensland (Qld) between 1850 and 2000. It attempts to understand the nature of policy formulation and change, and to identify the extent to which these processes have resulted in meaningful outcomes for users of the services and the community more broadly. The focus is on the key actors, their networks, the major transport initiatives, and the policy communities and related discourses within the frame of the institutions that contain and enable action.

Pritchard (2005: 103) argues that, "For economic geographers, the documentation and interpretation of regional socio-economic outcomes is core

business." The thesis uses the two case studies to enable a comparative analysis of regions so that it is possible to examine the extent to which 'geography matters'. In sectoral terms, the focus is on land transport. This is analysed through the lens of the ontological *institutional turn* in human geography discourse (Jessop, 2001: 1220). The basic stance of the thesis is that institutional arrangements are important and can be analysed. Institutional analysis is used to identify and unpack the differences in outcomes for regional economic development, city form, infrastructure governance and service delivery in NSW and Qld. As Boschma and Frenken (2006: 277) note,

"One of the objectives of institutional analysis is to understand the effect of the local specificity of 'real places' on economic development, which is mainly attributed to place-specific institutions at different spatial scales. Thus, an institutional approach takes differences between localities as the starting point of the analysis and analyses how place-specific institutions affect local economic development ".

Such a methodology enables regions and their economies to viewed and studied as 'complex systems' where '..complexity arises in large part precisely because it is spatially distributed and spatially embedded' (Martin and Sunley, 2007: 595).

A critical question underpinning the thesis is to what extent is the economic history of regions (which itself is moulded by regional physical and cultural geography) an important determinant of current regional economic development prospects. The critical significance of the major investments in transport infrastructure for environmental, social and economic outcomes is highlighted. This is especially important because in the case of transport, the associated embedded social relations of production are locked in for the life of the asset (in rail up to 100 years) and limit future decisions. Hence, long run economic

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evolution is crucially shaped by single, large and long-lasting decisions. Viewed in these terms, transport investment can be understood as having critically important path-dependent implications for the spatial dynamics of economic growth and change. Recent analysis of the impact of railway investments on global city positioning and competitiveness by Niedzielski and Malecki (2012) has shown how significant investments in urban railways provide global economic advantages to cities. Research by O'Çonnor (2010) highlights how cities with multiple transport facilities (specifically airports and seaports) capture lucrative shares of economic activity.

The size, complexity, significance and global reach of land transport institutions combined with the historical framing of this research allow a multi-faceted view of path dependent processes. This provides an ability to identify critical investment decision points which have in turn 'locked in' a series of socio economic relations that both chart and constrain behaviour. The concept of economy that emerges is one of a '...composition of collective influences which shape individual action and as a diversified and path dependent entity moulded by inherited cultural and socio-institutional influences' (Amin, 1999: 367-8).

These influences can be understood in terms of a complex array of social networks, work cultures and routines which act to reinforce and maintain specific institutional regimes that are embedded socially, politically cognitively and culturally (Mackinnon, 2009: 500). These processes of embeddedness manifest in complex networks. Recent research in economic geography has drawn attention to the increasingly networked forms of governance incorporating a variety of actors (Coe et al., 2010).   Local conditions in cities and regions represent the 'intended

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and unintended' outcomes of a broad range of relational networks governed by many different actors and institutions:

> "We cannot understand how the global economy works without appreciating its complete embeddedness in, and shaping by, specific geographies. Equally, we cannot understand such geographies without appreciating how they are shaped by the complex interconnections within and between production networks organized at different spatial scales (often regional and global)'" (Coe et al., 2010: 138-9).

Hence, in its broadest scope, this thesis is about institutions and their regimes. It seeks to extend our understanding of how institutional environments (systems of formal rules and regulations and informal norms, conventions, customs and social routines) and institutional arrangements (specific organisational forms and structures) mould local economic outcomes in different local spaces at different scales through case studies of land transport.

1.2. Background

The idea that institutions and their interactions can be studied and understood is not new. The classical sociologist Max Weber saw the importance of this idea in his focus on bureaucracy and the idea of the 'iron cage' of institutionalisation and its pervasive social impact. However, traditional, Weberian approaches described specific governmental institutions - structures, organisation, functions – without broader, systematic analysis of the impact of institutional features on policy or outcomes (Dye, 1981: 21).

These perspectives have been termed, "old institutionalism" and date from the 1930's. However, they did not clearly explain the processes through which institutions change. To this, we must look at Arthur's work within complexity

theory (1987, 1989 and 1994) which identifies economic path dependence as critical in understanding how institutions evolve. His work suggests that path dependence is the result of increasing returns generated by large set up costs, learning effects and coordination effects and self-reinforcing expectations.

"Complexity therefore portrays the economy not as deterministic, predictable and mechanistic but as process dependent, organic and always evolving" (Arthur, 1989: 109).

The most important ideas that were contributed to institutional theory by an economist were arguably those of Douglass North. Over a period of more than 40 years from the mid 1950's, North sought to reinterpret economic history through the application of rigorous economic theory (see for example North, 1971, 1974, 1976, 1979, 1983, 1987, 1989, 1990, 1991a, 1991b, 1994, 1997). One of his goals was to develop an understanding of how economies evolve (North, 1994: 359). His major contribution was the development of an analytical framework that was a modification of neo-classical theory which could be used as a policy tool to improve the performance of economies.

More recently the relational turn in economic geography has added a further dimension to these analyses. This approach allows an analysis of the unevenness of production and consumption across space, the role of structural and economic conditions and the responses of individual firms and actors to shape eventual local outcomes (Hess and Yeung, 2006:1193). The analysis of actors is anchored in different places and multiple scales. It highlights the role of local governance structures including the role of state policies and institutional conditions in shaping outcomes. Recent research draws attention to the increasingly networked forms of governance incorporating a variety of actors who

impact on the value chain (for example, state agencies, trade unions and NGOs) (Coe et al., 2010).

The application of the institutional perspective – defined in terms of the broad agenda outlined above – to the specific question of transport policy has remained a partially-addressed research area, notwithstanding the obvious merit of this theoretical approach (Leinbach and Smith, 1997). The multiplicity of social, political, cultural and economic interconnections that link transport to the wider context of social change and scale (Hoyle and Knowles, 1998) would seem to allow a fruitful basis for in-depth and thorough analysis of institutions and their articulation in a manner that is possible in few other industries. With this in mind, this thesis uses transport policy and takes up the challenged suggested by Docherty (2003a) to use this sector as a laboratory in which to understand the ways in which institutions promote broad changes and have long-ranging implications.

This focus, moreover, is in line with recent new approaches within the field of transport geography. For over a decade, this sub-discipline has been shifting from its former empiricist nature towards placing an emphasis on the application of wider policy. This trend is clearly observed in the papers contained in the *Journal of Transport Geography* over time. Transport geography is now more concerned with the spatial analysis of the economic, environmental, social and political aspects of transport policy (Charlton and Gibb, 1998). This has led to work on privatisation, deregulation and sustainability. There is renewed interest in difference in economy, culture and public policy shaping contrasting attitudes to the relationship between social change and mobility. Good examples of this are

Hoyle's work on waterfront management and regeneration (Hoyle, 1989, 1999, 2000 and 2002) and Knowles' analysis of structural change, ownership and regulation in UK rail and bus industries (Knowles, 1998 and 2004; Davidson and Knowles, 2006).

The focus is now on transport research that reinvigorates the study of urban transport systems and locates more precisely their roles in the wider process of spatial restructuring, within a broadly-based approach that is highly sensitive to history (Docherty, 2003a; Niedzielski and Malecki, 2012). Hence, this thesis located as it is within the geographical perspective of policy determinant and impacts seek to extend the locus of enquiry in the field of transport geography. This is important because, "Policy making is the crucial factor in realising economic benefits from a transport investment" (Bannister and Berechman, 2001: 216).

1.3.   The Context and Purpose of the Research Problem

Australia's transport systems have undergone substantial reorganisation and restructuring over a number of decades. They have at various times been private companies, wholly owned government entities (of various kinds), semi government agencies with significant elements of privatisation and even (it could be argued) key delivery arms of social policy. There has been a constant theme of the need to search for a financially self-sustaining model that delivers wider economic and community benefits as well as direct services to customers. The systems in all States remain financially dependent (for both recurrent and capital support) on governments. The perceived burden goes beyond the financial to the

impact on the allocative efficiency of the national economy and entrenched investment decision making which has consequences for ecological sustainability.

As a result, the transport systems that were developed to facilitate access and mobility and support the economic, social and cultural growth of cities and regions are increasingly being seen as not to be delivering these basic benefits. Many government inquiries have considered these issues (indeed it seems an entrenched problem[3]). However, none have examined the problem in relation to a full consideration of the historical economic geography of the various transport systems in relation to the global movement of capital. The thesis argues that it is only such a perspective that will enables us to understand the decisions that are necessary in order to move back to a situation where the transport sector delivers what it should to the national economy.

This research documents a significant public policy story in land transport from the perspective of an extended historical account, the recent portions of which are informed by interviews with senior government decision makers and their advisers. By telling the story of 'the present' in a way which begins more than a century ago, insight is given into embedded structural forces that are important variables in determining outcomes. Specifically, this leads to two key aims:

- The empirical aims of the research are to add to our understanding of policy changes in land transport and the key impacts on the effectiveness of infrastructure governance arrangements, service

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[3] For example Industry Commission Reports on Rail Transport (08/1991), Intrastate Aviation (07/1992), Urban Transport (02/1994), Port Authority Services and Activities (05/1993), and Productivity Commission Reports on Road and Rail Freight Infrastructure Pricing (4/2007), Progress in Rail Reform (4/2000), A Comparison of Institutional Arrangements for Road Provision (6/1998).

delivery, spatial form in cities and economic development in regions and cities.

- The theoretical aims of the research are to apply an evolutionary perspective and to fill some gaps in our knowledge and add to our understanding of the relationship between ideas and policy changes; the role of individuals as agents of policy change; the role of separate policy arenas; the role of institutions with embedded and socialised norms; and the impact of the "local" (physical, economic and cultural) as a modifying variable.

1.4.   Significance of the Research

A major goal of this research is to exemplify the validity of a contemporary economic geography perspective to the understanding of land transport policy. Results would lend support to the main theoretical constructs current in the approach of economic geographers to institutional analysis and change.   The thesis hopes to underline the importance of individuals and their networks as key actors and to policy streams, networks and communities as part of globally connected urban regimes. This is especially apparent in the case of Qld which, as will be shown, illustrates the importance of not succumbing to fatalism associated with the dominance of global forces. (It suggests not that TINA ['there is no alternative'] but that TIAA ['there is an alternative']). As the case study chapters of this thesis show, the arena of transport policy in Qld has gained a degree of agency and autonomy (or, what might be labelled, freedom from the captivity of market rationalism) precisely because of the ways that institutional environments have evolved over a long period of time.

Through these foci on the role of key individuals and their networks as variables in determining the nature of policy change, this thesis has similarities to the work of Dudley and Richardson[4] (2000) in their review of British transport policy since 1945. They analysed the British case studies in terms of policy networks, multi arena games and urban regime theory. They found that these concepts were important in explaining changes in British transport policy and that the strength of relationship between critical actors was important to outcomes. More recently Dudley (2013) found that the role of narrative was important in explaining the policy window and the associated opportunity for successful implementation of a policy change in relation to London congestion charging. He noted impact on the duration of the policy window. At the same time, Marsden and Docherty (2013) argue that disruption is an important element in enabling policy change that the narrative about the past, present and future prospects associated with a particular policy is important to successful implementation because of its in transport because it provides an opportunity to intervene in an environment where large investments and high sunk costs lock-in prior decisions reinforcing ingrained institutional bias towards incremental change.

The changing relationship between ideas as 'structures of meaning' (Radaelli, 1995) moulded and framed by critical actors (Campbell, 1998 and 2002) and policy in its broadest sense includes notions of 'policy streams', 'policy soup' and 'policy viruses' (Kingdom, 1984), policy networks and policy communities (Jordan, 1990: Atkinson and Coleman, 1992), issue networks (Heclo, 1978),

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[4] Meijerink (2005) also analysed Dutch coastal flooding policy in terms of advocacy coalition, policy streams, punctuated equilibrium and epistemic communities and found that coastal flooding policy had been closely tied to an epistemic community of civil engineers and that they sustain a policy monopoly from 1945 – 2003 that delivered a program of coastal works (Delta Works).

advocacy coalitions (Sabatier, 1993) and multi arena games (Hall, 1993) within the context of urban regime theory (Stone, 1989, 1993, 1998, 2001, 2004 and 2005). In this thesis, these notions are examined with specific reference to the critical sets of ideas that impacted land transport policy in rail at different times: the introduction of rail transport in NSW and Qld, the reforms to rail administration in the late1880s, the proliferation of rail branch lines from 1890 to 1930, modernisation reforms in rail in the mid 1950's[5], the reforms associated with Beeching[6] in the early 1960's and the reforms associated with neoliberalism[7] from the late 1980's[8].   It is also reviewed in relation to the policy response in roads in relation to the early administration and development of roads by councils, the growth of private motorised transport, the extensions of the state road networks, the early development of freeways and motorways, the emergence of key partnerships in planning in the 1960's, to the entry of the community as a 'player' in the 1980's and the emergence of public private sector partnerships in the early 1990's.

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[5] In response to massive debt, increasing costs and aged assets the British Transport Commission released a plan to modernise the railways and eliminate the deficit by 1962 in 1956. The plan, "Modernisation and Re-Equipment of British Railways" was the result of six months' work by senior officer of the railways.

[6] In the early 1960s the conservative Minister for Transport in England Ernest Marples believed that the railway was a relic of the past and the future would be car based. He set up an advisory Committee headed by Sir Ivan Stedeford to review transport and provide recommendations for improvements. Richard Beeching was on the Committee and it was his first report "The Reshaping of British Rail" released on 27 March 1963 that was adopted by government and would shape rail for more than two decades. Beeching's second report "The Development of the Major Railway Trunk Routes" in 1965 extended the thinking in the first report with a focus on what lines should be developed.   These ideas are discussed in detail in Chapter 4.

[7] For a discussion of the concept of neoliberalism and a suggested definition see Thorsen (2009).

[8] More recently ideas associated with neoliberalism have impacted government transport provision. In transport the key ideas have been reducing regulation, increasing competition, encouraging contestability (as defined by Baumol, 1982) and reducing public subsidies. Neoliberal ideas as they apply to space, place and transport are discussed in Peck (2001 and 2004), Peck and Tickell (2002), O'Neill and Argent (2005), O'Neill and Fagan (2006), O'Neill and Moore (2005) and Tonts and Haslam-McKenzie (2005).

Actors are seen as behaving opportunistically in relation to the availability of 'policy windows' (Kingdom, 1995) and enabled by moments of vacuum conceptualised as 'punctuated equilibrium' (Kingdom, 1995) to facilitate change in dominant paradigms. Equilibrium[9] is conceptualised as a period of relative policy stability not as an abstract economic assumption. The role of culture as defined by North is viewed as a key variable in explaining differing outcomes across space.

1.5.   Research Questions and Approach

Five specific research questions are addressed in the context of land transport policy in NSW and Queensland.

- What are the main themes of change in institutional arrangements in the management and delivery of land transport by government road and rail agencies in NSW and Queensland between 1850 and 2000?

- What were the drivers of key changes between 1850 and 2000?

- What are the similarities and difference in the policy response relating to institutional arrangements in land transport between NSW and Queensland between 1850 and 2000?

- What factors contribute to an understanding of differences in policy response?

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[9] See Martin (2010 and 2012) for a discussion path dependence, lock-in, equilibrium and stability.

- What have been the outcomes of these institutional changes in NSW and Queensland for spatial economic development in regions and cities?

Examining these questions required the thesis to select a specific policy area, land transport, as already noted. [10] This sector was selected because of the range and magnitude of its unique and significant economic, social, cultural and ecological impacts on individuals, communities and states at all levels of geographical scale. In addition, the detailed knowledge and experience of the researcher enabled access to key individuals to obtain their special individual stories as well as an ability to analyse and interpret the results from a perspective of a detailed understanding of the dynamics of policy development and implementation.

The critical case study approach enabled a consideration of the impact of a wide range of variables. These included different: geography (physical, economic, political, social and cultural); industries and industry life cycle phases; policy drivers and policy frames and influences; and institutional arrangements. Most importantly, the historical frame of the thesis allowed a comparative empirical investigation of the evolution of the economic landscape and the role of social actors and how they are constrained and influenced by instructional factors

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[10]The style and composition of the methodology was heavily influenced by several seminal studies in transport and or governance including Amin and Thrift (1994, 1994a), Dudley and Richardson (1998, 2000), Docherty (2000a), Wolmar (2002), Murray (2001), Shaw (2000), MacLeod (1998), Meijerink (2005), Coulson and Ferrario (2007). All had elements of multiple cross sectional data collection and attempts at longitudinal data collection to reveal longer term trends, with the objective of viewing underlying structures and developing more general models of institutional arrangements and change. The key element in each of these studies, moreover, was a multi-method approach developed through a number of stages.

emanating from different scales which are themselves contingent and bounded.

As Pike et al., (2009: 180) argue,

> *"As Boschma and Frenken (2009) and Essletzbichler (2009) agree, further increasing the body of empirical work on the evolution of the economic landscape is clearly a priority for all who are engaged in this research agenda. The contingency and openness of social outcomes that are suggested by our conception of the geographical political economy of evolution in economic geography—incorporating, for example, the aspirations and struggles of social actors who are constrained and structured in different ways and to various degrees over space and time—renders much of sociospatial reality an empirical question…*
>
> *In particular, comparative methodological frameworks are especially important to explain how and why places evolve in geographically differentiated and unequal ways—the heart of our concern in connecting evolutionary thinking with uneven development. Rigorous comparative research designs can offer a means systematically to compare and contrast such geographic differentiation over time and address Boschma and Frenken's (2009, 156) desire for empirical studies in economic geography to be "more comparable, transparent, and cumulative"…"*

The analysis of the thesis hinges on an intricate research methodology which has owed much to the researcher's positionality within professional networks in the transport sector. To gather information on the institutional arrangements of NSW and Qld rail and road sectors required the negotiation of a multi-layered set of inter-personal and inter-agency relationships.

The methodology had several critical components. A review of historical sources comprised the major technique for examining these sectors pre-1950. For analysis of events over recent decades, a more diverse set of techniques were used including participant observation, the review of documents, in-depth interviews with key informants, and informal discussions with a range of other actors. Of these different techniques, the in-depth interviews with key informants can be considered the methodological foundation for this thesis. In order to

attempt to understand the role of key actors at different levels, a life history interview approach was used. This is an important empirical contribution albeit it is noted that this method produces a very specific perspective on the events.

The application of this approach and the position of the researcher as a double insider allowed a perspective and research approach which is rare to be tested. Chapter 3 argues that this is in fact a key strength of the data collection and the analysis. Chapter 3 also presents an argument that the in-depth nature of the interviews and the positionality of the respondents presents a unique view of the data and is itself a contribution to a body of knowledge. In order to cover such a large research question the approach was to rely on archives, previous studies and published accounts for the period prior to 1950 and to restrict description to key salient events and to avoid lengthy detail where incidents (for example railway accidents) had been well documented elsewhere. This has led to a heavy reliance on theory and a move away from the presentation of large amounts of data. Again Chapter 3 argues that this is consistent with the increasingly sophisticated conceptual approach being ascendant in contemporary transport analysis.

1.6.   Structure of the Thesis

Chapter 1 provides an overview of the thesis, identifies the research problem, question and hypotheses, the theoretical and empirical context and the methodology. It also discusses the significance and limitation of the thesis. Chapter 2 provides the detailed literature review. The methodology and relevant ethical considerations are set out in Chapter 3. Chapters 4, 5, 6 and 7 document

the case studies. Chapter 8 summaries the thesis, presents the findings in relation

to the research questions and the hypotheses, details the main conclusions and

considers the wider significance and implications of the main findings. Chapter 9

restates several larger points which deserve reiteration.

2. Applying Institutional Approaches to Transport

"... the economic landscape is not just the outcome or by-product of the process of economic evolution, but a determining influence on that process. Economic transformation proceeds differently in different places, and the mechanisms involved neither originate nor operate evenly across space. To adopt Schumpeter's phrase, evolutionary economic geography focuses on the 'creative destruction' of economic landscapes". (Boschma and Martin, 2007: 539)

"…the evolution of places is conditioned by their positions within wider territorial divisions of labor, and path dependence can be seen as a product of the succession of roles that a place has played, evoking notions of historical "layering"…Places can become tied to particular roles, reflecting the spatial concentration of either high or low value-added activities…changes tend to be related to broader shifts in prevailing technologies and modes of organization…, lock-in can be seen as a contingent effect of broader processes of territorial development, rather than as representing a structural cause of regional decline" (MacKinnon, et.al., 2009: 139)

2.1.　　Introduction

Institutions have been central to work in the social sciences for well over a century. From the seminal thinking of Weber (institutions as 'iron cages' that set deterministic frameworks for action) to the 'old institutionalism' (concerned with organisations as slowly evolving systems) to the 'new institutionalism' (an explicit recognition of the importance of different possible paths, the role of actors and values) to the 'institutional turn' (which sees institutions in terms of social arrangements and structures) there has been a recognition that institutions matter. The geographical perspective on institutions has seen the explicit incorporation of spatial fixity and flexibility as a unit of analysis. Most importantly geographers have adopted and adapted key conceptual developments, namely embeddedness and path dependency to explain economic and social development outcomes in places. Taking that point as a start, this chapter outlines the key theoretical

developments and places the central concerns of the thesis and the research questions squarely at the centre of current debate in the social science.

2.2.   The Diversity of Institutional Approaches

Since Weber, institutions have been a central topic of analysis in the social sciences. There are two main periods of theoretical development that have been termed old and new institutionalism. From the 1920s – 1950s in the era of what has been termed 'old institutionalism' the concern was with organisations as institutions and how they as systems slowly evolved over time. The approach was normative and prescriptive. Farashahi et al (2005: 3) note that Hughes (1936) saw institutions '...as stable and slowly changing social systems". A major development that heralded the dawn of new institutionalism was the incorporation of values as an important variable to explain behaviour in institutions. In the late 1940s for example, Selznick[11] (1949 and 1957) examined the values in organisations to explain institutionalism. He saw institutionalisation as a process which embedded values beyond the demands of technical tasks.

Over time, these approaches evolved into so-called 'new institutionalism'. The defining feature of new institutionalism is the interest in the different paths that an idea or a reform can take given the range of 'actors' and groups that are involved and which influence outcomes. It avoids the technological determinism of the old institutionalism and accepts that actors are both determined by and are

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[11] Note that Sleznick (1996) disagrees with drawing a distinction between new and old institutionalism.

producers of history. The genesis of these ideas was in the work of historical institutionalists for example Samuel Huntington (1957).

The new view of institutionalism also incorporates the effect of macro influences on local phenomena. Meyer and Rowan (1977) view institutions as socially constructed templates for actions generated and maintained through on-going actions.   Institutions are seen as providing frameworks and rules that particular organisations follow. More recently, the role of actors has been made explicit in institutional theory. For example Burns and Flam (1987) '...define institutions as shared rules which categorise social actors, their activities and their relationships' (Farashahi, et. al. 2005: 3).

Prior to the recent work by Economic Geographers on this theme, three major fields in the social sciences made important contributions to the development of institutional theory over the past 30 years: economics; political science and sociology. These three interpretations by economists, political scientists and sociologists have been termed the rational choice, historical and sociological schools of new institutionalism (Campbell 1997). More recently, researchers have used the term 'constructivist institutionalism' (Hay, 2006) or 'discursive institutionalism' (Schmidt, 2008 and 2010) to identify a fourth perspective in the new institutionalism where the role of ideas and discourse is seen as important to understanding institutional change.

Economists have viewed the existence of institutions as central to understanding the logic of transactions within organisations. For example, Williamson (1993) defines the institutional environment as a set of political, social and legal rules that establishes the basis for production, exchange and

distribution, while North (1990) views institutions as sets of repetitive interactions, customs and rules that incentivise behaviour. Individuals are seen as rational actors who maximise their utility through organisations.

Political scientists (for example Ostrom, 1986, 1990 and Keohane, 1988) have added the dimension of preferences and power in the ways that institutions are constituted. A key foundation of this perspective is that 'history matters'. Paths chosen will have an impact on the development of the organisation. The concept of path dependency that past history will result in inevitable consequences is central to this view of institutions.

Sociologists reject these rational-actor models of institutions and believe that 'analysis cannot be reduced to aggregations of the direct consequences of individuals' motives (DiMaggio and Powell, 1991). They stressed the importance of cognition where individuals act because they are unable to conceive of an alternative, '..the way we do these things' (Scott, 2001: 57). This includes consideration of cultural artefacts such as symbol systems and moral templates in the definition of institutions and sees the institutional environment as a set of social relations and embedded interpretations where accepted stories affirm organisations' legitimacy (Meyer and Rowan, 1977). DiMaggio and Powell (1983) built on these ideas to develop their concept of isomorphism which argues that organisations are similar because they want to attain legitimacy. They identified three methods of institutional isomorphism: coercive, mimetic and normative.

A summary of the work from in the three earlier perspectives can be found in Farashahi et. al (2005). They reviewed studies published between 1983 and

2002. Their sample of 101 studies[12] found that: there is a growing tendency to use institutional theory; Sociology is the basic theoretical foundation of the majority of studies (96%); Isomorphism and institutional change are the central concerns; formal and well established institutions are seen as being the most influential; inclusion of at least two levels of institutions is a common approach; and top-down directionality (i.e., institutions affecting organisations) was the main direction of effect (81% of studies).

The work of Douglas North in economics deserves special mention because he used an historical perspective to reframed the conceptualisation of institutions and applied this to develop and better understand the implications for the economic performance of places. North's framework retained the concepts of competition and scarcity, modified the assumption of the rational human actor and added time as a critical dimension. He argued that "...institutions form the incentive structure of society and the political and social institutions,..., [they] are the underlying determinant of economic performance." (North, 1994: 359). He conceptualised time as relating to the learning process of people which he argued in turn shaped the evolution of institutions.

North saw beliefs held by individuals, groups and societies that determine choices as a consequence of learning over time. This learning is embedded and passed on intergenerationally. North's analysis dismantles the rationality assumption prevalent in neo classical economics and replaces it with a view of how learning occurs within societies. He argues that mental models that result

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[12] Most (76) were published in the second decade from 1993 and the vast majority focussed on institutions in the USA (77%) or other industrialised nations for example Canada, UK, Germany, Denmark, Norway and Australia (16%).

from experiences in the physical and socio-cultural environment must be incorporated into institutional theory. He argues that a common cultural heritage is the mechanism that enables the intergenerational transfer of mental models. North sees mental models and the associated belief structures as central to the nature of the social and economic institutions that are created within a society.

North defines institutions as constraints that structure interaction, and mechanisms that provide the incentive structure of societies and economies. Hence, he argued that institutions and their attendant technologies determined the transaction and transformation costs that equated to an economy's costs of production[13]. He conceived of organisations as groups of individuals bound together to achieve a common purpose (councils, regulatory bodies, firms, trade unions, schools, churches, clubs etc). He argues that it is the interactions between institutions and organisations that shape the institutional evolution of an economy and that the organisations that come into existence reflect the opportunities provided by the institutional framework.

Thus, North sees economic change as a continuous and ubiquitous process which happens as choices and decisions are made. Some decisions can be made within the existing institutional framework (property rights and political rules) and others require recontracting resulting in significant modifications to institutions. North argues that the speed of economic change is a result of the rate of learning and the direction of the change is the result of the expected pay-offs to acquiring different kinds of knowledge. Hence, while this perspective of the new institutionalism is viewed differently in the various fields of the social sciences

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[13] North drew heavily on the work of Ronald Coase (1960) to link transactions costs and neo-classical economic theory.

there is general agreement about the existence of institutions and the importance of their impact. Despite their differences all perspectives share the common base that institutions matter and have a significant impact on the behaviour of individuals and organisations.

2.3.   The Institutional Turn in Geography

In economic geography institutions have been defined as both formal organisations and sets of norms, values and rules that govern behaviour. Traditionally, as Philo and Parr, (2001: 513 -14) note for geographers, institutions have meant the internal and external 'material build' environment of large organisations (for example prisons and asylums) and the interest was in understanding institutional space as a specific place with social connections to surrounding places.

More recent research in economic geography first tended to focus on organisations, such as the role of local authorities, planning authorities and large organisations in industrial location and regional economic development. A related second field of enquiry, sometimes within an empirical investigation of organisations such as local authorities, was a focus on the role of managers in shaping the urban landscape. Geographers[14] were interested in the role of institutions in structuring space and the levels of activity (scales) at which institutions operate (viewed as local, regional national and global).

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[14] A review of the approach of economic geographers since the mid-1990s is contained in MacKinnon et.al. 2009.

An early anthology on the geography of institutions by Flowerdew (1982) provides examples of these approaches. The definition of institutions used in the introduction ('an identifiable organisation') is reflective of this paradigm,

> '...an organisation considered in relation to the effects of its internal structure and operating constraints on how it acts. The organisation may be a private company, a nationalised industry, a non-profit organisation, a central or local government or one of its departments, or a quango...' (cited in Philo and Parr, 2001: 515).

The more recent institutional turn in geography has seen the adoption of theoretical frameworks developed in sociology, economics and political science (outlined above) where institutions are seen as embedded dynamic systems of rules, norms and values that reflexively influence, constrain and shape actors' choices and behaviours. Hence, there has been a significant shift from a concern with individual organisations viewed within a specific spatial territory to a view of institutions as,

> '...more complex institutional ensembles and regulatory networks...a spidery network of dispersed intentions, knowledges, resources and powers...coupled with a concern for questions of governance and the manner in which institutional ensembles regulate, order and steer economic practices and relations (Wood and Valler, 2001: 1140).

The idea that, 'institutions matter' (Jessop, 2001:1213) and that "...the form and evolution of the economic landscape cannot be fully understood without giving due attention to the various social institutions on which economic activity depends and through which it is shaped" (Martin, 2000: 77), has become a central area of enquiry in economic geography.

Martin (2000) notes four reasons for the increased focus on institutions within economic geography: the adoption by economic geographers of French regulation theory with its emphasis on the 'mode of social regulation' (the social

norms, rules and customs that support regimes of production, consumption and accumulation); the growing recognition of the socio–cultural in economic geography and the recognition that the economic process is a socio-cultural process; the influence of the growing 'institutionalism' in the other social sciences, especially economics, political science and sociology; and the upheavals in institutional regimes with the decline of the Fordist regime and the implications of the shift to a new regime of Post-Fordist accumulation.

Jessop (2001: 1214) has identified three different forms of institutional turn in economic geography: thematic (the hypothesis that aspects of institutional life should be included social enquiry); methodological (institutions provide a useful entry point for exploring the social world); and ontological (the hypothesis that institutions are the foundations of social existence). He argues that,

'...the likely returns from the institutional turn will depend largely on the proposed definition of institutions and the respects in which they are held to matter' (Jessop, 2001: 1220).

A more recent review of institutionalism in economic geography (Mackinnon, 2009: 499) reinforced Jessop's (2001, 1220) view that there are two definitions of institutions still employed by geographers'. Institutions as organisations that have important social and economic impacts and the view that institutions are a range of social practices that are based on norms, values and beliefs.

Jessop states that taking an institutional turn requires that organisations be 'put in their place'. He says there are several steps to do this: first institutions must be defined, located and themed; second we must understand how they operate and are reproduced; third we can examine institutional emergence as a

'complex evolutionary phenomenon that depends on specific mechanisms of variation, selection and retention in specific spatiotemporal contexts'; fourth we can understand embeddedness, institutional governance, inter-institutional relations and their systemic environments; and finally we can examine the intentions of institutional design and institutional outcomes (Jessop, 2001:1221).

This institutional turn has been a significant augmentation to traditional models of economic geography where 'economic action is atomistic, rational and maximising and the socio-political context is held constant' to an acceptance that economic action is intricately linked to social and political action. As Amin (1999: 366) notes markets are 'socially constructed' and economic behaviour is 'embedded in networks of interpersonal relations' and economic outcomes are influenced by network properties.

Different types of networks have been associated with different types of behaviours. The economy is seen as shaped by enduring collective forces that make it an instituted process (Polanyi, 1957) and it is not conceptualised mechanistically as a system. Indeed, "...economic activity is socially and institutionally situated: it cannot be explained by reference to atomistic individual motives alone, but has to be understood as enmeshed in wider structures of social, economic, and political rules, procedures and conventions. It is the role of these systems of rules, procedures, and conventions, both of a formal and informal nature that is the focus of an institutionalist approach to economic geography" (Martin, 2000: 80). The concept of economy that emerges is one of a'

'...composition of collective influences which shape individual action and as a diversified and path dependent entity moulded by inherited cultural and socio-institutional influences' (Amin, 1999: 368).

Martin (2000) has identified the major applications in economic geography of the three alternative approaches to institutional analysis discussed above. First understanding how institutions generate particular organisational forms under capitalism resulting in a focus on spatial agglomeration and localisation of economic activity. Second, understanding the economy as a socio-institutionally embedded system where the role of locally specific formal and informal networks is seen as important. And third, understanding the role of institutional evolution in the historical dynamics of the capitalist economy where the nature and evolution of local institutional regimes and their role in the social regulation and governance of local economies is the focus.

Hence the key themes of institutional research in economic geography have been: describing the role of institutions in shaping the economic landscape; understanding the evolution of economic landscapes; analysing the role of technological in shaping the changing outcomes for regional and local economies; considering of the cultural foundations of the space economy; and understanding the social regulation and governance of regional and local economies.

For economic geographers the challenge is to describe and conceptualise the spatial dimensions of the processes associated with institutions and their workings to identify the different effects in difference places and to understand why the process of institutionalisation varies between places. The approach of this thesis and its approach are at the centre of current debates in economic geography.

2.4.   How a Geographical Perspective Contributes to Institutional Analysis

Institutions can be formed at different spatial scales including global, national, regional, and local, (Meyer and Scott, 1983).   However, the way they are embedded at one scale reverberates onto other scales, creating mutually dynamic, relational geographies. At each level institutional norms define or bound interactions. Effects are ongoing, complex and multi-dimensional and cannot be seen as simply responses to singular institutional forces at any particular level (Oliver, 1991; Mackinnon, 2008; Tonts, et. al., 2012). Organisational response results from the various strength of institutional factors from a variety of sources at all levels.

Seen this way, Jessop (2003: 2) argues that scales can no longer be conceived as nested in a neat hierarchy but as highly interactive,

> *'...co-existing and interpenetrating in a tangled and confused manner, '... within an overall dynamic of globalisation. Globalisation, the process by which 'the local' or regions are becoming increasing economically, socially and culturally integrated into the international economy has both structural and strategic moments. 'Structurally, it involves the objective processes whereby increasing global interdependence is created among actions, organisations and institutions....These processes occur on various spatial scales, operate differently in each functional subsystem, involve complex and tangles casual hierarchies rather than a simple, unilinear, bottom-up or top-down movement, and often display an eccentric 'nesting' of the different scales of social organisation' (Jessop, 2007: 179).*

As Jessop (2001: 1231) notes institutions have micro foundations and macro contexts. They are perpetuated in individual and organisational activities as well as being embedded institutional rules and norms.

Jessop's insights, however, deal with the geographical question of scale, but not place. Building on this latter concept, Boschma and Frenken (2006: 277) argue that a key objective of institutional analysis is to understand the effect of the local specificity of 'real places' on economic development, which they primarily ascribe to place-specific institutions at different spatial scales. Most importantly Pike et al., (2007) note that,

"Each scale and level is mutually constitutive: 'localities cannot be understood as neatly bounded administrative territories, and places are intrinsically multi-scalar" (Pike, et al., 2007: 1259).

Thus, an institutional approach takes differences between localities as the starting point and analyses how place-specific institutions affect local economic development. Hence, they maintain that institutional analysis requires all antireductionist qualitative methodologies, in particular in-depth case-study research, to enable a complete understanding of the complex and multi-faceted nature of regional development (Boschma and Frenken, 2006: 277).

Such methodologies enable regions and their economies to be viewed and studied as 'complex systems' (Martin and Sunley, 2007:595). Using a relational view in which scales are conceived as being co-produced relative to one another, actors do not take on structurally predetermined roles but their interrelations and behaviour 'carry explanatory weight'. Actors however, are not viewed as free agents but are seen as constrained and shaped by a context of institutions, norms and rules i.e. the importance of path dependency, conceptuality and contingency (Bathelt and Gluckler, 2003).

This thinking has been bolstered at the level of the individual actor by the inclusion in geographical research of work by behavioural economists and cognitive scientists. This research suggests the significance of social and cultural factors, the important role of intuition and imitation as well as the context of decision making (Strauss, 2008:142). The second blade of Simon's (1982) scissors analogy - the decision making environment – can be conceptualised as comprised of embedded networks of social relations plus the economic and physical factors that are present (Strauss, 2008:140).

Methodologically the turn shifts the focus of analysis from the macro (institutions and regulatory frameworks) to the micro (agents and their relationships). Actors are not viewed as independent subjects but as, '...interdependent subjects whose identities and resource capabilities...are co-constituted by their relations with other actors' (Boggs and Rantisi, 2003: 112). This turns attention to 'the socio-organisation of production' (Yeung, 2002, 2004, 2005) (i.e., actors networks and their relations), otherwise understood as the 'meso level' (Storper and Salais, 1997) entry point for research.

The relational turn views space not as an object of analysis but as a perspective for analysing and understanding social relations. The local is examined in terms of the advantage conferred by proximity and the 'micro-space' (Ettlinger, 2003) conceptualisation of networks highlights the role of global networks in influencing place-bound economic practices. The concept of 'relational proximity' vis 'spatial proximity' allows an analysis of the advantage delivered by the multiple global networks of actors. The literature on 'communities of practice' provides numerous examples of the importance of these networks.

The concept of 'temporary constellations of goal directed social relations' (Grabher, 2001, 2002) recognises that members build social capital and relational strength and that success in an enterprise is likely to lie outside a single firm.

Yeung (2005) reviews the key relational frameworks in relational geography which he sees as thematic and reworks three concepts – relationality, power and actors – to identify the underlying causal properties and build the theoretical base of relational economic geography. He argues that it is necessary to unpack the 'conceptualisation of power as practised through relationality' and to identify how different geometries of power create different effects and spatial outcomes (Yeung, 2005:43). Relationality is seen as constituted through interactions and interconnections resulting in different configurations of relational geometries with different forms of power embedded in them.

His approach is based on '..understanding the intentions and strategies of economic actors and ensembles of actors and the patterns of how they behave' (Yeung, 2005:48). Causal power is given to relational geometries. Hence, '...a relational approach to regional development seeks to identify the complex relational geometry comprising *local* and *non-local* actors, *tangible* and *intangible* assets, *formal* and informal institutional structures, and their interactive power relations. ... In particular, the approach analyses the relational complementarity and specificity of these actors, assets and structures – not their mere presence or absence' (Yeung, 2005: 48).

In Economic Geography, the institutional turn has been used to address the question of how local and regional economies are shaped by particular, place specific and embedded institutional arrangements. Under the banner of 'new

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regionalism' geographers have examined the effects of social and cultural conditions in regions as assisting or hindering economic growth. Regions can be conceived as spaces that relate to a constructed and instituted identity.

"Region' can be seen as a socially-produced spatial category, meaning that a region is a perceived demarcation of, among other things, social, political, economic, and cultural processes that change over time" (Frisvoll and Rye, 2009:177).

The work of Paasi (1986, 1991, 2001, 2002, 2002a, 2003, 2004, 2009 and 2013) provides an analytical framework that has been used by geographers (see for example MacLeod, 1998 for Scotland and Frisvoll and Rye, 2009 for the Mountain Region in Norway) to incorporate social, cultural, governance and institutional structures from the micro to the macro level into an understanding of economic outcomes in the local. The framework explicitly incorporates the role of local actors and identity issues to enable a view of, '...how regions emerge, and are continually reproduced and transformed in and through the practices of individuals and institutions at a variety of spatial levels. This emphasis on the wider socio-spatial structure and collective consciousness of 'society' helps to foreground issues of spatial scale, boundaries, institutional formation and cultural identity' (MacLeod, 1998: 834).

Using a Paasian framework requires sensitivity to the particular social forces, interest group coalitions, institutional geometry and political discourse that constitutes regions (MacLeod, 1998: 835). Hence, '...a region is an explicit collective representation of institutional practices. It has thus a longer historical

duration and represents a 'higher-scale history' than place' (Frisvoll and Rye, 2009: 177) that results in a specific cultural image (MacLeod, 1998: 836).

Regions can be advantaged and disadvantaged by their economic history and their embedded social relations. These factors can be important in explaining the adaptability and resilience of regions. Pike et al. (2010) argue that strong, tightly connected agents have an important role in framing disruptive change in regions. They consider that their role is an important variable in determining the resilience of regions and therefore must be considered.

Through these approaches, Geographers have spatialised the concept of embeddedness. Particular forms of economic activity are seen as embedded in the social relations of a particular place. The term 'institutional space' refers to a geographical area over which an institution is constituted and has influence. As Amin (2001: 1241) notes,

"This gives us a very different understanding from institutions seen as containers, structures, organisations, or contextual settings. The focus falls on the repeated/instituted practices enshrined in interpersonal relations, network enrolments, habits of thought, and laws of markets, state and other organisational practices, technological regimes that give rise to economic formations of varying organisation, geography, and vitality."

The Regulation Approach (RA) has also been incorporated into institutional studies by geographers who see regulation as an uneven process highlighting the role of local state agencies in mediating between local economies and national and global regulatory frameworks (Mackinnon, 2009: 500). This work represents the efforts of a school of French political scientist and economists largely in the two decades from 1970. RA views capitalist economies as a function of social and institutional systems. Economic relations are seen as socially embedded;

economic development is path dependant and irreversible; economic, political and social institutions matter and are endogenous and shape changes over time which can be identified in specific institutional frameworks and regimes (Jessop, 1997b: 503-4). RA emphasises the contingent relationship between a regime of accumulation (macroeconomic and reproducible relationship between production, distribution and consumption) and mode of regulation (the extra economic institutional and social norms that legitimise the accumulation regime) (MacLeod, 2001: 1157).

2.5.   Geography, Institutions and the Transport Sector

Geographical insights into institutions have relevance to geographies of transport via two key connections. Firstly, they apply geographers' insights on scale, embededdness and regions to transport networks discussed above. Secondly, they bring into focus the crucial importance of path dependence concepts for transport organisations and the resultant outcomes for local and regional economies. The later concept has particular application in transport because of the size and lumpiness of the investments and the life of the resulting assets. In this section, we focus specifically on this set of issues.

Investment choices in transport lock in (and out) a complex array of institutional arrangements. MacKinnon (2008: 1455) notes that lock-in can be functional (relating to the nature of relations between firms), cognitive (reflecting world views) and political (relating to social relations and power). Investment choices also produce and reproduce a set of spatial expressions (for example

development opportunities for regions and areas with high and effective connectivity due to good transport infrastructure).   Technology choice in railways can have lock-in effects that last for over 100 years. Investment decisions can have long run effects on future technologies, organisations and systems. Earlier decisions reverberate throughout history implying outcomes that result from the past and may not be optimal or rational; and technological lock-in can result from positive network externalities (that is technical interrelatedness, economies of scale and the inertia created by sunk costs). An example of this is the narrow gauge choice made by Qld in the 1860's which still dominates the investment choices available today.

The concept of path dependency is where prior choices pre-determine and shape future choices, responses, decisions and or outcomes. That is, thinking and decisions are conceived as historically conditioned where the past is imprinted on present and future organisational behaviour (Schreyögg and Sydow, 2011: 326-7) and is often associated with technology. Amin (1999: 368) notes, '...a key institutional axiom is that solutions have to be context-specific and sensitive to local path dependencies'. Jessop (2001: 1229) notes that,

'...Path dependency implies that the prior development of an institution shapes current and future trajectories. It suggests that institutional legacies limit current possibilities or options in institutional innovation. History make(s) a difference. But this need not imply fatalism: social forces could intervene in current conjunctures and actively rearticulate them so that new trajectories become possible'.

Martin and Sunley (2006: 398) note that three of the current key approaches to economic geography (evolutionary, institutional and relational) view path dependence as a '...fundamental feature of the economic landscape...there is an emphasis on the context-specific, locally contingent nature of self-reinforcing

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economic development, particularly the 'quasifixity' of geographical patterns of technological change, economic structures and institutional forms across the economic landscape.' They note three forms of economic path dependence: technological lock-in; dynamic increasing returns to scale; and institutional hysteresis. This builds on the highly influential work of David (1985; 1986) who used the example of the QWERTY keyboard as an example of technological lock-in and the resilience of prior technologies, due to positive feedback mechanisms. Thus, the central feature of path dependence is that:

'... the economy inherits the legacy of its own past...the economy is an irreversible historical process in which future outcomes depend on past events and outcomes: at any point in time the state of the economy depends on the historical adjustment path taken to it' (Martin and Sunley, 2006: 400).

Arthur's work within complexity theory (1988; 1989; 1994) also identifies economic path dependence. His work suggests that path dependence is the result of increasing returns generated by large set up costs, learning effects and coordination effects and self-reinforcing expectations. While North's work (1990) argues that all forms of path dependence associated with increasing returns applies to organisations. His view reinforces David's concept of 'institutions as carries of history'. None of this implies that path dependence suggests the future is preordained; it is, '...a probabilistic and contingent process' (Martin and Sunley, 2006: 402) where it narrows choices and links decision making through time (North, 1990: 99).

Schreyögg and Sydow (2009 and 2011) have identified three phases in path dependent processes. The Preformation Phase is a situation where the choice of decision making is broad and while being historically framed is unable to be predicted by prior events. If this decision sets off a self-reinforcing process

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then it can be conceived as a 'critical juncture'. During Phase II, The Formation

Phase, the range of decision choices is narrowed by the prior decision and it is

difficult to change the initial decision and a path begins to evolve. A new regime

emerges and positive feedback processes further reinforce the path. In Phase III,

Lock-in, the dominant pattern is fixed and all future processing is fully bound to a

path and flexibility has been lost. More efficient alternative processes will be

unable to be adopted resulting in actual or potential inefficiency. These phases

are shown in the figure below.

Figure 2.5.1 Phases of Path Dependency and Lock-in
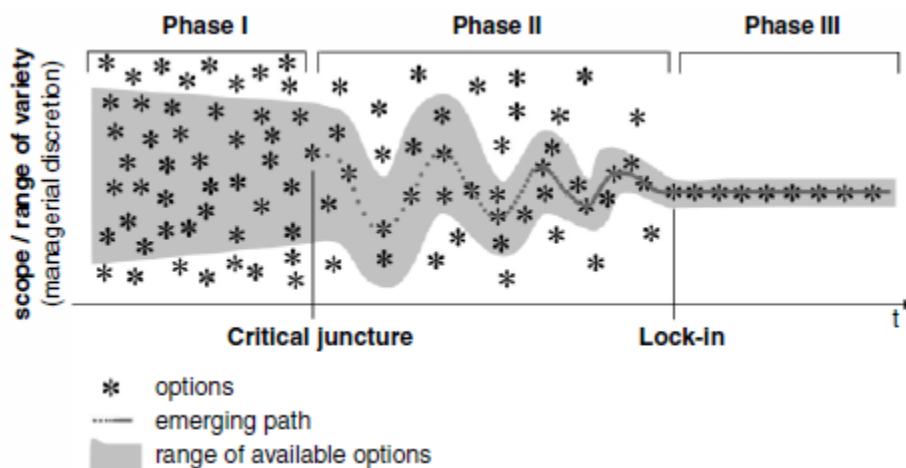
(Source: Sydow, et.al. 2009: 692)

Path dependence as a process is conceived as intertwined with geography.

Scott (2006) argues that space plays an active role in economic outcomes.

Essletzbichler and Rigby, (2007: 557) note that

, '...because different institutions operate over various spatial scales and
tend to be geographically and temporally embedded, the influence of institutions
on economic actors such as firms and workers will exert region-specific
pressures'.

However, this is a complex process where the regional economic landscape is, '... simultaneously both an outcome of path-dependent processes of economic evolution, and a major determinant shaping many of those processes (Martin and Sunley, 2006: 410). Most importantly, local organisations, industries and institutions are linked into a wide range of markets, regulatory systems, regions and institutions at all levels of spatial scale. Path dependent evolution within any region is unlikely to be able to be explained or understood without reference to what is happening to processes, systems, industries, markets, technology and regulatory behaviour in places linked via complex social, political and economic networks that themselves are part of a much broader evolution of regimes of accumulation and modes of regulation.

'At the regional level, institutions, broadly defined as 'settled habits of thought' (Veblen, 1899, 1919), play a similar role to routines at the firm-level. Regional path dependence may arise from: a natural resource base; sunk costs associated with infrastructure assets; regional technologies; economies of agglomeration; region specific institutions, cultural forms and traditions; and interregional dependencies and linkages (Martin and Sunley, 2006: 412). The concept of 'regional lock-in' has been used to describe the observed pattern where regions tend to exhibit a tendency to particular economic specialisations and uneven development that seen self-reinforcing and self-reproducing over long periods of time. Setterfield (1997) has described it as 'conditional equilibrium' that is difficult to escape while Arthur's work focuses on the role of processes in producing gradual rigidity.   Martin and Sunley, (2006: 415) have noted three types of lock-in described by Grabher (1993), 'functional' (based on hierarchical firm

relations), 'cognitive' (consisting of a common world-view) and 'political' (a thick and dense institutional structure that hampers restructuring)'. In his study Grabher found that lock-in led to rigidity, an inability to adopt new ideas and to respond to competition in a regional steel and coal industry complex in the Ruhr.

Path dependency has particular application to transport. Transport investment choices are sufficiently large, are linked to (and it can be argued are driven by) the dominant mode of accumulation and put in place economic relationships that create and then embed systems and sub systems of production at all levels of scale. These economic relationships themselves have implications for the future possible behaviours of key actors as they open up networks which both enable and constrain the flow of ideas and policy choices. The analysis of path dependence in transport also enables a consideration of the spatial impact of these decisions. Transport investments provide channels of movement and development that have economic and social consequences for regions and local places. The resulting economic paths link places globally and are specific to the institutional regime. Hence, an analysis of path dependence is fundamental to understanding the impact of transport investment decisions.

2.6.   Conclusion: Making Sense of it all

The themes addressed through this chapter signify a series of key insights which can guide the analysis of transport systems. Firstly, there is diversity in terms of how the concepts of 'institutions' and 'institutional analysis' have been developed and applied by leading theorists. Secondly, perspectives focusing on institutions have been found to be extremely fruitful for geographical analysis - a process dubbed the 'institutional turn' in geography. Thirdly, geographical

perspectives, in turn, have fed back into and enriched the broader field of institutional analysis through an understanding of spatially embedded institutional milieu. And fourthly, and most importantly, in the context of these considerations, the notion of path dependence has critical relevance, especially for geographers.

Institutions are best defined as multi-scalar ensembles which produce and reproduce networks linking knowledge, resources, places and actors with implications for habits, norms, rules and values that structure behaviour. Transport geographers have an interest in the spatial dimensions of institutions and their outcomes at all levels of scale from the local to the global.   Institutional regimes (characterised by periods of relatively stable economic structures, technologies, organisations and relationships) create transport investment choices that lead to a complex array of economic, financial and trade arrangements for states. The regional and local outcomes resulting from instituted processes associated with investment choice has the effect of embedding particular forms of economic activity in places, and has implications for development options. The resulting local relationships between firms, government agencies and critical players (e.g. unions, trade and community associations) create networks of information and support which are also linked to extra regional and global networks.   A window of analysis is enabled by the institutional perspective into the policy choices available and legitimised within the context of the institutional regime which limit and perhaps predetermine the policy decisions that are available to key actors who themselves are constrained by the decisions of the past.

The role of key individuals and their networks as agents of change can be examined as a key variable in determining the nature and possibility of policy

change. The perspective is informed by the relational and cultural turn in economic geography recognising that individual actions can only be understood as part of embedded social relations. These key actors are seen as behaving opportunistically to facilitate change in dominant paradigms. The role of culture in influencing the rate of change in norms and institutions and therefore enabling or constraining outcomes can be viewed as key variable explaining differing outcomes across space.

These variables are not viewed as fixed but are seen within their historical context. In transport, especially, a long historical lens is necessary in order to identify the reasons why particular institutional arrangements exist. There is an implicit acceptance of the role of and the key characteristic of path-dependent processes and systems where the outcomes is seen to evolve as a 'consequence of the process's or system's own history" (Martin and Sunley, 2006).

With these points made, the next chapter provides an overview of the methodology used for this research, and then, a series of chapters apply the institutional approach outlined here to the history of road and rail systems in NSW and Qld. This extended historical understanding presented in these chapters provides insight into the importance of ideas, networks and policy development, as a back drop to major decisions. The role of geography is highlighted as the central variable that explains how these outcomes were reached.

3.   Methodology

"...space and place as well as the practices and power relations of the involved actors are important when studying the production of geographical knowledge." (Adriansen and Madsen, 2009: 146)

"...Judging an interviewer's positionality is a slippery process and rather than focusing on dualism it is arguably more important to analyse the power relationships between the researcher and the elite subjects as a 'sliding scale of intimacy.'...Positionality is not static." (Harvey, 2010:198 – 9)

3.1.   Introduction

The analysis of this thesis hinges on an intricate research methodology which has owed much to the researcher's positionality within professional networks in the transport sector. To gather information on the institutional arrangements of NSW and Qld rail and road sectors required the negotiation of a multi-layered set of inter-personal and inter-agency relationships. This chapter discusses the range of complex issues that arose during the development and execution of this methodology.   It is structured to align with the stages of the research process, as an explicit intention to reflect on the impact of the researcher's positionality at each stage of the process, using the concept of the 'double insider' articulated by Adriansen and Madsen (2009).   It addresses the benchmark question of insider/outsider status which defined the research approach.   The research as a result of the positionality of the researcher, the epistemological approach required by the theoretical constructs, the power of the comparative case study method and the nature of the interview respondents are all explicitly examined.

3.2.   Identity and Positionality: Defining Insiders, Outsiders and Double Insiders

For much of the twentieth century, research in the social sciences was dominated by objectivist epistemologies associated with realist ontologies. These approaches viewed reality as, '...an external, objective phenomenon, existing independently of human consciousness' (Rooney 2005:4). Such a stance led to the situation where, "...the concepts of validity, reliability and generalisation have obtained the status of a scientific holy trinity. They appear to belong to some abstract realm in a sanctuary of science, far removed from the interactions of the everyday world, to be worshipped with respect by all true believers in science' (Kvale, 1995:19).   Validity, reliability and the ability to generalise research conclusions were held to be dependent upon the data on which they were based. Methodological procedures were held to, 'transmit validity from premise to conclusion' (Hammersley, 1977: 5).

Such positivist perspectives based on technical approaches saw the researcher as, "...an outsider, an independent observer rigorously gathering data and reporting objectively. The researcher's subjectivities were not allowed to impact the research process as it was believed that this would lead to a distorted, invalid picture of reality" (Rooney, 2005:4).   However, as Hammersley (1993: 219) notes,

"...no position, not even a marginal one guarantees valid knowledge; and no position prevents it either. There are no overwhelming advantages to being an insider or an outsider. Each position has advantages and disadvantages, though

these will take on slightly different weights depending on the particular circumstances and purposes of the research."

Over time, research philosophies in the social sciences have moved from the positivist position where the validity of research is dependent on the researcher being objective, to the neo-positivist position of the non-existence of an objective reality and the impossibility of total objectivity, and thence, to the position where recognition of the researcher's subjectivities are core to the research process and must be recognised (Rooney, 2005: 3). More than this, "Postmodern critiques of qualitative interview research methods insist that the researcher's multiple identities and their embedded social contexts influence the validity and reliability of 'data' collected and their interpretation" (Gunasekara 2007: 462).

