



**Lower Hunter Public Transport
Liaison Group**

Sustainable Transport in the Lower Hunter Region

Vol 1: Action Strategies



Issues Paper

prepared for

Cessnock City Council

Lake Macquarie City Council

Maitland City Council

Newcastle City Council

Port Stephens Council

by ***Transit Planners*** Pty Ltd

ACN 060 372 312

April 2003

Sustainable Transport in the Lower Hunter Region

Vol 1: Action Strategies



Issues Paper

prepared for

Cessnock City Council

Lake Macquarie City Council

Maitland City Council

Newcastle City Council

Port Stephens Council

by ***Transit Planners Pty Ltd***

ACN 060 372 312

PO Box 576 Kotara 2289

Phone 02 4957 9229

Fax 02 4957 0672

April 2003

CONTENTS Volume 1

Executive Summary	1
1 Overview	4
1.1 Introduction.....	4
1.2 Context.....	7
1.3 Paper Structure	8
2 Urban Sustainability.....	9
2.1 Understanding Sustainability	9
2.2 Sustainability Issues	10
2.2.1 Environment.....	10
2.2.2 Settlement Patterns.....	11
2.2.3 Employment Concepts and Locations.....	12
2.2.4 Shopping.....	12
2.2.5 Entertainment and Recreation	13
2.2.6 Transportation.....	13
2.2.7 Freight Movement	14
2.3 Transport Alternatives	15
2.3.1 Walking and Cycling.....	15
2.3.2 Car Sharing.....	16
2.3.3 Automated People Mover Systems.....	16
2.3.4 TramTrain	18
2.4 Cost Comparisons: Car v Public Transport.....	19
2.5 Integrating Land Use and Transport	21
2.6 National Strategy to Tackle Urban Traffic Emissions	23
2.7 Alternative Fuels.....	23
3 Opportunities in the Lower Hunter	25
3.1 Roles of Local Government	25
3.2 Regional Transport Management	27
3.3 Sustainable Transport Plan	29
3.4 Auslink National Land Transport Plan.....	30
3.5 Urban Development Processes	34
3.6 Transport Planning Studies	35
3.7 Coordination	36
3.8 Employment Centres	37
3.8.1 Sustainable Approach.....	37
3.8.2 Tomago.....	39
3.8.3 Williamstown Airport / RAAF Base.....	39
3.8.4 Hunter Employment Zone at Tomalpin.....	39
3.8.5 Cardiff / Glendale	40
3.8.6 Thornton / Beresfield.....	41
3.8.7 Kooragang	41
3.9 Regional Centres.....	41
3.9.1 Newcastle CBD.....	41
3.9.2 Charlestown	43
3.9.3 Kotara	43
3.9.4 John Hunter Hospital.....	44
3.9.5 Maitland	45
3.9.6 Cessnock	45
3.9.7 Raymond Terrace	45
3.10 Major Projects	46
3.10.1 North Wallarah Peninsula	46
3.10.2 Thornton - Killingworth Sub-Regional Strategy	46
3.10.3 Coastal Planning.....	47

3.10.4	Regional Sports Stadium	48
3.10.5	Parking.....	49
3.11	Road Corridors	50
3.12	Rail Corridors	51
3.13	Transit Corridors.....	53
3.14	Transport Interchanges	55
3.14.1	Design Principles	55
3.14.2	Woodville Junction	56
3.14.3	Glendale Transport Interchange	59
3.14.4	District Transport Interchanges	60
3.15	Demonstration Projects	61
3.15.1	Inter-regional Direct Trunk Services.....	61
3.15.2	Swansea - Newcastle Priority Service.....	62
3.15.3	District Feeder Services	63
3.15.4	Local Services.....	63
3.15.5	University of Newcastle.....	63
3.15.6	Late Night Services	64
3.16	Promotions and Marketing.....	65
3.17	Pathways.....	67
3.17.1	Footpaths.....	67
3.17.2	Cycleways.....	67
3.17.3	Shared Paths	69
4	Sustainable Transport Projects in Lower Hunter.....	71
4.1	The Challenges	71
4.2	Regional Transport Advocacy Group.....	72
4.3	Sustainable Transport Plan	73
4.4	Lower Hunter Regional Sustainable Transport System.....	73
4.5	Regional Transport Management	74
4.6	Transport and Land Use Planning	75
4.7	Transport Corridors	75
4.8	Transport Integration	76
4.9	Transport Interchanges	77
4.10	Rural Transport	77
4.11	Service Standards	78
4.12	Demonstration Projects	79
4.13	Road Corridors	79
4.14	Parking.....	79
4.15	Employment Centres.....	80
4.16	Regional Centres.....	81
4.17	Pathways.....	83
4.18	Disabled Accessibility	85
4.19	Information, Promotions and Marketing	85
4.20	Alternative Fuels.....	86
4.21	Funding Programs	87
4.22	Action Summary	88

TABLES

Table 1:	Savings Using Public Transport instead of Car for Work Travel.....	20
Table 2:	Potential Transit Corridors.....	53
Table 3:	Potential Trunk Bus Routes using Road Network	55
Table 4:	Location and Functions of District Transport Interchanges	61
Table 5:	Summary of Agency Involvement in Action Strategies	88

Sustainable Transport in the Lower Hunter Region

Executive Summary

Many cities and regions in Australia are developing plans for sustainable development. Some are more detailed and specific than others.

Newcastle led the way in this trend when it hosted the United Nations International Conference *Pathways to Sustainability* in June 1997. It is now appropriate to examine the application of sustainability principles to transport, but this has to be done on a regional, rather than a city, basis.

This Issues Paper has been commissioned by the strategic planners working in local government in the Lower Hunter Region in order to bring together the transport infrastructure and operations issues that transcend their administrative boundaries.

All of the five Councils in the Lower Hunter have adopted urban development strategies that embrace the principles of environmental sustainability. However, to achieve these, they have to adopt a coordinated approach to address and influence transport issues, both in terms of how the transport systems are used and how they are planned and managed by other government and private agencies.

This Issues Paper is a strategic vision document. It aims to pave the way for the development of integrated sustainable regional transport policies as the various agencies of government prepare the strategic directions for the future.

It adopts as a basic principle that sustainability must be the foundation of all regional strategic planning, and it aims to show not only how this can be done in the Lower Hunter Region, but also that it can be done physically, economically and environmentally. In fact, the region is now at the size where it must determine how it is going to accommodate the growth pressures imposed from Sydney's expansion while retaining its intrinsic environmental qualities and lifestyle attractions.