This process of active consideration of positionality during the research process has been termed 'reflexivity' (Ryan 2005: 2). The importance of the researcher making transparent and reflecting on the nature of the connections with the research and the nature of changing 'identities' throughout the research has been noted by numerous researchers including Cassell, (2005); Denzin (2001); Holstein and Gubrium (1997) and May (1998). Nightingale and Cromby (1999: 228) suggest that, reflexivity requires an awareness of the researchers' contribution to the construction of meaning and urge an exploration of the ways researchers' involvement influences the research.

This makes visible, "the backstage reality of research life" (Gunasekara, 2007: 462) and in so doing, increases the rigour of the research (May, 1998). The multiple, dynamic identities of the researcher have been described as a 'constantly pivoting centre' (Walters, 1996) and this is reflective of the research reality where relational connectedness varies with individual participants and will be impacted by

location, context and time. Hence the process of reflexivity is complex and multi-dimensional and must be considered for each part of the research process and for each interaction with all sources and in relation to the relational, spatial and temporal contexts. There is a need to allow for and analyse social and personal change in the research process (Lewis 2003: 231).

It is through the process of making the research process transparent that, 'readers can construct their own perspectives and in so doing are able to use the information provided about the methodological process to address a range of various concerns about positionality. For example, Will the researcher's relationships with subjects have a negative impact on the subject's behaviour such that they behave in a way that they would not normally?   Will the researcher's tacit knowledge lead them to misinterpret data or make false assumptions? Will the researcher's insider knowledge lead them to make assumptions and miss potentially important information?   Will the researcher's politics, loyalties, or hidden agendas lead to misrepresentations?   Will the researcher's moral/political/cultural standpoints lead them to subconsciously distort data Rooney (2005: 6)

These points bring us to the vexed concept of the positionality of the 'insider'. The term insider in its more limited sense was seminally defined by Merton (1972) as "..an individual who processes a priori intimate knowledge of the community and its members.." (cited by Roland and Wicks, 2009: 253). Over time, however, usage of the term has become increasingly tightened. The more demanding definition employed by Adriansen and Madsen (2009: 147) is:

"To us, an insider is someone who is considered an insider by the other members of a given community and/or participates on par with the other members of that given community."

The use of the term 'community' is important because as Hellawell (2006: 485) notes "possessing intimate knowledge of it doesn't necessarily mean being a member of it yourself. So being an insider researcher is not necessarily the same as being currently a member of the organization being researched." However, this usage of the term is also slippery.   It is different from the definition of insider by Robson (2002) where he notes that insiders have a direct involvement or connection with the research setting. Community is less direct but is cognisant of the role of networks and the potential impact they have on how the 'knower impacts the known'.   By extension, an *outsider* then is a researcher who is not a priori familiar with the setting or the people and is unconnected with the community of the research setting.

Further to these debates is the concept of a 'double insider'. This construct was seminally discussed by Adriansen and Madsen (2009) in the context of interview-based research with decision-making elites and professionals. The concept of the double insider implies that the researcher has detailed knowledge not only of the research matter (in the present case, the transport sector and its institutions) but also of the participants. The distinction between being and insider and a double insider is important because the two roles are different and have different implications for the research.   As Adriansen and Madsen (2009: 146) note,

"...the insider role is most explicit during the interview situation itself, but it also affects how the interviews are planned, located and analysed. By analysing the whole process, we illustrate our double insider role and the contested nature of

our position as well as the multitudes of power relations and tacit negotiations taking place when conducting insider interviews."

This framework has vital significance in situations where the intention of research is to understand the social, relation and economic structures, and the individuals' experiences of them. Crucial, in these contexts, is a high level, in-depth knowledge of the economic sector and an ability to access key decision makers and gain their confidence and trust to discuss complex, sensitive and confidential information.   The ability to access, understand, analyse and interpret the range of institutional linkages and embedded rules at all levels from the macro to the micro equally requires a detailed knowledge of the possible array of institutional nodes and entry at all levels into institutional confidence. As Hellawell (2006: 486) notes, "... some of the nuances of the relationships known to the insiders, and often going back generations, may forever be withheld from the outside observer." He quotes Schultz (1964: 34) (apologies for gendered text),

"At best he may be willing and able to share the present and the future with the approached group in vivid and immediate experience; under all circumstances, however, he remains excluded from such experiences of its past. Seen from the point of view of the approached group, he is a man without a history."

Thus, the advantages of double insider research are the ability to obtain knowledge which an outsider is unable to access, and the ability to enter into complex dialogue with respondents. At the same time, however, this positionality carries certain presumptions to which the researcher must be on guard. Importantly, there is the potential for misconception arising from ascribed knowledge, established ways of looking at reality, and an inability to 'see' what is there because it is familiar. Being alert to such potentialities is a central issue that becomes a key requirement of research praxis.

Applied to the current project, the double insider status of the researcher was expressed through an extensive personal history of engagement with this sector. Identities which defined the double insider status of the researcher included former senior public service executive, consultant on management reform issues, and member of a community of interest around transport reform issues. Taken together, the researcher was colloquially known by participants in terms of being part of 'the transport family' (and therefore, a very close double insider within intimate knowledge of individuals' roles in professional duties and networks).

3.3.   Selection of Sector of Focus and Case Studies

The selection of the land transport as the sector of focus and of the case studies of NSW and Queensland for the research was directly related to the background and experience of the researcher. At the time of commencing this thesis, the researcher had over 20 years of experience working as either a senior government official or a consultant to senior government officials in land transport in both the case study jurisdictions of NSW and Qld. Unusually, the researcher had experience working directly as a senior employee for the road agency in NSW from 1987 to 1992, as a consultant to the various rail agencies in NSW from 2000 to the present, as a consultant to the main road agency in Qld from 1999 to 2008 and a consultant who completed one small project for the rail agency in Qld in 2004. The researcher often worked closely with CEO's, their direct reporting teams, the related government agencies and key stakeholders on complex, sensitive and critical directional organisational issues and projects.

The topic lent itself to in-depth qualitative research as its focus was social, relation and economic structures and individuals experiences of them. It demanded a high level, in-depth knowledge of a large economic sector and the ability to access key decision makers and gain their confidence and trust to discuss complex, sensitive and confidential information. The ability to access, understand, analyse and interpret the range of institutional linkages and embedded rules at all levels from the macro to the micro equally required a detailed knowledge of the possible array of institutional nodes and entry at all levels into institutional confidence. . As Hellawell (2006: 486) notes, "... some of the nuances of the relationships known to the insiders, and often going back generations, may forever be withheld from the outside observer." This double insider positionality crucially shaped the qualitative research methodology in terms of access to informants, conduct of interviews, and interpretation of interview materials. To explore these issues, the detail of the project methodology is now addressed.

3.4.   Research Methods

As outlined in Chapter 1, this aim of the thesis was to develop and apply an institutional approach to the study of decision makers as actors within a set of embedded social relations, anchored in a global political economic order to add to the understanding of the structures which impede or enable the dynamics of change and adaptation in important socio-economic sectors; thus, determining the allocation of resources, access to economic power and wealth across space. To recap, this was achieved through exploring:

- The application of institutional theories to explain the evolved history of land transport (road and rail) in NSW and Qld between 1850 and 2000;

- The themes of change in institutional arrangements;

- The drivers of the key changes;

- The similarities and difference in policy response between the two case study jurisdictions; and

- The outcomes in terms of service delivery, infrastructure governance and spatial economic development in regions and cities.

The style and composition of the methodology was heavily influenced by several seminal studies in transport including Dudley and Richardson (2000), Docherty (2000a), Wolmar (2002), Murray (2001), Shaw (2000), Bennett (2004), and Coulson and Ferrario (2007). All had elements of multiple cross sectional data collection and attempts at longitudinal data collection to reveal longer term trends, with the objective of viewing underlying structures and developing more general models of institutional arrangements and change in the transport sector. The key element in each of these studies, moreover, was a multi-method approach developed through a number of stages.

For the present research, the insights from these earlier studies in combination with the double insider positionality of the researcher structured the order in which various components of the methodology took place. The methodology had several critical components: literature review, participant

observation, in-depth interviews and informal discussions (Figure 3.4.1). The data collected using the techniques are set out in Table 3.4.1.

The literature review provided a core entry point for the methodology. The importance of institutional evolution and path-dependence, discussed in the previous chapter, implied that this study take history seriously. As a result, the analysis of road and rail organisations in contemporary NSW and Qld are framed by way of extensive documentation of how they have come to exist the way they do. This involved lengthy data collection exercises in various archives, and consultation of a wide range of published historical sources. The importance of these activities is underlined by the comprehensive treatment of institutional histories in each of the case study chapters later in this thesis.

The participant observation phases were to become particularly important in terms of being able to understand the nuances within the institutional milieu and significantly increased the credibility of the researcher enabling access to key informants for extended interviews allowing sensitive and insightful narrative and discussions that enabled the creation of an arena where the interviewer and the interviewee together made sense of the bare facts to uncover meaning and at times implications that were generalised beyond transport. This phase also significantly extended the researcher's view of what constituted the institutional arena to include aspects of community, stakeholders, bankers and universities that had not in the initial research proposal been considered. The in-depth interviews, which are discussed in detail below, provided the bulk of the original data for the thesis and together with the informal discussions enabled a detailed analysis of outcomes in the case studies.

Figure 3.4.1 Research Methodology Overview

Literature Review	Participant Observation	In-depth Interviews	Informal Discussions
Emphasis on documenting the historical record of institutional evolution in these sectors	Senior Public Servant Director of a Think Tank • Transport Plans • Community meetings • Conference papers • Industry discussions • Ministerial briefings • Government submissions Informal discussions as an established player	Decision makers Advisors Consultants Senior technical specialists Slice Group identified by senior insiders	Academics Industry figures Key informants

Table 3.4.1 Methodological Techniques and Data Collected

Technique	Focus/Respondents	Information
6.2,1Literature review 2004 – 2006 (initial) then on-going	Geographical literature	Theoretical constructs, methodological approaches, previous studies
	Government reports, transport commentaries	Overview of trend and issues in the transport sector, history, industry data, policy stances
	Institutional histories	Critical case study data and information including legislative changes and critical historical periods
	Archives	Key documents relating to critical policy pivot points
Participant Observation 2004 – Present	Transport Sector Institutions	Key players, critical institutions, policy arenas, decision making apparatus, linkages, networks, communication channels, language, embedded norms and values, methods of reproduction, supply chains, labour relations, geography of the regime, sources and methods of maintaining and transmitting power
In-depth Interviews 2009 -10	Critical decision makers in road and rail transport in NSW and Qld in State and Local Government from 1952 - 2000	In-depth individual perspectives on key players, ideas, policy changes, institutional change, embedded norms and behaviours, decision making, impacts on service delivery, development in cities and regions and infrastructure governance
Informal discussions 2004 - 11	Senior commentators in the transport sector in NSW and Qld	Confirmation of ideas and concepts Testing of views Triangulation of data

Participant Observation

The participant observation phase involving participation within a transport lobby group (10,000 Friends of Greater Sydney) which arose out of an impromptu opportunity presented to the researcher. Although not originally planned for, it allowed the development of a differently-positioned understanding of the inner workings of the key institutions that are critical to the transport sector. Although the researcher's history working as an executive and consultant to transport agencies provided an insider perspective on the sector, participating with others in a multi-stakeholder advocacy coalition provided an important new lens from which to observe and consider the institutional arrangements in transport. These

activities included wide-ranging discussions with all the key stakeholder groups, the relevant State Ministers and Shadow Ministers, numerous local government leaders and officials, and the key public officials from all the relevant agencies within the jurisdiction of the NSW case study. The outcome was a vantage from which to think critically about the multitude and complexity of the various relationships between key players which underpins the decision making process in transport.

Most importantly, participant observation period occurred at a time of key change in transport in very much the terms that had been theorised by the researcher in the very first year of study when the initial theoretical premise was constructed. It was to prove invaluable in providing insight into how the top level of the regime organises itself to make and consolidate decisions and critical actions.

Initial participation was in the role of a founding Director of the 10,000 Friends of Greater Sydney. The organisation was established by the Warren Centre at Sydney University to bring to fruition the ideas developed in an earlier study "Sustainable Transport in Sustainable Cities" that had been developed by over 250 professionals as a blueprint for the future of Sydney. Further activities included Project Management of the development and public launch of a land use and transport plan for Sydney; assistance with the development of a rail plan for the existing rail network in Sydney; assistance with the development of a transport and land use plan for the Central Coast of NSW; participation in public forums and discussions, contributions to government submission, hearings and meetings; numerous meetings with government ministers, officials and shadow ministers;

and involvement as a participant at numerous international industry conferences that were held in Sydney, Melbourne and Brisbane from 2005 – 2011. Full details of all activities can be found in the various annual reports of 10,000 Friends of Greater Sydney which are publicly available.

Initially, this involvement was considered a cognate but functionally separate area to this PhD. However, after two years, a conscious connection to the research became apparent. The group accorded a deep penetration into the top level of decision making in the transport sector, providing a unique view of the institutional arrangements at work. The timing here was crucial. Participation in the Think Tank occurred at a moment when thesis research required a reading of the theory of decision making in transport.

Participant observation through the group enabled insights from this literature to seep slowly into my consciousness. The researcher's stance became very much the same as that taken in the seminal study of Negro Streetcorner Men, "Tally's Corner" (Liebow, 1967) where the many conversations in small rooms, coffee shops, ministerial and officials offices, over the internet in email became the field site. As Liebow (1967:256) observed,

> *"In retrospect, it seems as if the degree to which one becomes a participant is as much a matter of perceiving oneself as a participant as it is of being accepted as a participant by others."*

The researcher is accepted as a participant in the transport sector in NSW by many senior players and interest groups including unions, ministers, shadow ministers, stakeholder groups, media and senior bureaucrats. My fellow Directors in the Think Tank knew of my PhD study (as did many in the industry generally) and in such circumstances, as a double insider, it can be difficult to draw clear

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lines in terms of the ethics of reporting information drawn from participant observation. For this reason, any specifics of 'who said what' that were revealed during the participant observation phase of research are not reported in this thesis. Rather, participation observation formed an overall arena for developing ideas about the nature of institutional relationships in the sector. These are reported in general, not specific, form in this thesis. Specific details are revealed through a formal interview process, as now detailed.

In-depth Interviews

The membership of the Think Tank also provided the vehicle that allowed the researcher to access in an 'arm's length fashion' the critical decision makers who formed the bulk of the interviews for the research. An ethics application was submitted and approved in 2005. A requirement of the university ethics approval was that the recruitment of interviewees for the research could not be done directly as the researcher may have a direct or indirect relationship with a potential participant which could be constructed in some way to impact the decision to participate in the research. This requirement was met by having the CEO and several of the Directors of the Think Tank recruiting interview participants on behalf of the researcher. The status of the CEO and the Director's was such that it had the additional positive benefit of conferring a 'halo effect' on the researcher providing a high level of trust and resulting in extensive and extended contact with participants who were themselves in close professional networks with the CEO and / or Directors.

The CEO and Directors all hold global senior, respected elder statesman (they are all men) status within what is a very hierarchical industry. Their

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participation in the role of introduction agent was critical in bestowing a level of legitimacy and credibility to the research that went beyond that bestowed by the affiliation with the university.   Snowball interviews suggested by participants were set up through the initial interviewees who could make the decision if they chose to disclose their own participation which had the same 'halo effect' and also resulted in similar detailed and extensive interviews. In each case the researcher was aided by 'association' with long time colleagues who had extensive trust relationships which were enlarged for a time to include the researcher.

A related impact of the use of such senior and respected introduction agents was that it limited the impact of the personal characteristics of the researcher. The researcher is female, 40 something and could be considered a career change professional with a background in transport. The result of the impact of using very powerful and connected introduction agents was that the participants were influenced to participate by the support of these agents and seemed to make judgements as the interview progressed about the quality of the researcher based on the conduct of the interview. The personal characteristics of the researcher were removed by the use of intermediaries. This impact was greatest for participants who were not personally known to the researcher and least for close colleagues and participants who had worked directly with the researcher and who were likely to comment, "Why didn't you just call me for an interview?"

Participants were initially selected who met the following criteria:

- Senior decision makers in road or rail transport in NSW or Qld from 1952 – 2000

- Advisers to senior decision makers in road or rail transport in NSW or Qld from 1952 – 2000 (this later group included academic, consultants and second level officials who provided advice)

- Sources of specialist information for example institutional history

- Each participant was asked to nominate other individuals for interview. If the referral met the criteria the interview was followed up.

A second set of interviews was conducted after the initial draft of the analysis to fill in gaps identified in the material. The criteria were the same as for the initial set of interviews. It was a deliberate strategy and half of the most senior interviews were reserved for this purpose. All respondents approached by the introduction agents responded positively. All were provided with a participant information and consent form and signed consent was obtained prior to interview. In all 37 interviews were conducted.

A pre-test of the interviews was planned and conducted. It proved to be one of the most important interviews as it was with a key introduction agent who became a most critical informant. This interview was very extended, and was so valuable that it is included fully in the study. All interviews were the subject of detailed notes and the majority were recorded, with full consent from interviewees. All were on the basis of full confidentiality. The majority of interviews were conducted face to face with only a small number conducted by phone. The length and depth of the interviews and the need to establish rapport meant that face to face interviews resulted in more detail.

Initially, the researcher was going to transcribe in full all of the recordings and return them so that they could be quoted and sources named. Due to the length of the interviews this became unwieldy and in place of this strategy, draft chapters for review were circulated to key participants for confirmation.

Interviews were conducted in locations selected by participants. In almost all cases participants chose locations away from their current place of work for example, clubs, coffee chops, neutral meeting rooms, or their own homes. Interviews were conducted using a list of topics and open ended questions that had been provided prior to the interview. A life history approach was taken that related critical events in the participant's personal life to work events to aid memory. This proved useful especially at the beginning of the interview and enabled participants to easily and readily go back in time. Interview times extended over several sessions in many cases and exceeded 4 hours. In some cases interviews lasted up to 12 hours and took place over a series of days.

The researcher's knowledge and background in transport was critical to the interview process and to the conduct of the interview. It added credibility and allowed a level of rapport building that enabled the creation of a shared arena of knowledge creation. In the absence of this the interviews would have been more shallow, shorter and lacking in depth. Areas of assumed knowledge were raised if the researcher was unfamiliar with the issue, event or terminology.

Informal Discussions

Throughout the research project the researcher was guided and assisted by key industry players. They provided access to the industry, to key informants and

to interviewees. They were a critical sounding board and reviewer of ideas and intellectual support. They were high level informants in transport and urban planning and had experience as government officials, consultants and business people. The depth of thought, the originality of ideas and the scope of the research would have been impossible without them. In true ethnographic style they provided a window into critical aspects of the culture of the sector and the institutions.

Given an identity of the researcher as an 'academic outsider' i.e. a very non-traditional PhD older student who did not easily fit into traditional expectations of PhD students, these informal discussions became very important and provided an opportunity for multi-disciplinary professional discourse which obviated the need for discourse within the confines of an academic department. As these discussions were supplemented by regular conference attendance where the participants were global industry leaders (Agency CEOs, Consultants, Academics, Interest Group Leaders) the researcher was able to gain current international knowledge in all areas of land transport.

3.5.   Conclusion

This chapter has sought to describe the research methodology in sufficient detail so that the reader can made judgements about the validity and application of the research. It has set out strengths, contexts and character of the methodology used in this thesis as well as the limitations. The approach of the methodology has been linked to the theoretical intentions set out in Chapter 2. Particular

attention has been paid to the positionality of the researcher and the potential

impact on the research approach and the conclusions of the research.

Part B – Case Studies

The Creation of the Present: Critical 'turns' and Embedded

Processes

"More than any other colony, Queensland had a deliberate policy of decentralised railway construction. All its railways were built to rather low engineering standards and to the same narrow gauge of 3ft 6 in. This pattern of railway development was the result of its enormously long coastline and the political significance of its provincial port cities." (Lee, 2010:146)

"Railways have played an immense part in the history of New South Wales. The parallel lines extended as the population grew and themselves made possible the new settlement and new industries....It is easy to see railway history as a record of stormy public controversy. From the beginning, when the question was whether there should be railways at all, through the controversies over state versus private ownership, the notorious gauge question, the often bitter disputes as rival districts competed for the privilege of railway services, the problems of labour relationships and staffing, the promises of politicians and the endless complexities of railway technology, the public has always been involved. Governments have fallen over their handling of railway policy. A recurring theme has been political control ...as opposed to control through independent commissioners...An even more constant theme has been whether railways should earn an adequate commercial return...or whether their undoubted contribution to economic growth and prosperity should be allowed to outweigh every other consideration." (Ward in Gunn,1989: V)

"Queensland faced particular difficulties in building and maintaining a road network. In a large state, with a small and scattered population, the cost of road construction was always a particular concern, for the tax base was small, and the distances to be covered very great. Only Queensland, too, had such extremes of climate to contend with. In the summer rain, roads and bridges along the coastal strip would be washed away by flooding, while the black soil plains were turned to a quagmire. Roads through the channel country would disappear under sheets of water, while at the other extreme, in a drought, water supplies along stock routes dried up, making the routes impassable to livestock." (QDMR, 1994: 6)

The quotes on the previous page identify the enduring economic, social and political importance of roads and railways and NSW and Qld. The major themes highlighted remain the central themes in all discussions of roads and railways in both states. These are: the key role they have played in social and economic policy; major impact of economic, cultural and physical geography on key investment decisions; pivotal role of labour (and its institutionalised representative – unions); regional and suburban rivalry for investment; the competition between the modes for funds; heavy established involvement of the public and the media; vexed question of finance; and the related question of ownership and control. Transport decisions have defined governments in both states and have ended governments in both states. The size of the investments, the impact on land use and the environment, the reliance of commerce and industry, and the implications for ordinary Australians are such that decisions in these policy arenas are viewed as among the most important that government can make.

The case studies will demonstrate that it is necessary to view the history of rail and road together if the long term trends in transport and mode share are to be understood. The decline of rail from the 1930's but especially after 1950's (refer to Cosgrove, 2011 for detailed statistics) can only be understood in relation to the increasing use of motorised transport (especially personal car use) from after the First World War.

It is not the intention that the following chapters should present a detailed history of road and rail development in NSW and Qld or of the government agencies involved. These histories have been exhaustively documented elsewhere (see for example, Broomham, 2001; Burke, 1991, 2009; Colwell, 1972;

Fraser, 1989; Gunn, 1989; Kerr, 1998; QDMR, 1994; Lay, 1984; Lee, 1988, 2000, 2003, 2010; Hulscher, 1994; Kass, 2006; ARRB, 2011; NAASRA, 1984; 2009; McKillop, 2009, Spearritt, 1978, 2000; Wotherspoon, 1983). The chapters in this section seek to give an overview of the major phases in road and rail development in NSW and Qld drawing out the key ideas that generated policy changes, noting the important investment decisions that directed and constrained future decisions and identifying the implications for cities and regions. Extensive use has been made of archival material, legislation and secondary sources to provide information on the early period prior to 1950 and to situate and relate the commentary of interviewees in the later period of 1950 - 2000.

The stance of the section is threefold: that geography can be seen to be a key determining factor in shaping the nature of roads and railways in the two states; that past policies and investment decisions related to specific global regimes of accumulation acted to set boundaries for future decisions; that investment decisions related to technology choices locked in sets of capital, industrial and labour processes that were reflective of the timing of the decisions; and that these major transport investments had significant implications for settlement patterns regional economic development and city form. The section deliberately takes an historical perspective because the nature of the path dependant processes can only be understood when situated in their historical context.

4. NSW Railways

4.1. Introduction

"In New South Wales, as in other Australian colonies, economic wealth was generated from the inland by the 1820s, initially from pastoralism and, following the goldrushes of the 1850s, mining, which brought a rapid influx of migrants to the colony. Thus railways were constructed to serve pastoral interests and, as migrants drifted from the goldfields in search of new opportunities from the mid-1860s, to promote settlement. In so doing, the railway network served to funnel commodities into the port of Sydney (and Newcastle in the case of coal). While a policy was adopted to construct truck lines to the Victorian border, the Darling River at Bourke and the Queensland border as the first priority, their primary purpose was to capture trade for Sydney, not to facilitate inter-colonial trade." (McKillop, 2009:3)

Railway development in NSW commenced less than three decades after the innovation was tested in Great Britain. The railway age that gripped the globe from the 1850s to 1920s played out in NSW as it did elsewhere. This innovation was the technological poster child of the hegemonic institutional regime of that era. The ideas prominent in the discourse of the intellectual, industrial and policy networks of Great Britain and Europe were trialled in a commercial environment, deemed profitable and then transferred swiftly through established political and administrative networks support by an availability of capital that was a feature of this phase of colonialism.

Investment in railway development allowed a profitable and secure outlet for the imperial capital accumulated in European cities from the exploits of successful colonial ventures. The railways themselves reinforced the spread, reach and profitability of these ventures improving transport links that enabled the more efficient flow of goods to markets. At the same time they generated a whole

range of linked new industries to support the technological and industrial requirements of the railways as institutions in themselves. The railway age launched a new institutional environment that was itself mobile, adaptive, fluid and globally connected but put in place at regional and local scales a high level of spatial fixity that would essentially predetermine future institutional arrangements. The nature of the investment decisions locked-in a broad range of path dependent processes related to railway investment that themselves moulded the development options and timings available in these places. In this way the economy of NSW inherited the history of its own past.

This spatial fixity can be seen in the economic landscape of sunk investments in transport (in this case railway lines, stations, yards, rolling stock) the built environment, (whole regions and cities developing and then decaying around the activity generated by the railway investment), the network of local institutions (schools, technical colleges, universities, trade associations, trade unions, government agencies) and the embedded industrial base which is itself globally connected. The physical geography of NSW also influenced the deployment of railway investment and the resulting spatial development. The size and shape of the state, the terrain of particular places, and possible location of coastal ports were important considerations in the design of the railway network. This design had to fit the institutional arrangements that were in place in related transport modes (especially shipping and roads). Indeed the nature of railway investments in NSW can be seen to have transformed over time in response to changes in the institutional arrangements in other transport modes.

The central contradiction of capital can be seen to be playing out in relation to railway investment in NSW; that is, initial investment requires spatial fixes for innovations hegemonic at particular times to flourish, but then must destroy that fix to make way for a new spatial fix associated with a later innovation. In this sense, periods of institutional stability (equilibrium) in NSW railway transport policy were interrupted by events or crises that punctuated that equilibrium and provided the opportunity for policy changes that enabled a closer alignment with the dominant mode of accumulation and regulation. The policy changes emerged from ideas dominating the discourse in policy networks; themselves part of the institutional structure. The speed and extent of the implementation of these ideas can be seen to be related to the strength of the individual actors and their networks as agents of policy change. The final nature of the implementation as it played out in NSW at various times is related to the relative strength of the policy arena and the key institutional nodes within it. In NSW railway policy was driven by global trends but the spatial allocation of capital was a result of local interest groups forming advocacy coalitions brokering policy through a series of multi arena (commercial, political, social) games and the prevailing economic and political culture which had a specific geographic focal intent. Local actors became policy entrepreneurs and thus built or reinforced power positions linked to ideas that drove policy changes.

The driver for railway development in the colony of NSW was economic development. The goal was to enable development based on agriculture and mining. The idea that railways enabled economic development was hegemonic at this time. The early focus of effort was the construction of the main lines to the south, west and north of Sydney (see Figure 4.2.2 below) which was consistent

with the economic goal of the dominant colonial institutional regime – i.e. to achieve efficient access to the productive capacity of remote regions. There was no explicit goal to develop short haul passenger traffic although the railway did connect the main inner administrative centres of the colony (Sydney, Parramatta, Liverpool and Penrith). The real aim was to access and develop the hinterlands beyond the mountain range that surrounded Sydney and ensure the movement of goods through the Port of Sydney, and later the Ports of Newcastle and Wollongong and to limit the exit of goods via ports in other colonies.

The development of the railway system was centred on Sydney. The capital centric railway policies reflected the political power of the powerful urban mercantile class who did not want to lose any revenue or business to ports in the neighbouring colonies of Victoria and Qld. At that time, "...politics were dominated by a prosperous urban mercantile class and, railway policy reflected that reality" (Lee, 2010: 133). This class controlled the various power networks and their discourse dominated thinking. These advocacy coalitions controlled the policy debate and supported critical actors (politicians and senior bureaucrats) who were charged with implementing the ideas.

Suburban railway development did not become the focal point until the 1880s when the fourth mainline to the south coast was underway. The boom in suburban construction in the 1880s mirrored developments in railways overseas where metros were redistributing large city populations in much of Europe and America. These changes were themselves a response to changes in the spatial articulation and expression of the dominant institutional regime of capitalism that saw rural populations move into cities to support economies associated with urban

industrial development. Hence, the transition in the regime saw the emergence of a new spatial fix which had implications for railway policy and investment decisions. These decisions in turn conferred advantage and opportunity at lower spatial scales where particular regions and suburbs could leverage benefits associated with local railway investment.

Of crucial significance to an institutional analysis of the NSW rail system is recognition of how the institutional regime, described above, co-evolved with the technologies and strategies of railway administration. In NSW, railway development was initially in private hands[15] (refer to Figure 4.1.1) but was brought into government in 1855 because of the inability to raise sufficient capital to fund construction and development. The financial institutional arrangements were altered to accommodate the need to raise and secure capital. The management and construction of railways in NSW has remained in largely government control since that time due to the size of the investment and the on-going capital contribution relative to the size of the local economy and its ability to support the industry from direct traffic.

The various structural relationships that have been established by government to manage the railways documented in Figure 4.1.1 can be divided into five main phases: early development and construction as the Railway Branch

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[15] The Great Southern and Western Railway Company was formed in August 1846 to develop railways in the colony. In 1848 a survey report was ..."presented to a Select Committee of the Legislative Council enquiring into "the practicability and expediency of introducing Railways into the Colony...On the 15 June 1848 a series of resolutions supporting railway development was carried unanimously by the Legislative Council. Their acceptance meant that private enterprise was unable or unwilling to begin the task without Government aid. The support of the Crown involved land grants to the Railway Company in "fee simple", guarantee of a 6% rate of interest on the first £100,000 of subscribed capital, and investment a of £30,000 (maximum) of Savings Bank funds in the project.... The Sydney Railway Company was incorporated in October 1849 by a private Act of the Colonial Legislature, royal assent, however, was not received until January 1851." (State Archives, Investigator Agency 1159).

of the Department of Public works (1855-87)[16]; significant investment and completion of the main lines and creation of the monolith under the Railway Commissioners[17] (1887-1932); Ministerial[18] control 1932 – 72; modernisation and rationalisation first under the Public Transport Commission of NSW[19] and Transport Ministers (1972-96); and the introduction of competition and open access from 1996 under with the influence of the Federal government.

These phases themselves can be seen to be responses to changes in the institutional regime that necessitated changes in supporting institutional arrangements.   The nature of the policy changes was the result of the transmission of ideas from connected policy networks that had gained hegemony and legitimacy as part of the new fix required to sustain the regime.   Crises and events (financial, technological, safety) can be seen in every instance to have created policy windows by punctuating the institutional equilibrium thereby allowing and enabling change. In every instance the institutional environment can be seen to have adapted to the new institutional requirements.

This chapter will treat the history of railway administration in the phases identified while recognising that there are significant periods of change within each. The contention is that the change within the periods while important did not result in a transformation of the dominant institutional arrangements or of the regime.

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[16] Refer to Railway Branch - State Archives, Investigator Agency 1524.
[17] Refer to Office of the Railway Commissioners of New South Wales - State Archives, Investigator Agency 1186.
[18] Refer Ministry of Transport [I] (1932-1975) Ministry of Transport and Highways (1975-1978) Ministry of Transport [II] (1978-1990) - State Archives, Investigator Agency 3819.
[19] Refer Public Transport Commission of New South Wales - State Archives, Investigator Agency 539

Figure 4.1.1 NSW Railway Administration
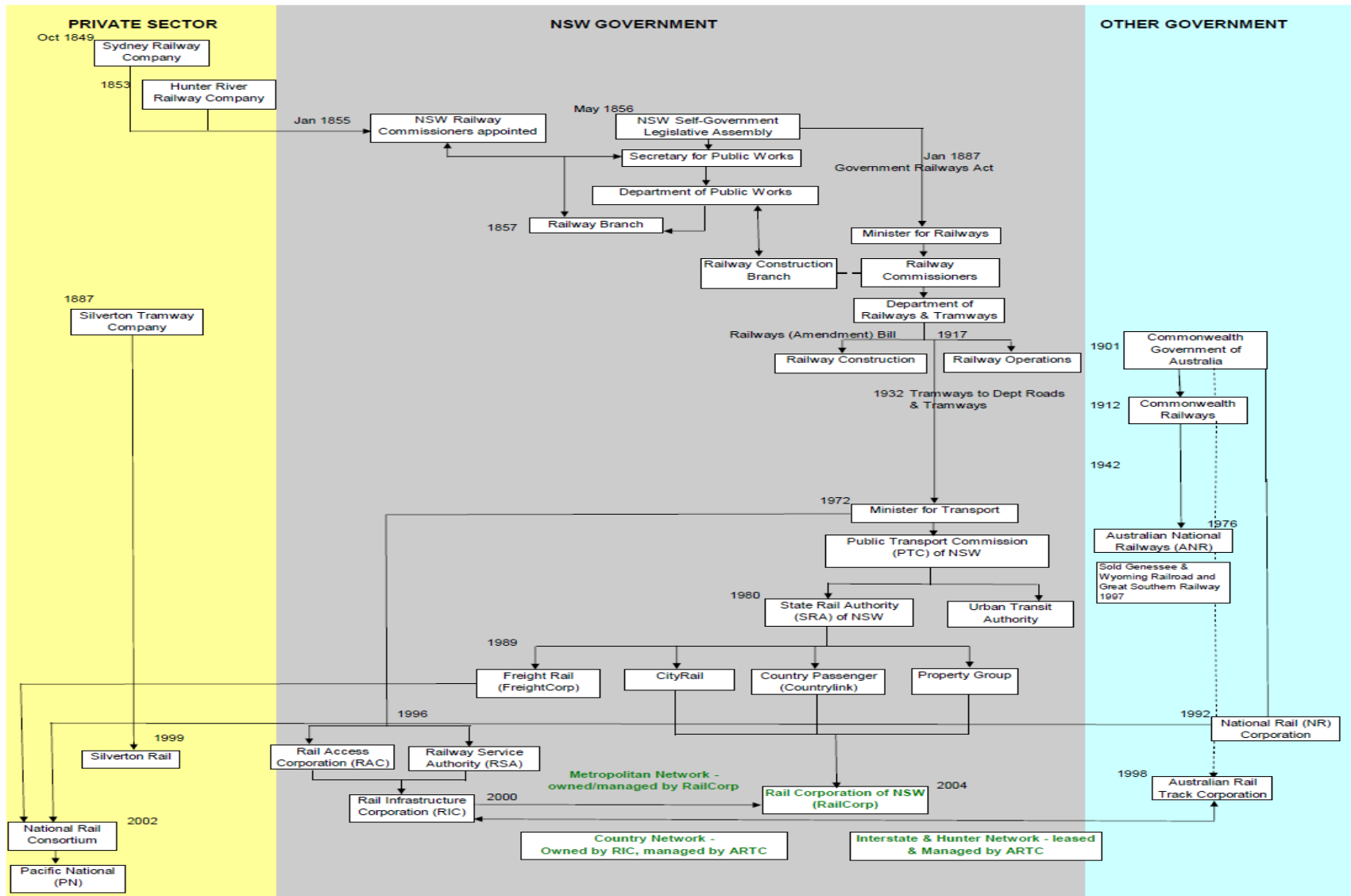
(Source: McKillop, 2009: 11)

4.2.   Early Railway Development and Construction 1855 - 1887

The early policy that drove the development of the railways was primarily economic. It was about constructing main lines into the hinterland to capture the produce for the Sydney commercial market as the trading entrepot. This led to an early focus on the construction of the main south,   and western lines (refer to Figure 4.2.1). The Sydney mercantilists were powerful and were keen to exploit the advantage construed by railway development to ensure that NSW trade went out through the port of Sydney and was not 'lost' to Victorian ports. This dominance of Sydney was to be crucial in relation to other location decisions such as the location of railway workshops which tended to reinforce the economic position of Sydney. This culture of Sydney centric commercial dominance was created by a range of factors including: geography; political and economic history; and the early settlement pattern. All conspired to locate decision making, early industry and political power in Sydney.   Hence, Sydney was the centre of political, social, commercial and economic networks that linked the colony with productive supply chains of the global regime.

While there was a concurrent policy of constructing connections to the Victorian and Qld borders and to the Darling River at Bourke to make inter colony connections, the primary purpose was to capture trade for Sydney. In fact, even after Federation in 1901 various legislative means have been used to restrict trade between the States. Decisions made about fixed investment that were to inhibit inter colonial trade for well over a century.

The size of the construction activity at this time was immense. The railway forged out into the colonial hinterland at considerable pace. Finance for rail development dominated political considerations and colonial budgets. Loans from England provided capital and English migrants provided the skilled workforce. The scale can be gauged from the pace of rail line openings on the main south, north and western lines. Main south reached: Granville 1855; Campbelltown 1858; Picton 1863; Mittagong 1867; Marulan 1868; Goulburn 1869; Yass 1876; Cootamundra 1877; Junee 1878; and Albury 1881. The main north line began in Newcastle from the Port and reached: Maitland 1857; Singleton 1863; Murrurundi 1872; Werris Creek 1878; Armidale 1883; and Wallangarra in Qld in 1888. The Sydney to Newcastle section had difficult terrain to overcome and began later with a connection to Hornsby in 1886 which was extended to Gosford in 1887. Progress on the main western line was equally swift. The main west reached: Blacktown 1860; Penrith 1863; Glenbrook 1867; Mt Victoria 1868; Lithgow 1869; Bathurst 1876; Orange 1877; Wellington 1880; and Bourke 1885.

It was during this early era of railway activity that the major connections with suppliers were formed setting in place commercial and industrial processes that linked railway development in Sydney with production networks primarily in Britain. During this time also the major investment decisions were made that resulted in the spatial fixes associated with the innovation of the railway being put in place in regions and towns across NSW. The technology choice locked in associated processes (skills, guilds, values, norms, behaviours, regulations, administrative structures) for three generations. Whole communities and regions became dependent on railway activity locking into this institutional structure and the

associated global networks. Regional identity and the economic base were formed by the presence or absence of railway activity, its level and nature. The initial high level of innovation and change had positive economic and social spin offs and these hid the later impact of such singular dependence for communities and regions.

Figure 4.2.1 Major Railway Construction NSW 1855 – 1885

(Source: www.nswrail.net)

Construction of Railway Branch Lines, 1855 – 87

The early private companies formed to construct railways in the colony did not

last long. The Sydney Railway Company[20] (formed 1849) and The Hunter River

Railway Company[21] (formed 1853) were purchased and transferred to government in

1854 with the three NSW Railway Commissioners[22] (one being named Chief

Commissioner) being appointed under the Railway Act 1854[23] in 1855 reporting to

the Governor. The quote below from the legislation explains that the government

intervened because the private sector was unable to find the necessary large sums

of capital or to expedite building to meet the demands of the community at the time.

Hence, the institutional arrangements were adjusted to meet the needs of the

institutional regime.

> *...the large amounts of capital required for that purpose and from other causes to complete their respective undertakings or to proceed with the same as expeditiously as the interests of the public require and it is expedient that the said works and all other Railways to be constructed throughout the Colony should be carried on and completed by Commissioners for Railways to be appointed by the Governor and that Her Majesty's Government should be empowered for and on behalf of Her Majesty to purchase from the said Companies their respective interests in the lines of Railway and other works commenced or made and executed and vested in the said Companies it has been found that they are unable by reason of the difficulty of raising respectively under and by virtue of the said recited Acts ...(An Act to make provision for the construction by the Government of Railways in the Colony of New South Wales. 2nd December, 1854: page 1)*

Self-government in 1856 eventually led to the formation of the Department of

Public Works in 1859[24] and the Under-Secretary, Captain B.H. Martindale, became

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[20] Refer Sydney Railway Company - State Archives, Investigator Agency 1159.

[21] Refer Hunter River Railway Company - State Archives, Investigator Agency 1160.

[22] Refer Commissioners of Sydney, and Hunter River Railways - State Archives, Investigator Agency 1161.

[23] An Act to make provision for the construction by the Government of Railways in the Colony of New South Wales", 1854 (18 Vic., No.40)

[24] Refer Department of (Secretary of) Public Works - State Archives, Investigator Agency 45.

the first Commissioner for Railways on 21 October 1859[25]. In 1861 John Rae became Commissioner for Railways. Rae was succeeded by Charles Goodchap in 1878.

Rail operations were organised into a triad relating to Construction (the Railway Branch) and Operation (the Traffic Departments of the Great Southern and the Great Northern Railways). The Railway Branch[26] included Offices of the Chief Inspector, Engineer in Chief, the Engineer and Locomotive Superintendents, the Inspector Permanent Way Great Northern Railway, and the Ticket Printer plus clerks, draftsmen, inspectors, and surveyors. The Traffic Departments of the Great Southern Railway and the Great Northern Railway were sub-branches staffed by a Traffic Manager and Traffic Inspector who supervised and monitored station masters and goods clerks throughout the rail system. A Land Valuator was added to the Railway Branch in 1860, a Railway Stores Branch was established in 1872, a Locomotive Engineers Branch in 1878, and a Tramways Branch in 1880 (outside the scope of this Thesis).

Administration was fully government owned and fully government controlled with Acts to support loan raising being hotly debated in and out of the legislature.

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[25] "The Government Railways Act, (22 Vic., Act No. 19) came into force on 1 December 1858 authorising the appointment of a Commissioner for Railways. The Commissioner was subject to regulations made by the Governor in Council who was also authorised to appoint (and remove) the "Secretary Solicitor, engineers, surveyor, and other officers". The Commissioner for Railways could appoint only minor officers under the delegated authority of the Governor in Council. (1) The status of the Commissioner for Railways was to be a corporation sole with the name having perpetual succession and an official seal. (2) The Government Railways Act (22 Vic., No. 19) provided for the acquisition of land, removal of materials from acquired land, construction of inclined planes and tunnels, the alteration of the course of rivers or streams, the changing of water levels in rivers or streams, introduction of conduits and drains, the felling and removal of any trees in forests or woodlands, plus the erection of toll-houses and warehouses. (3)" (State Records, Archives, Agency 1162)
[26] Refer Railway Branch - State Archives, Investigator Agency 1524.

By 1877 railways were the most influential industry in the colony as the quote from the Sydney Morning Herald below illustrates.

"The railways of New South Wales,...,are gradually becoming one of the most extensive departments of Government, one of the best investments of public money, and one of the most effectual means of opening up the interior. They represent two thirds of the public debt of the colony. They involve one fifth of the whole annual expenditure, and return to the revenue one third of its whole amount, exclusive of the proceeds of land sales. Their maintenance and management furnish subsistence to hundreds of families and their extension to hundreds more...All classes of people therefore are most intimately concerned in the railway policy of the colony." (SMH,30/7/1877 in Gunn, 1989:149).

Communities formed advocacy groups and advocacy coalitions with local pastoral, agricultural and industrial interests to lobby politicians for railway investment in their area. The discourse in the press at the time was dominated by railway achievements, railway demands and railway debt. During this time the Railway Commissioners were subject to lobbying and political pressure to build lines to particular settlements and railway management became increasingly politicised. Public pressure and dissatisfaction eventually led to legislative action to transform railway administration. The politicisation produced sufficient turmoil to cause punctuation in the equilibrium surrounding railway administration allowing a change in policy to be implemented.

4.3.   Completion of the Main Lines 1878 - 1900

The main line (or trunk) rail policy was overturned in April of 1877 when powerful politicians (starting with Thomas G Dangar who won a Parliamentary motion to build a branch line from Werris Creek to Gunnedah) effectively lobbied for the building of branch lines through their electorates. This expansion of services to

meet public demand was supported by the creation of 'railway leagues' in settlements across NSW that acted as advocacy groups and lobbied effectively for the railway to come to their 'town'. The growth of the rail network in the boom era 1860-90 created political pressure for the construction of rail lines to every settlement (Stevenson, 1987). This policy of 'connection' remained in place until it was halted abruptly by the recession of the 1890s. It lasted long enough however to have a permanent impact on the size and distribution of the rail network in NSW. The extension of the lines can be seen in Figure 4.3.1 below. The 1890s recession was an event significant enough to generate crises which punctuated the policy equilibrium leading to a significant change.

It is during this era of major railway building that the power of the railway to shape settlement in NSW was demonstrated. The railway had three major impacts on settlement: the wealth of inland settlements and towns depended on whether the railway linked them to external markets or bypassed them; for established coastal towns it enabled them to consolidate as entrepots of trade and commerce; and for settlements and administrative centres that were bypassed, the outcome was severe and at times sudden as population and the economy declined in favour of locations near the railway. The settlements that were remnants of the prior spatial fix (the closely spaced small settlements that had supported horse drawn transport) declined while those located in sync with the railway grew.[27] The needs of the railway led to the creation of rail depots (to service steam locomotives, to house crew, to stable

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[27] McKillop (2002; 2009) provides case studies from the development of the western line to illustrate the power of the railway over settlement. For example, Carcoar which was established in 1839 as the main administrative centre for the area west of Bathurst suffered a decline in favour of Orange and Blayney when it was bypassed by the main rail line. Whole settlements that had sprung up every 10 – 15 miles along water courses (for example, Minors Falls, Timbrebongie, Warren, Canonbar and Gongolgon) to support coaching stations were abandoned in favour of larger (for example Nyngan on the Bogan River) more widely spaced centres (the steam trains needed water only every 100 miles).

trains) at these key centres that became known as railway towns such was the employment creation ability for the railway in regional NSW. Examples of railway towns are, Goulburn, Tenterfield, Junee, Werris Creek, and Murrumbarruh. From the 1870s the NSW railways were the largest employer in the colony. This continued to be the case well into the next century.

Figure 4.3.1 Major Railway Construction NSW 1855 – 1900

(Source: www.nswrail.net)

Railway development went hand in hand with the manufacturing development of the colony. Railways needed iron, water and gas (later electricity). This led directly to the establishment of the first industrial base beginning with the establishment of the Government Railway workshops in Redfern in 1855, the Fit Roy Ironworks Company in 1862 and Denison Foundry (manufacture of goods wagons)

at Bathurst in 1865 and later Mort's Dock and Engineering Company in Balmain for the assembly of English locomotives. The advent of refrigeration added to this manufacturing base with the ability to move meat products over long distances. All through the 1870s and 1880s the story of the railway in economic terms for regions and for the colony of NSW generally is one of stimulus for a large range of related industries. These included industries related to station building, construction of accommodation for railway workers, production of ballast, iron, rail carriages and wagons and their fit out.(See McKillop, 2009 and Gunn 1989 for extensive detail).

This era, which has been termed the 'railway age', was a global phenomena. From their beginnings in England in the 1830s railways spread around the world

"London's Metropolitan Railway was an immediate commercial success,[4] as people had been starved for a fast means of transport, and the idea spread quickly, first to the United States—the first elevated system in New York (1870) was followed by the first subway in Boston (1901)—and then to continental Europe (Budapest in 1896, Paris in 1900, Berlin in 1902), South America (Buenos Aires in 1913), and Asia (Tokyo in 1927, Osaka in 1933)" (Niedzielski and Malecki, 2012: 1412)

Three factors have been identified to explain their rapid spread. First, British enterprise and engineering skills; second, American enthusiasm for a new idea; and third, and perhaps most importantly, the development and exploitation of the colonial possessions during the last and most aggressive phase of colonial imperialism (Westwood, 2009: 12).

This latter point was crucial in the development of railways in NSW. Almost all the capital to develop the railways was sourced from England. Investments that were secure and profitable and had colonial government guarantees were sought by capital rich English investors. Railway development presented an ideal vehicle. The bulk of the finance was raised using government bonds sold in London with

government guarantees predicated on anticipated profits and colonial land sales (Lee, 2010: 132- 5). The colonial networks created the conduits which enabled the flow of capital to the railway to further advantage the prevailing global regime.   This in turned reinforced the locked in and path dependent processes associated with colonial commerce.

The size of the investment in the railways at this time was considerable. The budgets of the colonial governments were dominated by rail expenditure and rail loans. The Treasury focus we see today on urban rail budgets is not new and dates from the 1880s. As Blainey (1983: 253) notes: "In Victoria and New South Wales the steam monster threatened to swallow its masters."

The railway network structure in NSW was largely determined by the interplay of geography, technology with the settlement pattern both a constraint and an outcome. The geography was dominated by the scale of the distances, the ring of mountains, the location of rivers for water for the steam trains, and the low population densities which limited the tax base to support development. The settlement pattern was a mix of early colonial administrative centres and centres of pastoral and or mining development.   The interplay of limited finance (related to the low population base and the large distances) and the large scale and difficult terrain of the physical geography meant that the resulting track alignment was often at steep grades with sharper curves then desirable. These alignment issues have plagued the efficient operation of railways in NSW. There has been a lasting legacy of slow speeds, constant upgrades and limited loading due to the standards having to fit the budget that was available. Some would argue that these problems continue today

and they can be traced to the decisions in the late 1870s not to provide the budgets that railway administrators requested (Gunn, 1989: 94-234).

The technologies employed on the early railway were largely influenced by the cultural background experience of the migrants who managed the construction and influenced the early decisions on engineering approach. These decisions had major impacts on future operating efficiency. For example, the first engineer with the Sydney Railway Company was Irish (Francis Shields) and he recommended the use of the Irish gauge (5ft 3in). This was also adopted by Victoria, South Australia and Tasmania. The next engineer was English (James Wallace) and he convinced authorities to use the Standard English gauge (4ft 8.5in) but the other colonies remained on the Irish gauge.

John Whitton, the most powerful and influential figure during the entire railway golden age. As Engineer-in-Charge from 1856 to 1899, the decisions he made paid down the parameters that would shape the state's railways into the following century. This included the: use of steel rather than wooden rails; use of steam engines rather than horses; and the extension of all the main lines using standard gauge over narrow gauge (see McKillop, 2009; Wettenhall, 1960; and Laszlo, 1956). His faith in British railway standards (over American) and the dominance of British expatriates on his staff was to have lasting impact on the railway in NSW. Whitton's staff brought with them relational networks that reinforced their own influence on technology and formal and informal institutional structures.

To sum up, the colonial imperatives of connecting product to market created the situation where, by the close of the century, the railway had become one of the most powerful institutions in NSW. It was the major employer, it was the largest

government budget item, and it represented the largest capital investments.   This was the hegemonic period of rail power.   Rail was closely tied to the global organisation of trade and markets; it functioned to efficiently support the economic exploitation of the hinterlands, provided a profitable outlet for colonial capital and spurred the development of a range of related supply industries that would in turn function as advocates for further rail development.

Spatial fixes associated with railway development transformed the settlement pattern, the built environment and the skill base of colonial NSW.   Strong advocacy coalitions with global networks grew up around the railway industry to broker policy choices that favoured further rail development.   Within the railway the institutional arrangements that were established set in place rules, norms and behaviours that would become embedded and resistant to change. The industrial guilds that were associated with the railway developed institutional structures around path dependent processes that were locked-in with technological choices further reinforcing rigidity and industrial fixity.

4.4.   Suburban and Branch Line Rail Growth 1900 - 1930

The recession of the 1890s punctuated the stable economic equilibrium of the railway age in two ways. First, it encouraged a shift to cheaper modes of railway construction, which took off in earnest following the death of John Whitton in 1899. Second, it marked a reorientation of the focus of railway investment from rural to suburban development. Both these transformations reflected the fact that the 1890s recession created economic and financial crises that allowed changes in the

institutional arrangements to adapt to the changing needs of the institutional regime. The rural sector experienced significant economic difficulties during the recession in the 1890s.

The economic recession led to the Engineer in Chief for Railway Construction Henry Deane travelling to American to investigate cheaper methods of construction which had been successfully employed. He noticed that American practices included initial construction without ballast (this was added when the profits of the line warranted it), limited earthworks, less sleepers and lower speed limits. The first line developed under the influence of the American model was from Berrigan to Finley (the first part opened in 1896) funded by a special Act of the NSW Parliament (The "Berrigan to Finley Railway Act" (No 26)). The location in the Riverina is important because it reflects the concern at the time with Victorian competition for produce in this region (See McKillop, 2009). The activity in the building of the Branch Lines is shown in the Figure 4.4.1 below in the years 1895 – 1920 where the bulk of activity was the construction of the so-called 'pioneer lines', which represented the last surge of railway investment in rural NSW.

At the same time NSW had been experiencing increasing urbanisation associated with increasing industrialisation. By 1900 the population of Sydney was 500,000. Suburban growth was assisted by the rail lines that forged out into the country and suburbs developed in a ribbon fashion along the rail lines to Parramatta and Liverpool. This growth was assisted by new lines to Newcastle and Wollongong with additional suburban stations and later the opening of the first purely suburban passenger line, the North Shore Line.

Figure 4.4.1 Rate of Opening/Closing of Railway Track NSW
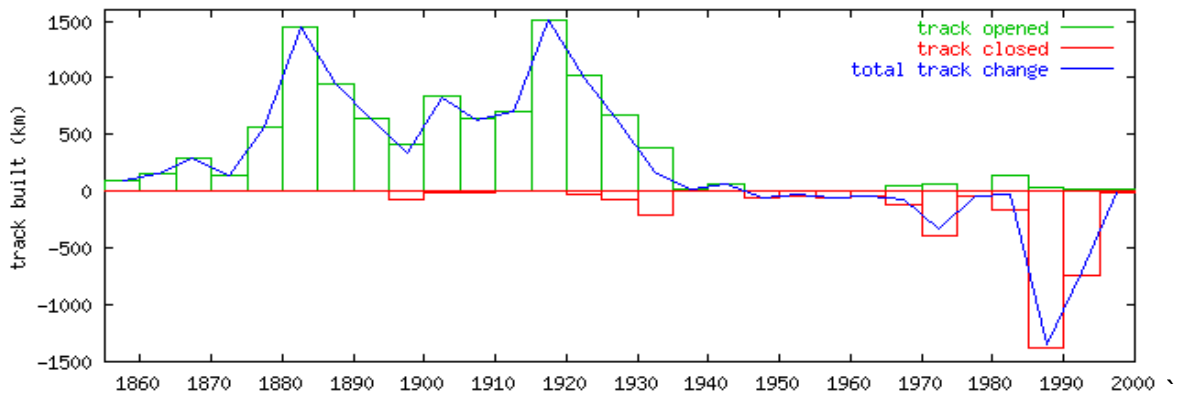
(Source: www. NSWRail.net)

Proposals for a city railway had been considered since 1857. They reached a peak in the mid-1880s with a proposal in October 1884 for an extension of the railway from Redfern through Hyde Park to a station between Park St and St James Road, with a branch line along Macquarie St. Public agitation led to the establishment of a Royal Commission in 1890. The Chief Commissioner (Mr EMG Eddy) submitted a proposal for an extensive city railway to this Commission. Mr Eddy's proposals were accepted by the Commission, but were not implemented by the Government. It was only six years later, in 1896, that a second Royal Commission was established and a latter set of recommendations gained the support of Government. The detail on this debate is contained in Appendix A.

Rail was not alone in supporting the development of the Sydney suburbs. Arguably trams were as, if not, more important but an examination of their role is outside the scope of this thesis. However, trams were instrumental in leading to the electrification of the Sydney suburban network. The major transport issue in Sydney

in the early part of the 20th century was tram congestion. The city was at gridlock every morning peak. Over 75 % of journeys were on trams. The government in response to the problem appointed two Royal Commissions in 1908 to develop solutions – Commissions on "Communication between Sydney and North Sydney" and "Improvement of the City of Sydney and its Suburbs".

It is important to understand that the electrification of the suburban railway (see Figure 4.4.2 for Bradfield's Plan) in Sydney was completed in the context of a social and political move to improve the amenity of the city and create the city of the future. It was not merely a transport decision but was interlinked with the future plan for the city. The electrification of the suburban railway and the related infrastructure investment was central to the creation of the global city of Sydney as we know it today. The importance of suburban rail to the development of global cities and to their competitive positioning has been well documented by Niedzielski and Malecki (2012). The railway signalling system that remains in place in Sydney today dates from this early period of modern railway development (a cabinet decision in 1913 allocated the funds). The investment decision was so large that it has locked out alternative operating options. It also locked-in the technology, the associated skills and the supporting industries. Advocates from all form powerful globally connected interest coalitions that act to reinforce the technology choice.

Figure 4.4.2 Bradfield's Plan for the City of Sydney Underground
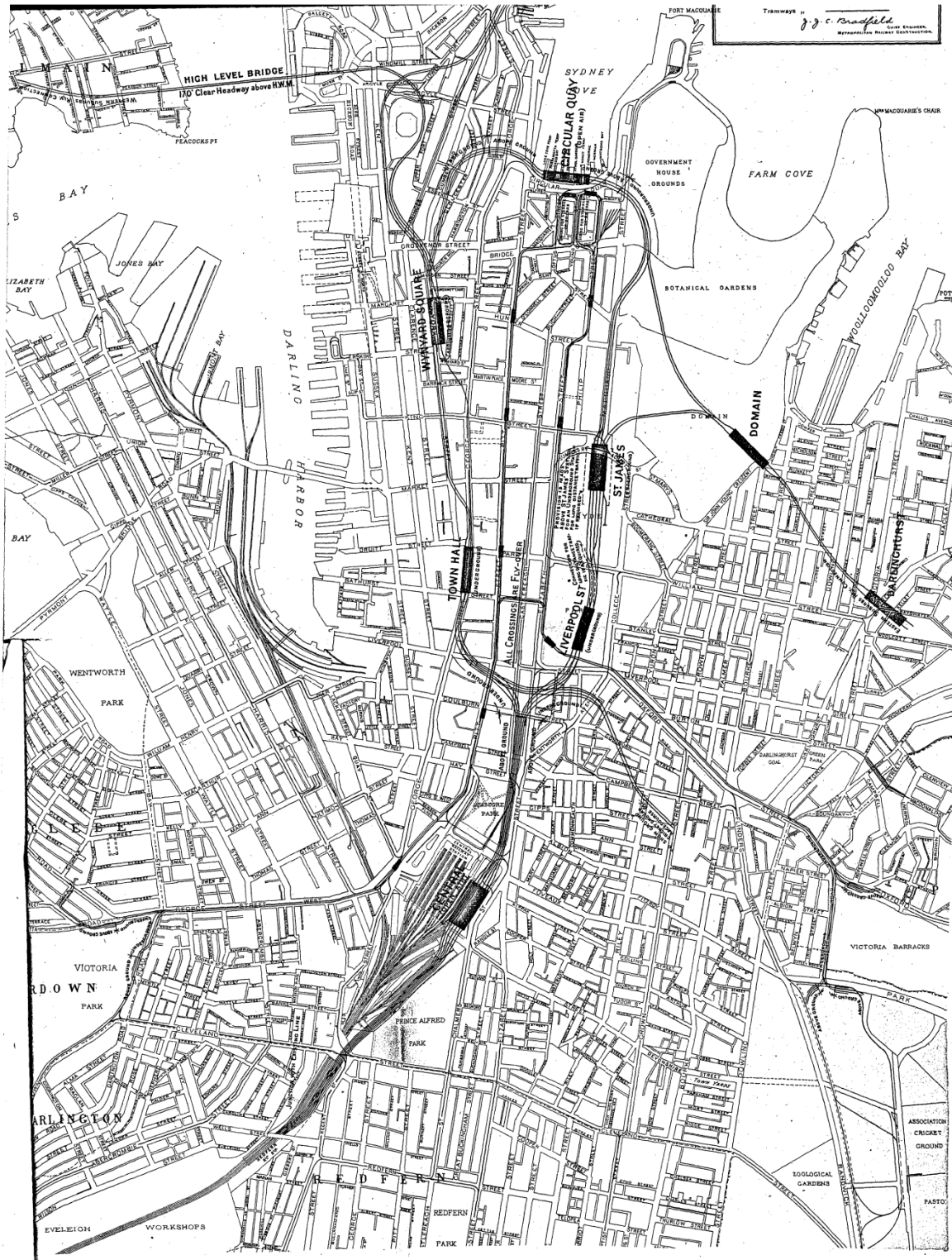
(Source: Bradfield, 1916: Plate 69)

It was also during this time with the First World War followed by a period of isolationism in the 1920s that NSW Railways became an enormous vertically integrated monolith producing almost all its requirements internally and amassing a large permanent workforce that was to remain in place until the 1970s. This structure also served to reinforce the dominance of the railway as whole towns and regions were economically depended on it. These characteristics of internal organisation mirrored the logics of Fordism as the dominant techno-economic paradigm of the first half of the twentieth century.

This linking of the city by the Harbour Bridge facilitated the development of suburbs along the rail line on the north of the harbour. However, the rise of the motor vehicle, the transition from rail transport to heavy vehicle transport and the transition to bus from tram had major implications for the railway. The story of railway network development across the State from the 1930s to 2000 is really one of decline. Figure 4.4.3 below shows the extent of line closures that have characterised rail rationalisation and consolidation in the latter part of the 20th century. The annual Reports of the Railway Commissioners in the 1930's are full of references to the loss of business (passenger and freight) to motorised transport. For example,

"...the prospects of revenue have diminished owing to the improvement in roads or other causes, while the costs of construction and operation have greatly increased", and

"The loss of passenger business and high grade freight traffic to motor competition is a serious matter to the Railways because the industry is one in which overhead costs bear a very high proportion of the total costs of transport." (Quoted in Gunn, 1989:331)

The First World War served to create another policy window as it punctuated the equilibrium that was re-establishing in the recovery from the recession of the

1890s. The War indirectly supported the spread of motorised transport in direct competition to railways. Vehicle innovations in the war and experience of driving gained during war service were some of the preconditions for growth in the demand for motorised transport. This early demand was fanned by the motor vehicle industrialists and the experience of railway development after 1920 can only be understood in relation to the emergence of a competing technology which was in fact associated with a new global institutional regime.   Social and cultural habits and practices associated with railway era were to decline in favour of the increased social flexibility provided by the increased personal mobility made possible with motorised transport. The decline of the railway had implications for the towns and industries that had grown up to support it. Entrenched advocacy groups lobbied to keep lines open and local industries in place.

Figure 4.4.3 Major Rail Lines in NSW in 2000 Showing, Closed and Lifted

Lines ■ Open ■ Closed ■ Tourist ■ Lifted ■ Uncompleted

(Source: www.NSWrail.net)

The story of these shifts in the operational activities of railways from their golden age in the nineteenth century to the period of decline starting in the twentieth century can also be told by way of focusing on the administrative reforms that accompanied this period. By the late 1880s political interference in the railway management and administration was common. Rail rates and timetables were altered on political grounds rather than to meet legitimate traffic demands. For example railway rates and fares were highly politicised in the 1880s with favourable rates for the transport of wool, special rates for establishments with political connections, and differential freight rates that benefited city based manufacturers. The later was so strong that it effectively closed regional industrial development and centralised activity in Sydney. In response, in 1888 two Acts separated the planning and construction of new railways (doing away with backroom land deals). The Government Railways Act (51 Vic. No. 35) 1888 established a corporate body "The Railway Commissioners of NSW[29]" appointed for seven years. The commissioners were responsible for the appointment of staff and all administration. The Public Works Act, 1888 (51 Vic., No. 37) required all new railway proposals to be referred to Parliamentary Standing Committee on Public Works. This separated the functions of constructing new lines and operating completed lines. These broad arrangements were then continued on in new legislation in 1907, 1912 and 1916 (State Archives, Investigator Agency 1163).

Railway finances again became a point of contention in the 1920s and again were the subject of a Royal Commission of Inquiry in 1924 by Sir S.J. Fay and Sir Vincent Raven. They found that there was a need for a significant overhaul of

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[29] Refer Railway Commissioners of New South Wales - State Archives, Investigator Agency 1163.

railway finances and management.   They made the point that railway finances should be taken out of the control of Treasury and given to the Railway Commissioners who should also be given the power to raise loans. The Commissioners also found that if commercial rates had been applied to all lines and all operations then the railway would have been profitable in all years except 1914, 1923 and 1924. Major structural change was recommended with a focus on financial management and performance as well as recommendations relating to provisions for future renewal of assets[30]. The changes that followed the Royal Commission report were minimal and did not affect the changes recommended. Hence, the financial position of the railways continued to deteriorate.

4.5.   Competition and Decline

Electrification of the suburban railway did provide an increase in passenger numbers however not at the rate experienced previously. For example, the annual growth rate was less (4.7%) in the five years after electrification then in the preceding five years (7.62%) (For a detailed discussion see Gibbons, 1983:160). Patronage peaked in 1955 (260 million passenger journeys) and did not recover to these levels until the next century (Figure 4.5.1).

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[30] For detail refer to *Report of Royal Commission on Railways and Tramways*, NSW Parliamentary Papers (1924)

Figure 4.5.1 Annual City Rail Passenger Journeys Since 1855/56
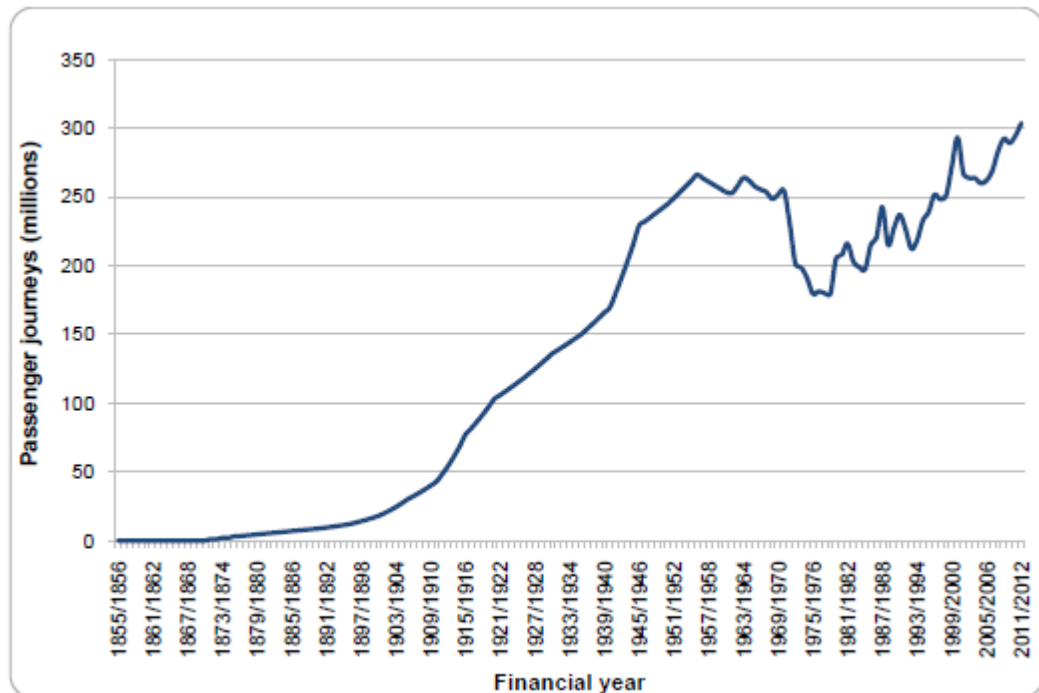
Source: Rail Patronage Data June 2012, Bureau of Transport Statistics, TfNSW.

(Source: Bureau of Transport Statistics, 2012: 15)

From the 1930s road transport posed serious competition to rail transport. This competition impacted the profitability of the railways and state budgets. The initial response of state governments was to regulate the industry especially in relation to freight traffic. The regulations fell into three categories: geographical restrictions on the distance goods could be carried by road transport; commodity based restrictions on the goods that could be carried by road transport; and taxes in proportion to the volume of traffic and the distance travelled (Productivity Commission, 2000: C3).

The Second World War made heavy demands on the railways with the result that at the end of the War there was a substantial back log of maintenance and a

need for significant reinvestment in rolling stock (Gunn, 1989:377). This deterioration was to continue to have impacts into the early 1950s where there were numerous instances of rail not being able to carry traffic due to shortages of staff, rolling stock or coal. Unmet demand was taken up by road transport. At this time the railway experienced significant losses due to competition, high maintenance costs and loss of revenue due to strikes (either on the railway or in the coal mines). Post war investment did eventuate and occurred at a time of technological change which saw the introduction of diesel locomotives to handle the freight task (a recommendation that diesel replace steam was made in 1957 by Neal McCusker) and the extension of the electric passenger fleet outside the city (to Lithgow in 1957 and Gosford in 1960). From the late 1950s, through the 1960s and in to the 1970s the freight business was supported by the boom in mining traffic and the introduction of diesel unit trains that excelled at the haulage of long distance bulk commodities. Table 4.5.1 below shows the growth in rail freight in minerals and the relative decline in agricultural traffic.

Table 4.5.1 Rail Freight and Annual Production for Selected Commodities 1960 - 1995

Financial year	Agriculture and livestock		Coal and minerals		Fertilisers, cement and timber	
	Rail freight	Proportion of production	Rail freight	Proportion of production	Rail freight	Proportion of production
	'000 tonnes	per cent	'000 tonnes	per cent	'000 tonnes	per cent
1960-61	15 413	86.4	22 054	61.4	5 929	45.8
1965-66	14 986	82.0	27 032	54.6	7 384	46.8
1970-71	18 041	75.3	41 266	53.4	6 460	38.3
1975-76	18 520	64.4	57 788	57.4	4 715	27.9
1980-81	19 334	70.3	78 966	58.3	5 611	27.2
1985-86	24 831	67.3	118 676	63.9	4 793	22.5
1990-91	17 845	47.7	139 099	60.9	3 638	17.5
1994-95	11 288	37.9	171 456	64.2	3 324	13.9

(Source: Productivity Commission, 2000: C4)

Despite the investment in rail and the increase in mining traffic the increased competition from road and air transport and the relative under investment in rail meant a decline in traffic and a worsening of the railway financial problem. By 1972 the annual rail debt in NSW was in excess of $32 million. This financial problem led directly to radical structural changes in railway administration (discussed below) and to the closing of branch lines across the state (discussed earlier). The remainder of the period from 1970 – 2000 is one characterised by three major activities: continued rationalisation of Branch lines with a focus on the streamlining of services to regional centres; maintenance activity in the suburban areas with peaks following serious accidents (these basically created crises that punctuated the policy stability and required a higher level of investment then would have occurred); and standardisation on the main interstate lines following heavy federal government intervention.

The rationalisation of Branch lines has been discussed above. Broadly, rail lines faced significant competition from road transport in an administrative environment where rail was constrained in its commercial decision making. At the same time rail was not funded to the level where the technology was enabled to produce a competitive supply option to the market. Lines remained on old alignments, the age of fleet was often beyond their asset life, and communication systems (particularly inter-state systems) were complex and out-moded. This led directly to the closure of the most uneconomical branch lines and passenger services very much following the British approach in the Beeching era (discussed below).

Effort on the suburban railway in the main became focused on maintenance and renewal. However, funding even for these activities was heavily constrained as the financial contribution of passenger services to profitability became negative. Funding and focus has tended to increase only after rail disasters notably Granville 1977 (the condition of the permanent way was found to be a factor in the accident), Glenbrook (factors identified included procedures, their application and training) and Waterfall (factors included and under developed safety culture)[31]. Arguably, technology investments in signalling and traffic control systems may provide improved management visibility of network operation.

Effort on the main interstate connection lines was significant in the period from the 1960s following federal government interest in improving freight movements.[32] This interest and activity gathered strength again in the 1990s, when the federal government took action to resolve problems with different rail gauges that crossed State borders.

It is interesting to note that in general, funding for initiatives to assist inter-state rail movements was provided by the federal government to the state in the form of interest bearing loans rather than direct cash grants (as was the case with road projects in the same era). Road investment was the dominant priority in line with the needs of the global institutional regime and reflective of the limited funds available for transport generally in Australia where a large land mass and a relatively small population (and therefore market) could not support investment in both modes at similar high levels simultaneously.

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[31] For details refer to State Archives, Investigator Agency 6087, State Archives, Investigator Series Detail 3631, McInerney 2001, 2005.
[32] For extensive detail on the gauge issue refer to Kain, 1995.

4.6.   Managing decline: 1932-1996

By 1932 expenditure on both roads and railways was considerable and proving a drain on the State's finances. Railway losses were at record levels with revenue having fallen steeply.   This situation produced a crises sufficient to generate punctuate the prevailing policy equilibrium and enable a change in administrative arrangements. A major overhaul of the transport administration aimed to improve co-ordination and derive more value from expenditure. The Transport (Division of Functions) Act, 1932 (No.31, 1932) abolished the Board of Transport Commissioners and created a Ministry of Transport. It established three Departments controlled by Commissioners: Railways; Road Transport and Tramways; and Main Roads. The increased power of the Minister to direct the Railways attracted considerable criticism at the time. However, this structure continued with little change until 1972 despite some rebuilding and massively increased competition from road transport after the Second World War. One of the respondents interviewed for this thesis commented on this period in the following terms:

> *"In the 1950s rail was self sufficient. It had extensive workshops and built trains. It employed every trade. The railway was like a city. It manufactured everything. It did all its maintenance, made its own tools and all the signals. It was a fully integrated railway employing well over 50,000 people. There was extensive training. Modules were linked to positions. They were even run by correspondence from the Railway Institute in Surry Hills. Seniority was very big. You were locked into particular streams of employment. Up until the 1970s and 1980s no one spoke of costs and budgets...The railway was not attuned to the cost to the public purse. Workshops were renound for the slow turnaround. There was a problem with alcohol. There was a blame culture. The unions were against change" (Respondent 1014, 6, 7, 8 October, 2009).*

By the early 1970s, increasing debt, ever increasing costs (especially staff costs with employee numbers in excess of 55,000) and industrial issues led to the government adopting a British model of railway rationalisation. Philip Shirley who had been a Vice-Chairman of the British Railways Board in the 1960s and heavily involved in the Beeching era of line closures and commercialisation was brought out to restructure and commercialise transport in NSW. The aim was to reduce costs and return the operations to financial solvency.

The Public Transport Commission was established by the Public Transport Commission Act, 1972 (Act No. 53, 1972), which commenced on 20 October 1972. The Act abolished the Offices of the Commissioner for Railways and the Commissioner for Public Transport. The Commission consisted of five Commissioners appointed by the governor (two were nominated by the Minister) one of which was appointed Chief Commissioner. The Commission inherited the functions (as set out in the Railway Acts of 1912 and 1930), business and liabilities of the previous Commissions.

In its first year the Commission was required to advise the Minister on changes required to improve the integration and co-ordination of services. The Commission identified the need to increase the emphasis on marketing, planning and personnel functions, to improve industrial relations and to update equipment. Organisational structural changes began almost immediately with the combining of the rail and bus functions. The structure while inheriting some features from the past reflected a new emphasis on functional accountability and streamlined administration.   Most importantly titles were changed from Chief to Director

reflecting a new managerial focus. The main branches of the PTC are set out in Table 4.5.2 below.

Table 4.5.2 Structure of the Public Transport Commission

Branch	Functions
Engineering	Co-ordination of the combined bus and rail engineering functions
Operations	Management of commuter, country, passenger and freight operations, for buses, trading and catering services, rostering of locomotives and locomotive staff
Planning	Short, medium and long-term planning, feasibility studies, cost-benefit analysis, evaluation of alternatives, corporate planning including forecasting trends and advising on investment policies to assist specific planning in the areas of marketing, operations and finance
Personnel	Recruitment, training and industrial relations policies
Secretariat	Administration, Legal Advice and Property administration

(Source: State Records, Archives, State Archives, Investigator Agency 539)

When their full report was completed in 1974 the recommendations included stronger legislation; re-equipment; upgrading of workshops to meet technological development; improvement of freight terminals; capital investment; more effective use of all of the Commission's resources; productivity improvements; decentralisation; and co-operation with other authorities – including other NSW agencies and the railways of other jurisdictions.[33] As one respondent noted,

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[33] Refer to the full report (Looking ahead NSW : report by the Public Transport Commission of New South Wales to the Hon. M. A. Morris, M.L.A., Minister for Transport, N.S.W., November 1974.

"In Britain they tried to get rid of the railways. Marples and Beeching had a belief they could replace the railways with the motor car. There were some significant rationalisations and this was copied in New South Wales" (Respondent 10052, November, 2009).

Shirley's approach was radical and the cuts he oversaw were unpopular with the public, unions and the state opposition. The public criticism was so bad that he retired two years early in 1975. By 1980, new legislation – the Transport Authorities Act, 1980 (Act No. 103, 1980) – was passed by Parliament. This legislation dissolved the previous Public Transport Commission and reorganised public transport services into the more specialised units of the State Rail Authority (SRA), with a Railway Workshop Board subsidiary, and an Urban Transport Authority (UTA) that became responsible for the operation of bus and ferry services. The SRA consisted of seven members who took on all of the functions of the PTC except those conferred on the UTA.

One of the respondents commented on this era,

"The railways were monolithic. It was a huge organisation with a non-vertically integrated structure. In the 1960s and 70s rail had over 50,000 employees. If you went to the Traffic Branch you stay there your whole life. They had their own catering, they even grew their your own produce on farms" (Respondent 1014, 6, 7, 8 October, 2009).

Another respondent also reflected on this era,

"In the early 1970s I took up a position in the marketing Department of the new State Rail. There had been a merger of rail, bus and ferries in the early 70s. I was placed where I was because I was one of the few people who had a degree other than engineering degree. In the early 70s I was the only qualified accountant in the railways. Here I did work on the analysis of some products so that we could understand the demand for freight on the east coast and hence bid for our share of the work. It was the first glimpse that New South Wales railways had the ability to do real economic and financial work. I was the first employee of the railways to use a

computer. Shirley's idea was we needed to understand the market to have an idea of freight movements. I don't recall customers ever being mentioned.

In 1972 Shirley amalgamated transport. He tried to replicate the Beeching report in New South Wales. New South Wales was concerned that the railways were continuing to lose money and it was time to consolidate. Shirley started focusing on core business. The biggest thing he did was to change the colours to blue-and-white. He rolled out the S wagon, and they were timber framed on a fixed bogey over 50 years old, he wanted to make an impression. He tried to create economies through organisational change. He ran into trouble because he was talking to people who were not talking to each other. He closed Branch Lines on the basis of maintenance cost against the revenue stream. He bought on people, all graduates who had experience in rail operations. He took the unions head on and it didn't work it didn't work under [David] Hill either [CEO of the state Rail Authority from 1980-86]. The only thing he left behind was the blue and white colours. The change was too big, too fast, he could not get the people on side. It was a family business and Shirley did not understand the culture. Shirley did not understand the internal politics" (Respondent 10092, November, 2009).

The State Rail Authority Board consisted of seven members - four ex-officio members and three appointed members. The appointment members were the Chief Executive and two Deputy Chief Executives of the State Rail Authority and the Managing Director of the Urban Transit Authority. The functions of the Board were to efficiently operate all passenger and freight rail services in NSW, with the UTA to provide efficient, adequate and economic urban passenger services, and meet future rail transport needs. The rationale behind the changes was instigated by the then-Premier, the Labor Party's Neville Wran. One respondent noted,

"In 1976 Wran got in because he promised to cut the fares and was going to fix the railway. It was a belief that you could win elections with these things. The mantra was and is make the trains run on time" (Respondent 10052, November, 2009).

With the passage of the In 1980 Transport Authorities Act, Wran appointed David Hill as the founding CEO of the State Rail Authority. The links between political patronage and rail management during this era were commented on by one respondent:

"David [Hill] was an intelligent person. He had a close and trusted relationship with Wran. He put the railway on an economic footing. He was there seven years in total. He consolidated the focus on core business. David fixed on time running quickly by taking trains out and extending the definition from 3 to 5 minutes. Neville Wran said late trains lose elections. David appointed the right people and set out KPI's. David saw reliability as the main service issue. He didn't reduce staff to any extent in the first three years as there was a deal done with the unions. He set up a train reliability program and he also studied productivity line by line. After Granville [rail accident] the government started to reinvest in rail. They realised there were serious problems but it was all about cost. He put in place maintenance programs, he listened to people on the ground; he was effective getting money from government" (Respondent 10092, November, 2009).

The SRA undertook a substantial modernisation program which included the extension of the electrified network[34] and the purchase of a range of rolling stock. The rolling stock decisions included an extension of the double deck carriages, five types of locomotives and replacement of the country rail fleet.

One of the respondents who was involved as a consultant during this era reflected on the time.

"In 1986 I was asked to review the Metropolitan strategy study for State Rail. The first thing I noticed was problems with the data. I said to them you have to check your data here, you have to have details on passenger you carry. There was dead silence. 'What happens if we don't have that data?' they asked. I said 'you must have something, how about ticketing data?'   How do you know how many people you carry? The real answer was they didn't know because the focus was running trains, the focus was not on moving people.

I said to them, 'so you want us to reorganise your services but you don't know how many people carry'. By 1986 they had never had a survey of the whole city. A way of guesstimating was to look at average amount of revenue divided by the average fare and it gave you an idea of how many people you carried. Any figures reported prior to 1986 really were worked out this way.

I told them we have to count the passengers so we set about working out how we are going to count them. The local stations knew the number of journeys so that was one possibility. Another was to count the tickets but not all machines printed tickets. The other problem was that tickets were printed by government ticketing office in Harris Street and Station Masters often found that they had two boxes of tickets with identical numbers so the ticket numbers were not a reliable method of

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[34] Gosford to Wyong – 1982; Wyong to Newcastle – 1984; Waterfall to Port Kembla – 1986; Riverstone to Richmond – 1991; Coniston to Dapto- 1993.

identifying passenger numbers. A final problem with tickets was that so many passengers used to just give small change to staff at the barriers on the way out. We didn't know the size of the problem and we really have no idea how many passages there were compared with the number of tickets sold. So really we did not have reliable passenger data.

We ended up doing physical counts using 500 field staff from State Rail. We had to use 500 workers from State Rail because the consultants we initially employed were removed due to union complaints and the work was given back to State Rail.

We found out what we already knew that there were a lot of trains with no one on them. A (senior managers) view was that the government wants more trains so we ran them. We ended up getting rid of the night time trains that were no benefit because there was nobody on them and they were costing a lot of money to run.

We did the surveys again to see what had changed. We were able to better manage timetables with this data and look at matching services to what would suit the various markets.

You had a marketing budget of $2-$3 million per year and 95% was spent on country services like the XPT . no one was interested in the metropolitan services.

In 1986 there were about 760,000 passengers a day by 2009 there were a million passengers a day. We can't know all that passengers on a first name basis.

My impressions from 1986 is that it was like stepping back in years. It was a strange environment It was nothing like the environment I had come from. It was nowhere near as rigorous as anything I have been used to in British Rail. If the station master saw an auditor once in three years it was considered harassment. Nobody was interested in fair discipline. It's gotten better but still not up to 1980 British Rail standards. There was no form of respect for fair discipline. New South Wales ran on the basis of no competition. If you take a look at the 1986/87 annual report you get a look at the culture. The Commissioner was David Hill, the Chief Engineer had engineering qualifications , the Chief Operating Officer had been a junior station attendant, level three managers in passenger operations and freight operations had basically, come up through the ranks with little additional education. The Chief Operating Officer was there to see that the trains on time. People who dealt with customers were level three managers. The capital works program did not add up. It was given to the railways on whatever basis. There were no economic calculations, there was no logic. Rolling stock had been operating since the 1920s and was way past its life expired date. When Tangaras [a type of urban passenger train] were introduced they were different from the rest of the fleet and drivers could not remember how to drive them. It ran as one complete railway so to change anything you had to change everything. There was an attitude that the government pays everything the notion was that it was all okay because at the end of the day the government would pay the bill " (Respondent 10052, November, 2009).

The election of the market-friendly Greiner government in 1988 saw the

implementation of a new set of reforms to NSW rail. The overarching ideological

premise guiding these reforms was to introduce competitive principles into the management of the sector. The initial policy shift was undertaken via the Transport Administration Act, 1988 (Act No. 109, 1988) which reconstituted the board of State Rail Authority to comprise the Chief Executive of the SRA and between four and seven members appointed by the minister. Reflecting the competition imperatives of the Greiner administration, the main function of the Board was specified as being to determine the policies of the SRA and ensure their efficiency. The Board could recommend candidates for the position of the Chief Executive. The Minister could give written directions to the Board relating to the conduct of the SRA's functions.

Almost immediately, the private sector firm Booz Allen Hamilton was commissioned to review the operations of the SRA. Their report in 1989 recommended major restructuring along Business Unit lines and significant rationalisation of services[35]. The rationalisation impacted the country services most where staff was to be reduced from 18,000 to 10,000 and major services on the northern and western lines ceased. The SRA was divided into four business units: City Rail; Country Link; Freight Rail; and Rail Estate.

These changes in the late 1980s were heavily influenced by neo liberal economic policies that reduced the role of the state, deregulated markets and corporatised government operations. There was a belief that the private market was more efficient and that government businesses needed to be structured to operate on business lines and where possible face market disciplines associated with direct competition. Under this policy many functions within the newly established government businesses were outsourced to the private sector. In the case of the

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[35] The Report had recommended the closure of all country services but this was politically unacceptable.

SRA it was in this era that the final demise of the railway monolith occurred. This philosophy as it was adopted in NSW at the time owed much to ideas out of both the UK and the USA that were behind equally sweeping changes in administration in those nations.

4.7. The Neo-liberal Reform Agenda in Rail: Competition and Open Access 1996 - 2000

The neo-liberal agenda for NSW rail following the election of the Greiner Government was then built upon by competition policy reforms in the 1990s spearheaded the national government. Until 1993 interstate freight was operated independently by each state using its own standards and operating procedures. The operating deficit was in excess of $300m per year. This fiscal situation led directly to the formation of the National Rail Corporation. At the same time the Federal government had instigated a review of national competition policy by Professor Fred Hilmer. The Hilmer Report (Hilmer, et.al., 1993) had major implications for the reform of public monopolies such as the railways. In April 1995[36] the Council of Australian Governments agreed the national competition policy reform package[37]. The package agreed principles to drive restructuring of public monopolies, open access to essential services, ensure competitive neutrality and review legislation restricting competition.

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[36] Madden (2004: 43) and see full article for a review of the impact of National Competition Policy on Australian Regions.

[37] For a discussion of neoliberal reforms in Australia see O'Neill and Fagen (2006).

By late 1995[38] Federal government policy was driving a neo liberal agenda in rail transport. The open access regime that emerged as part of national competition policy was seen as mechanism to access funds directly from the private sector and unlock the public sector monopoly. It was argued that effectively regulated competition would improve innovation, service quality and use. The US and UK experiences were used a guiding examples. As one respondent noted,

"In the mid 90s the Hilmer report led to the breaking up of the railways. Hilmer said you have to break up the railways etc. There was an underlying notion that they wanted to corporatise with a handful of people. Access payments and charging arrangements was the potential future structure of the railway" (Respondent 10052, November, 2009).

In NSW, the national policy reforms were put in place with the Transport Administration (Rail Corporatisation and Restructuring) Act, 1996 (Act No 56, 1996).[39] This divided the SRA of NSW into four separate entities. The SRA was reorganised into four separate organisations: (i) the Freight Rail Corporation (commercial competitive freight operator); (ii) the Rail Access Corporation (owner of rail infrastructure responsible for track funding upkeep and provision of access); (iii) the Rail Services Authority (track and rolling stock maintenance under contract); and (iv) the State Rail Authority (passenger service operator running CityRail and CountryLink and train control under contract). A detailed description of each of these entities is provided in Appendix A.

Interviews with key informants highlight an array of complications, and indeed, contradictions, which accompanied the implementation of neo-liberal reforms in the NSW rail sector. Seen in its broadest terms, the innate problems associated with

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[38] The 1991 Industry Commission Report into Rail Transport found that the core issues were the history of ownership, the monopoly status of supply, the lack of customer focus, the short term decision making and the inflexibility of the workforce. Subsequent federal policy addressed these issues.
[39] The Competition Policy Reform Act 1995 required the separation of infrastructure and operations.

these reforms stemmed from the attempt to instil the logics of private sector market behaviour to a highly complex organisation that was designed (no doubt in ill-fitting ways) to attempt to meet multiple social goals and with profoundly important aspects of institutional lock-in – in terms of capital, operational systems and workforce relations. The apparent zest of policy-makers in the 1990s to reinvent this system along neo-liberal principles betrayed a myopic inability to understand the complex roots of this institutional architecture.

The first and most obvious clash in the implementation of neo-liberal principles in the NSW rail system pertained to the need to disentangle the commercial operations of rolling stock management and passenger services (constituted by the reorganised SRA) from the ownership and maintenance of rail infrastructure (constituted by the Rail Services Authority [RSA] and Rail Access Corporation [RAC]). In accordance with the objectives of National Competition Policy, the latter set of services was put out to tender. One key informant described the process in the following terms:

"The Fred Hilmer report led to competition policy. The view was it was necessary to create competition to improve efficiency and effectiveness. Below rail was put out to tender. There was a view that we should use any organisation that could meet the requirements. RSA was a State Owned Corporation and had to compete. Tendering started two years after RAC was established. The idea was to tender slowly in 13 bundles over a 2 to 3 year period. With the first two bundles Fleur [a private company] won one and RSA the other." (Respondent 10042, November, 2009)

However, this functional separation between 'above rail' and 'below rail' services did not mirror the organisational realities within these organisations:

"With hindsight the creation of RAC was never really well thought through. RAC had little ability to be an informed buyer too many of the staff had been left with RSA. Rail was very rundown there was a lack of understanding of the state of the asset and of asset management. Information was not put into RAC. But there was

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clarity of what information was required for long term institutional change and for the asset to be appropriately funded. RAC had an understanding of the role in terms of government policy and urban form. The CEO understood strategic thinking and strategy and planning. RAC had a get up and go culture. In SRA there was a lack of direction and leadership. RSA did well given the mandate it was given to compete or die. Focus on Service delivery was very limited. The key was network control. The network control contract between RAC and SRA began to unravel the black box and the related time and motion studies started to put in place accountability KPI's to support service delivery." (Respondent 10042, November, 2009)

These views were supported by another key informant, who suggested:

"People don't understand the complexity of the system the baggage of the past. It's continually compared with the private sector. But our overheads are high and our costs are high and there is no profit margin so we should be operating as efficiently as possible but will never make a profit. For contracts done externally the railway groups take delight they say, "... you reckon you're so good go for your life and we will step back". They will not assist until they have to save the day. Guys get precious about their work they take criticism to heart - ,there is no culture of working as a team. Government doesn't understand that the business model can't work if it doesn't take into account human factors and the culture" (Respondent 10072, November, 2009).

The respondent then went on to say:

The model could have worked but didn't because the culture of the organisation was not taken into account the way it was structured. Unions were extremely concerned about contractors coming in and taking over. When the south coast was won by flirt the minister requested postponement of the contestability process. The next scheduled one was the Hunter Valley It was seen as the jewel in the crown it was $100 million plus contract. The contestability program was postponed for about six months. When it was reinitiated instead of the Hunter going out it was the Illawarra Metro and RSA won. The next one was to be the Hunter Valley and at that time the Glenbrook rail incident occurred. The contestability program was seen as a contributor to the accident. The unions were pushing the point that the guys could not concentrate on work and were fearful of their jobs. There was a big push to stop contestability on safety grounds. The Hunter Valley tender got to RFP but the results were never released. The program was cancelled by government and RAC and RSA were joined. In October 2000 on the East hills Alliance a passenger train derailment was put down to problems with maintenance on the line by Fleur. Fleur and RAC got it wrong. We understaffed that region. It was only a small region and largely capital works, maintenance was not big but the infrastructure was in need of upgrading. Just after the 2000 Olympics a decision was made to reintegrate RAC and RSA. In 2001 RIC was created. There were rumours of a RIC / SRA Integration but it didn't happen until 2004" (Respondent 10072, November, 2009).

Fundamentally important to the functional separation of these activities was the role of State Treasury, the policy epicentre for the roll out of neo-liberalism in government program administration. Yet the policy ambitions of Treasury were thwarted, or at least challenged, by the complex detail of engineering and other technical knowledge that was embedded within the operation of these systems. This clash between viewing the system through neo-liberal and engineering terms was clearly brought to the surface in 1999 when a rail accident (at Glenbrook, south of Sydney) provided a punctuated equilibrium that reasserted the need for safety protocols and technical expertise, over and above the commercial worlds of the Treasury economists:

"Treasury despised RAC. The appointment of the CEOs and the period of transition when the arrangements were getting sorted was a difficult time. There was inadequate leadership. The commercial arrangements were never modelled. It was categorised as economic rationalism. Unravelling the complexity of the original organisation was massive. Nobody really understood it and nobody could really influence it. There was a shared view in terms of the outcomes wanted - that is improved efficiency and effectiveness. But nobody in government adequately put in place the accountabilities and the people to deliver it. The unions were not a decision maker but they became very important. After Glenbrook [rail accident in 1999 which killed seven people and injured 51] the unions mounted a campaign. Over the period there were really massive changes. The biggest learning was management beginning to manage rather than waiting for the unions to tell them what to do. Now there is more staff engagement and the people factor is viewed as important, it has risen to the top" (Respondent 10042, November, 2009).

Ironically, whereas the functional separation of track and operational components of NSW rail was intended (at least in the minds of by neo-liberal policy-makers) to de-politicise the system, by making decisions more closely beholden to market rationalities, the bureaucratic challenges of making this happen invoked the claim that policy in the 1990s was becoming increasingly politicised in favour of market solutions. These processes are akin to what Peck and Tickell (2002) influentially labelled 'roll-out neo-liberalism'. Thus, according to one key informant:

"[The] State Owned Corporation Model does not work for an agency like rail. It pretends you can treat rail like a business. It doesn't work you can't separate the service outputs from the input issues. It tries to stop the politicians from interfering in the inputs but the inputs are political issues. Treasury hates political interference in all services. This is because as a general rule political interference leads to bad decisions. So they try to minimise that interfering. Free market ideology dominates in Treasury. The minister does not want it put down in writing that he made a decision to protect a union. The political reality is that the community whatever the issue is quite rightly holds the Minister for Transport responsible. So the Minister for transport feels accountable and wants to manage the issues so that he is seen to be accountable. Hence, it is a government model that does not match the political and public perceptions so it does not work. If you want a model where we separate the contracted outputs from inputs you have to privatise. However, in the case of rail you privatise gains and are left to socialise losses. There is now a global view that separation does not work. The model applied in rail was applied first in electricity. Electricity is simple, rail is much more complex. And it's further complicated by industrial issues" (Respondent 10082, November, 2009).

And according to another key informant:

"In the 1990s there was too much political interference. In 1995 it was split 4 ways. This did not help avoid Glenbrook. They started to roll out the contracts after 2 were won by the private sector the union complained and government went weak it was all rolled back. We never had such a good maintainer as Fleur. They maintained the track with a lot less possessions and better organisation. Fleur downsized" (Respondent 10062, November, 2009).

The general misalignment of the model with the actual situation it was

supposed to remedy was complicated by overly complex layers of deals and

agreements with the various stakeholders. These in turn were not sufficient to

address the processes that required significant change and served to further lock in

particular arrangements in various parts of the model to serve the interests of the

various parties. This additional complication is described below by one of the

respondents

"… hated it and wanted it all brought back into the centre. The unions hated sectorisation because it does not fit with their structure which is centralised. …They viewed it as losing control….they insisted that CityRail kept signalling. … Nobody owned the timetable. .On 28 December Len came in and after that it was a done deal.

Competition led to a weak rail access corporation, it made rail services a very well protected monopoly. …In terms of the impact on the governance infrastructure nobody really knew exactly what the outcome would be. But the system had setup conflicting objectives. RAC was set up as a SOC with the need to make a profit so to balance the books. It had to reduce maintenance spending. RSA was set up like a private company competing regardless. It didn't have to maintain the infrastructure in New South Wales it could go anywhere else and get a good rate. SRA had to write the timetable but had no power because they could not control investment in the infrastructure. An example of an outcome was that RAC made investments that were not necessarily in tune with what the operator wanted. The customer service outcome was station staff came under SRA. …decisions were not made at the sector level, and competent managers were let go" (Respondent 10052, November, 2009).

The model also set up internal conflicts within the system. The entities were

organised for competition but were not necessarily focussed on the track in NSW

and they were not set up to transition in a managed was from the past to ensure that

all the interfaces were covered and associated risks were managed. This was

complicated by a range of old rivalries that came across in the new model. For

example,

"RAC was a small organisation with a number of staff from the private sector but it was viewed by RSA and SRA as being arrogant and smart arses. At times this was an appropriate description.

"…the work was to be contested. The reality was RSA never going to win everything. So the approach was 'What am I going to do? I'm going to focus on life outside of New South Wales and RAC. ...

…RAC had a charter to reduce costs. There was a view that RSA inherited an operation that was fat and could be cut down in value. … It was perfectly reasonable to say you needed to sweat the asset more. The problem was how it was done and the interpretation that was put on it by the RSA Guys. RAC copped criticism. When RSA won contracts they inevitably went for variations and really gouged for money. …There was never visibility on bundle costs. It was a general understanding that no government department will take another to court so what happens it's all too hard. The bottom line is … that these guys are a law unto themselves. When you try to understand what went wrong it was always the element of blame. The management style in the past didn't encourage the team approach. When you get everybody on board they can do an exceptional job. When you get the CEOs aligned at the top it can work like a valued asset....

A key problem with the new setup was the SRA, really it was missing in action the eight CEOs in 11 years and there was no stability it was always a negative" (Respondent 10072, November, 2009).

An additional issue was the failure to understand the business side of running

a railway and to factor this into the structures. One respondent observed,

"The break up was poorly conceived in that each entity was given different charters… by the government and the shareholding ministers.

RAC was to make the infrastructure efficient and achieve cost savings.

The executive of each organisation was set up on separate lines to run on its own but each was linked and couldn't run on its own. For example, contracting train control to SRA had issues for RAC on how it managed other operators on its network.

…Part of the problem was that they didn't see it as a business.

…From a business perspective a number of models could have worked but they took no notice of the culture and known factors and competing agendas when they set up the agencies and it was doomed to fail" (Respondent 10072, November, 2009).

Another respondent observed similar issues but from much closer,

"In 1995 I was asked to come and sort out the rail system …. They had brought in all the consultants in the world to work out how to move the railway forward. I chaired meetings between the unions and the senior managers to work out the structure of the separate organisations …. There was the dual driver of the Hilmer report and the need to save money. There was the separation of the passenger function from freight. RAC was given ownership of the rail and stewardship of the access model. RSA was to be responsible for maintenance of the track as it won various tenders.

There were problems. RSA never had to be competitive, it was a sole provider. Government didn't want to upset the unions, there was a three seat majority. It was a mongrel model it was never going to work. RAC was a facade. In the first year it made $115 million profit. All it did was fail to spend money on maintenance. They were basically running the railways down. Separating passengers and freight was bad financially. Freight has contributed $220 m a year cash surplus to passengers. It cost $40m For RAC administration in year one. RSA was monopolistic. The government had separated out freight, the cash cow, and left all of the costs in government. The SRA was the whipping boy of the group it was the largest and most vulnerable. Whatever could go wrong did go wrong" (Respondent 10092, November, 2009).

4.8. Conclusion

This chapter has interpreted the NSW rail system from 1850-2000 through the lens of institutional analysis. It has identified five main themes of change. First, from 1850 through to the 1920s the notion that the railway was the engine of growth led directly to the construction of the heavy rail networks. It was this set of ideas that embedded the first set of institutional forces which shaped settlement patterns, developed the economic base of regions and locked in technologies further embedding a range of related social relations and networked economic forces. Second, the rise of motorised transport and the associated demand for increased personal mobility that followed the First World War then challenged the dominance of this regime.

These forces directly impacted the earlier investments in rail creating a competitive environment requiring adjustments and divestments which resulted in the reconstruction of the prevailing institutional arrangements. This reconstruction required by the transition to new global institutional forces took place over a 30 year period and it was not until the 1950s that the transition to the new institutional arrangements was achieved. The modernisation phase of the 1950s, which is the third theme of change during the period, served to both align institutional arrangements with the new economic and technological requirements of global economy after the Second World War and to transition regions fully to the new regime.

The fourth theme of change is one of urban growth and commercialisation. Urban growth led directly to a need for improved city planning and mobility. This demand for mobility found its expression in improved suburban rail but also and much more significantly further generated demand for roads indirectly contributing to a financial crisis for the railway. These crises provided the context for commercialisation to become embedded in existing institutional arrangements. The final theme of change that had significant impact was the implementation of the neoliberal agenda that lead to significant transformations in the institutional arrangements and investment climate for rail.   Unfortunately the outcome for NSW was summed up by one of the respondents,

"In New South Wales the change had been an absolute disaster, it was a terrible mess. In New South Wales in RAC they were talking from the treetops and getting a commercial return because they didn't invest. At the end of the day the cost was the network. It was the same outcome as in Britain they privatised and the railway was broken" (Respondent 1021, 7 December 2009).

5. Qld Railways

"The answer used to be its railways. Queensland was laughed at for its slow narrow gauge railways. Economics, however, dictated that the Queensland Government build cheap, low standard lines across vast distances of a sparsely populated state...Queensland's cheap construction and its light rolling stock often proved more appropriate to the freight task in rural Australia than expensively engineered railways built to imitate those in Britain. Ironically, every state except New South Wales had to resort to narrow gauge." (Kerr, 1998: 1)

"Although many of the links with the past have disappeared, understanding today's railways – and understanding today's Queensland – requires an understanding of the past. The choices of a low standard of construction and especially of a narrow gauge were events that determined the future far more than our forebears imagined." (Kerr, 1998: 2)

5.1. Introduction

The quotes above identify perhaps the most distinguishing feature of the railway in Qld – the narrow gauge. This decision, dictated in large part by geography, is illustrative of an ability that decision-makers in Qld would continue to demonstrate throughout the period covered by this thesis. It is an ability to adopt ideas and apply them with sensitivity to the particularities of their region. These decision-makers displayed – and continue to display - an extensive record of creative adaptation based on researched case studies and informed, inclusive debate.

From the selection of the narrow gauge to the timing of electrification and the selection of the technology associated with the move to faster trains (tilt train technology) Qld decision makers made choices which were closely aligned to the

geography of Qld, to available funding, and to prospects for economic development. The narrow gauge choice was reflective of the physical geography of the colony – its size - the limited finance available and the desire to develop the colony quickly. It enabled the construction of large lengths of railway with relative speed and at relatively modest cost compared with what would have been possible if there had been a decision to use a standard railway gauge.

Railway development in Qld commenced shortly after that in NSW and was driven by the same global processes and transmitted through the same global policy networks. Indeed, the first propositions for railway investment in the colony of Qld came from NSW.   The railway age gripped Qld in much the same way as it did NSW. This innovation, the associated discourse, networks, industries and institutional structures transferred swiftly through established political and administrative networks support by the same capital that funded the NSW railways.

In Qld, as in NSW, railways focused on improving transport links that enabled the more efficient flow of goods to markets. The difference in Qld was the larger geography of the State which combined with its financial situation and small population.   This led to three distinguishing features of rail development in Qld: (i) the initial development of three separate rail networks which were not joined until the 1920s (and realistically administered as one single entity until the 1990s); (ii) the choice of narrow gauge which conferred a number of advantages and impacted a range of related asset choices, and; (iii) the settlement pattern and the resulting economies of communities and regions across Qld.   Notwithstanding these differences, the development of rail in Qld shared with NSW principles of spatial fixity and path dependent lock-in to the prevailing economic forces.   Qld ports were a

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focus for railheads and the institutional structure and arrangements in international shipping reinforced the shape of the railway network in Qld. Railway policy was driven by global trends but the spatial allocation of capital was a result of the geography of Qld and the way its economic history played out in policy arenas.

Notably, in Qld, population has traditionally been relatively dispersed into large regional population centres. This has occurred because: the location of mining developments and their efficient servicing in later periods by modern railways that were operated to internationally competitive standards; the development of tourism in regional centres; and the political power of regional Qld that has been supported by advocacy groups that have been successful in securing the location of administrative government agencies and key institutions such as universities. These factors have not been as apparent in NSW where the dominance of Sydney was reinforced by the nature of rail devilment directed as it was by the city merchant class.

The periods of institutional stability (equilibrium) in railway transport policy that was interrupted by crises that punctuated that equilibrium mirrored those in NSW. This is because the policy changes emerged from ideas dominating the discourse in policy networks, which themselves were part of the institutional structure that was not related to jurisdictions but to the institutional forces associated with the railway. The speed and extent of the implementation of these ideas can be seen to be related to the strength of the advocacy coalitions in Qld that supported individual actors.

Unlike NSW, the development of the railway system was not centred on the State capital of Brisbane.   Suburban railway development did not become the focal point until the 1880s when Brisbane was finally connected and even then the boom

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in suburban construction lagged behind that elsewhere but it did eventuate.   The

suburban system in Brisbane served the same purpose as in Sydney to enable the

growth of the city and provide transport for the working classes. Hence, the urban

spatial fix required by that stage of the institutional capital regime had the same

implications for railway policy and investment decisions as in Sydney. The

difference was in later periods when Qld was unable to afford the reinvestment in

railway innovations (for example diesel and electric engines) until long after Sydney.

Aligned with this, the tight purse which was always characteristic of Qld

Treasury meant that all railway administrations had to practice severe economies. In

relation to asset use this meant extended use until well past the original design life of

the asset. This nuanced approach resulted in an ability to reinvest because the sunk

costs of initial investment were less, and hence played a lesser role in precluding

future reinvestment. The need to fully utilise assets also influenced the timing of

investment. Hence, while Qld investigated electrification as early as the late 1890s

the actual investment did not occur until the 1970s enabling the leveraging of

substantial economies associated with later and more advanced technologies.

This stability in the Qld approach to decision making about long-term

investments was assisted by equally stable administration. Major changes in the

administration of railways in Qld were few and while following (rather than mirroring)

trends elsewhere they always took into account the local situation. Four key

administrative phases can be identified: (i) from 1863 – 87 railways were

administered as a Department within the Public Works portfolio; (ii) from 1887 –

1932 railways were administered as an independent Department; (iii) from 1932- 91

railways were managed as a sub-department of the Department of Transport, and

(iv) from 1991 – 2000 railways were moved to a commercial basis and managed as

a state owned corporation (Queensland State Archives Agency ID366, Railway

Department). Equally stable was the management. For example Kerr (1998: 218)

notes,

> *"In 125 years there have been 52 Ministers of the Crown responsible for railways, several for only a few days....In the same 125 years there have been just 19 Commissioners..."*

This stability was also noted by many respondents, for example,

> *"In Qld, there is time to do the job. There is time for discussion. You can talk and get the idea across. It's slower. You are not harassed by politicians. You get the time to do the job. They had some vision." (Respondent 1007, 26 October 2009).*

> *"Here, if there is vision they want to talk and listen...In NSW if you have a good idea they want to park you in your car...In Qld if you have a plan for the future and you convince the government they will let you do it...The people are different – there is more loyalty." (Respondent 1021, 7 December 2009).*

> *"In Qld there was less political interference. Politicians were kept away from the detail, the nitty gritty of the day to day. People could just get on with it. The management and the whole scene was much more stable then NSW." (Respondent, 1009: 2 October 2009).*

The timing of development in Qld has been noted elsewhere as an important

factor in its development.

> *"The timing of the creation of Queensland is important. With Victorian economic optimism and the liberal doctrine of equality of opportunity in their hey-day, the climate of opinion was favourable to economic progress and development...Capital for the development of what seemed the very promising resources of a new colony were readily available. Again the time was propitious. Victoria growing rich from the recent gold rushes could offer investment capital and entrepreneurial skill...The Queenslanders inherited liberal democracy from other people's efforts. Government could concentrate on the problems of development. The Queensland legislature was also able to learn   to some extent from mistakes by Victoria and N.S.W...." (Farnfield, 1974: 10 -11).*

Hence, perhaps Qld had an element of luck from the beginning in its

economic and social development.

5.2. Early Railway Development 1863 - 1887

After the separation from NSW in December 1859, the colony of Qld was very

minimally developed. It was described as follows,

"..there was a very small population (European), the distances were immense,
there was an immense amount of land, the transport network was dreadful, the
population settlements were small and located in isolated pockets, resources and
minerals were thousands of miles away." (Respondent, 1002, 7 October, 2009)

Figure 5.2.1. shows the limited development in Brisbane in 1862. The first

census after separation in 1861 found a population (European) of just 30,059

(Cameron, 1989:4).

Figure 5.2.1 View of Brisbane 1862

(Source: Cameron, 1989:5)

The driver for railways in Qld was the development of the colony. Power at

the time was in the hands of a very small number of rich graziers who wanted to both

intensify economic exploitation of the colony and increase the white population (Lee,

2010:128). This focus on 'opening up the country' as a central role for Qld railways was to remain for well over a century. Railways provided the infrastructure that supported agriculture and, then, in a more recent period, mining. Both phases were vital for the development of Qld.

> *"The role of the railway in Queensland was to be the development of the country. This was to mean that railways would often be built into rural areas in advance of settlement and led to the establishment of railway towns, towns which did not exist before the advent of the railway and which were often heavily dependent on the railway for their economic base." (QR, 2002: 2)*

While railway development in Qld had been planned prior to separation[40] the first tangible attention to this issue came after the report of the Select Committee on Transport in 1860. The Committee regarded railways as beyond the resources of the colony and recommended urgent road works. They did however consider the value of tramroads. A private company, the Moreton Bay Tramroad Company, was established in 1861 to build a tramway from Ipswich to Toowoomba. The initial funding basis was a land grant railway – a similar funding basis to some American railways at the time. The Act of Parliament that incorporated the company granted it one acre of land adjacent to the track for every pound spent. Despite the generous land grants there was insufficient capital in the colony to finance the railway. In 1862 the company went into insolvency selling its only assets (the survey plans) to government (Kerr, 1998:4).

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[40] The first planning for a railway in Queensland was in 1855 when Thomas Hood moved a motion in the NSW legislature for a survey of a 'tramroad' (a horse powered railway on wooden rails) from Ipswich to the Darling Downs via Warwick to Tenterfield. No construction eventuated. The only outcome for Qld was a debt (Kerr, 1998: 3).

The Railways Bill in 1863 (see Figure 5.2.2 below) authorised the government to build railways. It was finally passed after significant debate especially relating to the decision about the gauge[41] (refer to Appendix B).