A further aim of the Issues Paper is to educate the regional community on the implications of a sustainable approach to strategic planning, and to encourage them to adopt this approach to their thinking about the future of the region. It is written primarily from the perspective of the potential role of local government in stimulating an awareness of sustainability issues and in enhancing the opportunities to create a region that does not continue blithely along the ways of the past, but pursues a sustainable path before the opportunities are lost.

The Issues Paper concentrates mainly on what should be done to achieve effective improvements in sustainable transport modes in the Lower Hunter in the short term. To do this effectively, it attempts to create a vision for the sustainable transport systems in the future. The details of this vision will emerge out of the progressive implementation of the short term actions.

The Paper accepts as a starting point that there are issues with sustainability that have to be addressed with decisive actions at the regional level in the short term. A 'do nothing' or a 'wait for State action' approach is not considered acceptable if the community wishes to retain and enhance its urban quality. Funding for sustainable and integrated projects can be sourced from a wider range of programs than are available for the existing approaches to infrastructure management.

Volume 1 of the Issues Paper explains urban sustainability and its impact on transportation. It suggests a host of opportunities for putting sustainable transport principles into practice in the Lower Hunter by improving the current transport systems and introducing new concepts. The roles of Local, State and Federal Governments are enunciated, and a set of Action Plans is presented.

Volume 2 describes the regional context from which the opportunities and actions presented in Volume 1 have evolved. It gives detailed background information on the region's profile in terms of population characteristics, existing transport systems and planning initiatives. It discusses issues relating to the provision of efficient and effective public transport and describes sustainable transport initiatives in other regions.

The Issues Paper focuses on an Action Plan for achieving sustainable transport in the Lower Hunter. These actions identify what local government can do to create the climate for government agencies, businesses and the community to carry out their normal activities in a way that promotes and achieves sustainability. In other words, it involves regional coordination and integration that ensures that future investments are directed to a more focused, effective and efficient outcome that will not only benefit the regional community, but will also enhance its quality of life and ensure its travel habits are conducive to a healthier, happier and more prosperous lifestyle.

The Action Plan puts forward a cohesive challenge to the regional community to move towards a sustainable environment through a series of inter-related strategies involving all levels of government, businesses and the community. The strategies fall into several groups:

- a Transport Advocacy Group to coalesce community expectations on regional transport issues
- a sustainable transport plan for the region encompassing the development and management of a sustainable transport system
- transport and land use planning that recognises the region's assets and adopts an integrated approach to their development
- development of transport interchanges at key locations in the network
- recognition of the needs and opportunities for improved transport in rural areas
- adoption of service standards and demonstration projects that will attract people to alternative modes of transport
- re-assessment of the roles of roads, attitudes to parking, use of pathways and alternative fuels
- specific issues related to development trends at regional commercial and employment centres
- information, promotions and marketing of sustainable transport concepts, projects and programs
- opportunities for funding a sustainable approach to the region's transportation
- a time-frame for implementation of sustainable transport strategies.

Integrated Transport is at the very heart of the government's policies of sustainable modern transport to tackle the problems of congestion and pollution.

By working closely with local and national transport providers, the government is seeking to build better links between differing forms of transport to give the travelling public a wider choice of quicker, safer, more reliable transport.

*UK Department for Transport
Integrated Transport website www.dft.gov.uk*

From Canada

THE TORONTO PROTOCOL

Public Transportation –

a major contribution to liveable communities and sustainable development

*

All individuals need accessibility to employment, education and recreation. Achieving environmentally sustainable mobility must include an expanded role for public transport and requires many kinds of action. Well managed, well utilised public transport will make a major contribution to the quality of life in global communities in the next century.

Economics can only prosper with efficient transportation systems and this requires a balanced use of all transportation modes including a strong public transport network. Transport and mobility has a direct impact on the social cohesion of our community life, benefiting all citizens including those with no access to other forms of transport. Public transport is safe, causes less pollution and is a better use of increasingly scarce land particularly in urban areas.

*

Action must be taken now to counter the deteriorating conditions in our environment and increasing traffic congestion, to create a future of mobility and to provide access to facilities.

Increased commitment of governments and international agencies is essential. Public transport has to have a higher priority on the political agenda and must be supported on a long-term basis by public officials. It has to be included early in the allocation of land and in the development of integrated transportation plans.

Expansion of all the different modes of public transport is crucial to make it widely available and as attractive to use as other means of travel. More public and private funding must be invested to improve infrastructure and quality of service available.

Public transport professionals around the world have a major role to play in providing a convenient, efficient, innovative, safe and affordable service. The undersigned associations of public transport commit to work together, share ideas and best practices in order to further improve public transport.

*

These associations and their members join together to call on international agencies, governments and public officials, and all professionals working in urban and regional transport to join them in making a commitment to support the actions agreed in this protocol.

*

Signed at the 53rd Congress of the International Union of Public Transport in Toronto, Canada, on 27th May 1999 held in parallel with conferences of the Canadian Urban Transit Association and the American Public Trust Association and in the presence of 5,000 transport professionals from 79 countries.

Sustainable Transport in the Lower Hunter Region

1 Overview

1.1 Introduction

The Hunter Region has a diverse and prosperous economy which is heavily dependant on efficient transport. The region's complex infrastructure includes all of the conventional modes of transport, intertwined with large scale urban, industrial and rural development. As such, the Hunter Region's need for a comprehensive and integrated approach to the full transport task is very high compared to other regions in Australia.

The Lower Hunter is a distinct region within the Hunter Region. It covers an area of 4300 km², has a coastline of 95 km, and extends inland for about 60 km. It is centred on the regional capital at Newcastle, and embraces the local government areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens. Its population in August 2001 was 470 600 people, 88% of the entire Hunter Region.

The community of the Lower Hunter Region is moving towards ecological sustainability in its urban environment. But much more needs to be done to ensure that the challenges which this entails will be further promoted, debated and understood, particularly in the area of transport.

The transport systems in the Lower Hunter are currently in an unsustainable state, and one of the underlying causes of this situation is the growth in personal car ownership and its use for a wide variety of personal transport needs. This phenomenon is not peculiar to the Lower Hunter: it applies throughout Australia, and in fact throughout the western world, and even in some developing countries.