Figure 5.2.2 Queensland Railways Bill 1863

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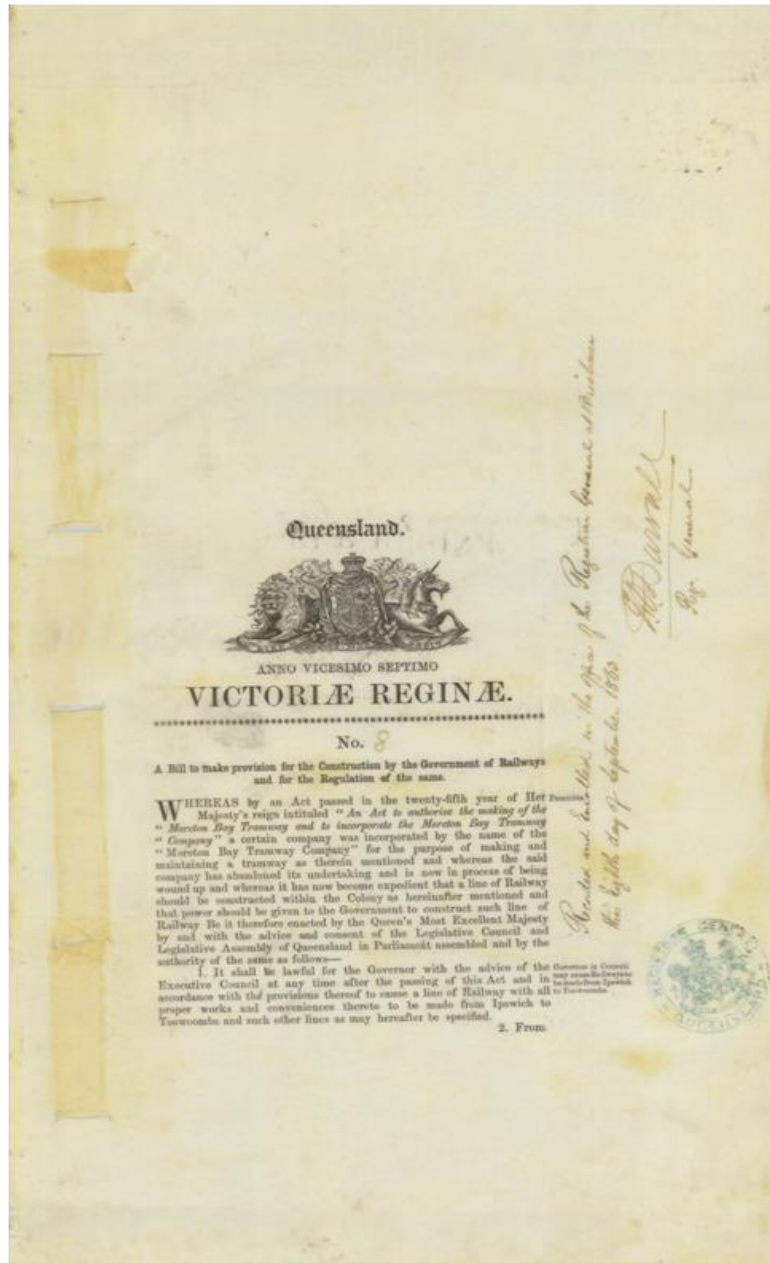
[41] For a detailed discussion of the gauge issue refer to Knowles, 1981.

Administration of Qld railways during the nineteenth century was designed to provide considerable regional autonomy (for full details, see Appendix D). This administrative structure (with some name changes to Branches and key positions) remained largely in place until corporatisation in 1991. This set of administrative arrangements evolved in no small part because of the State's geography. The long coast line meant that coastal shipping was very important. Railways were connectors to either sea or river ports. Hence, they were isolated lines and were not connected until the north coast line was built in the mid-1920s. This had a major impact on the settlement pattern and on the spatial fixity associated with railway development in Qld. The first lines constructed in the early period were the first part of the western and northern railway lines. The western line was the first and its development was all about supporting agricultural trade. As one respondent observed,

"The first railway was from Ipswich to Bigge's Camp. It was completed on 31 July 1865 it was wool to the world." (Respondent 1010, 8 October, 2009)

Key milestones were: from Ipswich to Grandchester 1865; Toowoomba 1867; Dalby 1868; from Ipswich to Brisbane 1876. A southern extension was built to Allora in 1869 and to Warwick in 1871. The northern line (the result of the political deal to get the Railway Bill of 1863 passed) was next with the railway from Rockhampton to Westwood. Copper mines at Peak Downs were one of the drivers for this railway and it can perhaps be considered as Queensland's first mining railway (refer to Kerr, 1998: Ch. 3 and 4). By 1875, 226 miles of railway had been constructed at a cost of three million pounds (Cole, 1945: 310). These early lines are shown in Figure 5.2.3 below.

5.2.3 Queensland – Early Rail Lines
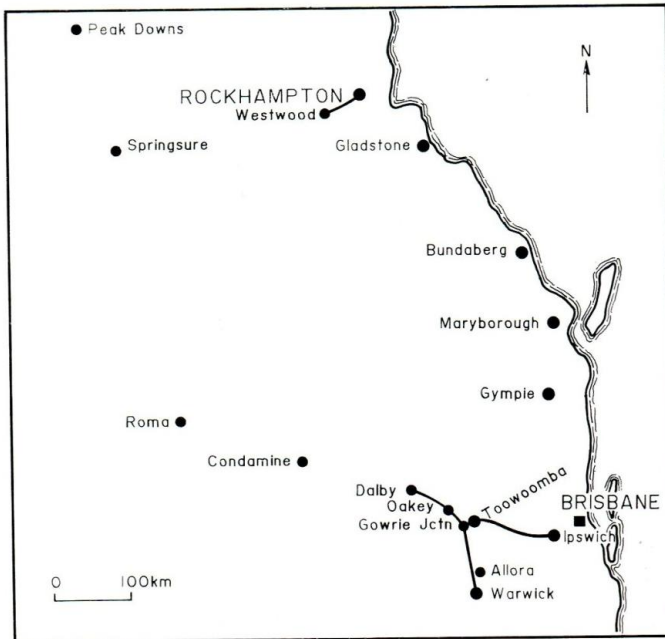
(Source: Kerr, 1998: 24)

The speed of the construction of these early railways can be compared with that in NSW. The narrow gauge and the construction approach using lower standards allowed faster construction. The Ipswich to Toowoomba lines was completed in three years. A line the same distance in NSW from Sydney to the Zig Zag (in the Blue Mountains) took 19 years (Lee, 2010:128). The railway construction resulted in a rapid influx of migrant labourers who added to the growth of local economies.

Unlike the other eastern State capitals, Brisbane was too small to have railways built solely to serve its suburbs. Indeed, Brisbane was not the site of the first railway and it did not have a railway until 1875 - the end of the first decade of railway building in Qld.   Some lines were built for specific purposes (for example the

Beach railway to Sandgate[45] and the race railway to Eagle Farm) others were built to accommodate suburban expansion (for example Melbourne St and the Cleveland Branch Line) and others to accommodate industrial development (examples include: the South Brisbane Line – coal; Bulimba - wool, sugar, sawmills; Enoggera Branch – livestock).   By the end of the 1880s two systems[46] had been built in Brisbane. One of these was in the east, and an entirely separate system centred on South Brisbane which at the time was an important commercial district. Hence, while the city and the suburbs grew around the railway in Brisbane, this was due to opportunistic association rather than by design. In Brisbane, commercial drivers to support industry were the engine of suburban rail development for passenger travel which was required to support the changing industrial structure associated with urbanisation facilitating transport of labour in the city.

Geographical features influenced the shape of the city of Brisbane and the direction of urban development.   Situated at the head of the Brisbane River, in a gap between coastal ranges and bordered by hills, these physical features divided the city into quadrants. The location of a suitable port in Brisbane and its development cemented the commercial role of the city over Ipswich. Again, it was physical geography that played a major part in encouraging development as the Port developed and grew in volume of trade and importance. The role of the Port of Brisbane was enhanced by the coastal railway and its increasing ability to tap the trade of north and central Qld.

"Brisbane was a country town until the 1960s...The railway was not important, trams developed Brisbane. The railway was an afterthought. It almost got closed

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[45] See The Brisbane Courier, 11 May, 1882: 3
[46] For over a century passengers on the South Brisbane line had to catch a tram across Victoria Bridge to reach the city (Lee, 2010:210)

after the war....Suburbanisation occurred around the railway line. ..The bridge across the Brisbane River in the 1970s was a key link. No one foresaw fast electric trains... A rail link to the Gold Coast was secondary to the two lane freeway. 'You can't carry a surfboard on a train kind of thinking'" (Respondent, 1001: 28 September, 2009)

5.3.   The Railway Age 1887 – 1932

Building the Trunk Lines 1887 - 1900

The railway boom of the 1880s swept through Qld as it did in the rest of the Australian colonies.   The table below (Table 5.3.1) shows this boom in construction. The role of the railway in Qld remained that of building trunk railways to the hinterland from ports. As one respondent suggested:

"..Qld [was] built from the Ports. Interconnectivity was not important in the nineteenth century. Railways were built to get rural produce to the ports. Back then the number of ports was not a problem.   Post war (World War II) with bulk transport of commodities and bulk inter modal transfers it matters. International shipping companies only want to go to one Australian port." (Respondent 1009, October, 2009)

The small population, the long elongated coastline, and the availability of ports meant that geography was the dominant influence on railway construction in the nineteenth century (Fletcher, 2002: 67). This geographic hegemony was not challenged by the then organisation of the international transport industry it was characterised by small ships stopping at a large number of ports, large and small. The current industry structure of large ships and global hubs would have led to the dominance of a single large port probably, Brisbane.

This was a time of significant agricultural and mining development in Qld. The colony was dominated by agricultural, pastoral and mining interests. They were spread over very large areas and all wanted good transport links to overseas

markets (Lee, 2010:134). This intermodal transport relationship was reinforced by the lobbying of the various agricultural, pastoral and mining groups which led to the development of isolated rail links that operated as individual railways albeit reporting to a single head office in Brisbane. They formed very effective advocacy groups and supported local politicians who power bargained in the legislature for their regions. The east – west construction was a distinguishing feature of the railway in Qld. In the other Australian colonies railways tended to radiate from the capital. This separation tended also to reinforce the regional thinking in Qld and was a key reason for the regional development and decentralised location of government services (Cameron, 1989: 43).

Table 5.3.1 Railway Construction 1859 – 1900

Period	Kilometres Constructed
1865–1870	233
1871–1880	692
1881–1890	2524
1891–1901	959

(Source Cameron, 1989: 42)

There was no detailed government plan or design that supported the development of the railway in Qld. Its location was greatly influenced by the power of the various districts and their parliamentary representatives. The government policy was very much one of providing for current needs. The lack of financial resources reinforced this policy as did the settlement pattern. After separation, squatters spread out over vast distances largely encouraged by very liberal land policies. Two policies were used by the Qld legislature to encourage development: land and immigration (Farnfield, 1974). Liberal land grants to settlers led to the development of a powerful squatter group that had significant political power which

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was used to ensure the protection of its interests. This group was important in

lobbying for the railway as it provided a means to markets for agricultural produce.

There was however no transport or communications policy that supported these land

and immigration policies. The result was a sparse and haphazard settlement pattern

that would only develop with improved transport links. Settlements which had

tended to spread out along rivers came together in towns along the railway at key

terminus points. The railway was critical to the development of the settlement

pattern in Qld from 1859 – 1900[47].

> *"Probably the greatest influence on the spread of closer settlement was the railway building programme embarked on so enthusiastically by the Queensland Government under Premier Herbert in the 1860s and supported by successive government's up to 1930 when the present network, excluding recent mineral lines, was substantially completed" (Cameron, 1989: 13).*

The initial lines were primarily to support graziers' interests to allow the more

efficient export of wool. The Darling Downs District had substantial power in the

legislature in the 1860s as three powerful ministers came from this district: Lands,

Public Works and Treasury. Hence, their interests were well supported by railways

during the first phase of expansion (Courtice, 1937: 164). The later lines were built

to support mines after the discovery of tin, gold and copper in the 1860s and 1870s.

The mines provided both the need and the finance to support rail development. By

1891 there were 11 separate railways in Queensland.[48]

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[47] For an extensive discussion of the relationship between railway development and the settlement pattern in Qld see Courtice, 1937.

[48] The Western line – Brisbane to Toowoomba, Roma (1880), Charleville (1888) and Cunnamulla (1898); The Central line – Rockhampton to Westward, Emerald (1879), Barcaldine (1886), and Longreach (1892); The Northern Line – Townsville to Charters Towers (1882), Hughenden (1887) and Winton (1899); Bundaberg Railway to Mt Perry (1884), (1884); Maryborough Railway to Gympie (1881), extensions to Burrum coalfields in 1883, to Howard (1886); Emu Park Railway to Rockhampton (1888); Cooktown Railway to Laura (1888); Cairns railway to Redlynch (1887), to Kuranda (1891) and Mareeba (1893); Normanton Railway to Haydon (1889) and Croydon (1891); Bowen Railway to Wangaratta (1891). For further details, consult Appendix E.

The development of the bulk of these lines in the 1880s was funded by a large loan. The new Government acquired a loan for ten million pounds in 1884 (about one billion dollars in today's terms) to fund railway development. Railways were built for a wide range of interest groups as the railway was seen as a means to certain prosperity (Kerr, 1998: 49; QR, 2002:4).   It was not until the appointment of the Railway Commissioners in 1889 that such overt politics was removed (at least somewhat) from railway development.

The early locomotives used on the Qld railways were imported from Great Britain[49] and America and built to designs from these countries. By 1877 however, local manufacture began in Ipswich. This was successful and except for the early imports, all the drawn rolling stock used on Qld railways from 1877 to 1900 came from the Ipswich workshops (Cameron, 1989: 55) and the rest of the fleet was sourced within Qld for example from workshops at Maryborough.

In 1888 legislation was passed which attempted to limit political interference in the railways. The politicisation caused a level of public debate, concern and uproar punctuating the policy equilibrium enabling change exactly as it had done in NSW, and at the same time. Hence the Qld legislation was similar to and followed the legislation that was passed in the other east coast colonies. The norms and behaviours were reflective of the institutional milieu generally and not of the location. They were reproduced wherever the railway operated.

The 1863 Act had provided for a Commissioner for Railways who (while responsible for all matters of administration) was subordinate to the Minister

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[49] "Class B locomotives in service were originally manufactured in Glasgow, Scotland by Neilson and Company and imported to Queensland" Qld State Archives, 1864 Railway Makes Tracks.

responsible for railways. The 1888 Act provided for the appointment of three Commissioners with full powers (similar to a Board of Directors) covering administration, management and construction of railways. The powers of the Minister were not abolished but were defined so that the Ministers became an intermediary between the Commissioners and Parliament.   The Commissioners had to provide an annual report including a detailed report to the Minister (Knibbs, 1908: 565).

A key aim of the legislation was to limit patronage in the appointment of staff. Only Parliament could remove the Commissioners. The Act also instituted a process of examinations before appointment and six months of probation for staff. There was an underlying assumption that the railway would be run on commercial principles, however the Minister assured Parliament at the time that the dominant motive was not profit but to 'induce and promote close settlement of the colony' (Kerr, 1998: 90). The salaries offered were substantial and attracted overseas applicants. John Mathieson came from Glasgow, Andrew Johnston from Great Britain and John Gary who had been Under Colonial Secretary of Queensland. The enthusiasm accompanying the appointment of these Commissioners is captured in a report of the Brisbane Courier newspaper at the time, reproduced in Appendix F. By 1894 the number of Commissioners was reduced to one after the overseas Commissioners came into conflict with key engineering staff over critical decisions. Amendments to the Act resulted in the appointment of a single Commissioner (Gray was appointed) and while the powers were retained the reality was that the Commissioner's recommendations to Parliament reflected government policy and the concept of an independent Board was removed. This proved an enduring feature of the

institutional environment of Qld railways. Every future Commissioner until the very last one (prior to the organisation being fundamentally restructured in the 1990s) came from within the railways (Kerr, 1998: 90 - 91). As one key informant noted:

"...They didn't bring people in from outside." (Respondent, 1001: 28 September, 2009)

The Board sought to drive efficiency within the administration, although this ambition was hampered by distance and the need to duplicate administration on the three main rail systems. Stations and lines with very low patronage were closed and costs were reviewed regularly and intently. As there was little construction in the first part of the early 1890s (due to the recession) retrenchments occurred in the Chief Engineer's Office. These included John Bradfield who had joined the Qld railways in May 1889 and went on to work in NSW railways.

By 1900, 18 million pounds (Courtice, 1937:165) had been spent and the basic structure of the railway in Qld had been formed with the exception of the north coast line that was to connect the separate lines. This was completed in 1924. The map in Figure 5.3.1 below illustrates the location of these railways while the map in Figure 5.3.2 shows and their relationship to ports, mines and centres of agriculture. It is reflective of the close association of the railway with centres of primary production and its initial role in providing effective transport for the colonial regime.

Figure 5.3.1 Queensland's Railways 1900

Railways Completed 1865-1901

Legend:
New Lines

(Source: Cameron: 1989: 54)

Figure 5.3.2 Qld Railways, Agriculture and Mining Interests 1900

(Source: Courtice: 1937:166)
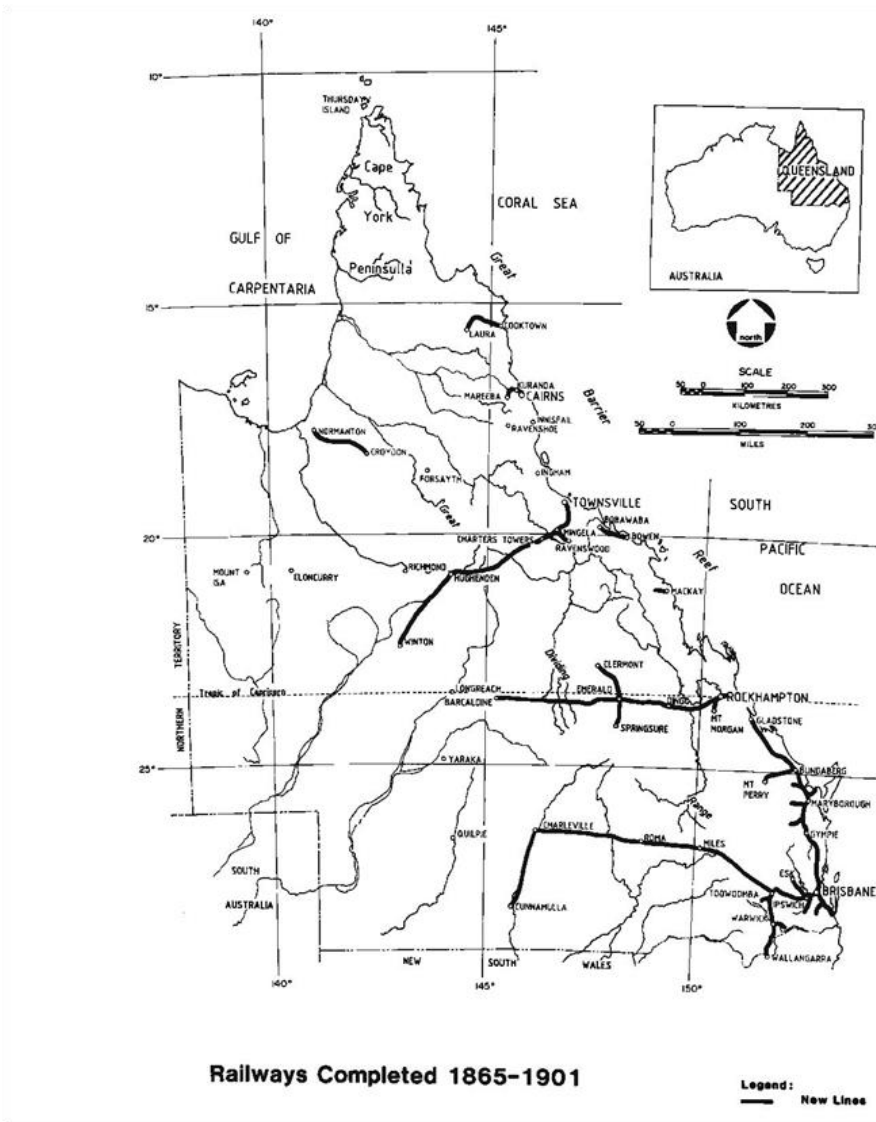
Building the Branch Lines and Joining the Separate Railway Systems 1900 – 1932

Between 1902 and 1920 branch railways grew all over the State as they did during the same period in and slightly earlier in NSW. Again this is reflective of the fact that it was a response to forces in the prevailing economic regime that were embedded in the regional economy and associated with that stage of railway development. .Some lines were in response to demands from farmers for rail services and others were to open up land for agriculture.   In the south, branch lines were built to: Dayboro, Canungra, Yarraman, Mount Edwards, Mulgowie, Haden, Cooyar, Cecil Plains, Bell, Jandowae and Glenmorgan, Wandoan and Injune, Millmerran, Goomburra, Maryvale, Amiens and Texas, Kilcoy, Brooloo, Kingaroy, Tarong, Nanango, Proston and Windera, Dallarnil, Gayndah, Monto via both Gayndah and Many Peaks, and Morganville. In central Qld, branch lines were built to: Yeppon, Theodore, Lawgi, Blackall, extending the Mackay railway to Netherdale, Kungurri and Owens Creek, and Mareeba to Ravenshoe, and Millaa Millaa (QR, 2002: 5).

The first 'grand rail plan' for Qld since the 1860s was presented to the Qld Parliament in 1910 (QR, 2002: 7). It presented the concept of the North Coast Railway (linking all the railways on the east coast) and the Great Western Railway (a link across western Qld linking the Southern, Western and Northern Railways). When Parliament approved the legislation on 21 December 1910 it was the greatest length of railway ever approved by the Qld Parliament in one day and indeed in one year (Kerr, 1998: 123). The North Coast Railway was completed in 1924 and the link on the east coast was completed. The Western Railway was never completed

and work ceased on it in 1917. While this achievement was impressive this period of railway building in Qld was dominated by the construction of Branch lines. Between 1905 and 1924, 4,800 km of new track was built and of this amount, 2,780 km was Branch lines (Cameron, 1989: 110).

By 1935 10,569 km of railway construction had been completed in Qld. This can be compared with NSW which at this time had 700 km less track, notwithstanding the fact that at the time, the population of NSW was three times that of Qld. The railway was the largest single employer in the state. Hence, the financial burden of the railway in Qld was much more significant than in NSW. However, successive state governments in Qld had borrowed and invested heavily in railways because they believed that railway development was central to the development of the state (Cameron, 1989: 110). A consequence of the high interest payments and the low traffic on many of the lines was that until the late 1960s when bulk haulage of minerals from Mt Isa and the central coal fields commenced, the railways rarely had an operating surplus. In fact they made very little contribution to the interest paid on borrowings or to the retirement of loans. This financial situation led to the payment of very low wages and increasing union militancy in the period from 1900 – 1930. This period was marked by numerous railway strikes (Cameron, 1989: 112).

The depression of the late 1920s and early 1930s combined with competition from road transport led to reduced haulage of freight by rail and reduced income for the railway. This was the same crises that faced NSW and it produced the same policy window allowing a change to be implemented. The administrative response in Qld was similar to that in NSW - the formation of a Transport Department. However,

the ambit of this Department was vastly different from that operating south of the border:

"The only real similarity between the latest Queensland Act and the New South Wales measure Is In the name," said the secretary of the Federation (Mr. C. A. Gregory). "The Queensland Government has been careful to omit practically the whole of the contentious (i) sections of the New South Wales Act, notably those empowering a non-representative board to impose crushing taxation on privately-owned motor vehicles. On the other hand, it has many equitable provisions, including representation of commercial, financial, and transport interests on its transport board, that were studiously omitted from the New South Wales measure and strongly resisted by the Government when the bill was going through Parliament." (Sydney Morning Herald, 17 March 1932:4)

The 1932 State Transport Act merged the formerly separate functions of the Commissioner for Railways and the Commissioner of Main Roads to form a new Transport Department. A State Transport Board was also established, "for the purposes of providing for the improvement and for the co-ordination of transport in the State". The Board's executive consisted of: two representatives of the commercial, financial and producing interests of the State; the Commissioner of Railways; the Commissioner of Main Roads; one other transport officer; and a Secretary. Its responsibilities were to devise and execute schemes to co-ordinate or otherwise improve transport, to make financial recommendations and decisions, to undertake inquiries into transport matters, and to set up Advisory Committees into various matters (Queensland State Archives Agency ID385, Transport Department).

This was a time of substantial financial pressure on the railways. Haulage was down (by 2 million tons), passenger numbers were down (by 30%) and freight rates were reduced. Tables 5.2.3 and 5.3.3 illustrate the size of the railway burden by 1931 and the financial situation. Economies were exercised as overheads and costs were reviewed in all aspects of operations. Low traffic branch lines were closed. The competitive pressures from road transport that were becoming an

increasing problem for the railways continued to escalate despite various regulatory responses and substantial inroads were made into the rail freight business. The 'common carrier' requirement and the publication of rail freight rates did little to assist the problem. The first three decades of the twentieth century then saw substantial investment in railways in Qld. Table 5.3.4 illustrates the scale of this activity and Figure 5.3.3 shows the extent of the Branch line construction. Again, this is similar to what had occurred in NSW.

Table 5.3.2 Railways – Interest Payments

RAILWAYS, STATE.—INTEREST ON RAILWAY LOAN EXPENDITURE.

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
AMOUNT OF INTEREST PAYABLE.							
	£	£	£	£	£	£	£
1927	5,562,308	3,271,374	2,720,717	1,332,515	887,740	285,255	14,059,909
1928	5,882,452	3,321,727	2,827,223	1,271,686	920,569	284,076	14,507,733
1929	6,150,000	3,473,575	2,902,710	1,366,807	923,017	283,554	15,099,663
1930	6,420,643	3,508,657	2,953,211	1,399,053	950,797	284,379	15,516,740
1931	a6,790,082	3,596,758	a3,018,355	1,426,741	968,066	285,881	a16,205,274
INTEREST PER AVERAGE MILE WORKED.							
	£	£	£	£	£	£	£
1927	968	707	435	528	227	433	593
1928	1,010	713	446	503	232	432	605
1929	1,042	739	454	537	231	434	624
1930	1,078	745	458	551	231	431	635
1931	1,129	764	464	563	235	430	660
INTEREST PER TRAIN-MILE RUN.							
	d.	d.	d.	d.	d.	d.	d.
1927	50.70	43.54	54.84	45.95	40.39	52.53	48.34
1928	52.48	45.05	58.21	46.92	38.55	48.12	49.81
1929	53.80	46.37	58.58	56.90	38.00	48.40	51.58
1930	57.68	47.65	59.77	60.49	39.83	45.37	53.95
1931	63.59	54.14	66.56	68.60	43.00	54.84	60.67

(a) Interest charges on the Grafton–South Brisbane line for the year 1930–31 amounted to £215,971, of which New South Wales contributed £70,269 and Queensland £26,311, the remainder, £119,391, being borne by the Commonwealth.   See B. § 1, 4 *ante.*

(Source: Commonwealth Bureau of Census and Statistics, 1933: 227)

Table 5.3.3 Railways – Profit or Loss

Year ended 30th June—	N.S.W.	Victoria.	Q'land.	S. Aust.	W. Aust.	Tasmania.	All States.
PROFIT OR LOSS AFTER PAYMENT OF WORKING EXPENSES, INTEREST, AND OTHER CHARGES.							
	£	£	£	£	£	£	£
1927 ..	− 451,618	+ 187,479	−1,890,362	a−3,068,133	+ 34,556	− 297,095	−5,485,173
1928 ..	−1,609,267	− 315,960	−1,551,831	− 991,150	+ 26,671	− 303,218	−4,744,755
1929 ..	− 712,434	+ 156,600	−1,536,864	− 1,395,728	− 178,699	− 343,351	−4,010,476
1930 ..	−2,756,374	− 818,399	−1,597,093	− 1,695,229	− 404,489	− 312,419	−7,584 003
1931 ..	b−3,683,987	−1,088,334	−1,616,854b	b− 1,575,228	− 379,992	− 334,543	b−8,798,329
PERCENTAGE OF PROFIT OR LOSS ON CAPITAL COST OF CONSTRUCTION AND EQUIPMENT.							
	%	%	%	%	%	%	%
1927 ..	−0.41	+0.27	−3.47	a−10.91	+0.17	−4.58	−1.88
1928 ..	−1.38	−0.44	−2.76	−3.81	+0.12	−4.68	−1.59
1929 ..	−0.58	+0.21	−2.64	−5.20	−0.80	−5.29	−1.30
1930 ..	−2.21	−1.10	−2.72	−6.22	−1.77	−4.78	−2.41
1931 ..	c−2.73	−1.46	c−2.64	−5.78	−1.63	−5.11	d−2.70

(a) See sub-section (ii), S. Grafton–South Brisbane line. (b) See Note (a) paragraph 11 above. (c) Exclusive of (d) Includes Grafton–South Brisbane line.

(Source: Commonwealth Bureau of Census and Statistics, 1933: 227)

Table 5.3.4 Railway Track Completed 1891 – 1950

Period	Kilometres of Track Completed
1891–1900	959
1901–1910	1717
1911–1920	2935
1921–1930	1250
1931–1940	62
1941–1950	0

(Source: Cameron, 1989: 110)

Figure 5.3.3 Railway Construction Queensland 1902 – 45

Railways Completed 1902-1945

Legend:
New Lines
Existing Lines (prior to 1902)
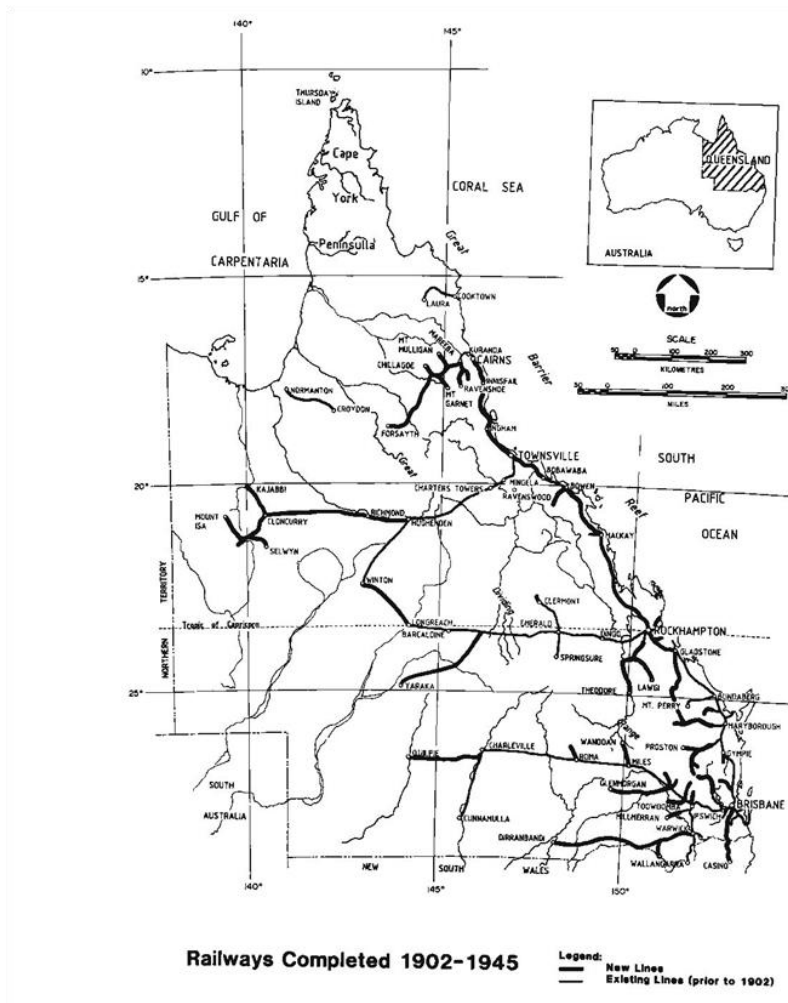
(Source: Cameron, 1989: 111)

The level of this investment was justified in terms of the anticipated catalyst

railway construction would have on the state's growth. The slogan of the railways in

Qld was, "A partner in Queensland's Progress". (QR, webarchive).   However, by

1930 the level of the investment in railways was being questioned on economic

grounds. It was noted that the investment in railways had increased by 46% since

1920, which was well ahead of the increase in the value of production (15%), the

increase in the value of agricultural production (34%), and the increase in population

(24%). The level of the railway debt was also massive. These views combined with

the economic depression in the early 1930s brought railway construction to a halt[50]

as it did in NSW. However in Qld investment did not recommence on the same

scale after the War as in NSW due to a change of government. It did not take off

until the 1950s and it gathered speed when the mineral railways of the 1960s

(Cameron, 1989: 113) provided the capital.

During the whole period from 1863 until the late 1930s, the technology used

to construct the railway in Qld was adopted largely from Great Britain but each

element was scaled down – gauge, track strength, rails, axle loads, rollingstock,

bridge design, stations, and gradients. The narrow gauge proved to be suitable to

Qld's economic situation and to the highly distributed and relatively low volume of the

transport task. Indeed, it was copied by Tasmania, Western Australia and South

Australia but it was different from NSW. The gauge and the associated lower

construction standards proved to be suitable for Qld needs.

> *"Queensland Railways led railway technology in Narrow Gauge. It was not, initially, an indigenous technology but wholly imported, but making the technology workable and economical was entirely in the hands of Queensland Railways. Once the initial construction period was over, and using the staff and the equipment imported from Britain, it was purely a local enterprise. In those early years there was a sense of confidence that in choosing narrow gauge and adopting cheap methods of construction, Queensland had made the right choice at the right time. Narrow gauge would eventually spread - to Japan, Africa, New Zealand and much of Australia, and in metre gauge to India, South East Asia and South America, in many countries as the principal and main line gauge - reinforced the judgement." (QR Webarchive).*

In addition to the narrow gauge Qld used lighter track and often adopted a

track geometry with curves and gradients that would impose limits on loads and

speeds. While a pioneer and an innovator in railway timber bridge design this too

would prove to be a limitation on the functionality of the system. However, in Qld the

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[50] The line from Thangool to Lawgi (13 kms long) was the last to be built in 1933.

timing of the investment, the ability and willingness to delay reinvestment until the life

of the asset had well expired and the determined reinvestment aligned to return

(whether at the level of the individual project or the associated economic spin offs)

allowed a system level rejuvenation at critical periods to further reinforce economic

growth trajectories. This is demonstrated during the next period of the evolution of

the railway in Qld (refer to Kerr, 1998 and to QR Webarchive).

5.4.   Reconstruction and Profiting from Minerals 1932 – 1991

Qld railways during the Second World War became vital to the defence effort

in North Australia. The fleet, tracks and staff were literally worked around the clock.

Reducing turnaround times, running engines beyond their usual maintenance

schedules, running rolling stock that was in need of maintenance, cancelling all staff

leave were all elements of the 'Pony Railway' that played such an important part in

the war effort. This has been well documented elsewhere and will not be discussed

in detail in this thesis. It is important however in understanding the state of the Qld

rail system at the end of the war and in the early 1950s. The situation after the war

was described by several respondents:

*"The war destituted QR: management acumen; equipment; rollingstock...In
1955 there were square miles of rotting locomotives, and carriages in Ipswich. They
were all run into the ground and there was no money to fix it. It was a bleak
landscape - there were shortages of everything...Even the signal and telegraph room
was a stall in one of the toilets in Rockhampton....Timetables...it ran on leftovers
from the 1890s...carriages were built pre-war...wages were pre-war...The track had
not been upgraded for years. Bridges were rotting...At that time it was Queensland
Government Railways. It employed 20,000 people... all the railways files were in the
Secretary's Office in spiral rows four deep around the room. The Commissioner at
the time (Moriarty September 1952 – August 1962) was brilliant man. No one really
knew him. A Brigadier General. Tyrannical (thinking he was still in the Western
Desert), ran a dictatorship, the managers were overawed by him...They needed it.*

They were a rag tag lot. His major contribution was that trains ran on time. The key people were all very competent – the Chief Civil Engineer, the Chief Mechanical Engineer and Chief Traffic Engineer." (Respondent, 1001: 28 September, 2009)

Similar sentiments were expressed by other respondents for example,

"After the war everything was run down there was still steam engine's. Diesel was not introduced until 1951-52. Steam was not phased out until 1989...The 1950s were a time of renewal all sorts of new things came in - air conditioning and in 1953 the Sundowner." (Respondent 1015, 6 October 2009)

"After the war the Railway in Queensland was a derelict railway, the infrastructure have been very run down because it had been worked to death during the war." (Respondent 1014, 6, 7,8 October, 2009).

The economic situation of Qld after the war and up to the early 1960s was

described by another respondent,

"Queensland's finances were desperate and the economy was at a standstill. In one year in the mid-60s, we were forced to apply to the Commonwealth for a short term loan to pay wages and current running expenses... As far as the economy was concerned back then, we had just one major company MIM [Mount Isa Mines Ltd] – and it was in trouble because the rail between Mt Isa and Townsville was clapped out. The rest of the economy depended very much on our pioneer industries. Elsewhere it consisted of a string of cottage industries, stove foundries, a boot factory, small clothing establishments, a couple of woollen mills and sustenance type personal endeavours. We didn't rely on service industries where people work for people as they do today. We painted our own houses, mowed our own lawns, grew our own vegetables in the back yard, had our own chooks and rainwater tanks. There were some important branch offices of banks, Dalgety's, Thomas Brown, the state branches of oil companies and so on... The reason for this economic stagnation principally was that Queensland was still enduring the debilitating effects of the 1930's depressions followed by the complete focus on the war effort in the 1940s with Queensland as a front line State, and then the austerity that followed.

In the 1960s, we still had no coal industry, no bauxite/aluminium industry, no tourist industry. Brisbane stopped at the tram termini at Balmoral, Belmont, Mt Gravatt, Salisbury, West End, Toowong, Stafford, Chermside, Clayfield and Ascot, and trains were steam driven..." (Respondent 1003, Private Address for 10000 Friends of Greater Sydney 2009).

The derelict railway of the immediate post war era gave way to the rapidly

modernising railway with significant influence from key bureaucrats (Commissioners

Moriarty, and Lee), a powerful Minister (Gordon Chalk first as Transport Minister and

then as Treasurer) and an external consulting Group (the American firm, Ford Bacon

and Davis) whom developed a road map that influenced the design of the railway in Qld for at least 50 years. In the 1950s and early 1960s steam gave way to diesel, tracks were significantly modernised, infrastructure was upgraded and stations were modernised[51].

It was the mining boom of the 1960s[52] however combined with the innovative financing devised wholly in Qld that facilitated the transformation to the corporate QR of the 21st century. Broadly, from the 1960s until the mid-1990s rail freight rates in Qld were negotiated by the Treasury with the companies. The role of Queensland Rail was to provide the rolling stock and infrastructure and implement the terms of the Treasury agreement. As the Qld Government noted in a submission to the Queensland Competition Authority in relation to rail access, rail freight rates contained a significant level of Royalty payment until the early 1990s,

> *"Over the years, QR has received a substantial amount of funding from companies for the purpose of upgrading or extending the rail network, or for purchasing new assets including rolling stock. These capital contributions were usually paid up front to QR and paid back (or otherwise recognised) to the*

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51 Critical developments in this period were firstly, modernisation of the network which began with the introduction of new diesel-electric locomotives, new country passenger trains, and new buildings on stations in regional Queensland (such as Charleville), and overdue investment in specific infrastructural works (QR Web Archive).

52 Since the late 1960s practically all construction has been to develop mining, and to rebuild or upgrade the existing network. The spur to Callide Coalfields in 1953 being the first coal specific railway.   All subsequent mining railways, starting with the Moura Short Line completed in 1968, have been built as government railways but funded by mining companies provided deposits which have been refunded out of rail freights providing agreed tonnages were met. Construction under this heading included Gladstone to Moura Mine, coal spur lines to Utah Mine (Koorilgah), Laleham, Curragh, Gregory and Gordonstone spurs in the Blackwater area, the Goonyella system from Hay Point to Goonyella, Blair Athol mine and a series of mines ending at Oaky Creek, Collinsville to Newlands with a spur to Abbot Point port, and Rosewood to Ebenezer in southern Queensland, all built for coal. Other mineral lines included Cobarra near Townsville to Greenvale for nickel ore, and Phosphate Hill in the Cloncurry district. The only exception to government construction was the short standard gauge railway built privately by Comalco to haul bauxite to port at Weipa. Much major reconstruction of Gladstone-Rockhampton-Blackwater and of the Collinsville branch has been financed by mining companies. No mining company finance was involved in the reconstruction of the Mount Isa Line Collinsville-Mount Isa during the 1960s. Some recent lines have been built for other than mining, Fisherman Islands (1980) to provide Brisbane with a new port, Roma Street to South Brisbane (1978) to link the two almost separate suburban systems in Brisbane (QR Web Archive).

companies under various terms and conditions that were set out in contracts known as rail haulage agreements (RHAs)...

In the period up to the early 1980s, mining companies made capital contributions to QR by way of an up-front payment of a refundable security deposit to cover the cost of constructing rail infrastructure (and/or purchasing rollingstock). Subject to performance criteria, these upfront security deposits were refunded to the companies through a schedule of repayments (generally including an interest component and often established through Acts of Parliament) set out in RHAs between the contributing companies and the Government (represented by the Commissioner for Railways. A capital component to fund the refunds was incorporated into the rail freight charge...

In the early 1980s, due to a change in Commonwealth taxation rules, the above arrangement of refundable security deposits was replaced by "non-refundable" capital contributions. The non-refundable capital contributions were recognised in terms of a lower freight rate for the term of the contract or the life of the asset." (Qld Govt, 1999, 5)

The Treasury Under - Secretary, supported by a network of bureaucrats (most importantly, the Co-ordinator General and the Commissioners of Rail and Roads) and a network of Queenslanders that included bankers, lawyers and the most senior politicians enabled the social and economic transformation of the railway and the State. Ideas that were implemented in NSW that stemmed from the Beeching reforms in the UK were also implemented in Qld at this time. However, balancing the line closures were large investments in new bulk haulage lines requiring very large purchases of rolling stock and a revolution in the management of rail freight. This investment began in 1968 with the new coal lines and continued into the 1980s with electrification, starting in Brisbane in 1979.

All informants commented on the importance of mining development to the redevelopment of the railway in Qld. Some examples are set out below:

"The Mt Isa mine upgrading was the start of QR growth. It was 1956...Ford Bacon and Davis, the US railroad consultants came in and took over running many functions. They transformed the railway. They developed a succession plan for staff....They were there on and off for 10 years...I suspect it was Sir Leo who was

behind it...Ford Bacon and Davis brought in IBM to do aptitude testing on anyone who asked...There as a new emphasis on training and skills...Alva Lee was the Commissioner at this time...ineffectual.. The Mt Isa project revolutionised freight working – dieselisation. The emphasis was on freight. They were never used on the suburban lines – they had steam until 1972." (Respondent, 1001: 28 September, 2009)

"New opportunities and especially minerals emerged. The Cowboys came in. It was like a gold rush. People went into totally different areas of economic activity. It was frantic activity. The more it happened the more likely it was that Queensland would have to embrace the southern states where the money was. Industry started to interact more dynamically across all sectors of the economy." (Respondent, 1033, 8 October, 2009).

"In the 1960s the coal industry was important. Then in '66 to '67 Utah became important in Queensland and you had the first heavy haul, the first purpose built railway at Gladstone in the 1970s." (Respondent 1002, 7 Oct 2009)

The initial railway infrastructure development that was enabled by mining had

a 'plantation effect' more broadly on the Qld economy. The role of Sir Leo Hielscher

and a small team of bureaucrats around him in successfully harnessing the capital

from the mining boom and using it to drive Qld economic development was

emphasised by all respondents. For example,

Railways were seen as a core part of the economic development of the state." (Respondent 1009; 2 October, 2009).

"Sir Leo is a personal friend. I started to go fishing with him 42 years ago. 1976 was our first fishing trip. He has made a major contribution to Queensland. He is a Queensland patriot – he puts 3 teaspoons of sugar in every cup of tea to help Queensland industry. He is a gentle giant. A good judge of character. He had worked his way up. He was not Catholic. He is very personable. He was very influential with the Premier. He controlled the budget and never let Joh Bjelke-Petersen know what was going on. Joh was not interested in detail.   He ran Treasury with an iron fist. He got the money, made sure it was spent with tight control. Made sure the public servants didn't set up silos through the role of the Coordinator General which was established in the 1950s. Joh was Liberal [sic, National]. Goss was Labor. The perfect Sir Humphrey without Humphrey's empire building...

Economic development brought money into Qld. It was a 'plantation' effect. The mining companies made money and Sir Leo charged royalties to make sure Qld got a share of the profits. Sir Leo put it to economic development projects. There

were big employment spillover effects. For example, Brisbane suburban electrification in the 1980s. Jim Goldston was the Commissioner (July 1976 – December 1982) but Mendozsa (January 1983 – January 1986) was the father of electrification. The method and approach were selected by Ford Bacon and Davis. The project was financed by one billion dollars out of the levies on coal. Sir Leo did it. Everything was upgraded, everything was new, new buildings - revolution in attitudes. They couldn't believe it." (Respondent, 1001: 28 September, 2009)

"In Qld we had key capable people in the right agencies (Premiers' and Treasury). In NSW there have been too many changes. When a Minister or a CEO changes it takes a year for the agency to settle down". (Respondent, 1013, 8 October, 2009).

"Sir Leo was brilliant. He underpinned the Queensland economy, he ran surpluses and he was able to keep the economic rationalist outs." (Respondent 1002, 7 Oct 2009)

"Queensland has a lot to be thankful for to Leo. Leo has been a committed lifelong bureaucrat. Early in his career he rose to be under secretary. He had huge influence. He attracted large amounts of revenue from the resources sector. He is as tough as God Almighty. Nobody failed to respect him. Queensland succeeded basically due to Leo's skills.   Leo is clever at manipulating people... Sir Leo had a pivotal role in generating income out of the mines. He spent it well. He helped Brisbane get the infrastructure it needed it and enabled Brisbane to perform better." (Respondent, 1033, 8 October, 2009).

The central role played by key decision makers in the bureaucracy was enabled by several factors among them: a level of stability in the positions of key bureaucrats and an ability to place the right skills at the right time in organisations; the stability in key ministerial portfolios especially Premiers, Transport and Treasury; the time made available for discussion between ministers and bureaucrats; and an evidence based approach to decision making which was accepted at the political level. The last point, the evidence based approach to decision making can be identified in relation to the railways since the first piece of legislation in the 1860s. Many respondents commented on these points. For example,

"On the operations side you would join as a station junior and work your way up. You were moved around, like the military. You knew the network and you knew how to get things fixed. They had stability. They had a minimum number of ministers and Commissioners. There was continuity. Qld generated cash. They were able to reinvest it. It allowed economies within a vertically integrated railway...Every time

they shopped around and identified best practice." (Respondent 1009; 2 October, 2009).

"In Qld, they kept the politicians away from the detail – the nitty gritty of the day to day. The Coordinator General was a very important role in Qld. The focus was on how can we develop this state? How can we catch up with the economic strength of NSW and Victoria? They had a narrow set of goals. There was unifocus not multi focus." (Respondent 1009; 2 October, 2009).

"...A lot of political stability gave the senior public servants confidence. They understood what the government wanted and they were able to talk turkey to the minister. It was a partnership in an administrative sense. There was also a process whereby people were identified for future promotion." (Respondent, 1013, 8 October, 2009).

"Basic to my story is that all this good story did not just happen. People made it happen. People working entrepreneurially, thinking and working outside the square, throwing away the 'precedent' book, bending the rules a little, being innovative, bravely blazing new trails, creating new opportunities and thus, maximising the benefits that flow from them. I guess simply put, people who were possessive of the outcome of their efforts; people who treated the whole exercise as though it were their individual own. They made it happen. They would glow with pride at their success and worry with personal hurt if they missed the mark…. It was these people thinking entrepreneurially, getting around the rules, bending them occasionally for the good of the cause, who were the imperative that brought Queensland from a moribund, bankrupt State in the mid 60s to the most robust cashed State in Australia today – one of the best performers in the world..." (Respondent 1003, Private Address for 10000 Friends of Greater Sydney 2009).

The ability of the key bureaucrats to drive the changes needed to revolutionise the Qld economy was underpinned by a very strong desire on the part of many sections of the Qld populace to 'cease being the laughing stock of Australia' and the 'butt of jokes'. The equally strong sense of parochialism and regional difference created uniqueness about the Qld culture that all respondents argued was important in building a core of support for what were at times difficult reforms. For example respondents comments below provide a window into these sentiments,

"Qld was the laughing stock of Australia – backward, underdeveloped in every way. It was an agricultural state run by cowboys up until Joh. Brisbane was the financial centre but it had no banks. They felt down trodden. They had been laughed at for many years. They felt resentful toward other states. They worked hard to prove them wrong. They had a vision of Qld as the leading state achieved through resource development and development of the people…. The stage was

set. Joh Bjelke-Petersen (Premier from 1968 – 1987) wanted to put everything on a business footing and a development footing. The state had to be developed at all costs. The emphasis was on bringing in capital, encouraging development, taking money off the mining companies. Money was no object. They got money from all the projects – royalties from mining and freight and sugar and copper. The image of Queensland was totally changed – from the laughing stock to respected player." (Respondent, 1001: 28 September, 2009)

"Qld is more parochial and a very proud state. Qld wanted to be better than the southern states." (Respondent, 1013, 8 October, 2009).

"There is a heavy sense of regionalism in Queensland. It's an important point of difference between us and the other states... Queensland focused its culture and collective activity on Queensland. It was a fierce Queensland focus and drive that developed Queensland for Queensland. Everyone pulls together everyone feels part of the state and local scene against everything from down south." (Respondent, 1033, 8 October, 2009).

On the economic side, we firstly had to cultivate a development culture. Several generations had lived and worked in conditions where frustrations, doing without, saving for the rainy day, not over-committing, careful, careful, were the essential of our very existence. The recognition that there may be a way out was the first step. Then we had (horror of horrors) to seek out and accept globalisation, and facilitate the investment of foreign capital, particularly into our mineral industries. Then one by one, create the opportunities and support the opportunities others created. The Government's role was to facilitate – not to fund or expose the taxpayer monies to great risk. It had to be entrepreneurial in its thinking, and its actions, while at the same time securing as much benefit for Queensland as possible. The first project, if my recollection is correct, was the upgrade of the Mt Isa rail line. We searched the world for the best practice private sector engineers to plan and complete the works and eventually contracted an American firm, Ford Bacon and Davis. We should look back occasionally but momentarily to appreciate that human management has brought us here and human mis-management could take us back to the desperate days as they were just 40 years ago." (Respondent 1003, Private Address for 10000 Friends of Greater Sydney 2009)

Several respondents identified major institutional changes to work in the railway as being fundamental to the success of the broader change program. These changes were based in the emergence of a competing technology (motorised road transport) and its impact on the scale of railway operations. Reforms that originated elsewhere (most notably the Beeching Reforms from the UK) were implemented to improve the financial situation of the railway. However, they usually occurred later than elsewhere due in part to the peculiarity of the gauge which reinforced a level of

isolation.   These changes also involved changes to the involvement of unions.   For

example,

"At this time there was also work on destroying the power of the unions...It was subtle...1955 – 1970s...The unions had a stranglehold on the workshops. They brought in political spies and stooges to break the power of the union... (at this point the respondent would not speak he insisted that he could only write it down but would not say the words. He wrote in capitals CATHOLIC CHURCH. He said he, "... thought it was Opus Dei.")

It was the McCarthy era – under every bed...There was a belief that unions were fostering communism in their ranks...Work was done to undermine them so that the threat was eliminated...The most significant effort was at Ipswich...The focus was on eliminating communist involvement in the workshops...The Australian Railways Union and the TWU [Transport Workers' Union] were very big. The TWU had representatives in the Federal Parliament. You could not get a job unless you were Catholic in the 1950s and 1960s...This died out in the 1970s. ." (Respondent, 1001: 28 September, 2009)

"There were big strikes in the mid-1920s. In the 1930s the unions got control of QR. The unions have always had a very significant influence. The power of George St was very significant. North Queensland has always been more radical - the ARU from time to time has been very important. Joh Bjelke Petersen set out to smash the ETU....

"In the 1980s Don Lane [Minister for Transport] significantly changed work practices, reduced guards on trains, changed staffing on stations and there was a major rationalisation of the workforce. In the mid-1980s there were 30,000 staff today there are 12,000. Previously QR made everything today everything is made outside by contract. The Beeching reforms had a big impact here. It was a high level of competition with roads. Gordon Chalk had shares in trucking and in bus companies that operated in and out of the Gold Coast. This was a time when the railways were ripped up and the Branch lines were closed" (Respondent 1010, 8 October, 2009)

"The union person [was] more important than the pay person… In the 1970s there was a strike every five minutes. During the Joh Bjelke-Petersen years the unions focused personally on him the premier it was a very disruptive time there was a stronghold by the unions because of the political issues." (Respondent 1015, 6 October 2009)

The critical role of the availability of finance was emphasised by respondents

in relation to the role of the mining boom in providing capital for development

(discussed above) or in relation to the need to develop innovate methods to

overcome institutional barriers. For example one respondent described a key

moment in Loan Council funding,

> *"On the funding for the upgrade, we firstly tried to do it (within the square) with a special Australian Loan Council borrowing allocation. This was rejected. We then approached the World Bank as a mendicant.   Well, not really as a mendicant – we had a very good business case that concluded that we could return the loan and interest within 10 years.... Our application apparently skated through and was about to be approved when the Bank phoned Canberra to ask the question, why one of Australia's provinces with a project like this couldn't be funded domestically. Canberra, it appeared, was appropriately embarrassed and we had the funds from Loan Council within weeks and, of course, repaid within 10 years. " (Respondent 1003, Private Address for 10000 Friends of Greater Sydney 2009).*

Through all this redevelopment the administrative structure of the organisation

stayed largely the same. This stability in administration, both in the bureaucracy and

in the government, is a defining hallmark of Qld that was identified by all respondents

as critical to Qld being able to reinterpret ideas and apply them in a way that was

seen to be beneficial to the State's interests. The final feature of Qld that was

identified by all was the role of the narrow gauge in creating an 'island' where it was

harder for outsiders to penetrate and which assisted in providing the time for more

adaptive change facilitating the 'best deal' for the local in the face of global forces.

Queensland it was suggested was further advantaged by the relative size of

Brisbane City Council. Many respondents pointed to the significant size and political

power of Brisbane City Council as enabling a singular approach and a single critical

negotiating point for key decisions, relating to the development and management of

the city. For example,

> *"Brisbane is the largest council in Australia...responsibilities have included water, power and transport." (Respondent, 1053, 7 December, 2009).*

> *"BCC is large! In planning terms it often did more than the State." (Respondent, 1055, 7 December, 2009).*

"Winston Churchill had commented at the time that 'the Lord Mayor of Brisbane was the most powerful person in the world'." (Respondent, 1013, 8 October, 2009).

"Brisbane can plan better because it's one administration. Its structure is homogeneous within itself. There isn't duplication. It's big enough so that it can employ enough good people. It's got scale. Brisbane has a deliberate process and clear decision-making processes that have been streamlined overtime." (Respondent, 1033, 8 October, 2009).

The excerpts from extensive interviews (sometimes up to 12 hours in length) above illustrate the key institutions involved from very personal perspectives during this formative period in Qld railway development. These institutions were: The State Cabinet – the importance of rail was such that critical decisions were beyond the preview of any one minister; the Transport Unions – indeed one could argue that it was the whole union movement (This has been extensively documented in several theses (see for example Cribb, 1972; Fleming, 1998; and Stevenson, 1988); the Catholic Church - particularly the role of the Catholic Social Studies Movement – 'the movement' - in breaking up the unions. This has also been extensively documented in Stevenson (1988: 210 – 216) and coined the 'railway family' in Qld. Indeed, it can be argued that this 'family' was the dominant institution in this key period of Qld rail history, having its own norms and rules which governed the individual and collective action of its members. However, the resilience of this institution was to be challenged in the next key period in Qld rail, associated with corporatisation.