The significant issues arising from this situation in the Lower Hunter are:

- the rate of growth in personal car usage is greater than the rate of growth in the population
- the average length of each car trip is increasing
- on average, more people own more cars, i.e. the per capita rate of car ownership is increasing
- the energy resources needed for vehicles are being depleted at a greater rate than they can be replaced
- the emissions from vehicles are causing cumulative environment damage
- the road space needed to accommodate the growth in vehicle usage is not available in our urban areas
- the use of alternative modes of transport is declining
- car ownership imposes household social and economic costs which can be avoided
- the movement of freight by both road and rail creates significant imposts on the environment, on urban amenity and on safety.

This situation cannot continue without exacerbating adverse social, economic and environmental consequences.

Sustainable transport strategies do not directly challenge the trends in car ownership. Rather they challenge:

- **the ways in which cars are used,**

- **the types of trips that are made in cars,**
- **the fuels that are used in cars**
- **the alternatives that might be available for some of the trips that cars are currently used for, and**
- **better utilisation of road-based transport systems for a full range of transport tasks.**

This approach is crucial to the understanding of sustainable transport strategies as presented in this Issues Paper.

The current fossil-based fuels used for car transport have an adverse affect on the environment. If for environmental reasons they are replaced by cleaner fuels, the sustainability problems may become even greater. The trend to smaller cars and alternative fuels may send a signal that there are no longer any environmental constraints to personal car usage.

Replacement of current fuels with cleaner fuels may provide some short term environmental benefits, however, much greater efficiencies can be achieved through a more strategic approach to integrated, efficient and effective transport systems. Our urban road systems cannot cater for unrestrained growth in car usage, irrespective of the fuel source. Crucial issues such as kerbside parking and intersection capacity have to be addressed from sustainability perspectives.

Hence, in order to avert a decline in the quality of urban life, sustainable transport strategies in the Lower Hunter must be embraced while it is still a relatively easily achievable outcome. Commitments are required by the community and government to examine and act on the issues relating to sustainable transport in the region, in order to sustain the strong economic growth and cultural transformation that is currently taking place in the Hunter. This will produce better land use planning that will reduce the need for trips overall, and it will allow diversion of some of the current personal car trips into shorter multi-purpose trips, or into trips by more sustainable means such as car sharing, public transport, cycling or walking.

Overseas cities which have adopted sustainable transport strategies have exhibited these characteristics. Their car ownerships levels are still high, but the 'vehicle kilometres travelled' (vkt) by these cars have been reduced through a combination of public transport, cycling, pedestrianisation and parking strategies, often referred to as Travel Demand Management Strategies.

In recent times there has been a groundswell of public and political opinion, as embodied in the recently published *Auslink* discussion paper, that supports the principles of ecologically sustainable urban development and which is keen to accept the beneficial outcomes. A full acceptance and understanding of what is needed to implement these principles is, however, only slowly emerging. This is particularly the case with public transport and alternative transport options.

Invariably, the success in moving towards sustainability has been directly proportional to the level of political commitment, the integration of the strategies, and the quality of services on alternative transport modes. These have to be balanced with more mature attitudes to affordable levels of service in the development of options and in government pricing policies.

The size of the Lower Hunter should not be a deterrent to putting sustainable transport strategies in place. There are substantial existing infrastructure facilities on which to build a viable and sustainable integrated system. Many regions in Europe with populations of around half a million (similar to the Lower Hunter) have been able to successfully implement integrated transport strategies and bring the growth in vkt under control.

Sustainable transport strategies are not confined to urban areas. In the Lower Hunter, there are more people living outside urban areas than there are in the urban area of Maitland. These people in small towns, villages and rural areas also need access to sustainable transport alternatives. Rural trips are usually longer than in urban areas, and there are less choices available.

Rural transport strategies have to be tailored to meet the geographic, social and economic profile of this region. They can be achieved by broadening the infrastructure covered by road funding to include various types of pathways, and by using rural public transport resources to cater for a wider range of travel needs, rather than mainly school transport.

Just over one hundred years ago (in 1899), the population of Sydney was the same size as the current population of the Lower Hunter (471 000). By acting now, there is still the chance to protect and improve the region's quality of life, and ensure that regional growth will occur in a controlled, sustainable manner, avoiding the pollution, congestion and social disruption that has become common in Sydney.

The rate of growth of population in the Lower Hunter is increasing, spurred on by the movement of people out of Sydney and the growth of regional employment and investment opportunities. Now is the time to assess the environmental, social and economic implications of this growth and set the sustainability targets that will enable the region's quality of life to be maintained and enhanced.

The tendency to re-direct some of Sydney's residential growth to the Lower Hunter using the same urban structures and processes that have dominated in Sydney has to be replaced with a more sustainable regional approach.

The general impression is that the provision of sustainable public transport in the urban areas of the Lower Hunter is not currently considered ahead of purely economic considerations. Apart from a few exceptions, the services are hourly at best, serving old-established areas, with little if any promotion. Services to new residential areas are introduced well after people are settled, and there are usually no services to new industrial areas. In addition, there is a need to 'look outside the square' to investigate and adopt alternative transport systems to meet specific needs.

Under current trends, the car will remain the dominant means of personal transport, although its form, energy source and even guidance systems may change in the future. **The task is to encourage sufficient people to review their travel behaviour for at least some of their trips so that the growth in vkt is brought under control.** A realistic target of converting 20% of trips to alternative modes means that 80% of current car trips may remain mostly unaltered.

Local government in the Lower Hunter region, through the process of production of this Issues Paper, has demonstrated its ability to drive the process of reform in this area. It advocates strongly the approach of working as a regional body, in conjunction with State and Federal Government, to carry forward the process of advocating, developing, planning, attracting funding and implementing strategies for the development of integrated transport options for the region.

New funding programs at both the Federal and State level are creating opportunities for the costs of transport infrastructure, and management and operations of transport resources, to be approached in innovative ways where local government has the chance to play a much more significant role.

Local Government in the Lower Hunter should, and will need, to take the lead in ensuring that sustainable transport systems are available. It has already adopted sustainable urban strategies, and it now has to move towards the adoption of these for the region's travel patterns. **It has undertaken to work on sustainable transport projects without the restriction of local council boundaries.** The Lower Hunter is considered as a cohesive region in which transport systems need to be developed to meet its own travel demands. The region also needs to develop integrated transport links with its adjoining regions: Central Coast, Sydney, Upper Hunter and North Coast.