5.5.　　Corporate QR – 1991 - 2000

By the late 1980s there was significant impetus for rail reform. The most pressing issues were: the increasing deficits of state rail authorities and the consequent need to reduce costs and increase revenues; increasing pressure from

industry for more efficient service provision; increasing modal competition; and increasing calls for increased contestability in state owned enterprises which culminated in the implementation of National Competition Policy in 1995 (Wills-Johnson, 2007; Walker, 2006; Productivity Commission, 1999) as discussed in the previous chapter.   As on respondent noted,

> *"In the very early 90s in relation to neoliberalism the situation of QR was that we were ripping the coal industry off. We were a monopoly with a schedule of rates. We had a large country freight network and there was a cross subsidy of $500-$600 million a year. And competition was in the wind…" (Respondent 1021, 7 December 2009).*

In 1992 the Economic Planning and Advisory Council estimated that returns on all public railways systems in Australia were a negative 11.5% (Baber, 1994: 573) (Table 5.5.1.), however Qld was the best performing state, both on account of the way in which freight charges from the mining industry bolstered its bottom line, but also, importantly, because it took action much earlier to improve the financial performance of the railway. In this important respect, Qld provides an example that differs from NSW and, indeed, the rest of Australia. Perhaps this is in part because the Ministers would take time to talk with and listen to their senior bureaucrats. This key difference from NSW was noted by many respondents for example,

> *"… Here if you have vision they want to talk and listen… The Minister was very easy to talk with. It was easy to access the Minister. The Minister wanted to talk, wanted to hear what you had in mind for the place….In Queensland if you have a plan for the future and you're able to convince the government they let you do it. It's much more stable here. There is a respect for ability" (Respondent 1021, 7 December 2009).*

Table 5.5.1 Australian Rail Deficits by System 1982-83 to 1993-94

Year	Commonwealth	NSW	VIC	QLD	WA	Total
1982–83	-122	-592	-354	-143	-11	-1 222
1983–84	-124	-605	-748	-79	-42	-1 598
1984–85	-84	-639	-940	41	-11	-1 633
1985–86	-74	-687	-1 022	52	-9	-1 740
1986–87	-67	-746	-954	52	-13	-1 727
1987–88	-64	-805	-871	47	-5	-1 697
1988–89	-59	-1 050	-973	6	0	-2 076
1989–90	-58	-549	-1 047	11	-29	-1 672
1990–91	-87	-590	-1 026	3	-12	-1 713
1991–92	-139	-649	-910	69	-31	-1 660
1992–93	-80	-535	-832	90	-19	-1 376
1993–94	-55	-578	-747	-9	-44	-1 433
Total	-1013	-8 025	-10 424	140	-226	-19 547

a   Commonwealth figures include AN and NRC, including AN's intrastate services in Tasmania and South Australia.
Source BTCE, ABS unpublished data.

Source: BTE, 1995: 11

During this period there were a number of reviews of the industry by the

Federal Government where the ideas that were eventually implemented in the late

1990s were developed. In 1991 the Industry Commission (Industry Commission,

1991) recommended increased competition, and commercialisation including

increased competitive outsourcing and tendering, increased flexibility in the

management of labour, and the separation of internal units to facilitate the operation

of a funder / provider model where costs could be transparently managed. These

ideas were pushed further by National Competition Policy with the implementation of

open access regimes for rail where the role of the infrastructure operator was

separated out and multiple operators could access the network for fees. In 1998 the

Productivity Commission was asked to review the progress in rail reform. The

findings were that more could be achieved principally by: structural separation – into

discrete businesses; horizontal separation – product separation and reduced cross

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subsidy between freight and passengers; and vertical separation – above and below rail operations (Productivity Commission, 1999:92; Wills-Johnson, 2007: 1-3; Walker, 2006; 5: Everett, 2006).

These policy actions which were pursued by all Australian governments at all levels did involve significant moves to: increase competition (through increased contestability and market tendering); increase the involvement of the private sector (through privatisation and outsourcing); increase pressure for government owned enterprises to act as businesses; and reductions in the role of government in service provision to reduce direct expenditure outlays. These policy stances are all consistent with the pursuit of a neo-liberal agenda. However, the driver for the change was in general the growing financial difficulty which the state rail budgets were presenting for state and federal treasuries. The neo liberal ideas which were almost uniformly adopted in Great Britain and Europe as well as Australasia (Wills-Johnson, 2007:1) in the rail sector were just the latest wave in the series of waves that have swept through railways since their inception to deal with common problems of finance, borrowings, debt management, stakeholder management and supplier management. What is interesting is that Qld was again different.

Competitive reforms to rail began earlier in Qld then elsewhere in Australia. In the early 1980s in response to increasing deficits the government set targets for revenue and resources to achieve break even, non-performing assets were divested (these included non performing lines), profitable niche markets were exploited, and there was renewed focus on labour productivity. At the same time common carrier obligations were all but abolished as was legislation that restricted the carriage of some goods to rail (Wills-Johnson, 2007:2).

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However, despite significant staff reductions (from 26,000 in 1983 to 21,000 in 1989) and a move to more commercial operation – 'the business railway' – the financial breakeven point was not achieved. This contextualised the decision of the newly elected Labor government in 1989 (led by Premier Goss) to release a Green Paper on Corporatisation in 1990, which paved the policy landscape in favour of corporatisation. Along with this went a major restructure away from the regional and engineering focus that had been in place since the 1880s to a more customer focused corporate structure (Qld Government, 1999: 3). As Barber notes there was a significant turning point in rail policy in the early 1990s which forced the change in organisation and culture,

"The political ideology of Queensland changed with the White Paper on Corporatisation which was released in March, 1992 together with the State Economic Development Policy which was released shortly afterwards. Previously, successive state governments had sought to balance the twin objectives of maintaining a competitive export coal industry and producing a return to the ultimate owners of the resource, the Queensland public, through QR coal rail freight charges. The Goss Government, faced with competitive world pressures in the coal industry, realised that the twin objectives had to cease and now the single objective is to enhance Central Queensland's coal export competitiveness with a Coal Rail Credit Scheme under which rail freight charges for export coal are based on an escalation formula in line With changes in the CPI. This change in political ideology translated into a change in organisation culture of QR from one of public benefactor to commercial corporatisation." (Barber, 1994: 563).

The first administrative reorganisation then was in December 1989. There was an amalgamation of all transport functions in the public sector into one integrated and streamlined Transport Department. It was a merger of the former Departments of Transport, Harbours and Marine, and Main Roads. Queensland Rail was included as part of the Department's structure until 30 June 1991 when it was restructured along commercial lines as a separate organisation under the Transport Infrastructure (Railways) Act, 1991.

The reorganised Transport Department was headed by a Director-General who was supported by four Executive Directors, the Commissioner for Railways, nine Divisional Directors and five Regional Directors. The responsibilities of these Executives included major policy issues, and the monitoring of programs. Divisional Directors were responsible for developing and implementing specific policies and programs (Queensland State Archives Agency ID385, Transport Department).

The Transport Infrastructure (Railways) Act was the most significant legislative change to impact Qld railways since the changes in the 1930s. This Act allowed Qld Railways to operate on a commercial basis as a State owned corporation. The new Act also established a Board of Directors to oversee the commercial direction of the Railway Department. The restructure of 1991 established four business groups: Passengers, Coal and Minerals, Freight and Workshops; and three support groups being: Corporate Services, Human Resources and Financial Services (Queensland State Archives Agency ID366, Railway Department). This change was described by one of the respondents,

"…With the change in government the environment was one of change. The government sacked all the Director-General's except me, the head of the Police, and Department of Transport. I had a view, I told the truth and my plans were accepted…. They (the other States) had treated us as the mendicant railway of the North, by the end of the 90s we led the nation. We became a nationally focused organisation….

So I ran a major internal program in the 90s that was about progress through people. There were significant barriers between different levels, the power in the organisations down low but it was locked in time. QR ran a major leadership program in the 90s and QUT helped out. In July 1995 QR became a modern corporate entity. The accounts went from cash to a modern business footing. …(Respondent 1021, 7 December 2009).

In Qld then the neo liberal ideas played out in transport as they did in NSW with this new legislation. However, in the case of the railway there was a very

significant difference. A key bureaucrat, the new Chief of the Railways (Vince

O'Rourke) influenced the Cabinet of the day to interpret the commercialisation and

competitive neutrality reforms in such a way that the railway was "kept together" and

the management of above and below the rail was not broken up as had been the

case in almost all other instances where these reforms had played out around the

globe. (Including NSW, as described in the previous chapter.) A critical meeting with

the Qld Cabinet was described by several respondents in the same terms. This

discussion was described by one of the respondents,

> *"Our belief was that QR was one QR and that we had the best narrow gauge railway in the world. We did our homework. We looked at the British rail experience. We saw what had happened in New South Wales and Victoria. We argued very strongly in 96 to 98 that the Queensland Railway should not be split up. They had a commission of audit that said QR should be split up. They wanted above and below rail as well. They did the lobbying etc. I argued that QR was like the US railways not like the British railways and that a vertically integrated railway here as in the US could be the best and most productive in the world. I played up the safety angle big time. The Swedish and the UK with the first to implement these ideas. I pointed to the outcomes there to highlight issues.*
>
> *I argued that we could review the method of managing a fully integrated railway and give effect to competition. I argued that Chinese walls between above and below rail groups could effectively deliver a competitive environment. Competition was just the first step towards privatisation sometime out in the future. Your sources are correct I did give an address to cabinet. Only the coalition wanted to break up rail.   Beattie believed that QR was right.   At the time David Hill didn't know what to make of all this stuff he could not believe it. QR has been strong the story of QR is the story of Queensland" (Respondent 1021, 7 December 2009).*

All respondents were in agreement that "Vince saved QR and Qld from the

worst impacts of neo liberalism" (as stated by one of the respondents). The thread in

all the reflections was that in Qld there was time to more fully consider the

articulation and implementation of the reforms and to develop them in a manner that

benefited Qld or at least damaged it least. This time to consider was provided by the

time given to new ideas, the time allowed for discussions between senior

bureaucrats and key ministers and the time provided by the narrow gauge which forced major adjustments on private sector participants who wanted to enter the Qld rail industry with the commencement of the open access regime. As one respondent noted the narrow gauge may have slowed the implementation of neo liberal reforms providing time for a more consider policy response,

"With the advent of competition policy the narrow gauge presented barrier to entry early up. Maybe we did slow it down a bit because of this"... (Respondent 1021, 7 December 2009).

The 1990s in Qld saw a major overhaul of the focus, operation and infrastructure. There were major investments in track, rolling stock and stations and complete review of the operation of the freight railway. Most significantly the focus of the entire organisation was changed to one of business and the customer. The aim was to establish a commercial railway and to support the continued economic and social development of the state. This transformation is described below by one of the key players.

"In the early 90s Goss went to Canberra and got rolled on the Grant's commission issue. We needed to find $100 million for investment. This is when we had to close down a third of the Branch lines. Country Queensland knew it was a major government issue. Goss made the announcement and the state went berserk, everyone worked for the railway. Within two weeks the government had to change the decision. Tom Burns had to go around Queensland and review the network. The community is very close to the railway up here. They can't take the pain of the southern states. In New South Wales the view is let's fight with them every day of the week. I would be firm but fair. I wanted to people to embrace the change. I saw that the union had a lousy job, they have lost 10,000 jobs in 10 years. I made the unions a partner. We were clear we were not going to do that they were doing in the southern states. Yes, we will do it but in a caring and sensitive way, we had to deliver the change but in an innovative way that delivered growth for Queensland. We had a clear growth strategy. The CEO, the minister and the Board were a team. Neville Blunt ran a very solid board. New South Wales was self-destructive. We had a vision for the passenger railway and a vision for the freight Railway. It involved restructuring, reorganisation new products, new development.

We were very conscious of history, were very conscious of the environment, we wanted to take the good things from the past with us. We established the railway

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museum in Ipswich, we reviewed and refurbished some of the workshops. David Hamel was visionary, a Rhodes Scholar, a courageous guy. We saw ourselves as part of the train industry. For example with the tilt train we sent people around the world and then I went and got the money. What will happen in the future? Queensland passenger rail will be hived off. They will split QR, coal will be privatised, and general freight will be run with the CSO. The track is where the money is" (Respondent 1021, 7 December 2009).

5.6. Conclusion

The same themes of change that were evident in NSW were important in Qld. However a comparison of the case studies shows that policy in both case studies changed as result of the emergence of ideas that capture advocacy within policy networks which are themselves part of the institutional structure. The policy responses varied in New South Wales and Qld in relation to the implementation of the same idea due to the impact of locally embedded economic, social and cultural forces shaped by the prior economic histories and the respected geographies of jurisdictions. Intergenerational learning described by North is a powerful force that can be observed to be operating within the cultural dynamic in both NSW and Qld. Strategies that were successful were copied and embellished by future generations of policy decision makers.

In all cases a precondition for a change in policy was the emergence of a policy window created by a disruption in the prevailing stability caused by an event or crises that punctuated that equilibrium. The ability to implement change was limited by the lock in effects of prior policy decisions. So communities, cities and regions created or at least constrain their own futures by their past decisions and the associated created economic history.

In relation to the case study analysis five sets of ideas serve to exemplifying this finding.   First the idea that rail investment was essential to support the emerging industrial development in the mid 19th-century and that it led directly to social and economic prosperity of communities, towns, cities, regions and nations. Second the notion that motorised transport would solve both the financial problem of the railways and the perceived need for seamless transportation.   This idea gained currency after the First World War. Thirdly, the idea that took hold from the 1960s that freeway development was intricately and intimately associated with the development of successful global cities.   Fourth, the rail rationalisation ideas of the 1960s that were associated with Beeching and led directly to the commercialisation of railway investments and government railway organisations as well as the rationalisation of the associated railway assets. And finally, the neo liberal ideas that took hold from the mid-1980s and drove massive restructuring and rationalisation in road and rail sectors in both the case study jurisdictions, however took root in starkly different ways between the two states.

All of these ideas originated in powerful policy arenas and were transferred and transmitted through a range of networked policy communities that are themselves globally connected to educational, political, industrial, commercial and financial networks that are global.   What they had in common was that they all addressed a need or a gap that emerged in the institutional fabric and required some form of fix to enable the regime to continue to operate effectively. In the case of rail transport infrastructure the fix had significant spatial implications. Rail lines spread out across regions connecting them to remote markets across the globe through aligned connectivity in port and shipping transport infrastructure.

At the local level agricultural and mining enterprises flourished as rail transport reduced transaction costs and shrank the distance between places by reducing the transit times. Towns and cities grew up around railheads, fleet construction and maintenance depots, rail facilities and the location of aligned industries.

In essence the ideas provided a correction within the prevailing institutional regime, extending its life and allowing it to continue to function. In two instances, it could be argued that the sets of ideas themselves signalled the emergence of a new institutional regime. These ideas were the railway ideas of the mid 1850's that signalled the hegemonic phase of the industrial revolution and the motorised transports ideas of the early 20th century that signalled the emergence of the Fordist regime. This is because the mode of transport itself was central to the success of the prevailing institutional regime. The relative dominance of the transport modes were part of the economics of the regime and the ideas that took hold to support and reinforce it. The transport mode itself unleashed forces which had spatial elements that were transformative for places and for place making. This is because they were key mechanisms in the spatial fixes that were associated with the regime.

6.   NSW Roads

"Road transport is the dominant mode of transportation in Australia and around the world and it is a vital link that brings people and goods together. In the last 40 years, there has been an enormous expansion in vehicle fleets around the world. Even with limited change in the distance travelled per vehicle, this translates to a corresponding huge growth in traffic levels..." (BITRE: 2012:1)

"In Australia, as in other countries around the world, traffic growth has been a feature of the post World War Two experience. The automobile and commercial vehicles have multiplied, as living has increasingly been intertwined with mobility. And yet in spite of its obvious benefits, traffic growth presents one of the key challenges to those tasked with assuring the continued benefits of mobility. It is therefore important to understand the nature, causes and outlooks for traffic growth." (BITRE: 2012:71)

"Over the years, and particularly since the end of the Second World War, many Australian cities have gradually transformed from quite tightly knit layouts (typically well suited to passenger movement by mass transit systems), to more sprawling suburban (generally low-density) configurations. This transformation of urban form – as the major cities have tended to grow ever outwards, often leading to longer and longer average trip lengths – has been accompanied, and assisted, by considerable improvement and spread of road systems and an even faster expansion in car ownership. Another factor … is this rapid escalation of car use (especially in the post-war era), leading to the current dominance of private motor vehicle travel, in terms of aggregate km share, within the Australian urban transport sector." (Cosgrove, 2011: 11)

6.1.   Introduction

The quotes above relate to the hegemonic period in road management which dates from the late 1930s and became entrenched after the Second World War. This chapter outlines the history of road agencies in NSW from first European settlement until 2000.   It highlights the role of the state road agency and argues that while it has undergone several branding changes it has essentially remained unchanged since the creation of the original Department of Main Roads in the 1930s. An understanding of the relationship between the road agency, local government

and the Department of Planning is critical to understanding how the road agency has come to dominate not just road construction and management but land use planning in Sydney and the other major urban areas across the State.

The economic, social and political reach of any road agency is reinforced by a range of established formal and informal networks that are closely managed at all levels of geographic scale and result in significant advantages through the sophisticated management and application of knowledge. In line with Ettlinger's (2003) analysis these multiple networks of confer advantage and enable networks to influence economic practices. The relational geometry is especially dense in the road regime's institutional arrangements and the interconnections and interactions contributes significantly to the level of power embedded in the networks. As one respondent noted,

"There has always been an interchange of ideas and knowledge between the road agencies. Far more then in rail. Commissioners of Road agencies met formally twice a year. My first meeting was for 3 days. It is enormously collegiate. We funded ARRB to provide technical development and AustRoads to promote interchange. We networked globally eg USA for traffic management technology and transport planning. We became very good at managing knowledge. The Australian highway organisation then transferred skills into Asia. Rail always highly operational; Rail engineers always working through how we are going to operate things more efficiently......" (Respondent I013, 8 October, 2009).

These networks have enabled the road policy arena to become incredibly strong, highly adaptive and resilient with embedded structures and processes for attaining knowledge that ensures its ability to remain relevant. This arena which is supported by extensive connected networks operating at all scales from the neighbourhood to the global. They are extensive in their coverage (health, education, military, commerce, banking, legal, global firms, universities, research organisations, unions, professional and industry associations). This arena has

demonstrated the ability to extend its policy reach into a large number of adjacent and overlapping policy arenas (land use, urban form, and local, regional and national planning and economic development) largely through the effectiveness of the central state authority in structuring its power base. Critical to this networked power structure is the relationship with local government which has grown up from the role of local government in relation to road ownership and shared management. As one respondent noted,

"Local government (Councils) are an extension of the RTA." (I168, 4 November, 2009)

An institutionally based understanding of the operations of road agencies seems critical at this point in time, where, during the first few years of the 21st century, vehicle kilometres fell in Australia (Figure 6.1.1.). The analysis of pre-2000 institutional arrangements presented in this thesis provides a basis for comprehending how these new trends will affect policy contexts. Will this policy area be resilient enough to adapt so that it reinvents itself to align with the new demands for mobility in a way the railways failed to do from the 1920s onwards?

Figure 6.1.1 Australian Trends in Vehicle Kilometres Travelled
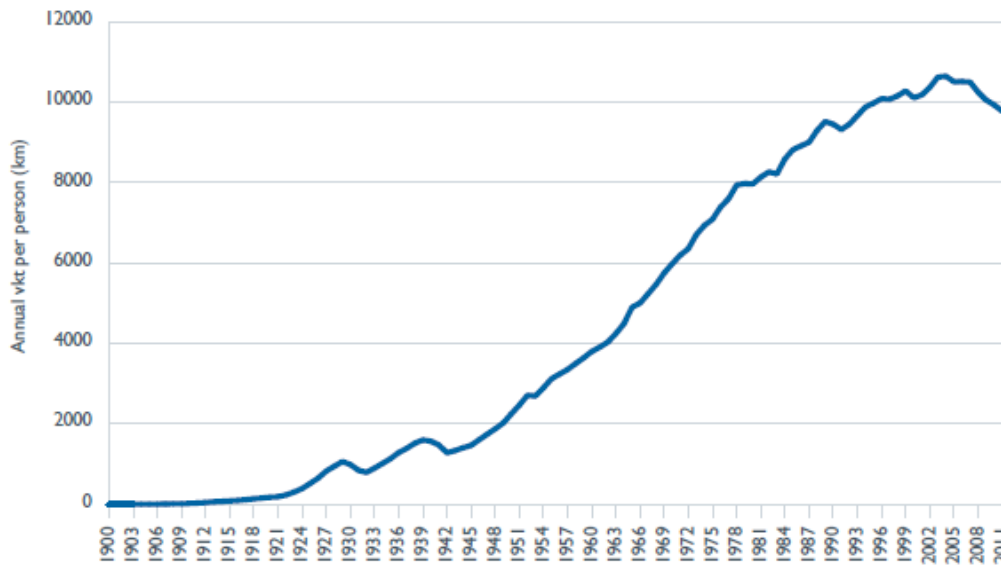
(Source: BITRE, 2012: 2)

Perhaps the answer lies in this observation by, one respondent who described road authorities as fundamentally different from railways. The respondent made the point that road authorities are

"'below road thinkers'...that '...they provide a network for third parties to use..' and that "..they were never expected to cover costs" (Respondent 1009; 2 October , 2009).

Moreover, this respondent also made the point that,

"Joe Public (everyone) uses roads. Road quality is discussed by all. Politicians use roads, most never ride on trains and they are not aware of quality differences." (Respondent 1009; 2 October, 2009).

Hence, the social and political positioning of roads is quite different to that of railways. It is not a separate, permanent way but intimately connected with how every person goes about their daily life; even if they do not own or ride in motorised transport they are road users. This high level of connectivity both generates conflict and creates a basis for ongoing discourse which is never far from public attention.

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This chapter will attempt to explain the size, power and significance of the road authority in NSW in relation to transport and landuse planning highlighting its significant impact on urban form.

6.2. Early Road Building 1788 – 1924

Prior to European settlement the Indigenous people used tracks[53] some of which showed signs of some level of construction. In the first years of European settlement the rivers were heavily used as transport routes but by the 1790s the two roads connecting Sydney with Parramatta and Windsor had become important[54]. Road construction was a major part of the influential agenda of Lachlan Macquarie (NSW Governor from 1809-22) and he oversaw significant road development[55] (making extensive use of private contractors as well as using convicts), which included the establishment of tolls on most roads, and the introduction of basic traffic management (for example registration of carts, restraints on the weight of vehicles and wheel widths and the 'keep to the left rule').

By 1830, most land along the roads had been settled as roads formed the boundaries for land grants. They also formed the boundaries for the Parishes when they were set down. Roads initially connected settlements within the County of Cumberland and then moved out as settlement spread into the Picton and Goulburn Plains and then into the Illawarra. Arrangements to finance roads were formalised in 1832 with an Act that provided the ability to levy tolls generally on roads. In 1833 an

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[53] See McBryde, 1978 (cited by Kass, 2006).

[54] In 1805, a voluntary committee of officers and other notables was formed to collect contributions to keep the two main roads in repair (Kass, 2006:11).

[55] Macquarie developed Windsor Road, Liverpool Road, and the road over the Blue Mountains.

Act was passed which separated main roads which were to be funded by a levy upon from the whole colony from local roads that were to be funded by local inhabitants.

In 1837 responsibility for road construction was moved from the Surveyor-General's Department to the Royal Engineers. From the 1830s and into the 1850s roads pushed south (to Goulburn and Wollongong), west over the Blue Mountains (to Bathurst and beyond) and north (to the Hunter and beyond)[56]. In 1840 the colonial government sort to pass responsibility for roads to local land owners with the Parish Roads Trust Act. This Act established road trusts to maintain roads, to levy a rate on local land owners, and to raise tolls. This has been seen as the first attempt at local government in NSW. The Act was flawed however and little used. From the late 1840s special Acts setting up individual road trusts or road trust areas were passed (for example for the Sydney Suburban Roads Act, the Cumberland Roads Act, and the Maitland Roads Trust). The decay of the roads and the failure of the councils that were to manage them led to a Royal Commission into the administration of roads by the Surveyor- General in 1855. In 1856 the responsibility for roads was transferred to the Public Works Department.

The 1850s was also the commencement for railway building in NSW. The enthusiasm for railways saw the already bad condition of roads worsen as the railway was seen as the answer for long distance travel. From this very early time road and rail development exhibited a level of competition which was strongly related to the demand for funds but also to the various interest associated with the modes that had a stake in their development. Hence, the new Commissioner for Railways

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[56] For extensive detail refer to Department of Main Roads, 1976

(Martindale) who also had the lesser responsibility for main roads[57] recommended a relatively cheap form of road construction. The surveying and alignment of roads remained with the Surveyor-General (later the Department of Lands).   Martindale developed a district based organisation for road management. No major changes were made until Bennett was appointed Commissioner and Engineer-In-Chief for Roads in 1862.

Bennett set out a list of prioritised road works in 1865. However, from the 1860s into the early part of the next century the success of local members was heavily dependent on their ability to lobby for their electorate and gain railways, roads and bridges. This power broking behaviour in relation to roads was no different to that which applied to railways in both NSW and Qld. Communities formed coalitions to lobby for local infrastructure in an effort to develop their towns and regions. The need to appease this local lobbying undercut the ability of the Public Works Department to provide a transport network based on an overall state plan. In addition, in these 'boom railway' years, roads remained at the bottom of the transport hierarchy and were seen as feeders to river ports and railways. Railways not roads were the drivers of settlement and the growth of towns. Once towns were established and motorised transport was available, roads could expand the trade district of towns empowering their growth. This was a period of rail hegemony and roads were not as important and were not seen to warrant investment. The discourse was all about railways and how they would inevitably lead to prosperity for communities and regions.   The railway 'idea' was dominant.

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[57] The Main Roads Management Act (21 Vic No 8) of June 1858, made Martindale responsible for the three main roads leading out of Sydney to the north, south and west.

In 1858 the Municipalities Act[58] enabled the creation of local government authorities. They would have the responsibilities for local roads in their areas. However, the Act was not well constructed and many local government areas were too small to raise sufficient revenue to support local roads; a problem that continues in NSW into the present day. By 1865 there were 34 toll bars and 5 toll ferries and 3,286 miles of minor roads had been transferred across to Public works in 1864. Large parts of this network were then transferred in road trusts[59]. Major road works in the 1860s and 70s were in the north of the state around Armidale, Kempsey, Glenn Innes and Grafton. The mineral development in the west of the state was dependent on a mix of river, road and rail transport. The Barrier highway (to the mining town of Broken Hill) was not complete until well into the 1930s.

In 1906 the Local Government Act devolved responsibility for roads to councils and all roads and bridges except those declared those declared as National Works were put under the control of Councils. Public Works remained responsible for National Works and for road development in 'closer settlement' areas and some key urban redevelopments. The closer settlement work increased after World War 1 with the solider settler grants creating the need to enable access for the farmers to market.

To provide funding about 150 roads were declared as Main Roads and received funding from 1913 onwards. In 1924 the list of Main Roads was increased. Under this system of administration the roads still fell into disrepair because only a limited number of roads were declared under the legislation and could receive

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[58] For detail on the history of local government in NSW see Larcombe, 1973

[59] South Head, Maitland, Penrith, Parramatta, Campbelltown, Liverpool, Windsor, Richmond, Narellan, Randwick-Coogee and Sydney (Kass, 2006: 20)

funding. This led road users (who tended to be the well-off section of the community) to lobby for increased road funding through the automobile associations (first formed in 1903). Indeed, when the National Roads and Motorist's Association was formed in 1923 one of its main aims was the establishment of a Main Roads Board to maintain and construct roads and resume land for future roads.

Much of the legislative tinkering with institutional arrangements for roads in the period prior to the 1920s was really concerned with funding. It was not until the road lobby became organised and the road use by motorised vehicles reached a level that impacted political power in the early 1920s (refer to Figure 6.2.1) that the roads policy arena was catapulted into a new policy window which would lead to its hegemonic position for nearly a century.

Figure 6.2.1 Mode Share of Urban Passenger Task 1900 - 2010
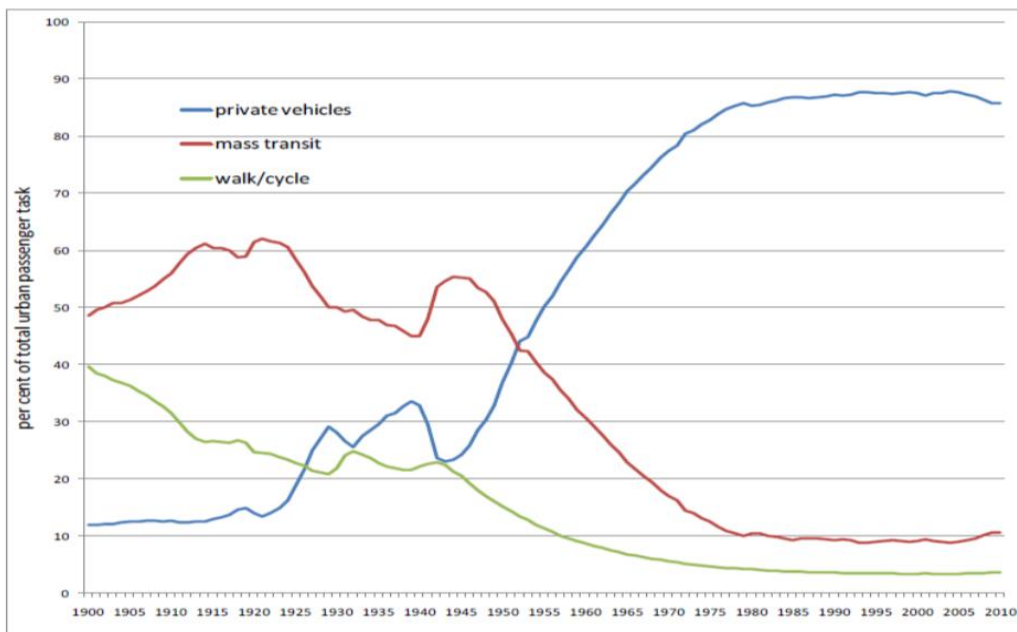
Note: Share due to 'private vehicles' is mostly from passenger cars, but also has some contributions from other road vehicles such as light commercial vehicles (LCVs) when used for non-business purposes, and motorcycles (and for early years also from horse use – such as for private carriages). Values for 'mass transit' include passenger task performed by all metropolitan buses, ferries, light rail and heavy rail (including early horse-drawn transit vehicles).

(Source: Cosgrove, 2011: 12)

Returning soldiers from the First World War and the need to accommodate

them both in employment and residence created an interruption allowing a policy

window for increased road funding through Federal road grants. The federal

government first commenced funding for roads in 1923 under the Main Road

Development Act. Grant money could be used for three categories of roads[60] and

the funds were allocated through the Department of Local Government and later the

Main Roads Board. In 1924 a Bill to establish a Main Roads Board was presented to

the NSW Parliament. The new legislation represented a radical departure from

previous transport legislation in that it signalled the acceptance of the 'age of the

motor vehicle'. As Kass notes,

"The intention of the Main Roads Act was to create an authority, which would
provide a road system suitable for the motor age, a radical departure philosophically
from previous transport works. The Act signalled the acceptance of the motor age in
NSW" (Kass, 2006: 28).

This was not the first Main Roads Board in Australia; the Victorian Country

Roads Board was established earlier. Again like the early rail institutional

arrangements, these were not isolated but rather they can only be understood as

artefacts of the regime. They were similar everywhere and it was part of the

articulation of the policy virus associated with the rise of motorised transport.

6.3.   The Main Roads Board 1925 – 1932

The Main Roads Act[61], came into force on the 1 January 1925 and provided a

Main Roads Board[62], consisting of three members - a President who was the

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[60] The three categories were: Main Roads (opened up new land for primary industry); trunk roads (that
connected settlements with no railway); and arterial roads (where there was insufficient local finance).
[61] Act No.24, 1924

permanent head of the agency; and two members. Two of the members were required to be engineers with special knowledge of road construction.   The function of the Board was the management, maintenance and development of Main Roads. (More specific details are provided in Appendix G.) Initially the Board had difficulty attracting staff, with both Local Government and Public Works lobbying to reduce its role. The government clarified its role in 1927 (see Figure 6.3.1 below) and the Board was able to proceed with its mandate.

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[62] "The Main Roads Board was a body corporate, that is, it had perpetual succession, a common seal, the right to sue or be sued in its corporate name and to purchase, own and dispose of property. The decision of the majority of the members was a decision of the Board. Two members of the Board formed a quorum. If only two members were present at a given meeting, any matter on which they disagreed was to be deferred until a meeting at which all three members were present when the matter was discussed again and a vote taken. The Board was required to record and retain the minutes of its meetings, and both an annual report and statement of accounts were to be presented to Parliament via the responsible Minister. The Board could appoint staff to assist with the performance of its role (State Archives, Investigator Agency 703).

Figure 6.3.1 Structure of the Main Roads Board – 1927
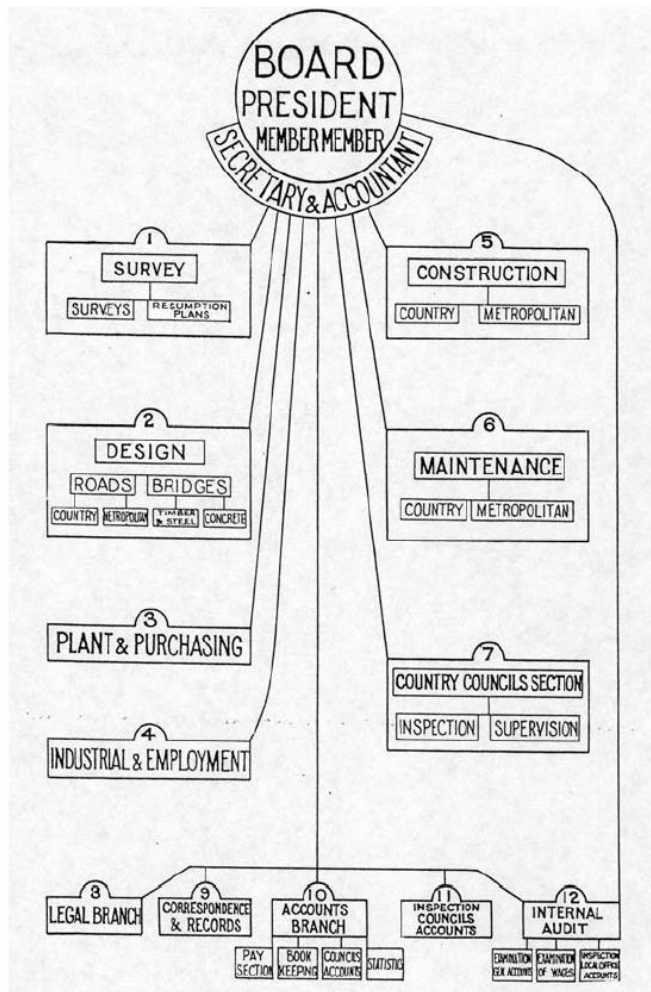
(Source: Kass, 2006: 29)

The Board undertook its work in a professional and systematic fashion having
inherited a somewhat 'patchwork' collection of main roads that had previously been
managed by a range of councils and local road trusts. For example, to inform road
design and construction, the Board undertook a traffic survey of the weight and
characteristics of vehicles using minor roads. It also established standards for
kerbing and guttering, road drainage, road surfaces, road width, side streets, and
signposting. The Board also experimented with concrete roads and pipes.   The

quote below from State Archives explains the main road system that the Main Roads

Board inherited,

> *"Before the Main Roads Board was formed, portions of several main roads had been reconstructed either by Local Councils financed by Loan Funds or the Public Works Department using money provided by the Treasury through the Local Government Department. The Main Roads Board therefore inherited a discontiguous road network. Not only had the roads been constructed by various authorities but they were composed of different materials including experimental surfaces. Sections of roads that passed through more than one municipal authority were of various ages, compositions and states of repair causing hazards and inconvenience to traffic. Early policies of the Board therefore concerned filling in 'missing links' (poorer sections of roads) and 'missing ends' or incomplete extremities of major roads radiating from the City of Sydney"* (State Archives, Investigator Agency 703).

The main road system was reclassified in 1928 with Country Main Roads

divided into the three "classes": State Highways; Trunk Roads; and Main Roads.

Metropolitan roads were either State Highways or Main Roads[63]. Co-ordination of

road construction and tramway development was defined in 1930 by the Transport

Act 1930 which detailed the arrangements and responsibilities of the various

agencies. This classification framework and the network of relationships with local

government and other transport agencies created a base for a powerful network with

a reach from neighbourhoods and local communities (through councils) to global

industries through the industry supply chain and professional associations

(particularly the engineers). It was reinforced by the connected and well organised

motoring associations which from very early days had global linkages.

The Main Roads Board was abolished and its powers were transferred to the

State Transport Commissioners by the Ministry of Transport Act, Act No. 3, 1932.

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[63] These new classifications were given statutory force in the Main Roads (Amendment) Act, 1929. The Act also enabled the Main Roads Board to assist the Water Conservation and Irrigation Commission (defined for these purposes as a shire council) in the construction of main roads in the Central Division of the State; and extended the Board's jurisdiction to the Western Division of the State (State Archives, Investigator Agency 703).

This administrative arrangement was changed by the Transport (Division of Functions) Act in November 1932 which established the Department of Main Roads.

## 6.4.	The Department of Main Roads 1932 – 1956

In 1932 the Transport Act established a Ministry of Transport[64] responsible to the Minister. The various transport agencies were grouped together into three Departments each under a Commissioner (Railways, Road Transport and Tramways, and Main Roads). Under the Commissioner for Main Roads the geographic organisation of the agency was unchanged. The Metropolitan Highway Division[65] and the six country highways divisions remained. In the late 1930s the number of registered motor vehicles expanded rapidly (refer to Table 6.4.1 below) as did the size and responsibility of the DMR[66]. Additional administrative Divisions were created in the city (Outer Metropolitan 1 and 2 at Petersham and Chatswood) and the country (centred on Bega, Grafton and Broken Hill). Legislation added responsibilities relating to the Western Division, roadsides and guttering and the ability to charge councils for work.

The traditional and enduring structure of the Department was noted by one of the respondents,

"The DMR had a simple corporate structure. There was a Commissioner and Deputy Commissioner. The state was divided into regions called Divisions the Divisional Engineers had full authority within the region reporting to the Commissioner. In the early years there was seen to be a need for a professional structure. There was a Chief Engineer who progressively developed Functional

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64 Refer to State Archives, Investigator Agency 3819 for detail.

65 Refer to State Archives, Investigator Agency 4022 for detail.

66 Refer to State Archives, Investigator Agency 2 for detail.

Heads to look at specific aspects, for example bridges, urban roads and rural roads. It was a traditional structure. There were about five Divisional Engineers prewar. They expanded into 11 or 12 in the mid 70s." (Respondent 0086, 30 September, 2009).

Table 6.4.1 Motor Vehicles Registered (Exclusive of Motor Cycles) per 1000 of Population 1921 – 1939

Year.	N.S.W.	Vic.	Q'land.	S.A.	W.A.	Tas.	N.T.	A.C.T.	Australia.
31st Dec. 1921	15	16	8	24	12	13	(a)	..	15
30th June, 1935	83	97	96	98	105	70	95	148	91
„ 1936	89	105	102	110	110	77	185	160	98
„ 1937	96	112	105	119	119	82	191	162	104
„ 1938	103	120	111	135	128	90	206	159	113
„ 1939	107	125	118	137	134	96	221	182	118

(a) Not available.

(Source: Commonwealth Bureau of Census and Statistics, 1940: 134)

At about the same time as the DMR was being established in NSW planners in the Unites States of America were responding to the challenge of accommodating the increasing number[67] of motorised vehicles on the road system. As Brown et.al. (2009) note,

"Adapting the form of recreational parkways, forward-thinking transportation planners like Lloyd Aldrich, Harland Bartholomew, Miller McClintock, and Robert Whitten began to devise plans for a new type of facility that they argued could cope with the increasing number of autos travelling at higher and higher speeds…The freeway borrowed two important design characteristics from earlier rural and suburban parkways: limited access and grade separation…The urban freeway was widely perceived at the time as an idea whose time had come. The issue was not whether they should be built, but how…Lewis Mumford saw limited access highways as suitable for connecting Garden Cities, provided that they were carefully coordinated with land use and urban design in order to minimize the auto's potential negative effects…Planners…naturally tended to emphasize the concerns of their clients. They proposed facilities designed to serve urban trips made by urban

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[67] Between 1925 and 1929 the number of registered vehicles in the USA increased from 20.1 million to 26.7 million – a 30% increase (Brown, et.al. 2009: 166).

residents; the facilitation of intercity through traffic was a secondary concern."
(Brown, et.al. 2009: 166 167)

The ideas of these early freeway planners are still to be found in the ideas being proposed today for road development projects for example, multi modal components integrated into freeways, surrounding landuse being woven into the plans, generating urban renewal with area redevelopment projects being part of freeway plans, and advance reservations of land to protect the right of way for the future freeway (Brown et.al., 2009: 168-69). By the end of the 1930s freeway designs had been completed for most major American cities.   The delivery did not meet the plans in most cases due to financial constraints and by the mid-1950s control over city transport plans had moved from the cities to the State legislatures as the power followed the funding mechanisms. This result was the transfer of power from the cities and their planners to the state based highway engineers who,

"…dominated state departments of transportation espoused a narrower, more technical view of transportation planning. They aimed to maximize safe traffic flows and to minimize costs while adhering to uniform design standards. Shifting control over urban highways to the states imposed this perspective on metropolitan as well as rural freeways…won the debate over urban highway development thanks in part to well-intentioned Progressive Era values that favoured expertise and science in the management of urban affairs…engineers were more readily perceived as experts than were the planners. Engineers could produce hard numbers,… could deploy scientific mathematical and analytical techniques…widely viewed as impartial and above the corrupt political fray, though in truth their choice of questions and methods did reflect their own biases and preconceptions…this engineering vision of urban transportation planning had political backing….engineers exerted more influence than any other single group…Thus began a new and narrower urban transportation planning mission, focused on congestion relief, higher vehicle speeds, and funnelling traffic into and out of city centres as safely and efficiently as possible." (Brown, et.al. 2009: 170 – 171).

These ideas were to find their way into road plans for Sydney after the Second World War.

During World War II the Department of Main Roads was heavily involved supporting the war effort[68] and much of the usual work was postponed. Some Divisions even closed for the duration of the War. Towards the end of the War the Department was concerned with planning for post war reconstruction including: restoring roads and bridges to their pre-war condition; resuming the construction program that was delayed by the war; developing a new road program to link towns and districts that had been growing; and re-surfacing state highways. Progress on these items which began in 1946 immediately after the War was hampered by shortages of materials.

In the late 1930s the DMR undertook a major review of the classified road network based on a set of principles which have remained largely intact through to the present day[69]. The Department used this review as a basis to begin to develop a plan for the future roads in the County of Cumberland. In the mid-1940s the Department undertook surveys of landuse, traffic flows and population densities, applying town planning approaches to the construction of its 1945 "County of Cumberland Main Road Development Map'. The plan included a large number of freeways which have now been built in Sydney primarily as PPP projects. This plan

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[68] This war work involved the following: construction of strategic and tactical roads and of roads in connection with military establishments; construction in conjunction with local government or roads to and within Commonwealth properties and of roads, paths and tarmacs of Royal Australian Air Force stations; strengthening bridges to carry military traffic and preparing works for demolition in the case of invasion; constructing concrete work for gun placements and making excavations for fuel depots; and building aerodromes, runways and dispersal areas throughout the State (State Archives, Investigator Agency 2).

[69] "…the DMR instituted a review of the Main Roads System in 1937-8, followed by an extension of the network. New State Highways, Trunk Roads and Main Roads reflecting the changing population distribution and traffic trends were proclaimed on the basis of the review. Hence, 1,359 roads were reclassified as State Highways. A total of 847 miles (1,363 km) were selected for proclamation as Trunk Roads and 910 miles (1,464.5 km) as Main Roads, although not all were proclaimed within the 1937-8 financial year. (Kass, 2006: 39)

was used by the County of Cumberland[70] (C of C) to produce its plan in 1946

(released in 1948). Indeed there is little difference between the two. The DMR Plan

outlined both Main Roads and Expressways. The County's Development Plan

included sketched-in roads and expressways (140 kms) and it acquired the vacant

land impacted by the proposed roads while the Department acquired developed

land. One respondent reflected on this work,

> *"In the late 50's the DMR appreciated that the focus was in the cities. It developed the first city plan for New South Wales. There was no department of planning. The road plan would lead to the County of Cumberland Plan and then to the Sydney Region Outline Plan. It established the first greenbelt For Sydney. From the late 50's until the 80's plans for Sydney and New South Wales were the output Of the Department of Planning. However the dominant authority was the DMR. The reason was financial. The planning authority needed the DMR's money to do the plans." (Respondent 0086, 30 September, 2009).*

The inter-departmental co-operation that emerged in this era was to morph

into the State Planning Authority[71]. Similar plans were developed for the Illawarra

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[70] The C of C has been described as "A second and more radical innovation in metropolitan governance was the formation of the Cumberland County Council (CCC) as a tier of government intermediate between local and state governments, to oversee preparation and implementation of Sydney's first statutory metropolitan plan. The Council was established under the provisions of the Local Government (Town and Country Planning) Amendment Act 1945, which enabled councils to prepare comprehensive local planning schemes for the first time. The process was overseen by a new Town Planning Branch in the Department of Local Government headed by Norman Weekes, with another new creation, the Town and Country Planning Advisory Committee, overviewing and providing high level ministerial advice.

Released in 1948 but not legally gazetted until 1951, the County of Cumberland Planning Scheme was once described as 'the most definitive expression of a public policy on the form and content of an Australian metropolitan area ever attempted'.27 With some inspiration from the famous London plans by Patrick Abercrombie, the County Scheme introduced land use zoning, suburban employment zones, open space acquisitions, and the green belt to Sydney. The Main Roads Department supplied a ready-to-go expressway network. Yet, despite the best intentions, the CCC was an overall failure. It met strenuous opposition from property owners and by the mid-1950s had 22,000 claims against it for 'injurious affectation' arising from County zoning.28 It also faced hostility from more entrenched state government agencies such as the Sydney Water Board and the Department of Housing. The green belt to prevent sprawl was the most contentious element, and land releases incrementally whittled it away to accommodate unpredicted population increases from international migration and the 'baby boom'. A breakthrough compromise was the securing of developer contributions to help fund infrastructure in new release areas."(Ashton and Freestone, 2008: 16 – 17).

[71] The SPA has been described by Ashton and Freestone (2008: 17 - 18) "From 1964 until 1974, broad responsibility for planning matters in New South Wales passed to the State Planning Authority (SPA). Unlike the CCC, it had significant powers to acquire and develop land as well as the ability to specify corridors for development and 'growth areas'. But it was also subject to direct ministerial control. In its 1968 Sydney Region

(Wollongong) and the Hunter (Newcastle) in 1952. All future plans for Sydney

including the current genre of Metropolitan Plans grew out of developments from

these early plans. A major innovation was the inclusion of all modes in the late

1970s with the Sydney Area Transportation Study (1974) which included public

transport on roads and railways as well as private vehicles on roads. From this very

early time the DMR established a strong voice and a significant level of influence

over planning. This was strengthened by the already strong relationship with local

government who also had a significant stake in planning.

The work of the Department changed radically after the war. As one

respondent reflected,

"The DMR was very different pre-and post-World War II. Before the war the task was very simple it was essentially keeping the motorists out of the mud and sealing the highway system in New South Wales.

After World War II it was a change in the development of cities. Cities became large population centres. Cities became the centre of the economy as distinct from the country which was important pre-war." (Respondent 0086, 30 September, 2009).

This change is reflective of what was happening with urbanisation in response

to changes in the broader economic structure and organisation of production which

favoured urban growth. The War unleashed innovation in vehicles, productive

techniques and the drive to modernise after the War created punctuation in the

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Outline Plan (SROP), the SPA identified a variety of options for controlling growth. These included settling up to 60,000 people at Menai, 1.75 million people in growth corridors, and 500,000 people in the Gosford–Wyong area.34 Given miscalculations, especially in economic trends and transport, the SPA helped create as many problems as it solved. This was symbolised in troubled social experiments at places such as Green Valley and Mount Druitt. The SPA's selection of places for growth also saw it ridiculed for providing land speculators with guides to getting rich quickly. Nevertheless, SROP set the basic blueprint for metropolitan corridor development in evidence today. Intervention in Mt Druitt town centre and the setting up of the Macarthur Development Corporation in 1974 signposted a more proactive implementation strategy by the state government.

policy equilibrium that required and enabled the change in road policy focus to shift to the urban area.

6.5.   The Department of Main Roads 1956 – 1989

By 1956 the extent of the sealed main roads had increased significantly (refer to Figure 6.5.1) and from 15 March 1956 the Department ceased to form a part of the Department of Transport and became responsible to the Minister for Highways. All Sections of the Department[72] expanded in the late 1950s in response to growing road use and the need to accommodate demand. By 1959 the Investigations Sections which had been established to review road proposals was augmented by an Advanced Planning Section which was tasked to identify and prioritise future road needs. By the early 1960s the urban issues were such that the Investigation Sections was divided into rural and urban specialities. By 1969 the complexity of urban property purchases required the formation of a high-level Property Committee. Again the 1960s was a decade of administrative expansion for the DMR with new Divisions being created at Bourke, Port Macquarie and Lithgow.

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72 Refer to State Archives, Investigator Agency 4023, 4025 for detail.

Figure 6.5.1 Extension of Road Surfaces from the 1930s
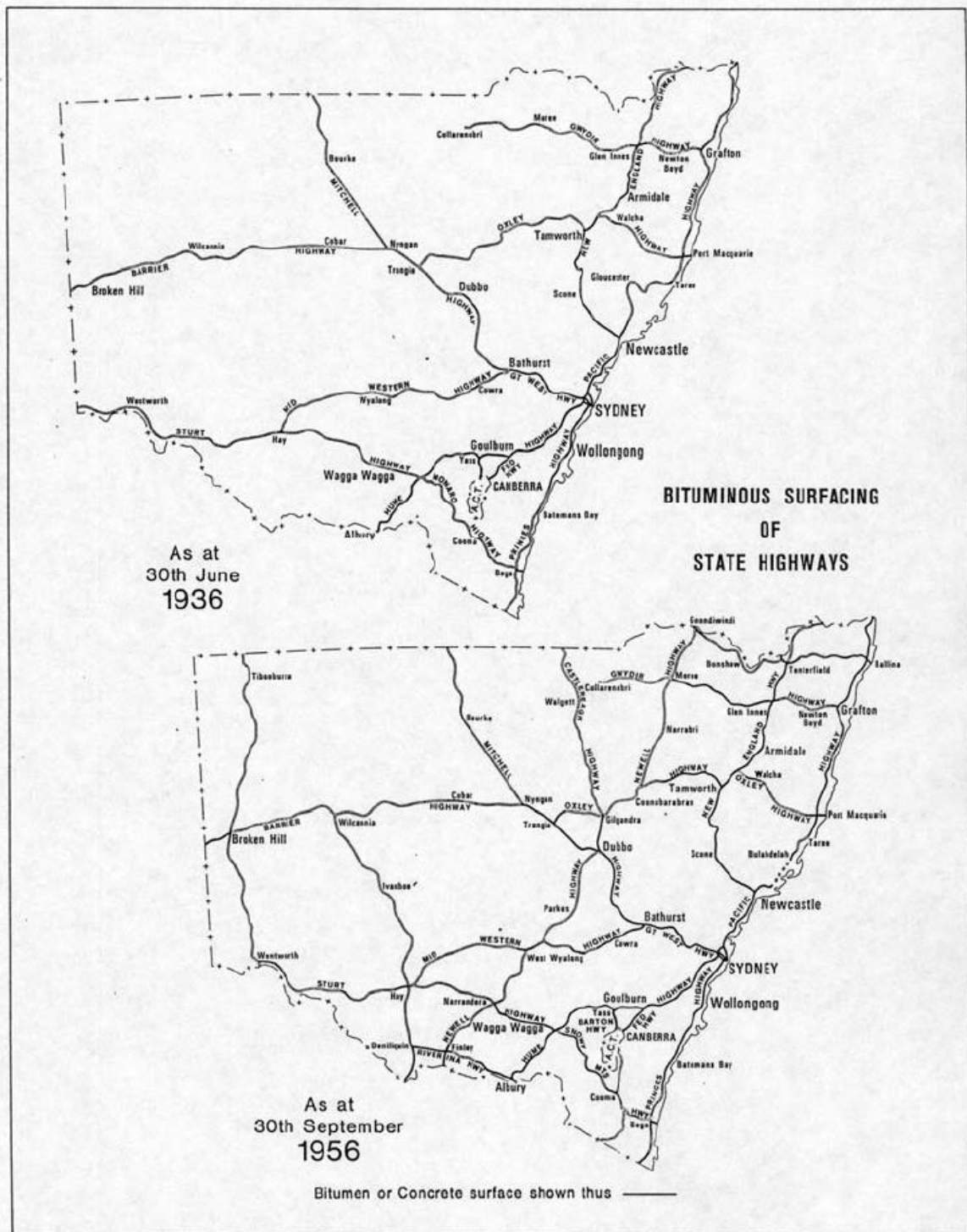
(Source: Department of Main Roads, 1976, 168)

By 1968 the Head Office of the Department of Main Roads was in the charge of the Engineer-in-Chief assisted by a Deputy and three assistant chief engineers. Reporting to them were 13 specialist engineers[73]. The Head Office also included the Principal Land Surveyor and Property Officer; Secretarial, accountancy and legal specialists.   Strategic management and design occurred in Head Office and Divisions were operational units responsible for constructing and maintaining roads and bridges and maintaining services.

In the 1960s, 70s and 80s the relationship between the two government agencies responsible for roads and planning which was formed after the war during the development of the County of Cumberland Plan was to become very important in the creating the shape of Sydney.   The early relationships were further cemented by the creation of powerful professional networks among senior officers.   The basis of the formation of these networks was an interest by the Commissioner for Main Roads in town planning. As one respondent recalled,

"He insisted that all the engineers completed a town planning course. He was an engineer but very switched on to planning. He may have studied in America. The 'new deal' under Roosevelt linked transport and land use. The only course at the time was a post graduate course at Sydney University. The Professor used group work in the course assignments; he chose the groups ensuring they were multidisciplinary. It was the most amazing thing. We got to appreciate each other's roles. The year I did Town Planning a lot were from DMR. Some ended up as future Commissioners. We formed strong connections. We had good relationships. The Town Planning course pulled us together. We all worked together. It filtered through to the wider work that was done in transport and planning with local government in NSW. These groups formed the basis of professional networks that are still place." (Respondent, 1079, 19 November 2009).

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[73] These were the Bridge Engineer, Road Design Engineer, Urban Investigations Engineer, Rural Investigations Engineer, Highways Engineer, Field Inspecting Engineer, Mechanical Engineer, Advance Planning Engineer, Engineer for Country Council Works, Traffic Service Engineer, Executive Engineer, Engineer for Standard Specifications and Technical Instructions, Materials and Research Engineer (State Archives, Investigator Agency 2).

A perspective on the State Planning Authority highlights how it created a powerful network of decisions makers among the key Departments Heads that enabled the important decisions to be made to support the growth of Sydney.