Local government is in a very strong position to achieve the required changes if it acts as a regional organisation. The processes available to local government include:

- regional political leadership
- regional commitment to achieve sustainable transport
- preparation of regional sustainable transport plans and strategies

- planning powers to produce sustainable land use patterns
- planning powers to ensure developments contain sustainable transport features and facilities
- management of local roads in accord with regional sustainable transport strategies
- submissions for funds to develop and manage sustainable transport projects
- coordination and dissemination of information about regional sustainable transport projects
- leadership by adopting sustainable transport practices in their own organisations
- significant consultation and coordination with State and Federal Governments to ensure their strategic goals are accommodated.

Achieving sustainability is not just about how new areas can be better planned, or how some new transport infrastructure can be provided. **For at least the next 50 years, there will be more people living in the currently established areas than there will be in new areas.** Hence, there will be a basic priority, in terms of achieving travel change targets, in retrofitting sustainable transport facilities in established areas.

There are enough trips being made in the Lower Hunter each day for the provision of alternative transport systems to be viable. ‘Viability’ takes into account the cost of fuel and other environmental issues generated by cars as well as the deferment of infrastructure upgrades if peak traffic demands are reduced. The key to viability is to ensure that the current inefficiencies are eliminated, and that the alternative modes are planned, provided and operated in an efficient and effective manner so as to meet the travel demands of the region. The economic argument that we don’t have the population size or density for sustainable transport systems is not valid (rather it is an excuse for not doing anything).

1.2 Context

From a regional perspective, development of sustainable transport in the Lower Hunter from its inception to its current state has been at best piecemeal and at worst ad hoc and ineffective.

There are several transport corridors and facilities that can be used to form the basis of a well-functioning, efficient and effective sustainable transport system. These include the rail line between Newcastle and Sydney, the rail lines between Newcastle, Upper Hunter and Dungog, and many vacant former rail and tram corridors.

Recent additional infrastructure such as the Charlestown Bypass and future projects such as the National Highway extension of the F3 to Branxton provide significant opportunities to enhance sustainability. However, the majority of the existing public transport network is founded on archaic infrastructure and work practices, and is lacking in imagination and innovation.

The purpose of this Issues Paper is to assess what is required to achieve effective improvements in sustainable transport modes in the Lower Hunter in the short, medium and long term. To do this effectively, it attempts to create a vision for the sustainable transport systems in the future. The details of this vision will emerge out of the progressive implementation of the short term actions.

The Paper works through four general topics:

- outline of the existing urban environment, planning policy and social characteristics in the Lower Hunter Region
- background to the current transport situation in the region
- how sustainable transport has been provided in other regions
- what we have to do to advance from the current situation.

Sustainable transport is considered for travel:

- within urban centres
- between urban centres
- between rural areas and urban centres.

Although the Paper assumes the principles of sustainable transport as argued in planning and environment literature, it attempts to summarise these as a basis for the Action Strategies that are put forward.

1.3 Paper Structure

In this Issues Paper, the Lower Hunter Region comprises the five Local Government Areas of Cessnock, Lake Macquarie, Maitland, Newcastle and Port Stephens.

The Paper is in two volumes.

- Volume 1, Action Strategies, outlines:
 - ◇ urban sustainability: what it means, and how it impacts on transportation (Chapter 2)
 - ◇ opportunities for advancing travel by sustainable modes in the Lower Hunter, with particular reference to the roles of local government, and with some examples of specific projects that can be considered in both the short and long term (Chapter 3)
 - ◇ principles, policies, issues and actions that need to be considered in the Lower Hunter as Action Strategies to achieve a more sustainable transport regime (Chapter 4).
- Volume 2, Regional Context, outlines:
 - ◇ a profile of the Lower Hunter Region in relation to transport issues (Chapter 2)
 - ◇ the existing public transport systems in the Lower Hunter (Chapter 3)
 - ◇ regional initiatives within the context of transportation (Chapter 4)
 - ◇ aspects of public transport that need to be understood as the basis for a more sustainable transport system (Chapter 5)
 - ◇ sustainable transport projects that have been undertaken in other regions (Chapter 6)
 - ◇ references to reports on sustainable transport issues (Chapter 7).

After the State Election in March 2003, the government has announced many changes to the names, functions and responsibilities of several government agencies, and has instigated short term reviews of some transport issues in the Hunter Region. This Issues Paper has not been updated to reflect these changes.

2 Urban Sustainability

2.1 Understanding Sustainability

Sustainable transport is a term used to describe those modes of transport which are not primarily associated with the use of non-renewable energy resources for the transport of individuals. The term also embraces those transport modes which can operate within our urban structures without causing a deterioration in the quality of urban life.

As such, 'sustainable transport' includes:

- public transport: trains, light rail, buses, ferries and taxis, whether privately or publicly owned or operated
- automated people movers (APM): new technology such as the *ULTra* and *Austrans* projects
- community transport: services for frail, disabled and disadvantaged persons
- cycling
- walking
- travel demand management, which aims to reduce the amount of travel that people need to make by non-sustainable means
- greater use of renewable energy sources for passenger and freight vehicles.

The World Commission on Environment and Development in 1987 defined a sustainable society as one 'that meets the needs of the present without compromising the ability of future generations to meet their own needs'.

A physically sustainable society should satisfy three basic conditions:

- its rates of use of renewable resources do not exceed their rates of regeneration
- its rates of use of non-renewable resources do not exceed the rate at which sustainable renewable substitutes are developed
- its rates of pollution emission do not exceed the assimilative capacity of the environment.¹

These principles, when applied to guide sustainable transport policies and programs, include:

- mixed use urban centres with increased local employment opportunities
- higher density residential development around designated urban nodes
- urban development designs that facilitate sustainable transport options
- commercial and industrial developments which give preference to use of sustainable transport modes
- investigation and implementation of more sustainable transport systems
- travel demand strategies that will curtail the growth of private car usage
- greater use of public transport for some personal trips
- strategies to achieve a more attractive public transport system, including pricing policies relating to costs and energy use as an alternative to cars
- facilities and incentives to encourage more cycling and walking
- benefits to the overall transport task in terms of efficiencies for other modes such as freight.

¹ John Whitelegg, *Transport for a Sustainable Future: The Case for Europe*, p 5

Although in recent times there has been a groundswell of public and political opinion that supports the principles of ecologically sustainable urban development and which is keen to accept the beneficial outcomes, there is as yet no widespread acceptance and understanding of what is needed to implement these principles. This is particularly the case with public transport and alternative transport options.

Green issues a grey matter for one in five

By PAUL MAGUIRE

ONE in five Hunter residents do not know of any regional environmental problems, according to a Hunter Valley Research Foundation study.

And one in 100 believe the Hunter has no environmental problems at all.

The main area of concern for people who responded to the

foundation's latest survey was that of freshwater pollution.