"The State Planning Authority was made up of State Government Departments including, DMR, Housing, Department of Transport, Treasury etc. It was a major step. It got all the main players together. All the Director Generals came together and made decisions. It was a major period as it was realised that Sydney would grow dramatically. There was both high immigration and a baby boom. This population growth had not been taken into account in the County of Cumberland Plan. The need for a new plan emerged and the Sydney Region Outline Plan of 1968 was completed. Sydney today is exactly like that Plan. Looking back it is quite brilliant. It was endorsed by the whole of government. There was general agreement on the direction for Sydney. Roads were the big issue. Housing got federal funding and was a big player. It was a huge program, they had to find land. DG's took it seriously. They went to every meeting. The Minister's had a lot of confidence in the DGs. It was not as political as things got later." (Respondent, 1079, 19 November 2009).

The 1968 Sydney Plan was remarkable because in an era when people were looking to the motorways of the USA and the tendency to build towns in relation to them the NSW government made a key decision that has been in place ever since and has been supported by successive governments. That decision was the centres policy. Centres were built in close proximity to major railways stations. Each Centre had its main shopping centre, schools, hospitals, economic, social and cultural base all located near the major station. Roads were seen as the connectors between the centres. The railway was not the driver in this planning. The railway itself (with the exception of the North Shore Line) was originally freight lines. Suburbs grew up along them coincidentally. It has been used as the major commuter public transport system mainly due to a drive to build patronage to improve cost recovery. The centres policy was an early idea to provide accessibility at low cost and had the impact of reducing total mobility. Interestingly, as in Qld when the idea dominant in

the discourse was adapted to suit the local conditions the outcome was generally more in tune with local needs.

By 1972 the roads built to serve in all weathers had expanded considerably (refer to Figure 6.5.2 below). The other significant change which had been coming through the 1960s was the change in the level of traffic (refer to Figure 6.5.3 below) which warranted more sophisticated approaches to management.

Figure 6.5.2 Extension of Road Surfaces by 1972
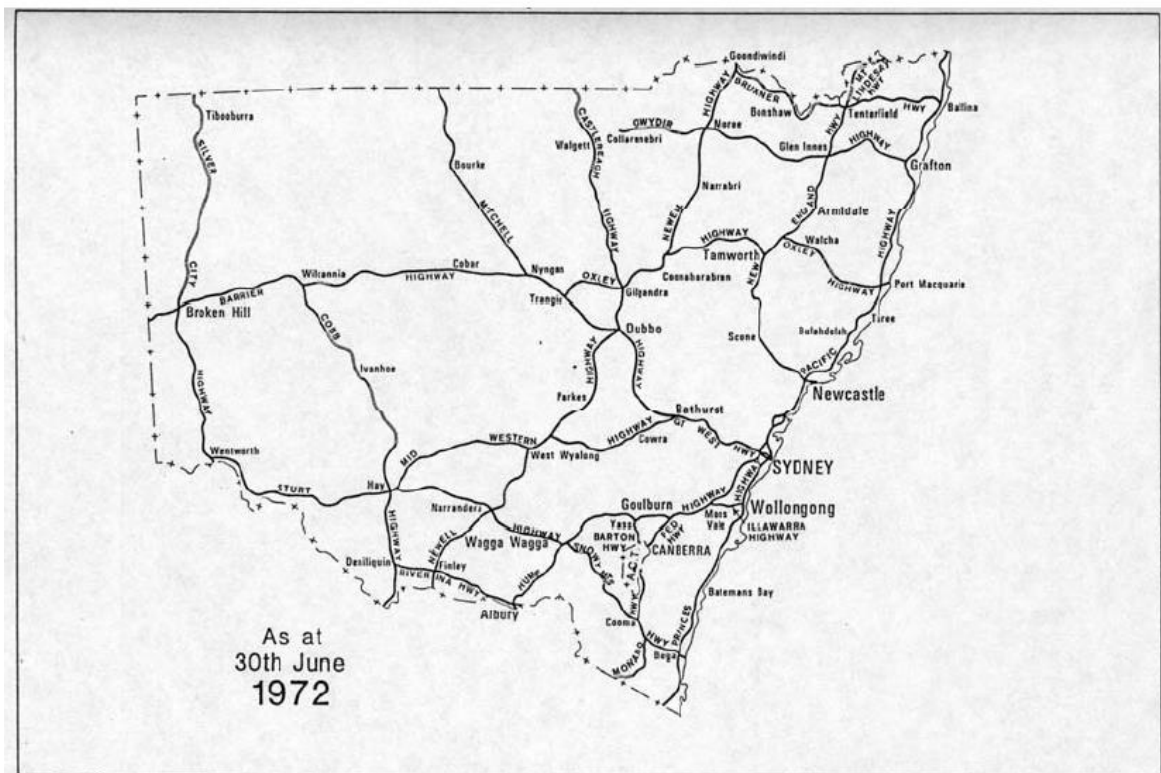
(Source: Kass, 1976: 200)

Figure 6.5.3 Aggregate Traffic Levels in NSW 1965 - 2019
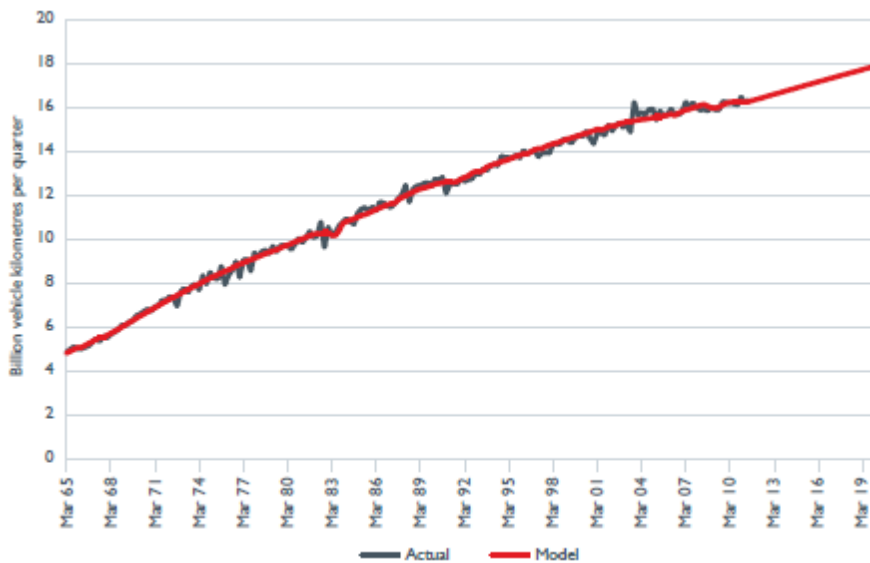
(Source: BITRE, 2012: 16)

The decision making approach of the Department was explained by one

respondent, who also noted that the structure remained remarkably stable,

*"It was a change in focus in planning the state with head office planning units
having dominance over the regional structure. In the 1950's and 60's the regions
began the work and submitted proposals to Head Office. Decisions were made on
the basis of the funds available not on the basis of a broad plan. In the 70's and 80's
Head Office dominance continued. Later the dominance of the regions was restored
through regional managers. Head Office then provided guidance not dominance.
During the whole period the structure of the road authority changed very little."
(Respondent 0086, 30 September, 2009).*

In 1987, the New South Wales Government Directory described the main

functions of the DMR:

*"The construction, maintenance and progressive improvement of main road
system throughout NSW and the installation and maintenance of traffic control and
traffic management devices for the commercial and social benefit of the community
(NSW Govt Directory 1987 p. 311.)"*

Its close relationship with the Planning Department[74] remained intact as did its role in assisting with the planning of cities. As one respondent noted,

"On the 1988 Plan we worked closely with the Department of Transport. The State Transports Study Group (staffed partly by seconded staff from the DMR) did the modelling using STATS. I would come over with rough plans and they would run the models... The measure developed was accessibility. The multi centred city gave the highest level of accessibility. It endorsed the centres policy of the 1968 plan but expanded into more areas – MacArthur in the south, Bringelly and the North West sector...The spine remained the railways." (Respondent, 1079, 19 November 2009).

This network of relationship has been criticised by some because there is a view that it erodes the power of the planning agency. This view is summarised by the influential Sydney-based urban planner John Mant,

"In the State government the strength of the input organisations has left the centre with a relatively weak coordinating role. There is an excessive reliance on interdepartmental committees and interventions on an adhoc basis." (Mant, 1995: 213).

During the late 1960s and especially in the early 1970s the DMRs freeway building plans were interrupted by urban protests. This movement was a worldwide phenomena that swept through the cities in countries that were delivering freeways. In almost all major American cities the protests slowed, altered or stopped the building of city freeways. As Frackler (2009:2) notes,

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[74] Ashton and Freestone (2008: 18 - 19) describe the activities of the State Planning Department in the 19802 and 1990s. "…the Department of Environment and Planning (established 1980) published a new regional plan entitled Sydney into its Third Century: Metropolitan Strategy for the Sydney Region.

From the mid-1990s the state government increasingly directed the urban governance of Sydney. Another new metropolitan plan appeared in 1995, Cities for the 21st Century, stressing four major goals of equity, efficiency, environmental quality and liveability, as well as introducing the concept of a 'Greater Metropolitan Region' stretching from Newcastle to Wollongong. The plan was released alongside a new integrated transport strategy. Testimony to the dynamism of the era, another new plan followed just three years later, Shaping Our Cities (1998), along with a companion report, Shaping Western Sydney (1999). The 1998 metropolitan strategy was a generalised plea for a more compact metropolis with familiar themes of better integration of land use and transport and promotion of suburban activity centres, but with a more explicit concern with urban design at a regional scale.36 The 1990s was the decade in which intergenerational equity, resource conservation and sustainability emerged as major planning themes at all levels in the wake of the internationally influential Brundtland Commission's Our Common Future (1987)."

"Because state highway engineers were given considerable funding and authority by the federal government, they dominated city planning after 1956. As a result of this bureaucratic control, residents of American cities found that they were effectively excluded from the decision-making process. As freeway projects threatened to carve up San Francisco, Boston, New Orleans, and dozens of other cities, protesters fought to save their neighbourhoods and gain a measure of control over transportation and land use planning…Because road builders operated under pretensions of apolitical expertise, they were often blind to the social ramifications of their plans. This myopia would lead to frequent clashes between state highway departments and urban residents across the United States in the 1960s and1970s" (Frackler, 2009: 2- 12).

These same tensions played out in most Australian cities at the same time. Urban protests linked to environmental, heritage, housing and amenity concerns impacted the delivery of almost all major freeway projects in the 1970s. This was augmented by action on the part of the Federal Minister for Urban and Regional Development to limit funding for urban freeway projects. Hence, while road projects moved forward in the decade of the 1970s the major urban road projects that had been planned in the late 1940s and 1950s would have to wait until the neo liberal agenda of the late 1980s and 1990s provided a policy window that enabled financing arrangements that supported these projects (refer to the discussion below in Chapter 6.6).

Despite this level of urban activism the growth of the road agency, its ability to spread it influence into planning, and the increase in the length and sophistication of the road network are simply to be understood in relation to the growth in the power of the industrial regime with which it was associated. Nothing occurred in the policy arena to interrupt its positioning despite significant urban protest that did result in short term government action to stop specific projects. All forces embedded by the initial innovation, including the very powerful networks, worked to continually reproduce and build every increasingly powerful communities supported by coalitions

in a broad range of fields. This growth was further supported by the decline of the railway.

6.6.   The RTA 1989 – 2000

On 16 January 1989, the Transport Administration Act (No. 109, 1988), abolished the Department of Main Roads and amalgamated it with the Department of Motor Transport[75] and the Traffic Authority[76] of New South Wales (which had responsibility for traffic safety and traffic management matters) to form the Roads and Traffic Authority[77]. The Roads and Traffic Authority of NSW (RTA) had a wide remit, with responsibilities for: maintaining and improving the State's road network; road safety; traffic management; maintaining vehicle safety standards; licensing drivers, driving instructors and tow truck operators; and registering motor vehicles.

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75 Refer to State Archives, Investigator Agency 3 for detail.

76 Refer to State Archives, Investigator Agency 4 for detail.

77 Refer to State Archives, Investigator Agency 7 for detail.

Figure 6.6.1 Evolution of the RTA
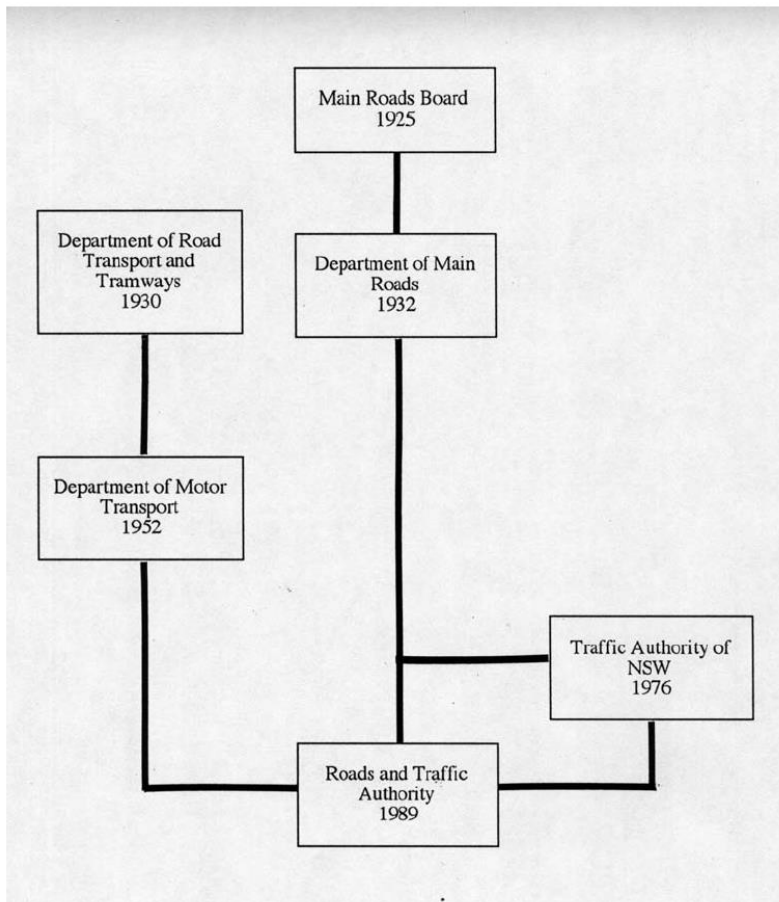
(Source: Kass, 2006: 32)

The neo-liberal changes that swept through rail in the 1990s also reverberated through road, but mainly in the sense of instigating pressures to reorganise and manage change within the context of a pre-existing, state-owned business model. There was a push to move some elements of the operation to a quasi-commercial basis (for example the creation of 'Consulting Services' out of the main design Branches that continued to supply the Divisions with specialist engineering services) and the move away from day labour to the management of large outsourced contracts. However, by and large, these initiatives had the primary effect of encouraging consideration of cost recovery principles within the core body

of the organisation's work. In a reflection on his career in traffic Frank Hulscher noted,

"A new administrative system was being instituted: cost recovery. It was a provocative concept, demanding considerable administrative resources to make it appear that various 'business units' were accountable. Everybody was charging everybody else; and if a specific client could not be identified, it was simply charged to 'overheads'. We suddenly found ourselves part of the Consulting Services Bureau, headed by John McKerral. The Consulting Services Bureau was one of those peripheral 'business units' which had gathered in old HO sections involved in planning and design of roads and bridges, including traffic matters. We were required to have a business plan, brochures were printed to advertise the Bureau's specialist services. We were warned that we would have to compete with external organisations which could offer the same services. Our priorities were changing: beyond mere survival, it now seemed to be more important to make a 'profit' than to provide services to the NSW taxpayer." (Hulscher, 1994: 141).

It also managed a large scale change towards neo-liberal manageralism in the operation of its main partner in road administration (local government councils) with a major rewriting of the State Roads Act in the early 1990s and the commercial sale of key products to overseas markets (for example the traffic control system to Chinese cities). In all this the RTA remained in control of its destiny. One respondent observed,

"Historically the RTA had its own sources of revenue – registration and licensing, state fuel tax and state weight tax as well as Federal government grants...The view was, 'That's your funding. We are not going to give you more and we won't interfere with your business.' The RTA was viewed as more efficient. It expenses had not grown. Expense growth was not out of control. It was perceived as better managed." (Respondent, 1066, 20 November 2009).

The RTA did not escape the staff reductions that had characterised the railways at this time. When the RTA was formed staff numbers increased to over 10,500 from below 8,000. A series of systematic reviews were to reduce this figure over time. As Hulscher reflected,

"..further reviews were to take place...Ahead of us was a period of uncertainty and low morale, when reviews seemed roll past with disconcerting regularity, and

staff reductions exceeded 25% over the first three years of the life of the RTA."
(Hulscher, 1994: 155).

The reorganisation of the road agency in NSW away from the direct management of construction delivery in the main using predominantly a day labour force into a manager of large construction projects using contracts was an important precursor that enabled the move to a new form of financing – tolls roads under a public-private partnership model (PPP). These PPP projects were to become the most visible sign of neo liberalism on the Sydney landscape and are the key characteristic of the road infrastructure spatial fixity associated with the neo liberal agenda.

The achievements of the RTA in this period illustrate the ability of the road agency noted by one of the Respondents,

"The DMR had an ability to change with the development of NSW and to deliver." (Respondent 0086, 30 September, 2009).

While another Respondent commented on the "can do culture of the DMR" with "an ability to acquire the necessary skills, including public consultation" and "to retain technical expertise" which had been demonstrated over the decades in the delivery of road works in Sydney (Respondent, 1009: 2 October 2009). The RTA in the 1990s used the neo liberal agenda to deliver the freeway style road projects that it had been planned since the late 1940s. It is an outstanding example of a government agency using a policy agenda to achieve its planning goals. The RTA was assisted by the change in government and the new Minister who was described as "..keen to perform with a better understanding of the integration of landuse and transport" (Respondent 0086, 30 September, 2009). The change of Minister to Wal

Murray also worked in favour for the road building agenda with "..a move backwards to its traditional role of building roads" (Respondent 0086, 30 September, 2009).

This form of financing where the private sector funds, constructs and operates the road has grown in appeal for capital intensive road projects with government funding shortages because it removes the expenditure from the government balance sheet, provides value for money with greater control on costs (Li and Hensher, 2010: 541 – 542) and moves risk to the private sector (Chung, 2013: 33). Australia now has the largest network of urban toll roads in the world (260.15 kms with an initial investment of $13.27 billion in 2008[78]). NSW has the largest share of PPP toll road projects 8 (refer to Figure 6.6.2 and Table 6.6.1 below) out of the total of 11 Australian PPP toll roads: the Sydney Harbour Tunnel (SHT), the Eastern Distributor (ED), the Hills M2 Motorway (M2), the M4 Motorway (M4), the M5 South-West Motorway (M5), the Westlink M7 (M7), the Cross City Tunnel (CCT) and the Lane Cove Tunnel (LCT) (Chung, 2012: 34).

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[78] (Source: Li and Hensher, 2010: 542).

Figure 6.6.2 Sydney's Toll Roads

(Source: NRMA, 2013: 1)

 As Li and Hensher note,

"The capital cities of Sydney, Melbourne and Brisbane have embraced private sector participation as a way of fast tracking much needed road infrastructure that might reasonably not have been provided by public investment only." (Lie and Hensher, 2010: 542).

This view was also expressed by several respondents (Respondent 0086, 30

September, 2009; Respondent, 1079, 19 November 2009; and Respondent 1099

December, 2009 and 2013).

Table 6.6.1 Summary of Sydney's Toll Roads

Toll road	Length/ Lanes[a]	Current tolls (GST included)	Year opened	Operators	Payment alternatives	Capital cost (Million$)[b]	Concession end	PPP	Major equity contributors (with over 10% of shares)
M2	21 km/4 lanes	Based on the toll plaza and vehicle size	1997	Transurban	Cash, e-tag or e-pass	M$644 (N)[c] M$864 (R)[d]	May 2042	Yes	Transurban 100%
M4	40 km/6 lanes	$2.75 for Class 2[e] $6.50 for Class 4[f]	1992	Statewide Roads/ Roads and Traffic Authority	Cash, e-tag or e-pass	M$246 (N) M$370 (R)	May 2010	Yes	Transurban 50.6%, Hastings Funds Management 21.5%
M5	22 km/4 lanes	$2.75 for Class 2 $6.50 for Class 4	1992	Interlink Roads	Cash, e-tag or e-pass	M$380 (N) M$572 (R)	May 2023	Yes	Transurban 50.0%, Hastings Funds Management 19.2%, Industry Funds Management 15.4%
M7	40 km/4 lanes	Distance-based charge, 33.25 cents per km (< 20 km), $6.65 trip cap for all vehicles	2005	Westlink Motorway	e-tag or e-pass	M$1500 (N) M$1647(R)	February 2037	Yes	Transurban 47.5%, MIG 47.5%
CCT	2.1 km/4 lanes	Based on the route and vehicle size	2005	CrossCity Motorway	e-tag or e-pass	M$680(N) M$747(R)	December 2035	Yes	ABN Amro Diversified Infra Trust 94%
LCT/FSG	3.6 km/4 lanes	$2.72 (LCT) and $1.36 (FSG) for Class A[g]; $5.45 (LCT) and $2.72 (FSG) for Class B[h]	2007	Connector Motorways	e-tag or e-pass	M$1100(N) M$1137(R)	January 2037	Yes	CKI holdings 19.6%, AMP capital investments 15%, John Holland & Theiss 11%
ED	6 km/3 lanes	$5.00 for Class 2 vehicles; $10 for others (northbound only)	1999	Airport Motorway	Cash, e-tag or e-pass	M$700(N) M$927(R)	July 2048	Yes	Transurban 75.11%, Industry Funds Management 14.37%, UniSuper 10.53%
SHT	2.3 km/2 lanes	Time of day tolling (southbound only)	1992	Sydney Harbour Tunnel Company	e-tag or e-pass	M$738(N) M$1110(R)	August 2022	Yes	Transfield 50%, Goldman Sachs 50%
SHB	1.15 km/ 4 lanes	Time of day tolling (southbound only)	1932	Roads and Traffic Authority	e-tag or e-pass	M$14 (N) M$534(R)		No	

(Source: Li and Hensher, 2010: 544)

The radial nature of the toll roads is reflective of the orbital links in the Brisbane Plans of the mid 1960's that were inspired by Wilbur Smith and Associates and also reflect the radial freeway options in the Sydney Area Transportation Study (1974) which all included a dense network of urban freeways with radial orbitals. Ring roads became popular after they were adopted by American transport planners to deliver the Interstate Highway system in the early 1960s. They have appear in cities all over the world from London to Beijing. The Sydney toll roads had their genesis in the first post war plan developed by the Department of Main Roads in 1944 and it the idea has been developed and further embellished in all subsequent plans. All respondents familiar with roads discussed versions of the inner, middle and outer Sydney orbitals. Essentially, the neo liberal agenda in NSW enabled the RTA (DMR) to deliver its planned Sydney orbital freeway network (or at least the important parts of it). As with the development of railways the development of the toll roads in Sydney coincided with an availability of private capital in the markets looking for secure investments.

The first PPP in Sydney was the Sydney Harbour Tunnel (SHT). The SHT was designed in 1987, construction commenced in 1988 and it was opened in 1992 (Neilson, 1991: 211). There had been four previous suggested harbour crossings (refer to Figure 6.6.3 below) but all involved significant costs, large harbour crossing and or unacceptable levels of urban disruption. The SHT gained government approval because it was environmentally acceptable, funded off the government balance sheet, economically feasible, purported to have transferred risk to the private sector and its construction involved minimal inconvenience to the community (Neilson, 1991: 213). However, as Chung (2012: 54) notes the project was rates as

'unusually attractive' and the Audit Office of NSW found that the financing package

had been constructed to avoid the global limits of borrowing set by the NSW Loan

Council,

> "The arrangements were consistent with intentions to avoid Loan Council
> restrictions and they suggest the Authority did not wish these arrangements to be
> known to Members of Parliament and the public which ultimately bore the risks by
> the Authority" (NSW AGO, 1994,p. 293). (cited by Chung, 2012: 55)

Figure 6.6.3 Proposed Alternate Harbour Crossings
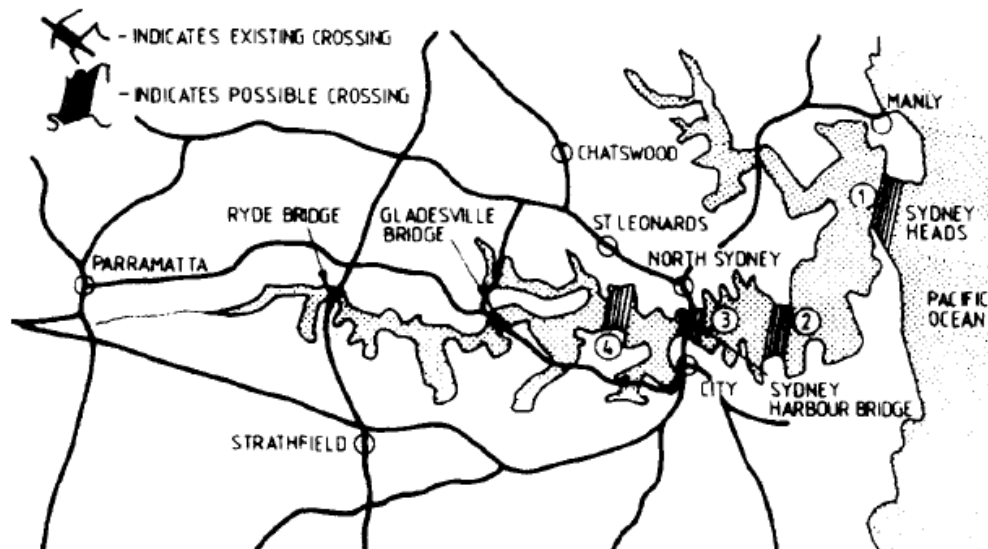
(Source: Neilson: 1991: 212)

The M4 was first conceived in the late 1940s as the Western Expressway and

was included in the County of Cumberland Plan. Corridors were identified (from

Glebe to Lapstone) and resumed in the early 1950's[79]. Constructions began in the

late 1960s and the first sections were opened to traffic in 1971 and later extensions

(all from the western direction) in 1972 and 1974. The announced plans to construct

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[79] Dates in this section are sourced from M4 Western Motorway – Construction Information Ozroads.com.au.

the eastern sections from Glebe met with heavy public opposition and were abandoned by the NSW government in 1977. The bulk of the public opposition occurred in 1974. At this time the a meeting was arranged by the a member of North Sydney (Robyn Read) between the Transport Planner Chris Stapleton[80] and Tom Uren the Federal Minister for Urban and Region Development. In this meeting Chris provided the Minister with an alternative proposal to the M4 East. (Chris had previously been involved in developing alternatives to extensive freeway developments in Edinburgh that would have swamped the city form.) It is not known if the Minister acted on this specific advice but other informants provided several examples of Tom Uren using Housing policy to influence urban form and protect urban environments from freeway development impacts[81]. Currently, the M4 East remains on the planning board. Additions to the M4 all west of Strathfield were opened in 1982, 1984, 1985, 1986, 1992, and 1993.

The next PPP was the M2 to the Hills District in Sydney's North West. This project too was the delivery of an earlier Freeway plan – the Castlereagh Freeway. The M2 is constructed in the reserve that was put aside after the concept was included in the 1968 Sydney Region Outline Plan[82]. The M2 contract was executed in 1994 and opened in 1997. Reviews suggest that the road agency learnt from the SHT experience and the NSW Auditor General found that the M2 lease arrangements allowed the true costs of the project to be more accurately reflected then in earlier projects. However the arrangements were still favourable to the private sector in terms of safety of the return for the level of risk, free use of the land,

[80] Personal Communication from Chris Stapleton December 2013.
[81] Ruming, James, Tice and Freestone (2009: 13) note that frustrating the planned roadway that would have demolished housing became an additional incentive for Uren for the Glebe Project.
[82] Refer to M2 Hills Motorway Ozroads.com.au

indemnity against future cost increases and an exemption from state land tax. The major community benefit from the project was improved travel conditions (see Chung, 2012: 55 - 59).

The M5 was the next project to be delivered using PPP financing. It was first included in the County of Cumberland Plan in 1951[83] as the South Western Freeway to be the major radial route for the south western suburbs. Early construction efforts meet with fierce opposition from environmental and resident groups and in the late 1970s led to the Kyeemagh-Chullora Road Inquiry in 1979-80 (Kirby Inquiry). Kirby recommended that the proposed route through Bardwell Park and the Wolli Valley be abandoned because it would cause environmental damage (SMH, 1986: 4). Despite this finding the DMR was undaunted and proceeded with bridge construction that was part of the freeway route (opened in 1985). The PPP was put to tender in 1989 and the first stage was opened in 1992.

The last PPP to be built in the 1990s and the period covered by this thesis is the Eastern Distributor. This concept is linked to the oldest freeway concept in Sydney – the Cahill Expressway (proposed as part of Bradfield's plan for Sydney Electric Railways in 1913). Later the County of Cumberland Plan included a corridor reservation for a freeway from the CBD to Old South Head road at Bondi Junction. The concepts morphed into the F7 which was to run from the southern end of the Harbour Bridge to Bondi Junction in three sections (Cahill Expressway, the Eastern Distributor and the Eastern Freeway). The Sydney Area Transportation Study included the Eastern Distributor as a freeway in a trench. The DMR began construction in 1976 but this was stopped due to public pressure and a decision by

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[83] Dates sourced from M5 South Western Motorway History and Development - Ozroads.com.au.

the Urban Transport Advisory Committee. The government abandoned the project in 1977 and houses were released from the road reserve. The project went through various phases from consultant's reviews of options (1977–78) to the delivery of an underpass of William St in 1987 until the final delivery by a PPP with a 50 year concession in 1999. The delivery of this project again demonstrates the DMR's use of the PPP financing enabled by the neo liberal agenda to complete the road plans for Sydney that had been conceived primarily in the 1940s.

The last three PPP road projects are outside the period covered by this thesis however both the LCT and the CCT need to be mention in relation to the level of the financial failure that resulted. This has been outlined extensively by Chung (2012: 62- 64).

This new form of financing brought additional players into close relationships with the road agencies; the banks and the large private construction companies. Initially at least, there was learning involved in these new relationships for the State. For example, a review of traffic estimates used in the PPP projects by Li and Hensher (2010) found that they were on average 45% above actuals. In addition, the outcome of the Sydney toll road projects for the private sector and the community has been criticised[84] by a number of players for being overly beneficial to the private sector. For example,

"Brown (2005) echoed the findings of Shaoul et al.(2006) and Debande (2002). She made it plain that early Australian private tollroads mispriced the level of risk that the private sector assumed. These early partnerships increased the cash flows available, and lowered the risk of returns, to private equity. Revenue share for governments was possible only when actual returns had been greater than some hurdle rates based on IRR to private investors. These hurdle IRRs, which were

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[84] Chung (2012: 35 – 41) provides a detailed review of the literature.

determined based on inflated traffic estimates, were found to be unlikely to be realised in the early years of the concession period. Effectively, governments reduced the revenue risk for the private operator. In more recent developments, governments purchase a series of call options on the toll revenue with the price of the lease granted to the private sector over the land on which the toll road is constructed (Brown, 2005, p. 435)." (Cited by Chung, 2012: 40).

Others (notably Forward, 2006) have argued that the toll roads have brought forward a range of benefits for the community including reduced travel times and vehicle operating costs, improved road based public transport and improved public amenity.

Perhaps more importantly the governance implications in terms of the impact of 'deal making', 'model making' and 'space making' have been analysed by Johns (2011) and her work illustrates the impact of global equity markets on the disempowering the interests of the residents of the cites and places in which the projects will be developed. She argues that when urban infrastructure is financed in global equity markets it become installed in the 'micro culture of a deal' and this deal-oriented configuration of work and decision-making neither entails seeing like a state, nor seeing like a city (Johns, 2011: 398). Similarly, model making removes important consideration from the decision making around large projects for example Johns (2011) argues that,

"The financial model also plays a key role in the commodification and fetishization of deal-structures: that is, the rendering of a deal as a single thing or parcel of things available for use or trade and the conferral upon a deal-structure of objective existence and value independent of the social relations underpinning or arising from it" (Johns, 2011: 406).

Finally Johns finds that 'space making' underscores the power of the global over the local,

"Decisions surrounding the financing of urban infrastructure in the global debt or equity markets often become caught up in, or made dependent upon, vocabularies and schemes of authority that operate, to a large extent, independently of the urban settings in which they are being invoked. For instance, vocabularies of

market practice and creditworthiness operative in the negotiation of urban infrastructure projects are shaped primarily by global forces and in global fields of expertise. The standing of a state or municipality in global financial markets will depend less on the material or practical outcomes for city-dwellers of that state or municipality financing its urban infrastructure privately, than on how those outcomes are perceived and reported by, among others, global rating agencies…" (Johns, 2011: 411).

The dominance of interests outside the city in terms of influence over large infrastructure projects due to the new financing methods has also been analysed by O'Neill (2010) who found that,

"Infrastructure spending, then, becomes an autonomous external variable capable of generating major positive or negative economic effects according to its timing and level; and decisions about these are increasingly taken outside the realm of government, and often by admitting new players and organisations into the governance arrangements of a city. These include infrastructure construction and management firms, financial institutions and the new industry associations that provide private sector brokerage spaces for infrastructure ideas to be mobilised and formal access routes to governments so that infrastructure projects can be provided with necessary support and approvals." (O'Neill, 2010: 10).

Hence, while the RTA entered the twenty first century smaller in terms of staff numbers it is very difficult to argue that it was less powerful. It budget was substantial and it had evolved with a large network of vertically and horizontally linked suppliers who formed global coalitions of power to advocate and lobby for the road system. In addition the organisation cemented its close relationship with land development and urban and regional planning through a range of formal and informal networks with local government and the state planning apparatus that reach back into the genesis of both institutions. The road industry is best conceived as a constellation of aligned and integrated institutions with powerful global coalitions that are reinforced by regulation and legislation and global industrial arrangements. This alignment has been so expansive that it impacts most aspect of life through the

intimate connection with mobility and circulation and landuse. A quote from Hansard illustrates that this is not lost on Macquarie Street.

> "The sad reality is that we do not have serious planning in our city. We are modelling our planning on Los Angeles and ignoring the existing rail system, which has had little improvement in 50 years, particularly in western Sydney. Governments have released chunks of land to developers, not along the railway line near Schofields where the market gardens were and where it should have been released, but in Castle Hill, where residents are dependent on vehicles as there is no rail transport. Deals have been made to build motorways, and probably clauses inserted in contracts to provide compensation if a railway is built. I would like to know whether the Parramatta to Chatswood railway link will mean that more money will have to be paid to the owners of the M2.
>
> The Roads and Traffic Authority [RTA] has acted as a law unto itself for long time. State Rail has behaved like a child playing trains on existing lines instead of planning rail transport for the future. The Government seems unable to think beyond busways, which suit the bus lines but do not solve the problems of western Sydney. It has allowed freeways - the Los Angelisation of Sydney - to be built. The RTA has a vision; it wants roads everywhere. No rail planning has occurred. Supermarkets and shopping complexes are built without any regard to rail, resulting in low-rise housing in Sydney, urban sprawl and traffic problems. The Government is doing very little to solve the problem - with the exception of the Parramatta to Chatswood rail link.
>
> If that is not enough, the contracts are secretive and the Government fights all the way to the High Court to stop taxpayers finding out where their money is going. When the contracts are finally revealed, they are revealed only to members of Parliament, and only if they sit in little rooms and do not take copies. If those members do not understand engineering they cannot evaluate the quality of the contracts." (The Hon. Dr A. CHESTERFIELD-EVANS [4.32 p.m.], Hansard, Legislative Council, 14 October, 1999).

6.7.   Conclusion

The level of spatial fixity associated with the growth of motorised transport is unmatched in its impact at every scale from the neighbourhood to the organisation of towns, cities and the flows between them. The industry has been able to manipulate the institutional arrangements to skew transaction costs and in so doing cement it's positioning. The road agency in NSW is merely one example of a road agency that

has flourished in the last 100 years. The trends that impacted it, the networks that supported it and the industrial regime of which it is an integral part are global. The ideas, policy windows and key trends discussed above are not singular to NSW. They are part of and can only be understood in relation to global moves in thinking, innovation, finance and power. The impact of these agencies endures and therefore their activities need to be closely examined and analysed. As Brown notes,

> *"When the First National "Conference on City Planning" took place in Washington, DC, 100 ago, the delegates failed to foresee the consequences of automobility and suburbanization,…those attending the 1909 conference would have understood the difficulties of accommodating widespread private vehicle travel in cities, and applauded planners' efforts to link transportation to land use planning, manage congestion, and support non-automotive modes …But at whatever scale transportation is conducted, fiscal politics will shape planning outcomes as they have in the past. Overlooking this is dangerous, as we are destined to live with the consequences of transportation planning choices for a very long time." (Brown, et. al., 2009: 161, 175)*

The major themes of change in road transport in New South Wales are directly related to the rise of motorised vehicle use. As the use of cars increased so too did the demands on the road system. When use reached critical levels important groups of stakeholders organised and acted as important advocacy coalitions directly impacting the allocation of resources to roads through the political process. The impact of motorised transport was such that it led to wholesale to changes in thinking by planners about how cities should be organised. The impact on city and regional form and on the location decisions within cities and regions was arguably highly significant.

Ideas about road construction and city planning that were developed in academic and policy networks in United States and Britain found their way into engineering and planning policy networks and policy communities in Sydney and then into the urban form of Sydney.

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The road transport policy community and its connections are arguably the most powerful and strongest of any policy community. They include important actors in academic, government, industrial, financial, educational, health and social networks. This relational depth provides the road transport policy community with a level of resilience and adaptability which further reinforces it's not insignificant power-base. This resilience and adaptability were demonstrated in relation to the implementation of neoliberal reform policies in the administration of roads in NSW in the 1990s. Despite reductions in staff numbers the road authority in NSW in the 1990s emerged from neoliberal implementation perhaps more powerful and better connected then when it entered that phase.

The standing of the policy community is such that once a set of ideas becomes entrench within the networks they are maintained until the implementation is complete. An example of this is the planning of the freeway system in Sydney which was complete by the mid-1950s but not delivered until the PPP toll roads of the 1990s were built. Rival policy communities that organised public resistance to freeway projects were successful only in delaying projects and altering their routes. They were not powerful enough to achieve wholesale change in the policy of freeway development itself. The analysis underscores the importance of road transport policy and the management of its impact on urban form and regional development.

7. Qld Roads

"The first 42 years of Queensland's existence was marked by a series of faltering steps towards the provision of a system of roads. The net result of these was a very inadequate network only trafficable in good weather and providing a considerable impediment to the economic development of the State. It was not until the Main Roads Board was established on 29 October 1920 that the Government took any really resolute steps towards an adequate road system" (Cameron, 1989: 61)

7.1. Introduction

As was the case in NSW the hegemonic period in road management dates from the late 1930s and became entrenched after the Second World War. This chapter outlines the history of road management in Qld highlighting the role of the state road agency and argues that while it has undergone several branding changes it has essentially remained unchanged since the creation of the original Department of Main Roads Department. In broad terms, this is similar to the situation in NSW. In Qld, an understanding of the relationship with the Brisbane City Council (BCC) and the State road agency is fundamental to contextualising the development of Brisbane since the Second World War. Unlike Sydney where multiple Councils complicate the relationship, the power of the BCC is significant, and rivals that of the State government in the city. It could be argued that for the period from the mid 1960s, BCC was often the senior partner. An understanding of the relationship between the road agency and local government is critical to understanding how land use planning in Brisbane is managed in relation to road development. This relational important is matched in the rural areas with rural councils. This is reinforced by the reliance on state road funding of many rural councils in Qld for sources of local employment and demand. These communities transitioned in dependence from the

railway to the road agency. The instituted path dependency instilling in its wake a co-dependency that is unlikely to change.

While the relational capital of the road agency is no less embedded, globally connected and hegemonic than in Sydney there are examples of the impact of local advocacy coalitions in shaping the outcomes for the urban form in the face of strong opposition from the road agency and the State. These are examined to illustrate the power of the local. It is suggested that there are cultural differences between Sydney and Brisbane which explain in part this community based power. The other significant difference between NSW and Qld is the timing of the large investments (especially in freeways and motorways). These were in part impacted by decisions of the Federal government in the 1970s but too had for a time at least a moderating influence on the impact of the road agency on the urban form. However, what is clear is that while this was a moderating influence and basically allowed a time lag prior to the inevitable investment it did not permanently block this trend which emanated from powerful forces embedded in broader economic forces.

As in NSW the road networks have supported the development of a powerful, highly agile, hegemonic road policy arena with a reach from the local to the global that easily moulds its policies to accommodate trends. Thus, it ensures its continued relevance.

7.2.   Early Road Building

Like, NSW, prior to European settlement in 1824 the only land transport routes were the paths and tracks of the indigenous people.   In the early years of the

colony long distance transport was by water. Indeed, in Queensland water transport

played an important role for longer than in NSW. The earliest formed road was that

from the wharf (on the site of the present Queen's wharf) the first public structure

leading away from it up and down the river (Laurie, 1959:51). The settlement was

laid out in blocks with roads a chain wide[85].

The first free settlers arrived in the Darling Downs in the 1840s. Their links

were to the New England area and they exported their wool through Port Macquarie.

Hence, their main road building focus was to construct a road to link them to the

south. When the convict settlement was moved to Brisbane in 1842 some roads

were developed to link Brisbane to its hinterland. Water transports still dominated as

it was relatively easy to service and link the Qld coastal ports. Even inland transport

focused in the river system - for example the traffic between Ipswich and Brisbane

used the river. When Qld became a separate colony in 1859 few roads had been

built[86]. Local roads that existed had been built by private local effort with at times

limited and patchy government support.

"Where roads or railways did not precede settlement, the individual effort of the settler was needed to make a track to his holding,...In some cases the necessity was met by joining forces to open up a community road. Efforts to obtain assistance from the government for major works were made through representatives in Parliament, by deputation, through the press, or by resolutions made at public meetings, but all these efforts were limited by the money available, and even if successful did not necessarily imply that the most deserving cases got the first attention. Many instances of favoured treatment occurred." (Collinson, 1954: 930-31).

In 1862 the Works Department began to establish Districts for road and bridge

construction. The first Districts were established were Southern and Northern

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[85] For a detailed discussion of the formation of the first Brisbane town plan see Cox, 1969.
[86] Mr P.D. Vigors had been appointed as a surveyor by the NSW Government in 1854 to survey a road from Brisbane to the Darling Downs. However he resigned in 1856 due to the inability to complete his task with the resources provided.

(Rockhampton)[87]. A third was then set up – West Moreton – to service the Darling Downs. And after the opening of the Port of Bowen a fourth (Far Northern) was set up to build roads in and around Cooktown, Cairns and Port Douglas. This administration developed and managed the first non-municipal roads after the Colony's separation from NSW. The government concentrated on bridge construction[88] as this was seen as beyond the means of a local authority and at times responded to resident demands for improved road connections.

After the start of railway construction in the 1860s roads were seen primarily as providing local access and as connectors to the railway or to ports. For example Cameron (1989:58) observed,

"...in the 19th century roads were used by pedestrians, equestrians, horse-drawn drays, wagons and carriages, and bullock drays. With the vast distances to be covered in Queensland none of these provided a means of transport capable of serving the main trunk routes linking the colony's towns and ports, ... The road network certainly could not support the growth of intensive agriculture more than a few kilometres from a port. At least with the pastoral industry the product could be walked overland to the meatworks located at the main ports and so could expand inland ahead of the railways. From the 1880s onwards the railways started to provide a reliable long-distance means of transporting people and goods over much of Queensland. ... Road transport was therefore essential to provide transport to the railways stations, to serve areas not provided with railways and to provide connections between discontinuous rail systems."

The legislation passed in NSW in 1858 (The Municipal Institutions Act[89]) was found not to apply as well in the new colony of Qld. It had been written to control urban, suburban and rural Districts from a municipal centre. At separation only one

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[87] In 1864 about 55,000 pound was spent on roads in the Southern District and 25,000 pound on roads in the Northern District (Cameron, 1989:59).
[88] For example bridges built during this period included The Victoria Bridge over the Brisbane River, The Fitzroy Bridge and The Alligator Creek Bridge at Rockhampton, The Lamington Bridge across the Mary River and bridges to support the gold rush around Cooktown (see Cameron, 1989: 58-70).
[89] Municipalities Act, 1858 (22 Vic., No.13).

Council had been proclaimed, Brisbane. Ipswich, Rockhampton, Maryborough and Bowen followed. This legislation was largely replaced by the Provincial Councils Act 1864. Its purpose was to provide for provincial council beyond the jurisdiction of a municipality. In the 1860s the Minister used this legislation to call for Road Trusts with honorary members who together with the Engineers would identify the urgent needs of districts. Approved work was funded by a government grant. However, local favouritism was common, the Trusts fell into disrepute and increasing population meant that the government had to find a mechanism to make road users pay money towards the upkeep of the roads they used. The Local Government Act 1878 provided for municipal councils for cities, towns and boroughs. The Divisional Boards Act 1879 dealt with all Districts not in municipalities and issues outside of towns. It primary purpose was the creation and upkeep of roads and the preservation of water supplies. The Divisional Board system was in place until 1900 when the Act was amended and the Shire Council were created (Laurie, 1959: 56).

Uniform traffic control began in Brisbane with the creation of the City and Suburban United Municipality in 1885. In 1886 the Metropolitan Traffic Board came into operation. Its functions were the regulation of traffic and the licensing, regulation of public vehicles and the expenditure of licence fees. Difficulties in membership (there were seven members and turnover was a problem), reaching agreement and speed of decision making led to complaints and the state government assuming responsibility with the Police Commissioner becoming responsible for administration (Cox, 1969:10 - 12).

The power of local authorities in relation to roads was further clarified in local government legislation in 1902 and 1923[90]. Despite all these legislative attempts to manage the road system the reality by 1920 was that the increasing number of road users was demanding a standard of roads that required a more sophisticated approach. At the same time the adequacy of the concept of roads as connectors to railways was beginning to be challenged.

7.3.   The Main Roads Board 1920 – 1925

Several factors influenced the increased government focus on roads in the 1920s. Among the most important were: a large increase in car ownership[91]; technical improvements following World War I; men who had learned to drive in army services who were keen to continue; the demand for motorists who were becoming a significant lobby group[92] for better roads; the technical[93] and financial inability of local government authorities to provide roads; and the growing impact of cars on planning. The War was an important impetus for road building in Qld as it was only after motorised transport was proven as a reliable method of transport during the war that it took off in popularity and the increase in the number of cars led to an increase in the demand for improved roads.

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[90] The Local Authorities Act 1902 allowed councils to open a new road or to divert an existing road but the alignment was within the power of the minister. The Local Authorities Act 1923 defined the powers of local authorities over roads and set down minimum standards for roads. (See Cox, 1969: ch1).

[91] Statistic became available with registration in 1921 when there were about 8000 cars and trucks in Queensland. By June 1922 this had risen to 13,807 and by June 1923 it was 16,893 (Diamond, 199?: 16).

[92] The RACQ was formed in May 1905 by 18 foundations members who were made up of Doctors, Engineers, merchants and a coachbuilder (http://www.racq.com.au/about_us/racq/club_history).

[93] Motor vehicles added new demands to the road. For example they travelled faster than existing vehicles needing better management of camber, required a smoother surface, had more impact and required presented more complex engineering problems.

The Main Roads Board was established in 1920[94].   It was modelled on the

Country Roads Board of Victoria which was the first state-wide road authority in

Australia having been established in 1913 (Krosch, 2009:7).   The Board was

established as the state road authority responsible for developing a network of main

roads[95]. It was responsible for: the classification of roads; construction and

maintenance of state roads; conduct of surveys and investigations into the

construction of roads for the purposes of facilitating land settlement and the like;

establishment of standards relating to the design, quality and construction of roads;

regulation of traffic on main roads; opening and closure of roads; collection of

licensing and motor registration fees; and the acquisition of land for construction

purposes.[96]

In 1921 the Board completed a fact finding tour to identify the condition of the

State's roads. In general, it found them to be in poor conditions and often

unpassable. Excerpts from Kemp's report to Parliament are illustrative of the

findings.

*"With the exception of one or two roads constructed some twenty years ago
and roads constructed under Acts in the early sixties, very little attempt has been
made to construct roads on a systematic plan . . .Local Authorities have, in many
instances, completely neglected to maintain through roads, bridges have been
allowed to tumble down and have not been replaced . . .No real attempt in the past
has been made to locate roads on scientific principles . . .The fact that only a very*

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[94] "Main Roads Act 1920", effective 1 Jan 1920. The Board was not constituted until October 1920 when the first Chairman was appointed. Queensland State Archives Agency ID365, Main Roads Board.

[95] The Main Roads Act of 1920, allowed a road to be gazetted as a 'Main Road' under specific conditions. Roads within towns remained the responsibility of the council. Outside towns, three priorities were identified: to use trunk roads to join towns which were not connected by railway; to construct feeder roads linking farming areas to the railway; and developmental roads to open new areas of settlement (www.tmr.qld.au).

[96] The Board had three Commissioners, the first Chairman was Mr J.R. Kemp who was an engineer who had been in the position of Engineer to the Country Roads Board of Victoria (SMH, 28 September 1920: 9). Mr J.A. Fraser (the then Deputy Chief Engineer of the Queensland Railways) and Mr S.A. Horsfall (then Shire Engineer, Corrumburra, Victoria) were appointed as the other two Commissioners (SMH, 1 January, 1921: 8). Mr J.E. England (an accountant) was appointed as Secretary of the Board in 1923 and became the first Registrar of Motor Vehicles (Diamond, 199?: 14). Mr D.A Crawford later became a Commissioner.

small percentage of shires were able to furnish copies of specifications or drawings of standard road profiles, indicates that work is generally carried out in a haphazard fashion and to no set plan . . ." (Kemp in Cameron, 1989: 118).

The Board acquired the function of motor vehicle registration from the Police Traffic Department in December 1921 (Queensland State Archives Agency ID365, Main Roads Board).   This responsibility and the associated revenue steam (registration fees) was to give the Board a level of independence in determining its activities. For example in 1922 almost half the funding was from registration fees and while this was to decline over time when federal grants became increasingly important, the principle of independence had been established. As Golding notes,

"This financial independence has been a long cherished facet of Main Roads operations, and although somewhat watered-down in current times, its spirit persists in the modern five-year Roads Implementation Program, of which the first two years are firm. Current Main Roads programmed funding is still benchmarked by Treasury against trends in motor vehicle registration receipts" (Golding, 2000: 1).

Kemp was to be very influential in road building and more generally in public administration. This was due in part, at least, to his interest in and support of technical education for engineers. He was very active in the Professional Engineers of Queensland and the Institution of Engineers Australia. He encouraged his staff to acquire technical qualifications and was heavily involved in developing the curriculum for the faculty of engineering at the University of Queensland. He wrote and presented many papers and was the Australian delegate to the International Road Congress at The Hague. He became a chief government advisor and went on to Chair a number of Commissions and bodies outside of roads. He was the first Head of the State Road Authority to go on to hold the position of Queensland's Co-

ordinator General of works in 1939[97]. A position which has subsequently generally

been filled by Roads Commissioners for more than half a century bestowing

significant power on the state road authority.

> *"These dual appointments placed the Main Roads Commission and its districts in a very prominent civil engineering role for the Government...The strong ties between service with Main Roads and the appointment as Co-ordinator General persisted until about 1990; another cause of on-going angst among other public service department heads who aspire to the senior position of Co-ordinator General"* (Golding, 2000:4).

In December 1921 the first roads were declared[98] under the legislation as the

first step in providing a connected road system for Qld. However, Local Authorities

did not co-operate with the new Board and little was spent on roads in the first year

of the Board's operation[99]. In the second year of operation road standards were

established and the board was gaining creditability. In addition the first

Commonwealth funds became available which meant that double the amount of the

first year was spent on roads. The Local Authorities became enthusiastic and were

lobbying hard for funding. The need to allocate priorities and to manage the

shortage of road funds let to the development of principles and policies that could be

used to make allocation decisions.

The Board was established with the objective of managing roads that were

beyond the boundaries of individual shires by providing financial assistance to local

authorities in return for works that reflected state and local priorities (Golding: 2000:

1). The Main Roads Board initially adopted a policy of responding to urgent needs

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[97] For more detail see http://adb.anu.edu.au/biography/kemp-sir-john-robert-10717.

[98] The Tamborine Station — Tamborine Mountain Road, The Landsborough — Maleny Road, The Kingaroy — Bell Road, The Brisbane — Toowoomba Road in Sherwood and Tarampa Shires, The Warwick — Toowoomba Road in AUora Shire, The Clifton — Pittsworth Road, The Killarney — N.S.W. border road (Cameron, 1989: 117-8).

[99] Only $218,376 was spent (Cameron, 1989:118).

(for example river crossings) especially on roads that served productive purposed or supported commercial centres that were not on a rail line and of linking roads to rail termini. This policy is an early example of removing bottlenecks to the flow of commercial transport. It was heavily supported by the rural car owning lobbyists of the day who linked poor roads to reduced income[100].

Other roads received attention because they supported other productive ventures. For example the Main South Coast Road began to be gazetted in 1923 because it supported tourism. Again, this policy was heavily supported by the car lobbyists who used their cars for touring. The Road Commissioners had also been influenced by the American Highway Commissioners and adopted their slogan, 'Sell our Scenery' (Cushing, 2002: 46). These policies did two things: developed roads that complemented railways rather than competing with them; and concentrated funding deliberately on a small number of roads provided a basis which would later open the Board to criticism. A map showing the Gazette Main Road Network is below in Figure 7.3.1.

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[100] For example the Annual Report of the Main Roads Board in 1923 gave examples of financial losses incurred by dairy farmers that resulted from inferior roads (Diamond, 199?:18).