Air pollution came second.

Asked what the situation would be 10 years from now, residents named air and water pollution and the impacts of industry and mining as the Hunter's most pressing long-term issues.

The foundation's senior research officer Evan Stevenson

said yesterday he was concerned that such a high percentage of people appeared not to care about their environment.

'The surveys indicate that people are more concerned about the things that directly affect them,' he said.

'The perceptions change with time and are influenced by media publicity and advertising campaigns that focus on issues.

'But one in five people not being aware of environmental issues has been consistent since our surveys began three years ago.'

The 'don't know' factor showed people were detached from the consequences of their actions and did not realise they were part of the problem.

The foundation conducts an annual environmental phone survey of 300 Hunter residents.

Extract from *Newcastle Herald* 26 March 2002

Furthermore, the sustainability issues that have to be addressed in the Lower Hunter are different to those that apply in large metropolitan areas like Sydney. The priorities for environmental decisions related to sustainable transport in the Lower Hunter have to be based on regional perspectives, rather than being absorbed into metropolitan perspectives. The differences between the two environments of Sydney and the Hunter Region need to be better understood and accepted.

2.2 Sustainability Issues

2.2.1 Environment

In Australia in 2000, the transport sector produced over 14% of the national greenhouse gas emissions. Of this, 56% came from cars and 34% from other road transport².

- Most of the fuels used in motorised transport systems are non-renewable
- The use of these fuels produces pollutants in the atmosphere which have both short term and long-term harmful effects.

Per capita transport-generated greenhouse gas emissions in Australia are among the highest in the world. One-third of the average family's greenhouse emissions are the result of transport activities. The greenhouse emission from an average car in a typical year of travel is about 4.3 tonnes, nearly as much as the emissions generated per passenger by a plane flight to London and back³.

Australia's transport system is a major user of energy resources and the principal contributor to pollution in major cities. Road transport contributes 80-90% of carbon monoxide (CO) emissions, 50-80% of nitrogen oxides (NOX) and 40-50% of volatile organic compounds (VOCs). NOX and VOCs are the major precursors in the development of photochemical smog and ozone, and they contribute to greenhouse gas emissions⁴.

In the Newcastle area, air quality has steadily improved to a point where it now satisfies ambient environmental standards most of the time. However, the incidence of oxides of nitrogen (pollutants from motor vehicles and industry) has shown an increase in the past five years⁵.

² *National Greenhouse Gas Inventory: Fact Sheet 2*, Australian Greenhouse Office, August 2000

³ *Sustainable Transport: Responding to the Challenges* Institution of Engineers, Australia, 1999

⁴ *Freight Logistics in Australia: An Agenda for Action* Dept of Transport and Regional Services, Canberra, 2002

⁵ *Newcastle State of the Environment Report, 2000/2001*

A recent study by economists in USA⁶ concludes that public transport generates 95% less CO, 92% less VOCs, and half as much carbon dioxide (CO₂) and NOX per passenger kilometre than private vehicles, based on a rail car or bus carrying 40 people. The study report states:

- increased use of public transport is an important answer to two national challenges: greater energy independence and a cleaner environment
- if one in ten people used more public transport regularly:
 - ◊ reliance on foreign oil could be cut by around 40%
 - ◊ carbon dioxide emissions would be cut by around 25% of the standard set under the Kyoto agreement
- increasing use of public transport needs to be an essential element of national energy and environmental policies.

Because of the unusually large transport task in the Hunter Region (mainly associated with the transport of coal) these adverse environmental impacts are more severe than in most non-metropolitan regions.

The adverse impacts can be ameliorated by reducing the transport demand, by aggregating more travel into fewer vehicles, by using more sustainable modes for some trips, by using renewable and non-polluting fuels, and by adopting more efficient modes especially for freight transport.

2.2.2 Settlement Patterns

In recent times, urban areas and the facilities within urban areas have been developed generally with the underlying attitude that everyone has access to a car. Those who do not have a car are becoming more isolated, and facing greater difficulties in accessing basic facilities, and are being treated almost as social outcasts⁷. Urban development has to take on a more social dimension and respect the fact that many people do not have, or do not wish to have, a car for very valid reasons.

Many people no longer feel that they have to live close to where they work. If they change their job, or if their job is relocated, they tend to retain the job and drive to the new location, even when it is much further away.

Young teenagers are particularly vulnerable to the urban form dominated by the car. They are active and able to travel on their own, often in small groups. But they are not old enough to drive a car. Their need to move around town independently has to be respected and accommodated.

Many older urban areas have been adversely affected by busy roads and freeways that have cut through their area, making them difficult to cross. The general assumption that people can use a car to get to facilities on the other side of these barriers further exacerbates the isolation of those without cars.

Urban consolidation, or as it is sometimes termed, 'smart growth', involves the redevelopment of older areas, usually close to commercial centres and transport nodes, at higher employment and residential densities. This brings more people into the area, and makes better use of the existing infrastructure. It should improve the patronage base and market potential for public transport.

However, this depends on the population profile of the new residents. If they are dominantly childless couples moving into small apartments, the public transport usage potential may be lower than it would be with family households or with aging communities. This can be addressed by designing the new development in accord with local public transport facilities, and encouraging the new residents to reduce their car ownership level as part of their lifestyle move.

⁶ *Conserving Energy and Preserving the Environment: The Role of Public Transportation*, quoted in ITS International 8:5, September 2002, p 8. Further details: www.apta.com

⁷ E.g, the Minister's Foreword to *South Australia's Draft Transport Plan* April 2003 states that 'making better use of public transport ... will benefit those groups that are **socially excluded**'.

The concept of ‘transit-oriented development’ advocates that sites adjacent to good transport facilities should be zoned and developed for higher density housing and local commercial / employment centres.

Irrespective of any urban growth strategies, **the majority of people live in areas that are already settled, and it is the travel habits of these people that are essential to the success of urban sustainability.** Hence, sustainable transport projects have to not only ensure more effective designs for future urban development, but they also need to examine established land use patterns and be prepared to modify these patterns where necessary to achieve the desired benefits.

2.2.3 Employment Concepts and Locations

In the past it has been acceptable to promote the development of large industrial and manufacturing plants to achieve the benefits of the job creation opportunities. Little or no serious consideration was given to how people would travel to and from these jobs, and what the environmental impact would be. It is assumed that ‘everyone has a car’, and for some of the largest employment locations in the Lower Hunter, there are no alternative public transport services at all.