Figure 7.3.1 Gazetted Roads Queensland 1923

GAZETTED ROADS

1923

SCALE IN MILES
50 25 0   50   100   150
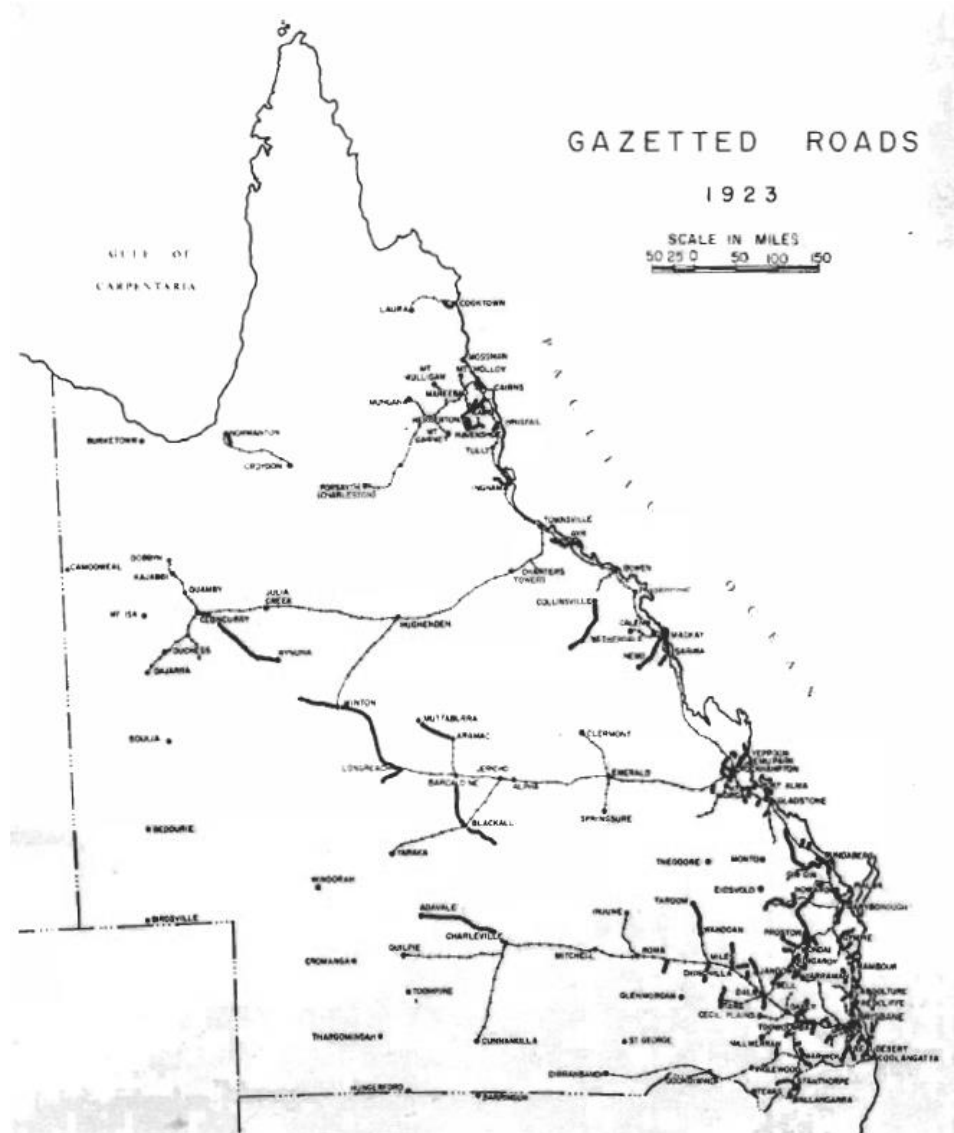
(Source: A Krosch, Personal Communication, 24 November 2004)

The Board also adopted a policy of building the length of roads over 'gold plating' the construction standards. This was at the insistence of Kemp and is similar to the policy in relation to rail where the narrow gauge allowed more length of railway to built over higher engineering standards. The financial limitations (small tax base due to a relatively small population) and the issues of the geography (size of the state, difficult terrain and climate) that existed for rail also impacted road

development. These challenges meant that building a cohesive network of roads was well beyond the means of local authorities and perhaps explains why Qld established a state road authority before NSW. Only centrally managed organised resources with the technical ability could deliver what the increasing community of road users was demanding.

By the mid-1920s, the car lobby emerged as a significant political power which was reinforced by a growing membership and payment of taxes through car registration and fuel taxes. In this environment the federal government decision in 1922 to establish and fund a National Main Roads policy was to begin to consolidate the increasing importance of roads. The first federal road policy was about the provision of construction funds to States to support the building of roads to open up and develop the country and provide employment for ex-servicemen[101]. Money was allocated to the States on the basis of population and area with matching state grants comprising half a free grant and half based on the existing Main Roads Act (half from each of the State and local authorities). Under the terms of the legislation three types of roads could be funded: main roads opening up and developing new country; trunk roads between important towns; and connecting arterial roads.

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[101] The plan was incorporated into the Main Roads Development Act of 1923.

7.4.   The Main Roads Commission 1925 - 1951

The Main Roads Board was replaced by the Main Roads Commission in 1925[102]. The Main Roads Commissioner was appointed and the powers previously vested in the Board were transferred to the Commissioner (Queensland State Archives Agency ID365, Main Roads Board). It took over the functions and responsibilities of the Main Roads Board which included road construction and maintenance and motor vehicle registration. In addition, it was responsible for the creation, maintenance and distribution of maps of existing roads and routes and advice on local government loan repayments for works on main roads.   The Commission was administered by a single Commissioner (unlike the Board that had had three Commissioners) who was supported by a Secretary, a Chief Engineer, and later the Registrar of Motor Vehicles (Refer to Figure 7.4.1). Interestingly, over its life span the Commission came under four different portfolios: Public Lands 1925 – 29; Railways 1929 – 1932; Public Works 1932 – 1944; and Treasury 1944 – 1951. (Queensland State Archives Agency ID113, Main Roads Commission).

The Commission cemented the position of Kemp as the dominant figure in the road authority arena. His management style and the relatively small size of the Commission supported the development of a highly centralised organisation.   The District Engineers were the main operatives of the organisation and managed the gazetted road system, prioritised works and monitored delivery by local authorities. All consultation with local authorities however was managed by the Commissioner. This remained the case until after 1945 when the increasing size and complexity of

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[102] The Board was dissolved under the "Main Roads Acts Amendment Act 1925".

the road management task in Queensland led to the development of a more

decentralised regional structure (Golding, 2000: 1).