Recent studies and urban strategies have advocated more home-based employment and creation of more local jobs within walking distances of homes. However, these situations will only ever affect a small number of people, and there is no guarantee that local jobs can be filled by the workers who live locally.

While large manufacturing plants will still be needed, more attention can be given to local industrial parks where the chances of being able to find a job closer to home are increased. **For the large industrial sites, the provision of various forms of public transport should be regarded as being an essential part of the development and of the environmental management program.**

2.2.4 Shopping

The dominance of car parking spaces at regional shopping centres is mute testimony to the dominance of the car for non-work trips. The cost of car parking is built into the cost of goods at the shopping centre and is generally accepted without question. Car users have a base where they can leave goods, usually close at hand, while they do their shopping.

Little consideration or priority is given to people who go shopping by sustainable means. Bus travellers have to pay to get there and, because they pay the same price for goods as car users, they are actually contributing to the cost of parking other people’s cars. They are given little priority in accessing the centre, and often have to walk long distances without shelter to and from the bus stops. Like pedestrians, they have nowhere to leave their shopping, and have to carry their goods with them all the time.

Commercial forces dictate that these trends continue. Shopping centre owners are reluctant to be the first to invest in ‘sustainable’ access for fear of the competitive advantage this might give other shopping centres where car access dominates.

However, **the cost of encouraging a shopper to travel by sustainable transport modes is many times less than the cost of providing ‘free’ parking spaces,** variously quoted at anything upward from \$2500 a year per space. Newcastle City Council recently developed a free parking area with 47 spaces adjacent to the Darby St commercial area in Cooks Hill. It cost over \$18 000 per space⁸. The same funds would have provided the marginal cost for operating a bus for 12 hours a day for 5 years.

The economic benefits of sustainable transport access need to be quantified and promoted to shopping centre developers.

⁸ *Parking problem solved on Darby* Newcastle Herald 17 April 2003

2.2.5 Entertainment and Recreation

For the vast majority of people, attending a function at an entertainment venue or going to a recreation area means getting there by car.

Car parking at entertainment venues and recreation areas is difficult and expensive to provide, because it is needed for a relatively short time. But at the times of peak demand, the parking and traffic movements can cause significant congestion and inconvenience in the surrounding area.

Public transport can be used to enable large numbers of people to attend popular events without the adverse affects of car usage. **Including public transport fares in the ticket prices can be an effective way to reduce car usage, and it may be cheaper for the event organisers than the total costs of organising car parking.**

However, issues such as availability of public transport at night time and perceptions of personal safety have to be addressed as well.

2.2.6 Transportation

The 462 000 people in the Lower Hunter generated over 1.9 million travel trips each day in 1999. 5.0% of these were by public transport⁹. To achieve urban sustainability benefits, a target of 20% of trips by public transport might have to be set¹⁰.

At this level of patronage:

- there would be sufficient revenue generated to cover the costs of providing high frequency bus services within easy walking distance of every house for most of the day, feeding a trunk train and bus network operating at 5-15 minute intervals
- the number of people using public transport would warrant priority measures for public transport vehicles
- the consequent reduction in personal car travel would reduce congestion and travel times for the remaining private vehicles on the region's roads.

Based on modal split and sustainability targets that have been set in other Australian cities¹¹, the 20% target for urban areas in the Lower Hunter is considered achievable, and it will help deliver the desirable environmental benefits¹².

Put another way, **public transport would not need an operational subsidy if it were developed in a way that attracts a higher modal split from the total travel market.** This does however assume that public transport infrastructure is provided by government programs, just as it is for the road system.

Based on surveys undertaken in March each year since 1999, up to 18% of morning weekday trips per hour to the University of Newcastle have been made by public transport, and up to 13% for the whole day. In March 2003, the best modal split achieved was over 14% of arrivals at the University by public transport (bus and train) between 10.00 and 11.00am, and nearly 10% for the whole day¹³. This shows that higher modal splits can be achieved in regional centres where services and facilities are focused on responsive markets, but that they will fall unless there is a concerted effort to provide and promote attractive services.

⁹ *Travel in Newcastle and Wollongong*, Transport NSW, Issues Paper 2002/01, Feb 2002

¹⁰ *Transport Choice*, brochure produced by UITP Australia/NZ, 2002

¹¹ Eg *TravelSmart, A Traffic Reduction Strategy for Brisbane*, Brisbane City Council, 1995

¹² *SMART targets for sustainable transport - a review of international and NSW practice*, Transport Engineering in Australia, Vol 7, 2001

¹³ *University of Newcastle Travel Modes Survey Semester 1, 2003*, Transit Planners, June 2003

2.2.7 Freight Movement

Urban congestion is a major contributor to increased fuel consumption and transport emissions. Australia's overall freight task is estimated to double between 1995 and 2010. This will have negative impacts on urban traffic congestion, air quality, greenhouse gas emissions and waste production. Internet trading and door-to-door deliveries are growing at 8% per annum in Australia, and this is increasing the frequency of small consignments and light truck movements.

Overseas, there has been considerable research on 'city logistics' as an integrated planning approach for solving freight distribution problems. City logistics considers the whole freight distribution system, rather than attempting to optimise each part of the system in isolation, and it fully considers the costs and benefits to the public sector while optimising business outcomes. It develops the most efficient freight distribution modes based on freight corridor analysis, peak traffic congestion times and energy consumption.

City logistics research includes:

- advanced information systems
- cooperative freight transport systems
- logistics terminals outside key congestion areas
- demand management
- freight management systems.

Given the projected growth in Australia's freight task, it is imperative that industry and governments develop a more long-sighted and integrated approach to urban freight distribution¹⁴.

The increasing intrusion of very large road vehicles into urban streets needs to be checked. These vehicles are incompatible with other road users in an urban context, and pose a serious threat to urban roads being able to be used for a range of sustainable transport modes.

With the planned development of the multi-purpose freight terminal in the Port of Newcastle, the Lower Hunter can expect to encounter more than the average expected increase in freight movement in the near future. The sustainable approach to this will encompass:

- creating freight corridors (rail and road) that do not impact on urban development
- moving as much freight as possible by rail rather than road
- initiating freight centres outside established urban areas
- integrating freight infrastructure with other transport systems
- reviewing freight distribution systems within urban areas.

In June 2000, the Newcastle and Hunter Business Chamber prepared a Discussion Document on the Regional Transport Projects required to link the North, North West and Central West Regions of NSW with the Hunter Region¹⁵. It emphasised the need for these projects to be integrated with other regional programs, and for freight transport to be developed in harmony with passenger transport.