Figure 7.4.1 Main Roads Commission Organisation Structure

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                        ┌──────────────────┐
                        │   Commissioner   │
                        └──────────────────┘
                                 │
 ┌──────────────────┐            │            ┌──────────────────┐
 │  Chief Engineer  │············│············│    Secretary     │
 └──────────────────┘            │            └──────────────────┘
       (Technical)               │
                        ┌──────────────────┐
                        │ District Engineers│
                        │      6 - 11       │
                        └──────────────────┘
```

1930: 6 Districts
4 – Brisbane Based
1 – Rockhampton
1 – Townsville

1945: 11 Districts
5 – Brisbane Based
1 – Rockhampton
1 – Barcaldine
1 – Mackay
1 – Townsville
1 – Cloncurry
1 - Cairns

(Source: Golding: 2000:2)
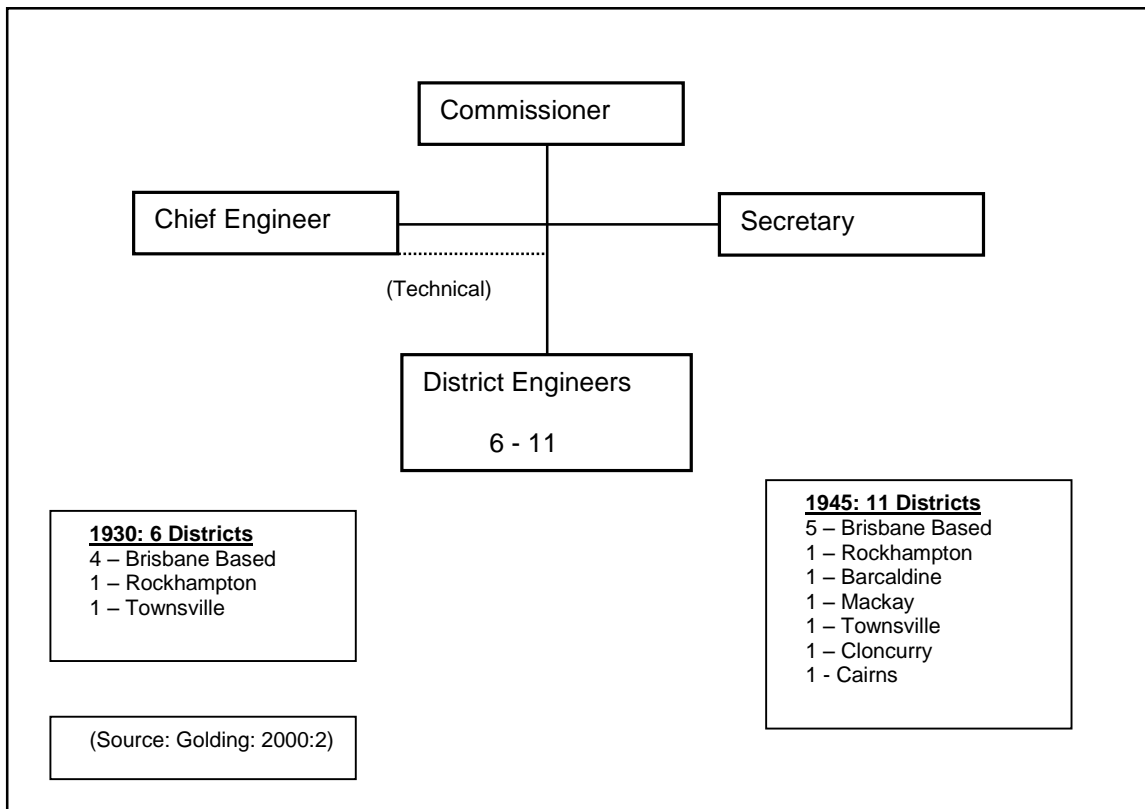
The allocation of funds at this time was partially directed by the legislation

which required that money by expended equally in the three Divisions of the state

(these areas were broadly the Southern, Northern and Central Districts).   In

Queensland, as Golding notes,

*"The concept of funding equity on a geographical basis is not a new
phenomenon; it was once enshrined in law"* (Golding, 2000: 4).

The work of road building continued to grow both in popularity and in demand

and in turn the length of the gazetted main road network also grew. With

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Commonwealth funding being cemented by the Federal Road Aids Act (1926), funding for roads was significantly augmented. By 1928-29 the budget had grown to over $2 million, the main road network work was over 13,000 kms by 1930 and the Commission had become a significant employer (Cameron, 1989: 119).

During the Depression the Main Road Commission played a very important role providing jobs for the unemployed (Diamond[103], 199?:39-49). The government saw roads as an opportunity to employ relatively unskilled labour and Kemp was made Chairman of an interdepartmental committee on unemployment within the Bureau of Industry. This made him what one writer called the 'supremo public service mandarin' in the State at that time (Golding, 2000:4).The unemployment relief effort required the initial policy of developing the arterial road system to be put on hold and the emphasis shifted to small projects that targeted unemployment in specific areas. The Commission used the employment relief funding to deliver projects that otherwise would not have had a high priority.

A key factor that impacted the development of roads in Qld during this time was the government policy towards the government-owned railways. The government had invested heavily in rail and had incurred large debts (refer to Chapter 5). Hence, there was a strong driver to protect rail traffic (both passenger and freight) and in so doing protect the income of the railway. Indeed the Main Roads legislation contained a significant non-competition clause with rail provision where the Commissioner for Main Roads was required to consider whether the District through which proposed new roads would pass are already served by rail. Another legislative change which altered the reporting relationship of the

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[103] This reference did not have a publication date. The citation approach used National Library has been employed.

Commissioner was the formation of the State Transport Board in 1932 under the State Transport Co-ordination Act 1931 (see discussion in Section 5.3). Now the Commissioner reported to the Minister through the Board which had two key entities, the Railways and the Main Roads Commission. The Commissioner for Railways was senior to the Commissioner for Roads and railways were given strong preference by various Ministers.

In the 1930s this preference for rail over road was illustrated in legislation by the levying of a Heavy Vehicle tax. The tax was unpopular and lobbying led to various exemptions but it remained in place in various forms throughout this period (Cameron, 1989: 119-21). When the Royal Commission on Transport reviewed the level of competition between road and rail transport in 1937 it found that of the 12,351 miles that were gazetted as main roads only 1,750 miles could be actively competitive with railways (Cameron, 1989: 121). The Commission recognised that competition between road and rail was an issue and other then recommending investigation of co-ordinated freight haulage did not make recommendations about roads.

As the depression eased, the demand for cars increased[104] again and lobbying by the motoring organisations again began to put pressure on governments. During the late 1930s the state highways took shape, were named as highways[105] and began linking towns and cities in a coherent fashion (refer to Figure 7.4.2).

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[104] 111,000 private vehicles were registered in 1937 making roads a priority for government http://www.tmr.qld.gov.au/.
[105] For example the Pacific, Bruce, Condamine, Cook and Gillies Highways were all named.

Projects constructed during this period included the Hornibrook Highway, the William Jolly Bridge in Brisbane, the Indooroopily Bridge, and the Story Bridge[106].

Figure 7.4.2 Gazetted Roads Queensland 1941

1941

MILEAGE	1,733
VEHICLES	128,436
POPULATION	1,032,000

(Source: A Krosch, Personal Communication, 24 November 2004)

The Second World War had a major impact on the Main Roads Commission. It became heavily involved in the war effort and its focus was not limited to roads. It

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[106] For a detailed discussion see Cameron: 1989: 123-132.

was involved in a large program of defence works. Most of the work was under the direction of, the Allied Works Council. The Commissioner for Main Roads was the Deputy Director of this body in Qld. War-time projects included roads to defence facilities, fortifications, fuel storage tanks, firing ranges, parade grounds, docks, jetties and widespread work in airport construction. A by-product of the War and the reduced availability of labour was the increased use of machinery and technology in road building. While the Commission had used tractors and dozers in the 1930s they were expensive and when unemployment was high there was little incentive to use machinery. In the War and Post War era of labour shortages however circumstance changed. The increased use of machinery and technology generally was to be a feature of road building carried into the future (Golding, 2000: 5; Cameron, 1989: Chapter 6).

Hence at the end of the War the Main Roads Commission had new skills, technology and focus and it also had greatly increased size and responsibilities. The Commission had grown into a large government department with multiple responsibilities, a large day labour force, significant plant and technical expertise. This size and complexity was not well suited to the highly centralised structure that Kemp had created in the 1920s (Golding, 2000:5). Other factors also caused difficulties.

Between the end of the War and 1950 the Commission was impacted by staff shortages caused by the War and having to use relatively unskilled labour. Generally new migrants were employed who were more transient and saw work in road building as short term employment. This labour situation further fuelled the move to increased use of machinery. The government policy of preventing roads

from competing directly with rail remained firmly in place and this meant that any potential for significant growth in road development immediately post war was not realised (Cameron, 1989:226). The other major factor that impacted the Commission was the resignation of Kemp as Commissioner for Main Roads in 1949 to concentrate on the role of Co-ordinator General. This created a significant vacuum in the organisation as the next two appointments (D.A. Crawford and A.R. Williams) were of staff who were close to retirement and both did not really provide the leadership that was required in a role that Kemp had built to become the most powerful in the Qld bureaucracy (Diamond, 199?:116). Hence the Commission closed out the 1940s continuing the policy and direction that had been set by Kemp.

7.5. The Department of Main Roads 1951 – 90

In February 1951 the Commission for Main Roads ceased to be a Commission and was the staff were moved into the Public Service proper under the "Public Service Acts Amendment Act 1950", creating the Main Roads Department. In the main the Commission's responsibilities were transferred to The Main Roads Department. It became responsible for the planning, surveying and constructing the: State highways; main roads (developmental, secondary connectors, mining access roads, farmers' and tourist roads); and bridges and related works. The Department also completed many construction projects at the request of other State and Federal agencies.

The Main Roads Department continued to share responsibility with various local authorities, the Lands Department, and the Public Estate Improvement Branch.

The original structure of the Main Roads Department was little changed from that of the Commission and incorporated a number of branches from the Commission under the office of the Commissioner of Main Roads. There continued to be District offices throughout the State.

The Department made a policy decision in the early 1950s not to declare any more roads until funds became available to cover their construction and maintenance. The period until was initially one of stagnation in the State road network and the state road network at the start of the 1960s was the network that had been established by the end of the Second World War (Cameron, 1989:228). The Federally funded roads however, continued to develop with work on the route from Cloncurry to Mt Isa, the connections to the Territory via the North-Western and Barley Highways and the development of beef roads in the Gulf and the Channel Country. During this period then growth was in the extremities of the network to support economic development and primarily funded by the federal government. A consequence of the nature of this growth was an increase in District Offices remote from Brisbane and increasing decentralisation within Main Roads.   Increasingly Main Roads engineers would consult with engineers from the local authorities with the de facto effect of by-passing Brisbane-based centres of responsibility.

Several factors worked to end the malaise within the state road system and build an impetus for increased road building activity within the state road network. First post war economic growth enabled rising car ownership with registrations increasing by 400% from mid the 1940s to the mid 1950s (Refer to Table 7.5.1). Second by the late 1950s there was significant pressure from local authorities with the Local Government Association resolving in 1957 that the Government needed to

review which Main Roads were gazetted. Third, also in 1957, a new (conservative) state government was elected in 39 of the previous 42 years, Queensland had been governed by the Labor Party. And finally, a new Main Roads Commissioner, Charles Barton, with strong government support to drive change was appointed in 1960. As one respondent observed these changes were very significant as roads became to be seen as a primary rather than a supporting mode of transport. These shifts were reflected in heightened strategic importance of roads within whole-of-government systems of administration. From 1957 to 1991, the Commissioner and the Department reported to a wide range of Ministers responsible for portfolio areas including mining, public works, local government, police, housing and the Deputy Premier (Archives Agency ID192, Main Roads Department I). These disparate reporting requirements at the portfolio level indicated the increasing importance of roads to government. As one respondent indicated, this was a change from the situation where:

"Prior to the 50's roads ran to the rail head" (Respondent 0077, December 2009).

Barton was a consulting engineer from Mackay who had been a junior Main Roads Engineer in the 1930s, served in the army in the war and had a good relationship with the minister of the day. He was very much the 'new broom' and was characterised as a 'strategic thinker and policy planner'. He had strong ministerial support and drove a program of modernisation and devolved decision making to deliver increased responsiveness and efficiency[107]. Kemp had centralised power in Brisbane but the larger network and increased responsibilities required more decentralised decision making.

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[107] Barton and his period of administration is discussed at length in Cameron, 1989: ch16; Diamond, 198?: ch6; and (http://adb.anu.edu.au/biography/barton-sir-charles-newton-12182).

"Main Roads was very centralised until the 1960s. Then Barton reorganised and devolved power to the Districts" (Respondent 0077, December 2009).

"Charlie Barton was significant influence and redesigned the districts. He put Assistant Commissioners in to run groups of Districts and he boosted the technical capability by adding a technical engineer to each division. He also reinforced the relationship between local government and Main Roads" (Respondent 0087, December 2009).

"Charlie Barton revolutionised Main Roads. He threw out the old building and built the first new ultra modern government building at Spring Hill. In its day it was ultra modern. He reviewed all the staff and got rid of old wood. He put them on the 8th floor, gave them titles and put them, out to grange....The government sent Charlie over to the US...He brought it Wilbur Smith and Associates. They did the same to the roads department that had been done by Ford, Bacon and Davis to the railways. It cost a lot of money and the government paid for it" (Respondent, 1001: 28 September, 2009).

Barton decentralised decision making to District Officers[108], required local consultations in decision making as well a driving a strong push to improve technical skill (in service training and encouragement of higher qualifications) and documentation of standards. As Golding has noted, Barton's,

"...arrival at Main Roads heralded a revolution built around: A decentralised, line and staff organisation; Development of a strong core technical capability; Delegation and clarity of accountability; Strong training emphasis to develop capabilities and skill sets; [and] Enunciation of a clear mission, supported by principles of delegation, communication and trust. His mission statement for the department was simple and direct: 'Adequate roads at minimum cost.' ...He delegated widely to District engineers and set them up as the Main Roads' authority in their areas" (Golding, 2000: 10).

Barton restructured the department in a number of key ways. First he created the position of Deputy Commissioner and Chief Engineer to reduce his operational load. Second, District Engineers were allocated Deputies to strengthen their technical resources. Third, District Engineers were sent to live in their Districts. Fourth new technical streams were created in the areas of construction and maintenance and research and planning. These reforms were based on the desire to

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[108] Barton placed Assistant Commissioners and Divisional Engineers in Townsville, Rockhampton and Brisbane and a Divisional Engineer in Toowoomba.

create an ability to deliver the Road Plan of Qld, which came to fruition in 1963 (Golding, 2000: 12). It was the first comprehensive road plan for Qld. A critical element of the Plan was a linked and simultaneous review of the classified road network which was based on the nature and direction of travel not the location of the road. This review of the classified network meant that the Plan was a rationalisation and re-evaluation of the entire road network. The Plan also restructured funding for roads making the Department responsible for funding all classified roads other than Collector, Local and Private Roads. The ongoing review of the Plan was a key feature of the document so that it was dynamic and kept pace with changes in demand. The flexibility in the classification system was underpinned by changes in legislation. This system remained in place until 2001.

Table 7.5.1 Car Registrations – Queensland 1935 – 2012

Cars and Light Commercial Vehicles on Register in Queensland as at 30 June from 1935 to 2012

Year	Total	Year	Total	Year	Total	Year	Total	Year	Total
1935	82,834	1945	102,326	1955	246,882	1965	477,538	1975	817,308
1936	85,449	1946	108,598	1956	266,310	1966	500,390	1976	866,228
1937	89,462	1947	116,966	1957	284,655	1967	525,433	1977	945,269
1938	95,984	1948	125,787	1958	304,782	1968	553,217	1978	997,666
1939	104,021	1949	137,114	1959	323,443	1969	575,893	1979	1,053,397
1940	106,051	1950	156,609	1960	346,442	1970	607,134	1980	1,106,811
1941	104,781	1951	179,751	1961	362,538	1971	637,282	1981	1,189,174
1942	88,691	1952	192,643	1962	377,068	1972	678,482	1982	1,261,344
1943	94,254	1953	204,979	1963	404,144	1973	725,065	1983	1,315,267
1944	99,947	1954	223,648	1964	440,806	1974	773,189	1984	1,353,747

Year	Total	Year	Total	Year	Total
1985	1,374,859	1995	1,878,375	2005	2,625,359
1986	1,402,143	1996	1,945,024	2006	2,733,893
1987	1,421,874	1997	1,994,776	2007	2,855,877
1988	1,462,390	1998	2,058,227	2008	2,976,160
1989	1,539,660	1999	2,139,266	2009	3,057,451
1990	1,602,673	2000	2,184,467	2010	3,121,297
1991	1,638,226	2001	2,243,269	2011	3,180,630
1992	1,683,736	2002	2,314,169	2012	3,271,721
1993	1,742,952	2003	2,403,406		
1994	1,815,783	2004	2,509,970		

Note that figures include utilities/panel vans

Note that figures in this report may differ slightly from previous reports due to ongoing data cleansing.

(Source: *www.tmr.qld.gov.au*)

The Road Plan of Queensland also marked the end of competitive restrictions which favoured railways. State Highways in poor condition connecting important centres that had railways could now be upgraded. The period from 1960 – 1983 when most of the important roads in the state (carrying the bulk of the traffic) were upgraded to bitumen or concrete was a critical achievement of the Department. Part of this increase was achieved through Federal Funding for Beef Roads under the Beef Roads Scheme which was expanded in mid-1961. In the decade of the 1960s over 1,000 km of Beef Roads were built in Qld under this scheme. Figure 7.5.1 below illustrates the increase in roads gazetted under the Main Roads Act and the increase in Total bitumen and concrete surface roads at this time.

Figure 7.5.1 Road and Rail Activity Queensland – 1860 - 1990
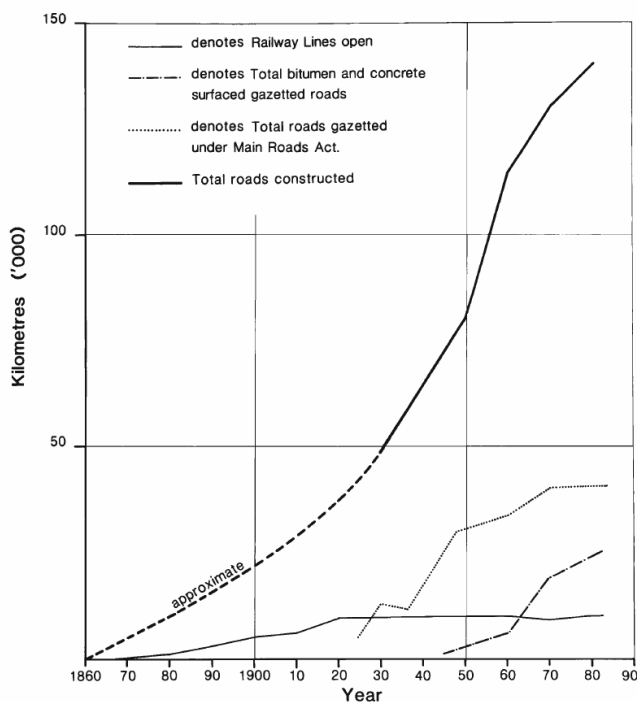
Roads Constructed and Railway Lines Open

Source : Queensland Year Book, 1986
Main Roads Department data

(Source: Cameron, 1989: 233)

The Main Roads Department had focused on State Highways and major arterials. Roads within Brisbane City had remained largely the province of Brisbane City Council. As Krosch has observed,

"*The new government [in 1957] made a major push to improve Queensland's system of main roads connecting cities and towns. In October 1960, Charles Barton made a trip to the USA where he found that the state road authorities were getting involved in the road issues within cities. In 1956 a "milestone" transportation study had been carried out in Chicago. Prior to that time Main Roads had implicitly seen itself as a 'rural roads authority'.*

When Charles Barton returned from his USA trip, he focused on what Main Roads needed to be doing with regard to the road system in Brisbane. The following year Mr Clem Jones became Lord Mayor of Brisbane. Mr Clem Jones also sought to initiate a traffic study for Brisbane. Both men subsequently pooled their efforts and in 1964 an American consulting engineering firm, Wilbur Smith and Associates, was commissioned. Their brief was to undertake a transport planning study and recommend a "Road Plan for Brisbane"." (Krosch, 2009:7).

The focus of Main Roads prior to 1963 on rural arterial roads meant that gazette roads were largely highways starting from the edges of suburban development. Radial routes in cities and towns were the responsibility of local authorities. Often this led to differing standards on links managed by different local authorities. In Brisbane the result by the 1960s was a road system that was inadequate to cope with the demands of rising car ownership and usage (Cameron, 1989:247). This led to the Brisbane Transportation Study of 1965.[109]

The result of the cooperation between Brisbane City Council and the State Government was a road plan for Brisbane with recommendations covering 16 years to 1981. The Plan included 155 km of urban freeways, 394 km of arterial and sub-arterial roads and five new river crossings as well as upgrades to existing bridges. In

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[109] Transport studies were also undertaken in other urban areas of the State at this time and included the Gold Coast in 1962 and Townsville in 1966 (Daimond, 199?: 142).

1965 the cost was estimated to be $170 million (Cameron, 1989: 247). The main recommendation was for a central ring freeway (see Figure 7.5.2).

Figure 7.5.2 Ring Radial Freeway System for Brisbane (Wilbur Smith and Associates)
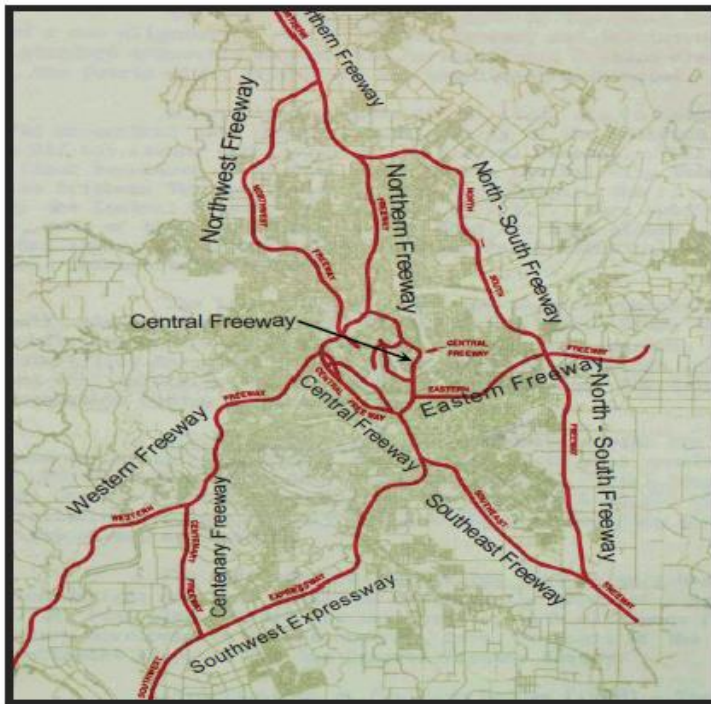
(Source: Krosch: 2009:7)

The proposed freeway system had an inner ring (the Central Freeway) and five radial freeways (South-East Freeway, Eastern Freeway, Northern Freeway, North-West Freeway, and Western Freeway). There were also a radial freeway (South-West Expressway) and a route around the eastern side of the city (North-South Freeway). This plan was heavily influenced by American approaches to transport planning and reflected a CBD-dominant view of the city. A reflection on it by a senior Main Roads Engineer is instructive,

"Was it sensible to plan for only one ring - a central ring? Beijing has five great ring roads (and more to come). In London, they failed to implement a central loop that was planned over 40 years ago - but they did implement, much more recently, one great outer ring road called the M25. An area of debate in urban transport planning in the USA during the early 70's was whether the freeway system should be ring-radial or a rectangular grid. The resolution was that it didn't much matter what idea you started out with as the limitations of topography and untouchable sites and so on would lead to a pattern of major roads that was much the same - providing an interconnected network covering the urbanised area" (Krosch, 2009: 8).

Implementation of the Plan required a large amount of land acquisition (including resumption of houses) and a level of freeway design which was outside the experience of Main Roads and Brisbane City Council (Krosch, 2010:15). To manage implementation the state government and the Council set up two committees to implement the Plan: a policy committee (comprised of the Minister for Main Roads, the Minister for Transport, the Lord Mayor and the Coordinator-General); and a technical committee (comprised of senior officers from both organisations).

At this time (1968) Charles Barton retired as Commission for Main Roads and became Co-ordinator General of Queensland just as Kemp had done before him. The organisation however, was not to change significantly until the early 1990s. Barton's approach and plans brought on board a new style of engineer (the transport planners for example, Finger and Schubert) and a new style of operation that was to be largely unchanged until impacted by the neo liberalism of the 1990s.

Significant funds to deliver the plan were provided by the federal government between 1969 and 1974 under legislative provision that allowed the funding of urban freeways.   The 1973 federal budget marked the end of this funding program and the federal funding reduction effectively ended the large scale delivery of motorways in

Brisbane until the recent era of building post 2000. With the funding cuts the plan was scaled down (see Figure 7.5.3) and the focus on construction was in the south east and the south west of the city. Between 1970 and 1985 some of the projects were completed using federal, state and local government funding included: the Story Bridge and Expressway; the Captain Cook Bridge, the Riverside Expressway and the South-East Freeway (Krosch, 2009: 14-16)[110].

Figure 7.5.3 Proposed Scaled Down Freeway System for Brisbane
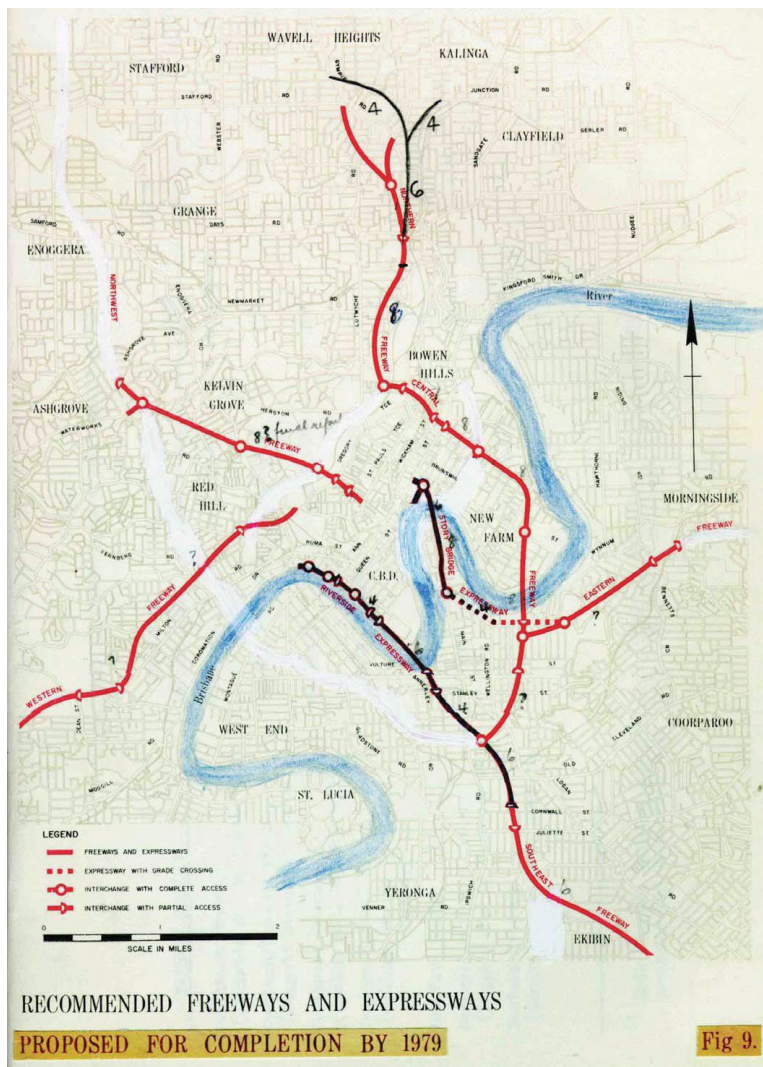
(Source: Krosch, 2009: 13)

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[110] For a detailed discussion of construction achievement see Krosch, 2009.

Much of the Plan however, was not delivered[111] due to the federal funding

redirection in the early 1970s and the shape and nature of Brisbane as a city was

permanently impacted.   Respondents described the process as follows:

"modes other then roads were not pursued... The then Treasurer (Sir Gordon Chalk) was most upset that there was no funding for public transport as an outcome of the plan. I remember him saying, 'I am not happy. I don't like it'…. [However] The recommendations of the plan [which were ultimately accepted] were primarily roads oriented. They included 96 miles of freeway and expressway and improved parking facilities. As a direct result of this plan the riverside expressway was constructed and the South East freeway was built. There were a number of road improvements in the plan that were undertaken by the Council. The Gateway Bridge was in the study. The Gateway arterial was in the study. The plan shaped the development of the road network." (Respondent, 10013, October 2009)

However, the full extent of these roads and freeways-based ambitions did not

come to pass because of conflicting transport ideologies with the Federal

Government during the early 1970s, which controlled crucial purse-strings. The

same respondent continues:

"In the 1970s it all came to a grinding halt because Whitlam [Labor Party Australian Prime Minister] and Uren [Whitlam's urban development minister] were determined not to inflict freeways on urban areas due to dislocation and social impact. They withdrew funds to those facilities. There was then a resurgence of traffic management and local road widening. Had the full 96 miles of freeway been built it would be a profoundly different urban structure." (Respondent, 10013, October 2009).

Another respondent described these processes in similar terms:

"In 1972, Whitlam was elected and one of the first things his govt did was stop funding for freeway construction, hence the network was never completed." (Respondent, 10077, 2004)

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[111] "The Wilbur Smith plan was essentially a ring radial system, supplemented with an eastern outer circumferential (the Gateway Motorway). The Central Freeway ring was never built. The only radial that was fully built was the South-East Freeway. The outer part of the Western Freeway was built, but not the inbound section from Toowong. The Northern Freeway, North-West Freeway and Eastern Freeways were never built. In concept, the Clem Jones Tunnel is really the eastern half of the Central Freeway with a different topology. It starts and ends in the same locations as the Central Freeway eastern half. The ICB continues the Central Freeway around the northwest sector of the central city and the Hale Street Bridge continues it a little further. The Airport Link is fulfilling the same function as the Northern Freeway and the later (aborted) proposal for an Airport Motorway" (Krosch, 2010: 24).

This period of intense cooperation between Brisbane City Council and Main Roads during the 1960s and into the 1970s was significant because it marked a major shift in the relationship between local government and state government in relation to road management in Brisbane. Brisbane City Council was very large and had always performed the role of road planner for Brisbane. The State had focused on the rural roads. After the Wilbur Smith Plan the state took on a much more active role for urban roads.

"All public roads belong to the government unless the state decides to run them. It's very similar in New South Wales and Victoria. Unless they are declared state-controlled roads, the road belongs to local government. Local government are road authorities in their own right. There is a lot of wheeling and dealing about who owns what roads. This is due to the funding issues. Brisbane City Council is large. The Wilbur Smith plan introduced freeways and expressways into Brisbane City. Prior to this the state didn't plan much. Brisbane City Council defined the plan" (Respondent 10087, December 2009).

"Main Roads was not big as far as Brisbane City Council was concerned. Brisbane City Council did its own thing. There was not a lot of interaction With Brisbane City Council. It was more interaction with other councils" (Respondent 10097, December 2009).

The first signs of the community taking an active opposition to urban motorways emerged in the late 1960s and early 1970s. As Mullins (1979) notes there were two clear periods in this early struggle,

"The anti-freeway struggle erupted in the mid-1960s, with the commencement of the freeway programme, but action was constrained during these early years and it was not until the 1970s that overt and contestatory action was taken. Differences between these two periods were seen to result from structural differences located at both an urban and a societal level, with the 1960s being a period when the working-class had, generally, been tightly contained. In contrast, the 1970s was an occasion when working-class action, at both an urban and a societal level, was widespread and it was this which brought the contestatory stance of the 1970s." (Mullins, 1979:ii).

In the late 1970s protesters tried to block the demolition of five houses required to build the Markwell St Bridge in Brisbane. The Police were called and the protesters were moved away. The bridge subsequently opened in 1978. This resistance to freeways that emerged initially in the late 1960s in Brisbane has been documented extensively by Mullins (1979) who found that there was relatively low involvement by residents and that it was a struggle that was part of the broader struggle about urbanisation in Australia,

"Brisbane's anti-freeway movement, then, existed as three struggles in one: there was economic action over the destruction of Windsor housing; ideological action over increased dangers of air and noise pollution and over the exploitation of the environment by the auto-oil rubber cartel; and political action over the inadequacy of public transportation. The effects of this 'three in one' struggle did not make an appearance as an urban social movement, but emerged as regulatory effects brought about following the indefinite postponement of announced freeways and of all future freeways. There was a reprieve to house destruction ('urban regulatory effect); a contribution to an increased emphasis on public transport ('political regulatory effect'); and a contribution to the ongoing ideological attack on the exploitation of the environment ('ideological regulatory effect')." (Mullins, 1979: 396).

More successful examples of 'people power' however, were to follow in the 1980s and 1990s, as will be discussed below.

In the early 1980s Qld applied innovative financing (previously applied in the railways where freight arrangements with coal companies funded construction – see Chapter 5 above for detail) to road construction to overcome shortages of funds from traditional sources. The Gateway Bridge and the Gateway Road System were built using a company nominally owned by two public servants.[112] The bridge and funds were raised with a government guarantee (Respondent 1003, Private Address for 10000 Friends of Greater Sydney 2009). This model was used again with the Logan

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[112] The Gateway Bridge Company was a 'corporation's law' company owned by the Commissioner of Main Roads. It later became Queensland Motorways Limited (QML). Refer to the Gateway Bridge Agreement Act 1980.

Motorway Company in 1987 where the Logan Motorway Company was established to build and operate a tolled motorway across the south of the city. A more recent example of this approach is the Port Motorway Company established in 2002. Now all are subsidiaries of Queensland Motorways Limited (QML)[113].

This activity in the 1980s was described by one respondent,

"In the early 1980s the Commissioner was focussed on building the gateway and the arterial road system. By that time Main Roads had agreed to take over a number of arterial roads in Brisbane. There was a focus on improving those roads through widening etc. With regional roads the focus was also widening e.g. 4 lanes to the Gold Coast; 4 lanes to Toowoomba; 4 lanes to Gympie. The structure of the Department meant that the Districts and the Divisions had a close relationship with communities and this included consultation on projects" (Respondent 10013, October 2009).

By the mid 1980s motorway construction using innovative financing was well underway in Brisbane. The mini boom was however to be impacted by the community becoming active in opposition to road works. The first example of this (Markwell Bridge) was discussed above but more striking examples which changed forever how Main Roads interacts with the community were Route 20 and the Koala Freeway. The idea for Route 20 emerged after the Gateway Bridge was constructed to provide a circumferential route on the western side of the city. Figure 7.5.4 shows the link that became the centre of controversy in relation to the original Wilbur Smith Plan.

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[113] For a history of QML refer to *www.qldmotorways.com.au.*

Figure 7.5.4 Route 20 in Relation to the Wilbur Smith Plan

(Source: Krosch, 2010: 18)

A community based group was formed to oppose Route 20 CART (Citizens Against Route Twenty). It was active from 1987 to 1990 when the project was abandoned by government. In 1990 CART morphed into Citizens Against Roads Transport. Also in the late 1980s, community opposition prevented the construction of a motorway from the end of the Gateway Motorway to Helensvale parallel to the Pacific Highway which went through Koala habitats (the 'Koala Freeway'). This proposal and the related community opposition arguably led to the defeat of the Goss government when it lost every seat along the proposed route at the State election (Krosch, 2009:22).

The role of community action – a type of new advocacy coalition in Qld politics – was described by respondents,

"The community became a player as a result of the freeway program. [Route 20] was going to disrupt suburbs and communities. It was severely opposed. This was the first time a community stopped a road project. We misjudged the community reaction. Koala Motorway was a proposal to build a duplicate of the Pacific Highway but further to the East. It went through an area that was regarded as being essential to the preservation and growth of koalas. It happened during the Goss government when I was in [the] Premiers' Department. There were several alternatives put forward but in the end the State election happened and the Goss government believed it cost them 2 or 3 seats in the vicinity of Logan. [As a result of these lessons] there were no big projects from the mid-80s to the early 90s. The emphasis shifted to road use management and the funding to public transport; increased emphasis on bus usage and an upgrade of the rail system." (Respondent 10013, October 2009).

"Route 20 was an awakening to community consultation. The experienced moved an institution to build a whole range of capability in relation to consultation. We had expected to be welcome and then we were thrown out. The Koala corridor was the result of confusion and poor communication at both state and federal levels" (Respondent, 10087, December 2009).

"Route 20 was the first real interaction of Main roads with the community. People got up in arms. The State was scared" (Respondent, 10097, December 2009).

"Route 20 in Brisbane in the 80s is the first time a major upgrade was beaten down by a community group. Community engagement then became a very big driver" (Respondent, 10067, October, 2009).

7.6. Transport Department (Roads Division) 1990 - 96

This era of community confrontation with roads planning also coincided with important administrative reforms to the system. The election of the Goss [Labor] Government in 1989 brought with it major rationalisations within government agencies. The new government reduced the number of Departments from 27 to 18 (Queensland State Archives Agency ID2723, Public Works Department II), and included within these reforms, the functions of the Main Roads Department were

amalgamated with Transport, forming a Transport Infrastructure Division within the Transport Department. This division later changed its name to the Roads Division. The merger included the former Departments of Transport, Harbours and Marine, and Main Roads. The South-East Queensland Transit Authority (SEQTA) which was responsible for the co-ordination of transport in South-East Queensland[114] also came under the control of the Transport Department (Queensland State Archives Agency ID121, Transport Department II). Queensland Rail was included as part of the Department's structure until 30 June 1991, after this time it was restructured on a commercial basis as a separate organisation.

These reforms posed important implications for roads management, but, like the case of Qld rail discussed in chapter 5, core elements of institutional knowledge and power survived into the new structures. As respondents observed,

"There was a big wave of neoliberalism and road reform [in the early 1990s]. Neither side of politics here particularly wanted it. Neither side wanted to get rid of Main Roads technical capability. We did however have to put our specialists into technical (consulting style) units. Because of this Queensland is now the strongest state in road capability" (Respondent 10077, December 2009).

"I'm unsure where the agenda came from in the 1990's. With commercialisation of the Districts you were allowed to buy in your own technical services. There were no common standards and this led to chaos. Reform was part of the agenda. It was a sense of de-engineering they wanted people more focused on outcomes. During this time RoadTek (respondent used this name but at the time it was Commercial Operations) was successful at maintaining an in-house capability. Technical specialists were forced to act like consultants and to accept a brief. They removed the engineering authority role (Respondent 10087, December 2009).

"The early 90s was the time economic rationalism you had to be commercial. Under Alan McLennan the Transport Technology Division was commercialised at this time. Alan had a constant battle to demonstrate value. All the funding was on a project basis. This led to some angst in the Districts because they seemed to have to pay for staff that they didn't have to pay for before. Districts got the position of power. Main Roads was expected to act like a business" (Respondent 10097, December 2009).

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[114] Transport Planning and Co-ordination Amendment Act, 1995

The commercialisation imperative within the new Transport Department also occurred in line with changes to the character of government decision-making under the Labor administration. As one respondent observed:

"Goss came to power and was determined to change in the way Qld was governed... . He was driven by the Fitzgerald Inquiry [into corruption during the previous government] and wanted to implement transparency and accountability across government. The only reason I survived was because I was a merit appointment. In Goss's first three years there were elements of economic rationalism: Making things more cost effective; Closing railway stations; Closing courts in rural areas where there was low demand [etc]... Under a Labor Government there is a totally different idea of the role of a senior public servant. Under a [conservative] government there will be a minister and an office with three or four staff (press officer and typist). The Premier will have maybe six staff. Under a Labor government there is a whole range of advisers and people who form another level of scrutiny on anything that goes to the Minister. The role of the senior public servant is still to provide advice but it is scrutinised by advisors and overlaid in a formal way by political and social considerations. The process becomes protracted and it becomes increasingly difficult to operate." (Respondent 10013, October 2009).

The key changes in this era for the Roads Division have been described by Golding (2000: 20 – 22) as: replacement of the line and staff organisation with a matrix structure; the reorganisation of regional directors reporting to the Director General; increased variety of programs for regions to deliver; and greatly reduced powers for head office. Golding has also described the loss of technical skill at this time, the reduced staff training and the large number of customer service reforms that stretched the ability of the organisation to cope with the level of change. He specifically notes the standard micro-economic reform tool-box and principles of commercialisation that were applied and resulted in the separation of owner and deliverer; the separation of corporate and commercial activities; the development of road network strategies by link and associated investment strategies.

These moves at the state level which impacted activity in roads were reinforced by changes at the local government level in Brisbane. Jim Soorley was elected Mayor in 1991 and did not favour road building. Initially, he wanted to run a

traffic management and public transport agenda. It was only later in his turn that he became a significant supported of a more pro-roads policy in Brisbane. As several respondents noted,

"Soorley came in as an ant- roads man and he left as the biggest roads man after Clem Jones" (Respondent 10077, December 2009).

"Jim Soorley was a no roads man. However he came back from the US and put an inner-city bypass on the agenda" (Respondent 10097, December 2009).

"In the 1990s Jim Soorley was Lord Mayor and he wanted out of roads in the city. In Brisbane he wanted to get back to the strategic roads and a strategic network" (Respondent 10057, December 2009).

7.7.   Main Roads Resurrected 1996 – 2000

The Main Roads Department was resurrected again on 26 February 1996,[115] exactly seven days after the conservative (National-Liberal coalition) Government of Premier Rob Borbridge took office. As noted earlier, community protest over motorway construction in south-east Qld played a key role in the demise of the previous Goss Labor administration. Under the new government, the road construction and management functions of the Transport Department were carved off, although the latter retained responsibility for overall transport planning and coordination. 'Queensland Transport' was adopted as the trading name for the Transport Department and the Main Roads Department was the name of the State roads agency (Queensland State Archives Agency ID193, Main Roads Department II).   The charter of the newly re-established Department was to provide and maintain a road network as part of the state's transport system.

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[115] "On 26 February 1996, under the Public Service Management and Employment (Departmental Changes) Order (No. 2), Main Roads Department II was established and all functions relating to roads then held by Transport Department II were transferred to the new Department" (Queensland State Archives Agency ID193, Main Roads Department II).

However, beyond these changes, the most significant change in this year was the reinvigoration of the relationship with local government which had become somewhat disconnected in the previous decade. As one respondent noted,

"In 1996 the coalition came back with a view that government had taken out its eye off roads, off working with local government and that it had failed. Local government is seen as a significant lobby group this goes back to Joh Bjelke Petersen days when the constituents were councils. Very strong connections at local government level. This shifted in 1989 when Labor came in and amalgamated transport into a centralised function. It was a disconnection from local government for five years until it shifted back with the roads alliance in the late 90s. The alliance reconnected the department strongly with local government...Regions enable local government and road agency to be in touch. The role of the districts was [also] revived in the mid-90s. It provided significant employment and it's untenable for government to shift. For example, in places like Cloncurry the three employers are Main Roads the Railway and local government" (Respondent 10067, October 2009).

The other major change which was an outcome of previous experience was that the state government had become very careful of endorsing 'lines on maps' that did not have broad community support. This played out at least partly in how the Integrated Regional Transport Plan (IRTP) for South East Queensland was developed in 1997. It was a 25 year plan for the region that had involved consultation with over 50,000 people. The approach of the plan is notable for the following key shifts: the change from moving vehicles to moving people; the aim to moderate traffic growth (accessibility over volume); and capacity expansion to support public transport and higher capacity freight vehicles.   Apart from public opinion the other driver for more efficient use of road space was a continued funding shortage which characterised the 1990s (Krosch, 2010: 20 – 24).

The final significant shift in the late 1990s also emerged from Brisbane City Council and that was a sophisticated approach to planning Brisbane in transport and land use terms. As one respondent explained,

"Brisbane has your classic radial transport system in the CBD with major rail and roads serving the CBD. Key parts of the growth corridors however were not well served by Rail for example the Southeast and the north. Jim Soorly [Mayor] had a reform agenda and was determined to change the city. He was building a better Brisbane, ferries on the river, outdoor living, some bushland. He engaged with the community and to identify outcomes and to do it. David Hamil was an important transport minister he always had time for meetings. Maureen Hayes was the transport chair at Council and was influential, dominant and well-connected politically. The City Council had a significantly bigger and better transport planning capacity. This led to the city setting the agenda and leading the transport and land use planning in Brisbane" (Respondent 10057, December 2009).

Queensland then closed out the twentieth century with an intact large and technically competent Main Roads Department that had both re-establish and revitalised its links with the community and with local government. Planning and thinking in Brisbane for the future was in terms of liveability and connectivity with the community firmly in place as a strategic and at times very powerful partner and player.

7.8.   Conclusion

The institutional-inspired analysis of the history of roads in Qld brings to the fore several key points.

- The road transport policy arena is particularly strong and its resources are reinforced by extensive networks.
- Resistance to the implementation of road transport policy agendas have had short-term and limited success. The impact of resistance by

local groups has really been one of delay not one of serious disruption to the implementation of long-term policy goals.

- Local governance arrangements have important implications for the ability of cities to implement policy change. Single governance units for cities seem to lead to faster and more even policy implementation then multiple overlapping jurisdictions.
- Change can only be understood in relation to the impact of global capital regime.

8.   Comparative Analysis of the Case Studies

"The restructuring of Australian cities – and of cities in general – is not purely the product of market processes. It reflects complex changes in relationships between market, state, class and ideology as interacting determinants of economic and social order. 'Globalisation' involves greater emphasis on market relationships transcending national and regional boundaries, extending the scope for capital accumulation by transnational institutions…What is happening in the cities can be interpreted, in part at least, as the product of this changed balance in the institutional structure of contemporary capitalism" (Stilwell, 1998: 23).

8.1.   Introduction

This thesis has been about institutional regimes in land transport. It has focused on how these institutional regimes mould local economic outcomes in different local spaces at different scales and at different points in time. The prevailing argument here has been that institutional arrangements determine social and economic outcomes for places within the context of globally connected economic regimes Jessop (2001). Case studies of road and rail transport from 1850 to 2000 in NSW and Qld were used to add to our understanding of the relationship between ideas and policy changes, the role of individuals as agents of policy change, and the role of institutions.

Returning to the themes identified in the opening chapter, the thesis sought to identify: the main themes of change in institutional arrangements in the management of land transport between 1850 and 2000; the drivers of these changes; and, policy responses and the outcomes of these changes for

infrastructure governance, service delivery and special economic development. Four hypotheses were constructed to guide the research.

- First, that policy changes as a result of the emergence of ideas that capture advocacy within policy networks which are themselves part of the institutional structure.

- Second, the speed, and extent of the implementation of these ideas depends on the relative strength of individual actors as agents of policy change.

- Third, that the actual nature of the implementation is modified by the relative strength of the policy arena and of the key institutions within it.

- And fourth that the policy, even if it is heavily linked to global trends, can be significantly modified by the "local" through the advocacy of interest groups.

This chapter details the main findings in relation to the research questions.

8.2.   Themes of Change in Institutional Arrangements

The period covered by the thesis allowed a reinterpretation of history using an institutional perspective. There were five major themes of change during period that impacted both road and rail policies. First from 1850 through to the 1920s the notion that the railway was the engine of growth which led directly to the construction of the heavy rail networks in both NSW and Qld. It was this set of ideas that embedded the first set of institutional forces which shaped settlement patterns, developed the economic base of regions and locked in technologies further embedding a range of related social relations and networked economic forces. The second significant

theme related to the rise of motorised transport and the associated demand for increased personal mobility that followed the First World War. This development directly impacted the earlier investments in rail creating a competitive environment requiring adjustments and divestments which resulted in the reconstruction of the prevailing institutional arrangements.

This reconstruction took place over a 30 year period and it was not until the 1950s that the transition to the new institutional arrangements was achieved. The modernisation phase of the 1950s, which is the third theme of change during the period, served to both align institutional arrangements with the new economic and technological requirements of global economy after the Second World War and to provide an engine which enabled the dynamics of regional change to be immersed into the new regime. The fourth theme of change is one of urban growth and commercialisation. Urban growth led directly to a need for improved city planning and mobility. This demand for mobility found its expression in improved roads which further generated demand for roads indirectly contributing to a financial crisis for the railway. These crises provided the context for commercialisation to become embedded in existing institutional arrangements. The final theme of change that had significant impact was the implementation of the neoliberal agenda that lead to significant transformations in road and rail investments and institutional arrangements.

These themes need to be understood in relation to the global economic institutional regimes and their transition over the same period of time. Each of these major themes resulted in spatial fixes that themselves embedded social relations and processes in regions and cities. The results for regional places, cities and

communities were path dependent activities that were further locked in by the technology associated with the large investment choices.

8.3.   Drivers of Policy Change and Policy Response

A key finding was that policy changes as result of the emergence of ideas that capture advocacy within policy networks which are themselves part of the institutional structure.   The policy responses varied in NSW and Qld in relation to the implementation of the same idea due to the impact of locally embedded economic, social and cultural forces shaped by the prior economic histories and the respected geographies of jurisdictions. Intergenerational learning described by North is a powerful force that can be observed to be operating within the cultural dynamic in both NSW and Qld. Strategies that were successful were copied and embellished by future generations of policy decision makers.

In all cases a precondition for a change in policy was the emergence of a policy window created by a disruption in the prevailing stability caused by an event or crises that punctuated that equilibrium.   The ability to implement change was limited by the lock in effects of prior policy decisions. This is especially the case in the transport investments because the technologies embed institutional connections at all scales. So communities, cities and regions created or at least constrain their own futures by their past decisions and the associated created economic history.

In relation to the case study analysis five sets of ideas serve to exemplifying this finding.   First the idea that rail investment was essential to support the emerging industrial development in the mid 19th-century and that it led directly to social and

economic prosperity of communities, towns, cities, regions and nations. Second the notion that motorised transport would solve both the financial problem of the railways and the perceived need for seamless transportation.   This idea gained currency after the First World War. Thirdly, the idea that took hold from the 1960s that freeway development was intricately and intimately associated with the development of successful global cities.   Fourth, the rail rationalisation ideas of the 1960s that were associated with Beeching and led directly to the commercialisation of railway investments and government railway organisations as well as the rationalisation of the associated railway assets. And finally, the neo liberal ideas that took hold from the mid 1980s and drove massive restructuring and rationalisation in road and rail sectors in both the case study jurisdictions.

All of these ideas originated in powerful policy arenas and were transferred and transmitted through a range of networked policy communities that are themselves globally connected to educational, political, industrial, commercial and financial networks that are global.   What they had in common was that they all addressed a need or a gap that emerged in the institutional fabric and required some form of fix to enable the regime to continue to operate effectively. In the case of transport infrastructure the fix had significant spatial implications. Rail lines spread out across regions connecting them to remote markets across the globe through aligned connectivity in port and shipping transport infrastructure.

At the local level agricultural and mining enterprises flourished as rail transport reduced transaction costs and shrank the distance between places by reducing the transit times. Towns and cities grew up around railheads, fleet construction and maintenance depots, rail facilities and the location of aligned

industries. Road developments had similar economic and social impacts with equally significant physical manifestations visible in the built environment. Road investment simultaneously connects and cuts off communities at all levels of geographic scale. Roads act as connective and access nodes while at the same time creating physical barriers that reduce and distort social and economic interactions.

In essence the ideas provided a correction within the prevailing institutional regime, extending its life and allowing it to continue to function. In two instances, it could be argued that the sets of ideas themselves signalled the emergence of a new institutional regime. These ideas were the railway ideas of the mid 1800s that signalled the hegemonic phase of the industrial revolution and the motorised transports ideas of the early 20th century that signalled the emergence of the Fordist regime. This is because the mode of transport itself was central to the success of the prevailing institutional regime. The economics of rail and road transport were central to the efficient functioning of institutional regimes that were in place at the time. The relative dominance of the transport modes were part of the economics of the regime and the ideas that took hold to support and reinforce it. The transport mode itself unleashed forces which had spatial elements that were transformative for places and for place making. This is because they were key mechanisms in the spatial fixes that were associated with the regime.

The initial investment in rail NSW in from the 1850s and Qld from the 1860s was itself a physical expression of the notion that rail transport was central to successful industrial economic growth. This notion had currency in industrial, intellectual, scientific and political circles throughout much of the 18th and 19th centuries. The strength of the idea was reinforced in a broad range of policy arenas

by its alignment with the commercial needs of the hegemonic industrial regime. Institutional forces within the regime further reinforced the strength of the rail development ideas and their physical articulation in the built environment through massive infrastructure investment decisions by governments.

Rail development presented an ideal vehicle for the capital accumulated by European financiers who were accumulating wealth from the success of a range of imperialist colonial investments. From the establishment of the first railway in Britain in 1830 the industrialists quickly identified the positive impact of this transport mode on transaction costs and the resulting positive implications for their profits. Communities across the globe clambered for rail connectivity because they associated the investment with positive social and economic returns at the local level. Hence, the rail era is characterised by the emergence and strength of numerous local advocacy coalitions feeding off ideas and discourse generated in globally connected issues networks and policy communities. These local advocacy coalitions connected with local politicians who acted as policy brokers and in some key instances policy entrepreneurs.

The policy window that enabled the rail age to take hold in both NSW and Qld was created by a combination of an opportunity presented by demand in European markets to drive economic returns from relatively under developed hinterlands in the colonies of NSW and Qld through the successful transport of produce to overseas markets and the perceived crisis in the loss revenue to ports in competing states. At the same time in Qld the geography, the limited available of finance and the almost non-existent road infrastructure reinforced the need for railways. These factors were also important in NSW but were not as strong. It is the strength of these factors in

Qld compared with NSW that explains the difference in infrastructure gauge choice. Qld had very limited financial resources, a very large state geographically with difficult terrains and emerging rural communities with limited and in some cases no road connectivity. The competing port issue was very real in both NSW and Qld. Victorian ports caused angst for Sydney based capital interests and in the case of Qld the ports on the north coast of NSW were better located for communities in the Darling Downs prior to the rail connection first to the river port at Ipswich and then to the port of Brisbane.

It could also be argued that in the case of this particular set of rail development, the strength of ideas in themselves created their own policy window. Such was the strength of the advocacy networks across the globe that in less than 50 years from the building of the first railway in 1830 this form of transportation dominated the globe. Indeed by the 1880s railways had spawned across Europe, America, Australia, Asia, Africa, and India. This was an idea that as central to the prevailing institutional regime and its spread and transmission was on track with the requirements of the regime.

Experimentation with motorised transport began in the late 1860s in various European technical institutions. It was not until after the First World War however that the idea gained currency of motorised transport as an effective mass transit and mass transportation mechanism. As with the earlier rail idea, motorised transport, its utility and its application, became a dominant part of discourse in political, technical and industrial networks.

From a policy perspective, in both Qld and NSW there was an initial resistance to a transition from heavy investment in rail to heavy investment inroads.

In part, this was due to the large sunk investment costs that railway investment represented and the need to maintain traffic on the railway to service the debt associated with the prior investment decisions. This hesitancy was reinforced by a large number of advocacy coalitions who had a stake in continued rail investment. These coalitions ranged from trade and professional associations (commercial and union) to communities dependent on employment related to the railway and associated industries to the railway supply industries (including educational institutions) themselves.

It was not until the late 1950s that the policy pendulum swung from rail to road transport in NSW and Qld.   The policy window that provided the opportunity for change was created by a series of circumstances. These were: significantly increased levels of car ownership and therefore demand for roads; substantial growth in the power of the motor vehicle advocacy groups; transformations in the size of cities and the concomitant reduction in the relative size of rural communities; transformation in institutional regime itself towards production that favoured more highly concentrated populations in cities; increased personal wealth that allowed the purchase of individual transportation vehicles; and crippling railway debt.

It was the latter point that provided the true policy window because it created a financial crisis that enabled the railway policy equilibrium to be punctuated. Treasuries were looking for a solution to what was perceived to be the railway financial problem. Investment by governments in road transport was not perceived to cause a debt problem in the same way that government investment in railways had done. Road investment was the 'new' policy fix.

The prior investments in railways had lock ink effects that impacted the future investments in roads. In Qld for example the initial road investment was limited to creating links to rail heads. In both Qld and NSW significant state investment in roads did not really occur until the 1960s when state governments took over more responsibility for a larger proportion of the road network from councils after the switch from investing in rail to roads.

The recent motorway building era began with the early US and German roads (autobahns in the case of Germany). Britain was later (1958). Significant freeway development in the United States throughout the 1960s and 70s which still continues today had a major influence on Australian road agencies. It was in this whole period that the idea of transport and land use planning being intricately related took hold in academic and intellectual circles. Government agencies sent planning and transport bureaucrats to universities to study the emerging discipline of town and country planning. It was in the universities that significant professional networks were formed that would be instrumental in the successful Implementation of these ideas through the planned development of cities and regions through the 60s, 70s and 80s in NSW and to a lesser extent in Qld.

Notions of free-flowing sets of circumferential ring roads can be seen in the landscape of cities in the US and Britain which were copied and transplanted to both Brisbane and Sydney. They were an integral part of attempts to provide a new spatial fix of this later stage of the Fordist regime. Sydney was more successful copying the policy trend due to particular financial circumstances that applied in both Sydney and Brisbane in the 1960s and 70s. The delayed development of the

Brisbane freeway system is an example of the power of the local which will be discussed later in this chapter.

As with both sets of earlier ideas these city development ideas associated with the development of freeways were truly global in source and impact. The institutional regime had of evolved to where it required significantly urbanised populations to support the prevailing industrial organisation and this in turn supported the rise of the freeway dependent city. It is interesting to note that in NSW it was the road agency that became instrument of state city development and not the planning agency. The power position of the road agency stemmed from its superior relationship with local government and also it's intertwined networks to powerful stakeholder coalitions that themselves are globally connected and reinforced.

The argument that the relative size of Brisbane City Council acted as a countervailing force to the power of the state and led to a planning and development outcome that was more closely connected to the community is difficult to sustain. What is clear is that decision making processes related to major policy shifts are different in Sydney and Brisbane because of the different constructions of local government and the different embedded norms, cultures and behaviours that are associated with policy decisions.

The policy window was created by the growth in the size of the city and the relative decline in the populations of rural areas. This growth led to a significantly increased need to service sprawling suburbanised development on the outskirts of the cities which were well served at their centres by older established public transport systems. The growth of car dependent suburbs from the 1960s onwards

and the need to efficiently and quickly connect disparate parts of the city reinforced the perceived need for urban freeway development.

At the same time that freeway and motorway development was taking off around the Western world to accommodate growth in motor vehicle use the investment in railways was effectively being retrenched. The policy change associated with the Beeching ideas and reforms of the 1960s can only be understood in relation to what was happening with investments in roads and the changing nature of the demands associated with the change in the institutional regime.   Maintenance costs associated with the upkeep of the branch rail lines which had in a main been constructed to lower standards were increasing and were not being covered by freight charges. In addition the returns for primary products were now much lower compared with what they had been in the past and more efficient industries with higher returns and concentrated in urban areas were the focus of policy activity.

The policy emphasis moved from enabling the transport of primary products to markets to support economic activity and growth in rural areas to one of the rationalisation of rural rail infrastructure in line with use and returns for the cost of provision. The introduction of commercial business principles and their application was a feature of this era. Urban rail policy was also impacted by the closure or reduced service to low-volume stations, the rationalisation of timetabling of services and a reduction in staffing across the board. The monolith of the railway institutions was broken as commercial principles were applied to the consideration of what was appropriately core railway business and therefore what should be within the direct ownership of the rail organisations. The notion of the commercial railway took hold

in the 1960s and remains central to an understanding of rail policy.   The concept that railway development is essential for social economic and cultural growth of communities, cities and economies that drove railway development was effectively replaced by the concept that railways were a business like any other and should operate on a commercial basis.

The Beeching ideas emerged in the policy networks in Britain found political favour and were implemented. These ideas were copied and transplanted in both NSW and Qld. NSW pursued the ideas more vigorously and went to the extent of importing one of the Chief Architects of the implementation. The implementation in Qld was moderated by community backlash and the regionally dispersed nature of political power which tended to favour the maintenance of rural infrastructure.   The policy window that allowed the transfer of these ideas was created by the financial crisis confronting railways and the need to accommodate the funding demands of the road lobby. It could be argued that the demise of railway investment needs to be seen as part of the broader dismantling of the state that began with these commercialisation ideas in the 1960s.

From the mid-1980s whole slabs of government policy in service provision was impacted by the neoliberal agenda. These ideas with their origins in British policy networks first implemented in the electricity industries and later in railways in Britain were transferred via intellectual, political and commercial policy communities around the English-speaking world. They found their way into railway policy in NSW via two key mechanisms.   Firstly, they were a direct outcome of the Federal government's policies on competition and competitive neutrality.   And second, they were a policy response on the part of the NSW government in particular to the debt

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situation of the NSW railway and its need for substantial government budget funding to cover both capital and recurrent expenditure.

The reforms were meant to free up markets, increase competition, increase the number of players, reduce costs and prices for consumers and improve service through exposure to the rigours of the free market. The policy equilibrium in railways had been badly punctured by a serious rail accident in the late 1970s and this had highlighted the need for substantial reinvestment further compounding the drain on State finances. The drive to find a solution to the railway debt problem was a pressing issue for the NSW Treasury.

Again in Qld the reforms came later and the implementation was muted by the lack of desire on the part of local politicians and the associated advocacy networks to adopt them. Qld policymakers moved more slowly protected as they were in part by the narrow gauge which effectively acted as a significant barrier to entry for additional players. They were also influenced by the mood of the Qld community which did not favour the reforms. The dispersed nature of the population in Qld as compared with NSW also lent support to continuing with existing policies for longer so that related developments in rural areas were sustained for longer. Qld effectively maintained the spatial fixity associated with earlier institutional regime for longer than NSW.

8.4.   The Role of Critical Actors as Agent s of Change

The major policy shifts that occurred over the 150 year period examined in the case studies came from major ideas that entered the discourse of the leading policy

communities and then found their way across the globe, transmitted through the networks of the key individuals in these policy communities. It was a case of ideas riding on the back of influential individuals who acted as policy entrepreneurs taking opportunistic advantage of punctuations in the institutional economic equilibrium to achieve significant change. In all cases critical actors were important to the implementation of the major policy shifts. Key politicians, especially premiers and ministers, with close ties to senior public servants who were themselves key actors have been important in both NSW and Qld in the modes of rail and road transport. At times key decisions driven by individual politicians and /or bureaucrats were critical to spatial and economic impacts.

These actors possessed the ability to stand in the middle of the system and had the authority to shape outcomes through the alignment of important coalitions of stakeholders. They acted as key change agents shaping, directing and aligning the discourse to the goals implied by the policy shifts. As Yeung (2002) noted, it is the actor networks and their relations that are important not the individuals as agents in themselves.

In all instances it is possible to identify the temporary constellations of goal directed networks of social relations that were fundamentally important. These networks also have spatial dimensions. There is a relational geometry comprised of local and non-local actors (Yeung, 2005) who are connected to the local via networks and formal and informal institutional structures. These networks act as resources for places and enable them to plug into the institutional portals which grant access to global economic flows of ideas, capital and assets. Critical individuals

then who are powerful actors with extensive networks to policy communities that are globally connected are important assets for places.

At the micro level the ability of regions to effectively organise and co constitute the local institutional arrangements to maximise the utility of local networks Is important as both a power bargaining and policy broking mechanism in relation to the management of the impact of global forces. Connection with extra regional networks is important (MacKinnon, 2010). This is especially well demonstrated by the case study of Qld.   That jurisdiction exhibited ability to shape and direct global forces over a long period of time which was above its power position in the network of global places. As Amin and Thrift (1994, 1994a and 1995) argue, local institutional conditions are a key asset for regions and local economies in the context of global economic processes. The case studies demonstrate that the economic performance of regions is influenced by the strength of the local institutional presence and its links with and the nature of these links with broader institutional networks.

8.5.   Infrastructure and Spatial Economic Development

Policy shifts even if they are heavily linked to global trends can be significantly modified by the local through the advocacy of coalitions of interest groups working as power broking networked communities. As Martin (2004) argues, specific institutional regimes develop in different places and interact with local economic activity in a mutually reinforcing way. The critical differences between NSW and Qld in relation to road and rail decision-making demonstrate this proposition.   Qld

constrained as it was by both geography and finance modified the development of railway infrastructure to suit these conditions. Choices about the gauge, the strength of infrastructure assets, the infrastructure standards, the level of investment in related railway assets such as buildings facilities and depots are all reflective of local constraints. These decisions enabled a level of regional connectivity and development in Qld which would not have been possible had Qld followed the gauge and standards decisions of NSW. Interestingly, these decisions, reflective of local conditions, afforded a level of protection in the face of later changes (especially the neo liberal agenda). This protection allowed time for Qld to mould a response that was aligned to their interests.

As important the location decisions in Qld influenced by the geography, the nature of the coastal shipping and the location of port assets as well as by the pre-existing settlement pattern and the advocacy of local communities demonstrates how an entire railway system and the related set of institutional arrangements can be influenced by the local. This influence however is strongest prior to the initial investment decision at the start of the institutional regime. Once the key asset and location decisions are made the lock in features associated with both the technology and the location set in motion path dependent processes which themselves heavily predetermine futures. In this way regional economies inherit legacies of the past and future outcomes depend on past events and their outcomes (Martin and Sunley, 2006).

Once made, decisions about the location of critical infrastructure generate a range of connected economic forces through related economic location decisions that create a particular economy base in places. This spatial fixity becomes self-

reinforcing and enduring for the life of the institutional regime. The economic history

of regions is reflective of the critical economic decisions about the location of the

major investments and the resulting economic decisions about the organisation of

the associated production.

Whole regions and communities in NSW and Qld grow up around rail

infrastructure and then declined in relation to the transition in the institutional regime

that required these investments. The inbuilt agility of regions to adjust to change is

limited by the local institutions that lock in a range of norms, behaviours and

expectations which limit flexibility in response and therefore future changes. As

David (191985, 1986) has noted this is especially so where technology is important.

Hence the rail case studies demonstrate higher levels of lock in, spatial fixity and

path dependence then did the road case studies because of the level of technology

associated with the investment decisions. Early colonial investments in roads did not

preclude later heavy investments in rail. Whereas significant rail investments led to

an entire suite of institutional arrangements including legislative supports and

prohibitions to prop up the artefacts of rail investment in the face of competition from

road investments. This is because of the importance and the impact of the sunk

costs as well as the embedded Interests that are associated with technologically

intense lumpy investments.

The case studies of road investment in NSW and Qld also reflect the impact

of local institutional forces. For example the freeway development that occurred in

Sydney from the 1960s was delayed in the case of Brisbane by funding issues

combined with significant community backlash. In Qld, powerful advocacy coalitions

were formed which were able to block road development projects. This power has

not been as well demonstrated in the case of NSW. Despite this however, the lesson of history is that the spatial fixity required by the institutional regime in relation to road investments to support the densification of cities required by the regime was delayed in Brisbane but not entirely removed from the economic landscape. It can be argued then that the nature of the policy shift can be modified by the strength of the policy arena and the key local institutions but it will not be able to be ignored because of the strength of the global economic forces associated with the institutional regime itself.

The experience of the implementation of the neoliberal agenda in road and rail in NSW and Qld illustrates that the implementation can be modified by the relative strength of the policy arena and the associated institutions.   The road policy arena is incredibly strong, highly adaptive and resilient with embedded structures and processes for attaining knowledge and reproducing itself that ensures its ability to remain relevant regardless of policy context. The arena is supported by extensive connected networks that can be activated at all scales from the neighbourhood to the global. These networks are extensive in their coverage and include health, education, commerce, banking, legal, industry, universities, research organisations, unions, the military, professional and industry associations as well as global non-government organisations.

This arena has demonstrated the ability to extend its policy reach into a large number of adjacent and overlapping policy arenas. These arenas include land-use and urban form, local, regional and national planning and economic development. The case study of roads in NSW and Qld demonstrates the impact of road planning on city form and the power of the road arena to control the nature, function and

global productivity of the global city. The neoliberal agenda did not interrupt the ability of the local institutional arrangements which included the road agencies to deliver the agenda of the policy arena. They interpreted and articulated the neoliberal changes in a manner which actually strengthened their network links with industry and local government in a manner that augmented the power base.

This can be compared with the relatively weak rail policy arena where the neoliberal agenda was able to re-organise restructure and rationalise institutional arrangements to the point where the asset network itself was in danger as a functioning entity. Rail at the time of the implementation of the neoliberal agenda was not hegemonic therefore it was poorly able to interact with the forces unleashed by that agenda in a way that was constructive to the intrinsic purposes of the railway. Unlike road, railway lacked powerful advocacy coalitions that were intimately connected with its purposes. This meant that neoliberal forces were able to impact directly on the local institutional arrangements and there was not sufficient strength in the local institutional networks to modify these forces. It was not until there were a series of crises themselves in part related to the implementation of neoliberal agenda that local communities and advocacy coalitions were able to exert any modifying influence on rail institutional arrangements. The critical lesson is that the strength of local institutional arrangements and the level of their connectedness to active advocacy coalitions in the local place is important in shaping and articulating the interests of the local.

8.6. Conclusion

The case studies demonstrate that the investments associated with large rail and road infrastructure developments are of a scale that results in the associated forms of economic activity being embedded in the social relations of a particular place. The embedded relations and the related economic activity has reach over a particular geographic area over which the associated institutional arrangements are constituted and has influence. For places this can provide them with sources of both advantage and disadvantage which is to some extent dependent on the temporal context and what is happening elsewhere. These findings support the recent work of Niedzielski and Malecki (2012) who found that global competitiveness of world cities is a function of both networks of capital and people and place-based quality of life. They also found that transport infrastructure decisions can privilege cities as nodes and are as important as other variables in relation to cities' competitiveness.

More specifically, the selected case studies of NSW and Qld present a view of relatively isolated regions where the outcomes of the major transport investment decisions can be viewed almost in exaggerated focus because of the size of the investment in these relatively small (in global terms) economies. The related lock-in effects, the unleashed path dependent processes, the associated networks, the resulting spatial fixity is all more embedded, sharper and clearer because of the absence of competing developments. This isolation in no way minimises the impact of multi scalar global forces but again heightens it. Small (in economic terms) isolated regions have fewer development options and opportunities. They also have limited internal institutional mechanisms to mitigate the effects of changes in global institutional regimes that inevitably connect them to innovations which have

transformative impacts on the global markets of which they are a part.   These processes that are critical to the dynamic of institutional regimes occur on all scales, involve complex dynamic and iterative relationships that vary within sub systems and are themselves altered by the place specific social relations. Hence, they can only be understood in 'their place'.

This study then used the transport sector in these two isolated regions as a laboratory in which to understand the ways in which institutions promote broad changes and have long-ranging implications. The critical significance of the major investments in transport infrastructure for environmental, social and economic outcomes is highlighted. This is especially important because in the case of transport, the associated embedded social relations of production are locked in for the life of the asset (in rail up to 100 years) and limit future decisions. Hence, long run economic evolution is crucially shaped by single, large and long-lasting decisions. Viewed in these terms, transport investment can be understood as having critically important path-dependent implications for the spatial dynamics of economic growth and change. The table below (8.6.1) summaries the major findings in relation to key theoretical constructs.

Table 8.6.1 Theoretical Constructs and Case Study Findings

Theoretical Construct	Case Study Finding
Actors and Networks – especially ensembles of actors	Relational depth, in terms of the power and density of actor networks are important explanatory variables in relation to the ability of places to access and adopt new ideas and then in relation to their resilience and adaptability to changes. This is illustrated in NSW and Qld

railways and roads – relationships between: politicians and key bureaucrats; relationship among bureaucrats; relationship between politicians, bureaucrats and sources of capital; relationships between regional power brokers and politicians and key bureaucrats; relationships between critical institutions (for example, unions, professional associations, churches, chambers of commerce) and politicians and key bureaucrats

The hegemonic positioning of discourse is important in explaining all instances of major policy change. The ideas which drove change in road and rail in NSW and Qld were transmitted into Australia from broader themes implemented in various times primarily in the United Kingdom and United States, and modified by the activities and policy influence of local advocacy networks

A comparison of the case studies shows that policy in both case studies changed as result of the emergence of ideas that captured advocacy within policy networks which are themselves part of the institutional structure

The economic, social and political reach of the road agency in both NSW and Qld is reinforced by a range of established formal and informal networks that are closely managed at all levels of geographic scale and result in significant advantages through the sophisticated management and application of knowledge

The road transport policy community and its connections are arguably the most powerful and strongest of any policy community. They include important actors in academic, government, industrial, financial, educational, health and social networks.   This relational depth provides the road transport policy community with a level of resilience and adaptability which further reinforces it's not insignificant power-base

The road networks have supported the development of a powerful, highly agile, hegemonic road policy arena with a reach from

	the local to the global that easily moulds its policies to accommodate trends. Thus, it ensures its continued relevance The railway age gripped Qld in much the same way as it did NSW. This innovation, the associated discourse, networks, industries and institutional structures transferred swiftly through established political and administrative networks support by the same capital that funded the NSW railways
Advocacy coalitions	NSW and Qld rail and road investments decisions were heavily impacted by the role of advocacy coalitions in local and regional areas In NSW railway policy was driven by global trends but the spatial allocation of capital was a result of local interest groups forming advocacy coalitions brokering policy through a series of multi arena (commercial, political, social) games and the prevailing economic and political culture which had a specific geographic focal intent. Local actors became policy entrepreneurs and thus built or reinforced power positions linked to ideas that drove policy changes The dispersed nature of the rail investment in Qld and the associated locational decisions are reflective of the strong regional advocacy coalitions In relation to all key investment decisions in NSW and Qld road and rail advocacy coalitions controlled the policy debate and supported critical actors (politicians and senior bureaucrats) who were charged with implementing the ideas In both NSW and Qld strong advocacy coalitions with global networks grew up around the railway industry to broker policy choices that favoured further rail development
Embeddedness	Social relations in railways and roads in NSW and Qld are influenced by processes in road and rail investment decisions in NSW and Qld that reinforce and maintain specific global institutional regimes that are embedded

	socially, politically cognitively and culturally
	Embedded relations in production networks at different spatial scales in rail and road in NSW and Qld are critical and have significant impacts on regional economic and social development opportunities
	The embedded nature of path dependent processes is heightened by the size and lumpiness of the investment decisions in rail and roads in NSW and Qld
	Processes of embeddedness manifest in complex networks that reinforcing path dependency
	The institutional environment in road and rail in NSW and Qld is characterised by a set of social relations and embedded interpretations where accepted stories affirm organisations' legitimacy and power
	Learning is embedded and passed on intergenerationally in rail and road in NSW and Qld and in the supporting institutional framework
	Rail and Road institutions in NSW and Qld display embedded dynamic systems of rules, norms and values that reflexively influence, constrain and shape actors' choices and behaviours and limit agility and responsiveness to external shocks
	Regions in NSW and Qld are advantaged and disadvantaged by their economic history and their embedded social relations associated with road and rail investments. The relatively small size of the economies and the absence of alternate economic options heightens this positioning
Institutional Evolution	The history of the institutional development in railways and roads in NSW and Qld provides an example where the interactions between institutions and organisations have shaped the institutional evolution of economies and where the organisations that came into existence

	reflected the opportunities provided by the institutional framework
Lock-in – (economic path dependence; technological lock in; and institutional hysteresis)	The key sources of lock-in for both road and rail in NSW and Qld were – technology choice, ownership arrangements, workforce organisation and sourcing and route selection. Local organisations, industries and institutions developed dependencies and linkages that were further locked-in by technology choice, history and networks creating a series of path dependent processes that shape and bound future choice
	All three forms of lock-in - functional (relating to the nature of relations between firms), cognitive (reflecting world views) and political (relating to social relations and power) – are illustrated in NSW and Qld road and rail institutional arrangements and most especially investment decision making
	The settlement pattern in NSW and Qld heavily related to the technology choice in road and rail investments and is illustrative of the spatial fixity associated with these investments
	The narrow gauge in Qld an example of a technological lock-in with positive network externalities (that is technical interrelatedness, economies of scale and the inertia created by sunk costs) that still dominates the investment choices available today
	Rail and road investments in both NSW and Qld have locked-in self-reinforcing and self-reproducing processes that lead to gradual and increasing rigidity
	Industrial lock-in in both NSW and Qld has included institutionalised path dependent processes which have circumscribed and limited future investment, and urban and regional development decisions
	The embedded nature of the path dependent processes acted as significant inhibitors to change in both case study areas

	The lock-in effect was most acute and lengthier for railway investments where the investments are more 'lumpy' and the life of the resulting asset can be extended for at least three generations Large investments and high sunk costs lock-in prior decisions reinforcing ingrained institutional bias towards incremental change in railways in NSW and Qld
Path dependency (also reinforced by associated economies of scale and sunk costs)	The colonial networks created the conduits which enabled the flow of capital to the railway in NSW and Qld to further advantage the prevailing global regime. This in turned reinforced the locked-in and path dependent processes associated with colonial commerce The nature of the investment decisions locked-in a broad range of path dependent processes related to railway investment and these moulded the development options and timings available in these places. In this way the economies of NSW and QLD inherited the history of their own past In both NSW and Qld, once the key asset and location decisions were made the lock-in features associated with both the technology and the location choice set in motion path dependent processes which themselves heavily predetermined futures. In this way regional economies inherit legacies of the past and future outcomes depend on past events and their outcomes Path dependence was stronger due to the size and lumpiness of investments in roads and railways in NSW and Qld; the impact of the choice of rail gauge in NSW and Qld; and the impact of technology choice in railways especially in relation to signalling, electrification and level of specification In road and rail in NSW and Qld important actors are anchored in different places and multiple scales. This highlights the role of local governance structures including the role of

	state policies and institutional conditions in shaping outcomes
	The evolution of the economic landscape in NSW and Qld was heavily impacted by the role of social actors and how they were constrained and influenced by institutional factors emanating from different scales which are themselves contingent and bounded. Effects are ongoing, complex and multi-dimensional and cannot be seen as simply responses to singular institutional forces at any particular level
Spatial fixity	Transport investments have significant spatial fixity. This results from their linear size, the life of the assets and the scale of the investments
	Spatial fixity can be seen in the economic landscape of sunk investments in transport investments in railway lines in NSW and Qld (railway lines, stations, yards, rolling stock) the built environment, (whole regions and cities developing and then decaying around the activity generated by the rail investment), the network of local institutions (schools, technical colleges, universities, trade associations, trade unions, government agencies) and the embedded industrial base which is itself globally connected
	The rail lines in Qld were isolated lines and were not connected until the north coast line was built in the mid-1920s. This had a major impact on the settlement pattern and on the spatial fixity associated with railway development in Qld
	The industrial guilds that were associated with the railway developed institutional structures around path dependent processes that were locked-in with technological choices further reinforcing rigidity and industrial fixity
	Related investments in 'places' (communities, towns, regional cities) in NSW and Qld further heightened the spatial fixity of road and rail investment decisions

	The PPP road projects in NSW are the most visible sign of neo liberalism on the landscape and are the key characteristic of the road infrastructure spatial fixity associated with the neo liberal agenda
	The level of spatial fixity associated with the growth of motorised transport is unmatched in its impact at every scale from the neighbourhood to the organisation of towns, cities and the flows between them. This is illustrated in the case studies of NSW and Qld road development
Scale	The global structural relational organisation of rail and road investments allowed an analysis of the impact of multi scalar forces in NSW and Qld. It became clear that outcomes in regions were the result of multi scalar forces emanating from an array of linked economic and political institutional forms associated with the global institutional capital regimes
	Large transport investments in NSW and Qld locked-in and out a range of related industries at all levels of scale (local, regional and global)

It is especially clear from the case studies of rail in both NSW and Qld that the multi scalar interactions that exist between institutional spaces from the global to the state to the regional to the local are repeated instituted practices encompassed within interpersonal relations, complex networks, markets and supporting regulations. Regions then evolve as an explicit outcome of institutional practices that relate to critical decisions large enough to connect them to global regimes. Such an understanding underlines the relevance of the application of a Paasian framework that incorporates social, cultural, governance and institutional structures from the micro to the macro to understanding economic outcomes in the local.   This is because places are a result of their past as much as of their present and the

spatialised whole can only be understood as complex relations connected to global

institutional forces.

9.   Conclusion

"…evolutionary concepts like place and path dependence help us to understand the deep historical and spatial processes that lead to the creation of particular rural places as bundles of 'space/time'.." (Tonts, et al., 2012:300).

In concluding this thesis, several larger points deserve reiteration.

Firstly, in transport, but in other sectors as well, struggles over the character and power of particular institutional arrangements, at specific moments in time, are often simplistically interpreted within the frames of their contemporary contexts. However, as this thesis has strongly argued, the institutional arrangements which exist at any point in time, in fact, represent evolved vessels from past social, political, economic and geographical interactions. History matters. Thus, in the specific context of this thesis, struggles over the implementation of neoliberal reform agendas in rail (particularly) differed markedly between the two states of NSW and Qld precisely because of the differing inherited composition of transport authorities in both states.

Secondly, institutional analyses must take into account the historical geographies of human settlement and wealth creation. The present and what is possible in the present is a reflection of past decisions and how they have played out through interactions with other processes which are themselves contingently structured and related to processes which are global and impacted by events at a range of geographic scales. These impacts from prior decisions are reinforced by functional, political and cognitive lock-in effects that mould even considerations of possible futures for places. Narratives generated about past, present and future

possibilities become locked in discourse which in turn impacts the time horizon of the policy window for change.

Thirdly, transport infrastructure assets are important vehicles of wealth creation in themselves and their impact on the development[116] and positioning of places needs to be considered. The location of these assets has implications in terms of the global competitive positioning of cities and regions and therefore on their ability to generate wealth. This in turn sets up linkages with global capital regimes which in themselves have effects that reinforce the established global positioning with which they are aligned.

Fourth, transport investments have significant spatial fixity. This results from their linear size, the life of the assets and the scale of the investments. The lock-in effects associated with this scale of investment generate a path dependency which is almost independent of other forces that may be operating. This exposes places to risk associated with shifts in global regimes and resulting from new (especially competing) innovations for example railway investments were impacted by increased use of motorised vehicles. This highlights the criticality of these investment decisions.

Fifth, key actors are significant relational assets linking ideas, places and institutions. Relational depth, in terms of the power and density of actor networks are important explanatory variables in relation to the ability of places to access and adopt new ideas and then in relation to their resilience and adaptability to changes. Intergenerational learning and culture are central to the resource fabric of places.

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[116] The term development here is used in its broader sense to encompass social, ecological, political and economic variables (see Pike, et al., 2009: 1259 - 1260).

Finally, language, that most basic of all institutions[117] is vital to understanding the transmission of ideas and change in policy. In the case studies all ideas that had significant impact were translations from places with a shared language and history. Ideas from non-English speaking places were, it seems, locked out.

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[117] See Pike, et al., 2009: 178 – 179.

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Appendix A: Background to the Electrification of the Sydney Suburban Railway and the Harbour Crossing (Bridge)

The Commissions recommended a subway link to the northern and western suburbs and an electrified city railway. It was not however, until the election of the Labour government in 1910 that these urban issues were actioned. The government in 1912 commissioned a London expert (Mr David Hay of Mott and Hay) to visit Sydney and report on the whole question of passenger transport in the city and suburbs. He developed an elaborate scheme which met with objection from the Railways and the Department of Public Works. The government adopted a modification of Mr Hay's proposal developed by the Railway that included a bridge connection to North Sydney.

The issues of the railway electrification and the harbour crossing were referred to the Parliamentary Committee on Public Works. It was to this Committee that Dr John Bradfield then of the Public Works Department made his recommendations initially in 1913.   This exhaustive process indicates the size and the importance of the investment. It is also instructive of public process around railway investment in the city of Sydney. It has always been and remains vexed, complex and lengthy.[118]

Bradfield later (1916) developed his detailed plan after visiting the US and Europe to study railways. His plan ("Report on the Proposed Electric Railways for the City of Sydney") called for the electrification of the suburban railway; the harbour bridge and the construction of the city underground rail network (refer to Figure 4.4.2

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[118] A detailed treatment of the history of the electrification of the Sydney network can be found in Moss, 2009.

for details of Bradfield's plan for the city underground network).   Much of Bradfield's

plan for the extension of the suburban network was never completed. However, the

suburban lines were electrified in 1926 and the city underground network as he

envisioned it was largely completed by 1932 with the opening of the harbour bridge.

Circular Quay Station was not completed and opened until 1956 and the Eastern

Suburbs line was not operational until 1979. Two additional lines were opened in the

1930s to East Hills and Cronulla. The last major extension was the airport line in

2000.

Appendix B: The Passing of the Queensland Railway Bill 1863

The Bill was introduced by the Secretary for Lands and Works, Sir Arthur Macalister, on the request of the Premier, Sir Robert Herbert. The railways Bill (like all other major policies at the time) was driven by Premier Herbert. He was known as a well-educated pragmatic thinker who had a close relationship with the Governor (Bowen) who played an active role in critical decisions. They agreed on the needs of Qld and generally regarded the colony as a "...property to be developed along good sound business lines for the benefit of the colonists and prosperity" (Farnfield, 1974:12).

Macalister informed the House that a private investor (Robert Tooth and Company) had proposed to build a light railway linking Ipswich, Toowoomba, Dalby and Warwick. At this time, Ipswich had substantial political influence. It was a river port that had experienced early commercial development and linked the Darling Downs with external markets. In the early rivalry between Ipswich and Brisbane, Ipswich was the winner until at least the late 1870s. Ministries depended on the support of the political representatives from this region. They were called the 'Ipswich Bunch" (Meston, 1891:25). Hence, local communities forming advocacy coalitions were an early and enduring feature of the rail policy debate in Qld. The Railways Bill passed on the Speakers vote, but the involvement of Tooth was rejected (Qld State Archives Item ID 611071 Legislative Assembly). Given the narrowness of the result the government went to an election on the issue of government construction of a railway to the Darling Downs and increased its majority. The Bill was reintroduced (Knowles, 1983:114).

The gauge question[119] had not yet been considered. Robert Tooth had engaged a railway engineer (Abraham Fitzgibbon) to visit Qld and recommend an approach to railway development. Fitzgibbon's report in July 1863 recommended a narrow gauge[120] (three foot six inches) to save on construction costs. He noted that such railways existed in India as feeder railways, in the mines in Wales and in Sweden, Norway and Belgium (Kerr, 1998:5).

The proposal for a cheap railway suited the situation of the colony and the financial position of the government. The Opposition also wanted railways and they wanted the Bill extended to apply to the whole of Qld so that a railway could be built from Rockhampton. The population of central and north Qld had increased significantly since the Colony's separation from NSW and there was pressure for a proportionate length of railway to be constructed in these areas to support development (Bond, 1965: 525). The Bill was amended to include these requirements and after its third reading went to the Legislative Council on 18 August (Refer to Cole, 1945: 294-7).

The Opposition and the press (principally the Moreton Bay Courier) were concerned about the narrow gauge. The Legislative Council decided to ..."examine all knowledgeable persons" before making its decision. Expert views differed but the Council returned the Bill to the Assembly after a motion was lost which would have inserted a clause requiring the use of the standard gauge. The Council also recommended that the Assembly give more consideration to the issue of the gauge from the perspectives of safety, and the current and future needs of the colony. After

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[119] For a detailed discussion of the gauge issue refer to Knowles, 1981.
[120] Fitzgibbon recommended a light railway on which locomotives of 10 – 11 tons could haul 160 tons on the level at 15 – 20 mph, 65 tons on a gradient of 1:100 and 35 tons on 1:40 (Knowles, 1981:115).

further debate (the presentation of much of the same arguments)[121] and two walk

outs by the opposition, the Premier used a procedural device to finally pass the

motion (Knowles, 1983: 118; Kerr, 1998: 5; Cole, 1945: 297).

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[121] The main arguments were: the gauge had not been used elsewhere for passengers; possible failure; small savings; inability to support locomotives required for the grades; government rushing the idea on the public; advice had not been sort from NSW and Victoria (Knowles, 1983:117).

Appendix C: Agencies established by the Transport Administration (Rail Corporatisation and Restructuring) Act, 1996

The Rail Access Corporation (RAC) commenced business on 1 July, 1996. Its main functions were to "hold, manage and establish rail infrastructure facilities on behalf of the state" and "to provide persons with access as rail operators to the NSW rail network". The activities of RAC were to be consistent with the Rail Access Regime, a policy established by the Minister and approved by the Premier, to ensure competition principles for third party operators applying for access to infrastructure. The legislation also made RAC responsible for the: development and maintenance of an access pricing policy; compilation of the master timetable for the allocation of train paths. The Transport Administration Amendment (Rail Management) Act, 2000 abolished RAC by amalgamating it with RSA to form the Rail Infrastructure Corporation. This was a direct outcome of the recommendations of the Commission of Inquiry into the Glenbrook rail accident.

The Railway Services Authority (RSA) was established as a corporation under the Transport Administration Amendment (Rail Corporatisation and Restructuring) Act, 1996 (Act No. 56, 1996). RSA began as a "fragmented collection of the track and rolling stock maintenance sections of the former State Rail Authority of New South Wales."[122] RSA supplied the rail industry with signals and tracks, maintained and reconditioned rolling stock, monitored the condition of rail infrastructure, and provided technical consultancy advice. Although it's principal function under the Act

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[122] See the 1997 Annual Report for detail.

was to be a safe and reliable supplier to the rail industry in NSW it did not limit its operations to NSW. RSA was involved in rail asset management projects in other states and Hong Kong.[123]

RSA was managed by a Chief Executive, subject to the control and direction of the Minister for Transport. The Chief Executive was assisted in the corporate governance by the Senior Executive team. RSA was a Government Trading Enterprise, and the principal stakeholder was the NSW Government, with the portfolio minister being the Minister for Transport. RSA was comprised of interdependent operating business units with a head office policy co-ordination.   The business units were: Business Development; Infrastructure Maintenance; Major Works; Consulting; Technical Services; and Workshops and Supply. RSA operated along geographic lines with the state divided into three administrative regions: North, West/South, and Metropolitan.

RSA was dissolved on 30 June 1998 by the Transport Administration Amendment (Railway Services Authority Corporatisation) Act, No. 8, 1998. The successor, Rail Services Australia (RSA2) was established under the Act as a State Owned Corporation (SOC). The new agency assumed the assets, liabilities, and work in progress of the former agency. The aim with RSA2 was to move to competitive business operation as an asset management contractor.   RSA2 had to compete in the open market for work that had previously been guaranteed. The organisation was restructured and included a Board with business experience to align it with a commercial operating environment.   Principle functions remained unchanged from the former agency.

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[123] See the 1998 Annual Report for detail.

On 6 June 2000 an administrative change led to the Co-ordinator- General of Rail being given the oversight of the rail infrastructure organisations (RAC and RSA 2). RSA 2 and RAC were amalgamated on 1 January 2001 to form the Rail Infrastructure Corporation (RIC). RAC2 remained as a Division of RIC.

The new SRA was responsible for the operation of passenger services and it continued to operate those services which its predecessor had operated. SRA was managed by a Board which consisted of the Chief Executive of the SRA and between four to seven persons appointed by the Minister. The Board was responsible for determining the policies of the SRA.

SRA consisted of four major divisions: corporate Head Office, Operations (City Rail and network Control), CountryLink and Passenger fleet maintenance. In February, 1998 SRA was restructured to operating divisions: CityRail Stations; CountryLink; Passenger Fleet Maintenance and Operations. These divisions were supported by corporate units responsible for: policy and planning; corporate services; employee relations; organisational development and rail development.

Freight Rail Corporation (FreightCorp) was established by the Transport Administration Amendment (Rail Corporatisation and Restructuring) Act, 1996, which divided the former SRA into four new independent businesses. FreightCorp became a SOC and operated under the State Owned Corporations Act, 1989.
The principal function of the FreightCorp was to operate rail freight services. Its objectives were to be a successful business and operate as efficiently as any comparable business, maximise the net worth of assets and exhibit a sense of responsible towards, regions, decentralisation and the environment. FreightCorp paid a fee to RAC for access. It transported a range of bulk commodities including

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coal, grain, minerals, cement, petroleum and shipping containers. On 24 August, 2001 the NSW, Victorian and Commonwealth Governments jointly announced the combined sale of National Rail Corporation (NRC) and FreightCorp to a single purchaser. The Freight Rail Corporation (Sale) Act 2001 (Act No 35, 2001) regulated the sale, dissolution, continuing business, distribution of assets and the rights of clients and staff after the sale.

Appendix D: Administrative arrangements for Qld railways during the nineteenth century

Fitzgibbon was appointed Engineer-in-Chief of Railways on 30 September 1863[124] and was gazetted as the first Commissioner of Railways on 23 December 1863. The Commissioner was responsible for the provision of passenger and freight service and related engineering activities to improve and maintain the state's railway (Queensland State Archives Agency ID366, Railway Department). Henry Plwes was appointed Chief Engineer for the Northern Railway in 1864 and was charged with constructing a railway from Rockhampton to Westwood. The Commissioner for Railways was responsible to the Under Secretary for Lands and Works from 1863 until 1866 when the Department of Lands and Works was divided into two and the Department of Public Works was formed (Queensland State Archives Agency ID108, Lands and Works Department). The Secretary for Public Works assumed responsibility for Railways until December 1887 (Queensland State Archives Agency ID108, Lands and Works Department).

With the appointment of the second Commissioner (Arthur Herbert) in 1864 the management of both rail systems was centralised to provide for uniform policy and to reduce overheads. However, there remained a large amount of local autonomy provided through a decentralised, regional approach to operation. The Commissioner for Railways was supported by three Chief Engineers, (for the

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[124] "Two dates are documented as the first appointment of Abraham Fitzgibbon as Commissioner for Railways. In the Queensland Government Gazette 1863, there is a notice of Fitzgibbon's appointment as Engineer-in-Chief for Railways on 30 Sep 1863, and on 23 Dec 1863, a notice of his appointment as Commissioner of Railways. In the Queensland Blue Book 1863, 30 Sep 1863 is given as the date of Fitzgibbon's appointment as Commissioner of Railways and Chief Engineer, Southern and Western Railway"(Queensland State Archives Agency ID2730, Commissioner For Railways)

Southern and Western Railway, the Northern Railway and the Eastern Railway).

The Departmental policy at the time aimed at the decentralisation of different offices.

The position of Chief Engineer was responsible for the civil engineering of all

railways together with the associated technical agencies of signalling, electrical

power and light, communications and architecture (Queensland State Archives

Agency ID1496, Railway Department, Chief Engineer's Branch). The Locomotive[125]

Branch was responsible for all rolling stock and the Traffic Branch[126] for the

operation of trains. These delivery branches were supported by a Stores Branch, an

Audit Branch[127] and an Administrative Branch (Kerr, 1998:26-7).   Local Branch

Heads of the isolated railways (at one time there were 11 operating) referred policy

matters and major administrative decisions to the central administration in Brisbane.

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[125] The head of the Locomotive Branch had several titles throughout the history of the branch but the functions remained the same. The various titles used were Locomotive Engineer, Locomotive Superintendent, Chief Mechanical Engineer, Works Manager, and Chief Mechanical Engineer and Workshops Superintendent. "The Branch was restructured in 1991. (Queensland State Archives Agency ID1497, Railway Department, Chief Mechanical Engineer's Branch).

[126] "John Kennedy Donald was appointed as the Chief Traffic Manager on 10 March 1865. The position was gazetted on 13 July 1865. Throughout the duration of this office, the Manager's position was retitled as: General Traffic Manager, General Traffic Superintendent, Traffic Manager and Chief Traffic Manager". The Branch was restructured in 1991 (Queensland State Archives Agency ID1680, Railway Department, Assistant Commissioner (Traffic Operations)

[127] "Thomas Battershill was first appointed as the Chief Accountant for the Southern and Western line on 7 March 1865. The appointment, however was not gazetted until 13 July 1865.
Throughout the duration of this Agency, the chief office has changed its name without any change to the functions." The Branch was restructured in 1991 (Queensland State Archives Agency ID1678, Railway Department, Chief Accountant's Office)

Appendix E: Motivations for railway construction in Qld during the nineteenth century

<u>Bundaberg Railway to Mt Perry</u>

The Mt Perry mine had investment from the Premier and a Minister when the line was approved in 1884. "Copper was discovered in the Mount Perry area in the second half of the nineteenth century. Mining activities led to agitation for a link between the mines of the Mount Perry region and a port. In 1872 proposals of a private railway line were considered, and both Maryborough and Bundaberg vied to secure the line. These plans were never executed however. Rather, it was decided a state-owned line would be constructed... At the completion of the line the Mount Perry copper mines closed due to the financial failure of the mines. The copper mines reopened around the turn of the century and with the construction of a smelter, operated until the period of the First World War." "Boolboonda Railway Tunnel (entry CHIMS16279)". Queensland Heritage Register. Queensland Environmental Protection Agency.

<u>Emu Park to Rockhampton (1888)</u>

When Brisbane residents achieved a railway to Sandgate Rockhampton residents felt they should also get one to their beach. The government provided funds for the project in the 1884 railway program and the line opened in 1888. It operated for 75 years (Kerr, 1998: 50).

<u>Cairns Railway to Redlynch (1887)</u>

This railway built during the gold rush to the alluvial field at Palmer was meant to make reef mining profitable but it never reached Palmer. It always had very light traffic and had several periods of non operation before closing in 1961 (Kerr, 1998: 51: Knowles, 1958).

Normanton Railway to Haydon (1889)

The town of Normanton is located on the Norman River and served as a port for gold and cattle. The line has been described as a train from 'nowhere to nowhere' and has never been connected to the rest of the Queensland rail network (Knowles, 1983).

Bowen Railway to Wangaratta (1891)

The initial idea was to build a railway from the port of Bowen to Ayr to serve the sugar districts and rival Charters Towers as a Port. The original plans never came to fruition and the line was never well utilised (Kerr, 1998: 55).

Appendix F: Newspaper report of the appointment of Qld Rail Commissioners, 1889

""At a special Cabinet meeting yesterday the following gentlemen were appointed the new Railway Commissioners: Chief Commissioner, Mr. John Mathieson; first assistant, Mr. Robert Gray; second assistant, Mr. Andrew Johnston. Mr. Mathieson, who has been selected as the Chief Commissioner, is 43 years of age, having been born at Cumnock in l846. He has been in the employment of the Glasgow and South-western Railway for a period of twenty-eight years, having entered the service of that company as a boy, and worked his way up through the various grades connected with the Traffic Department. For the past thirteen years he has occupied the position of superintendent of the line. In addition to his practical experience he has a knowledge of the procedure in Scotland for the promotion of now lines, and has frequently been a witness before committees of both Houses of Parliament. For the past fourteen years he has acted as one of the company's representatives at the Railway Clearing-house, London. Mr. Mathieson states in his application that he has a general knowledge of the requirements of the locomotive and permanent, ways departments, of the construction and maintenance of railways, and he has frequently been brought into contact with engineers and contractors with respect to their operations and progress of works. The approved appliances as recommended by the Board of Trade for the working of railways in Scotland on both single and double lines, such as inter- locking, block telegraph, electric telegraph, train staff, train tablets, etc., are familiar subjects to him, as the Glasgow and South-western system, including general lines, consists of 282 miles of double and 171 miles of single line, and these railways are all worked under regulations in

accordance with the Board of Trade requirements. Mr. Mathieson was strongly recommended for the position by Mr. Speight, the Chief Commissioner of the Victorian Railways.

Mr. R. J. Gray, the able and popular Under Colonial Secretary, was born in Port Macquarie, New South Wales, in 1840, and received his early education there. He arrived in this portion of the colony in 1865, and entered the public service in 1865 as a clerk in the Colonial Secretary's office. He was subsequently promoted to the position of chief clerk, and later on as acting Under Colonial Secretary. When the Under Colonial Secretary (Sir. Manning) retired, and pending the appointment of his successor in 1870, Mr. Gray was appointed Immigration Agent, which position he held until the end of 1879. On the 1st January, 1880, he was appointed Under Colonial Secretary, which position he has held with credit both to himself and to the public service. Mr. Johnston, who is 37 years of age, is a member of the Institute of Civil Engineers. He has had considerable experience in the construction and maintenance of heavy and light railways, inspection, alteration, and repairs to existing lines, and the making of permanent and temporary roadways, also the drawing up and carrying out of contracts. His special qualification is in laying out the construction and maintenance of railways and the drawing up of contracts appertaining thereto. He also claims to have a good knowledge of railway work in general. From 1869 to 1877 he was engaged in the construction of the Settle Carlisle and the Shipley-Guiseley railways. From 1877 to 1881 he was engaged as agent and engineer for a contractor, and had sole charge of the staff, locomotives, plant, and the entire supervision of the following works : Ely and Haddenham and St. Ives Railway, the Máchynileth and Corris Railway, and the Gottenburg tramways in

Sweden. In 1881 he was appointed engineer of the eastern division of the Great

Eastern Railway, and now has the entire charge of 300 miles of railway, together

with large docks and quays at Harwich and Parkeston. He has also carried out many

large works, among them being the conversion from single to double line of the

Manningtree aud Harwich branch, the Tendering Hundred Railway, while he has half

completed the Bury and Newmarket Hall- way, which will be open for traffic in June

next. Mr. Johnston refers the Government by permission to Major-General

Hutchinson, R.E., Board of Trade Inspector of Railways. The Government have

cabled to the successful applicants notifying their appointment.

There were in all 134 applications received from England and America, and

twenty-six from the various Australian colonies." (The Brisbane Courier, 11 May

1889, Page 6).

Appendix G: Functions of the NSW Mains Road Board, 1920s

Under the Main Roads Act (1924[128]), there were two types of Main Roads: Metropolitan and Country Main Roads. Roads which previously had been declared Main Roads remained so and councils could make representation to the Board[129] to have a road declared a Main Road or a Secondary Main Road and attract funds. The Board could also provide financial assistance to councils for the Country Roads[130]. The Board could recommend the proclamation of Developmental Roads. These were roads that would assist in the development of a district or of Crown or private land by improving access to a railway station or a wharf[131].

In general, the Board decided which roads would be constructed or maintained and who would carry out the work. The Main Roads Board managed three funds that provided for the development, management and upkeep of roads: the County of Cumberland Main Roads Fund[132]; the Country Main Roads Fund[133]; and the Development Roads Fund[134].

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[128] Note: this legislation came into effect in 1925.

[129] In recommending the proclamation of a main road, the Board was to consider: any representations from relevant local government authorities; the availability of funds for its construction and maintenance; whether the road would be a main trunk road between business, population or production centres; whether the road formed a major link between the various parts of the county of Cumberland (or the state if in a country location); whether most of the traffic will be local or is through traffic whether the road would develop tourist traffic; and the value of the road for possible defence purposes (State Archives, Investigator Agency 703).

[130] Normally the Board paid at least half of the cost of country main roads, and could advance the full cost the Council or Councils' portion to be repaid over a nominated period (State Archives, Investigator Agency 703).

[131] The Board determined, following application of the Council for a Developmental Road, the proportion of the cost that will be supplied from the Developmental Roads Fund. The Board could elect to meet the whole cost with the council repaying the interest. Councils were responsible for the maintenance of Developmental Roads to standards set by the Board. If such a road fell into disrepair, the Board cold repair the road at Council expense (State Archives, Investigator Agency 703).

[132] The following was paid into the Fund: half of the proceeds from motor vehicle and motor traffic taxation in New South Wales (minus the costs of collection); the income derived from the licensing of drivers and fines for traffic offences in the Metropolitan area (minus the cost of administration); a levy (based upon the unimproved capital value of land in the Metropolitan Councils); and monies from the sale of equipment of main road building and the income from the lease or hire of equipment belonging to the Board . The Fund was to be used for the maintenance of the roads, re-payment of loans taken out for road building, a proportion of

Road Ferries were added to the Board's responsibilities in 1928[135]. The Board was organised into a Metropolitan and a Country structure. The Metropolitan Highway Division was established on 1 January 1928. It was headed by an Engineer-in-Chief who oversaw all of the survey, design, construction and maintenance functions of the Board in the Metropolitan area[136]. The Country area of NSW was divided into six Divisions: Upper Northern (office at Glen Innes); Lower Northern Division (Tamworth); Outer Metropolitan (Sydney); Central Western (Parkes); Southern (Queanbeyan); Riverina (Wagga Wagga). Bridge Design and Property remained Head Office functions.

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the salaries and expenses of the staff attributable to Road construction, purchase of equipment for use on metropolitan main roads and purchase, maintenance and stocking of facilities necessary for the construction of main roads. Improvements to the secondary main roads could at the Board's discretion be financed from the County of Cumberland Main Roads Fund (State Archives, Investigator Agency 703).

[133] The following was paid into the Fund : Half of the proceeds from motor vehicle and motor traffic taxation in New South Wales (minus the costs of collection); The income derived from the licensing of drivers and fines for traffic offences outside the Metropolitan area (minus the cost of administration); a sum voted annually by Parliament; other revenues directed by legislation to be paid into the account; any money appropriated by the Commonwealth Government for the construction or maintenance of Country Main Roads; contributions by Councils; loans raised for the construction of country main roads; proceeds of the sale of equipment or income from leasing and hiring the Board's equipment. The Fund could be used for the construction and maintenance of country main roads, the repayment of loans raised for the construction of country main roads, a proportion of the Board's staff costs, purchase of equipment for use on country main roads and purchase, maintenance and stocking of facilities necessary for the construction of main roads (State Archives, Investigator Agency 703).

[134] The Fund comprised: money appropriated by Parliament for this purpose; money granted by the Commonwealth government for Developmental roads; Loans raised under the Loan act for construction of roads of this type. The Developmental Roads Fund could be used by the Board for the construction of developmental roads, the payment of interest on loans and a proportion of the salaries and expenses of staff (State Archives, Investigator Agency 703).

[135] On 1 May 1928 a number of bridges and ferries situated in the County of Cumberland that had been previously classified as 'National Works' were deproclaimed as such and responsibility for them was transferred to the Main Roads Board. The cost for the maintenance of these was drawn from the County of Cumberland Main Roads Fund (State Archives, Investigator Agency 703).

[136] The Branch took responsibility for the management of the Sydney Harbour Bridge (apart from the railways and tramways) on or shortly after 29 December 1932. In this regard the branch was responsible for: managing the bridge finances; maintaining and lighting the bridge; administering the toll; monitoring traffic; and initially was responsible for the disposal of surplus land acquired during the construction of the Bridge (State Archives, Investigator Agency 4022).