Freight transport issues are not addressed in further detail in this Issues Paper.

¹⁴ *Freight Logistics in Australia: An Agenda for Action* Dept of Transport and Regional Services, Canberra, 2002

¹⁵ *Transport Infrastructure Study for the Hunter, North and West Regions of NSW* Newcastle and Hunter Business Chamber, June 2000

2.3 Transport Alternatives

2.3.1 Walking and Cycling

Many people are prepared to walk reasonable distances to reach their destination, but are often deterred by a hostile environment, such as no footpaths, hilly terrain, circuitous paths due to lack of direct pedestrian links, and safety concerns.

Similarly, cycling would be more accepted as a transport alternative if the hostile elements were removed. For most people, cycling on roadways is too great a safety risk, cycling on footpaths is technically illegal, and very few cycleways are provided relative to the number of people who have bicycles, where people live and where they want to go to¹⁶.

In Australia, new bicycle sales have continually exceeded new car sales for more than 15 years. Total bicycle imports in 1999/2000 were 1 018 000, of which 584 000 were adult bikes. Total motor vehicle sales in 2000 were 787 000¹⁷.

The NSW Transport Study Group reported in 1991 that the Newcastle / Lake Macquarie area had the highest level of cycle use per capita of any urban area in NSW.

Capital costs for cycleways vary from \$125 000 to \$300 000 per kilometre, and maintenance costs are minimal. By accommodating some of the future growth in travel demand by cycling instead of driving, a considerable saving can be achieved in road building and maintenance costs.

Cycleways should be treated as part of the road system, in the same way as the road carriageway, footpaths, kerb and guttering are treated. They are not just an optional extra to be provided when there are some surplus funds.

Power assisted bicycles are likely to become increasingly popular as a cheap and efficient means of transport. They have a small electric or petrol motor that can sustain a person on a bicycle at speeds of up to around 25kph. No licence or registration is required for power assistance up to 200 watts. They provide the best of both worlds: ease of personal travel with assistance on a steep hill. They can easily be parked in the same space as a conventional bicycle.

Bicycles are legitimate road vehicles: therefore the road system has to be made safe enough for them by the provision of bike lanes and cycleways. This is in line with the RTA's Strategic Plan for Road Safety in NSW, and the NSW Government's *Action for Bikes* BikePlan 2010.

Given the number of bicycles that exist, and which are still being bought, it stands to reason that if there are safe facilities for their use, their usage will increase.

Elderly people and people with disabilities are now able to use motorised 3- and 4-wheel scooters to improve their mobility. For these people, even footpaths are essential. For the time being, they are regarded as being within the 'cycle' transport mode.

Some motorised scooter users have limited independent mobility, and are able to use public transport and walk around in shopping centres. They need somewhere secure to park their scooter, and this need now has to be addressed in the planning and management of parking areas, bus stops and railway stations.

Pedestrians, cyclists and those with scooters need facilities at their destination to leave their belongings so they don't have to carry them everywhere they go. These facilities should be regarded as having the same importance as car parking spaces in any development.

¹⁶ *Cycling and Cycle Tourism Opportunities in the Hunter Region: Inquiry into Infrastructure and the Development of Australia's Regional Areas*, Darrell Stone, April 1999

¹⁷ Research by Darrell Stone, Newcastle Cycleways Movement, August 2002

2.3.2 Car Sharing

'Car Sharing' is not the same as 'car pooling'. In general terms:

- 'car sharing' refers to schemes where people belong to a group that has access to a fleet of vehicles. The car is used by different people at different times
- 'car pooling' refers to schemes where people share the cost of travel by car in a vehicle owned by one of the participants.

While car pooling has been tried with limited success for some time, car sharing is a more recent innovation that has proved to be very successful in Europe. In Germany, 200 000 people belong to organisations which arrange car sharing¹⁸. An initial car sharing scheme is planned for introduction in Newtown (Sydney) late in 2002.

The car sharing schemes in Europe use smartcard technology. Members of the scheme book a car on the internet. They go to a local holding yard (such as part of the car park at a local shopping centre) and use their smartcard to gain access to the vehicle at any time. A smartcard embedded in the vehicle records the user, date and time. The member can use the vehicle as required, and return it to a holding yard when finished (not necessarily the one it came from). Smartcard technology is used to record the usage details and the storage location, and to lock the vehicle. Members are billed monthly.

Car sharing trips have to be planned. To this extent they tend to reduce the number of indiscriminate trips made in private vehicles. They can be used effectively to eliminate the need for one car in multi-car households.

In the Swiss city of Zurich (population about 1.2million), the car sharing scheme has 700 holding yards. Zurich has what may well be the world's most successful public transport system, which an affluent population actually chooses to use¹⁹. On average, 42% of all trips are made by public transport and 20% by car. By comparison, in Perth 7% of all trips are made by public transport and 75% by car. In the Austrian provincial city of Graz, population 250 000 people (about the size of Newcastle / Lake Macquarie), there are 10 holding yards for car sharing²⁰.

Car sharing schemes need to be considered as part of an overall travel management strategy, not as an isolated project. Their success is highly dependant on regional commitment, appropriate seeding funding, and integration with the walking, cycling and public transport strategies.

2.3.3 Automated People Mover Systems

Automated People Movers (APM) are advanced transportation systems in which automated driverless vehicles operate on fixed guideways in exclusive rights of way.

Two of the best known APMs are the Docklands Light Rail system in London and Line 14 in the Paris Metro system.

Attractive features of APMs include the high frequency of their operations, and the low operating costs due to reduced staff levels. The deployment of vehicles is more flexible due to the removal of the requirement to comply with driver working conditions and award provisions.

¹⁸ *The Courage to Keep Out Cars* John Whitelegg, Australasian Bus and Coach, 15 March 2002

¹⁹ *A Very Public Solution: Transport in the Dispersed City* Paul Mees, Melbourne, 2000, page 120-121

²⁰ *Concepts of Mobility Management for the Whole City* Presentation by Karl-Heinz Posch, Travel Demand Management Seminar, Sydney, September 2002

APMs are especially suitable to situations where there are relatively small numbers of people moving throughout the day. The construction of systems is cost competitive with new roads, but there are higher overheads due to the centralised control system and the computer technology. However, within their capacity restraints, they are far more effective per person moved in achieving sustainability targets than any system using vehicles with drivers.

• ***Austrans* APM**

The *Austrans* system is an Australian invention designed to fill the gap between the automated light rail systems and the Personal Rapid Transit (PRT) systems²¹.

Austrans offers:

- mid-sized vehicles (the prototype has been built for 9 people)
- a combination of demand-responsive and scheduled services to match daily changes in demand
- high vehicle speeds and off-line stations to ensure short journey times for intra-urban travel
- exclusive guideways and tight cornering capability to minimise impact on city environs.

The *Austrans* system uses a specially-designed rail guideway for the self-steering vehicle bogies. The vehicles are powered by electricity picked up from the rails.

Prototypes of the *Austrans* vehicle were built by ADI in Newcastle in 2000, and the test track was manufactured by OneSteel in Newcastle. The system is being trialed at a test site at Chullora in Western Sydney.

In 1996, Newcastle City Council supported a feasibility study into the operation of the *Austrans* system in a Western Newcastle transit corridor linking Glendale, the University of Newcastle and Mayfield Industrial areas²².

• ***ULTra* PRT**

Personal Rapid Transit (PRT) systems are a type of APM which offer an effective way to overcome the difficulties of scheduled public transport systems while retaining the benefits of individual travel. PRT systems involve a small driverless vehicle operating along a guided way.

The Urban Light Transport (ULTra) system has been developed by Bristol University. The vehicle is a 4-seat capsule which runs on rubber wheels on its own guideway. Guidance is provided by computer responses to magnetic implants in the guideway. Vehicles are electrically powered, and have room for bicycles, wheelchairs and luggage.²³

ULTra vehicles move along the guideway network in response to passenger activation at stations using smart card technology. Vehicles are distributed to the stations throughout the network so that there is never a wait of more than one minute. Travellers can choose to travel alone or in a group of up to 4 people. They press a button to indicate their destination, and they are taken to it by the most direct route, without any other stops.

The ULTra system achieves the best combination of individual transport, fast travel times and environmental sustainability. Because it is not rail based, the guideways are relatively cheap to construct (similar to a cycleway), about a tenth of the cost of a freeway lane, but with the same capacity. The guideway is only 2m wide. The vehicles use 75% less energy compared to a private car.

²¹ *Austrans People Mover Project*, Transit Australia, December 1997

²² *Feasibility of Austrans People-Mover: Western Newcastle Corridor Study Stage 1: Demand* Sinclair Knight Merz, Sept 1996

²³ *The ULTra PRT System*, International Conference on Automated People Movers, San Francisco, July 2001

Fare systems are based on the use of a vehicle, rather than individual travel. Hence four people travelling together pay the same fare as one person travelling alone. This makes ULTra very competitive with car travel.

Presentations on the ULTra project have been given in recent times to Newcastle City Council and to various regional and state government agencies in the Lower Hunter, including Hunter Region Organisation of Councils.

Funding has been approved by the National Assembly of Wales for the first ULTra PRT project to be installed as the transport system between the Cardiff City Centre and the redevelopment of the former wharf area. Ongoing funding is dependent on integration with rapid transit options for the region, and on a robust private-public funding partnership²⁴.

Cardiff County Council policy envisages that 50% of all trips in this area will eventually be undertaken by public transport²⁵. This has similarities to the potential transport linkages between Honeysuckle developments and the City Centre in Newcastle.

Other immediate applications of this technology could be to assist movement around the campus of large university and TAFE colleges and regional hospitals.



Prototype of the 4-person ULTra PRT vehicle on the test track in Cardiff, Wales, October 2001. The structure in the background is the lightweight bridge for taking the ULTra vehicle over the roadway.

2.3.4 TramTrain

The most significant trend in Europe in recent years has been towards the TramTrain, where light rail vehicles operate over heavy rail lines to serve the suburban areas of regional cities and the surrounding towns in the region.

For 10 years, light rail vehicles have been running from the city centre in Karlsruhe in south-western Germany along old industrial rail lines through the suburbs and onto the main intercity rail lines for distances of up to 50km. The frequency of all services using the main lines is about every 10 minutes.

The light rail vehicles run on the same tracks as the heavy rail freight and passenger trains, and use the same main line station platforms. This minimises investment costs by using existing infrastructure, integrating local and regional traffic, and offering highly attractive regional train services without the need for interchanges.

The success of the Karlsruhe system has been reflected in an enormous increase in the number of passengers and a positive change to the modal split²⁶.

²⁴ *Cardiff ULTra is put on shelf* Tramways and Urban Transit, April 2003, p 125

²⁵ *Sustainable Personal Transit*, M Lowson in *Municipal Engineer* 151, March 2002

²⁶ *Karlsruhe: Back to the Future* Tramways and Urban Transit, Dec 2000 and Feb 2001

Implementation of new tramtrain systems is complex, as a range of diverse issues have to be considered. One of the most challenging tasks is to adapt the model to local conditions, and to overcome the traditional prejudices about dual mode usage of the heavy rail tracks²⁷.



Light rail vehicles on the 56km S5 TramTrain route between Wörth and Mühlacker pass the Marktplatz in the centre of Karlsruhe (top) and stop in the main line train platform at Pforzheim (bottom)

In 2001, the tramtrain system in Karlsruhe reached the city of Heilbronn, 60km away. A new system was implemented in Saarbrücken in 1997. There are 58 cities in Europe where the implementation of the tramtrain system is currently being investigated²⁸. One of the most advanced of these is Strasbourg, where the light rail vehicles will operate within the City Centre, through the suburban areas and along the main railway lines to smaller towns in the region.

2.4 Cost Comparisons: Car v Public Transport

Research undertaken by Adelaide Metro shows that significant savings can be made by travelling to work by public transport instead of driving a car²⁹. The comparative costs are based on:

²⁷ *Mixing Light Rail with Heavy Rail* Trevor Griffin, British Rail Research, in Light Rail Review 3 (1992)

²⁸ Tramtrain website www.tramtrain.org

²⁹ *The Metroguide: A Guide to Adelaide's Public Transport System* Adelaide Metro, January 2003

- travel for 231 working days a year
- using a multi-trip ticket at \$20.60 for 10 trips (equivalent to the \$21.00 TimeTen ticket on Newcastle Buses)
- car parking costs of \$5 a day
- Royal Automobile Association (RAA) private car running costs for a Holden Commodore 3.8 litre automatic
- RAA rates for depreciation, interest, insurance and maintenance
- fuel prices of 95c per litre.

These costs are equivalent to car usage costs in the Hunter Region.

Table 1 shows the savings:

- when the car is left in the garage and public transport is used for travel to and from work (the car is still available for uses at other times, or by other members of the household)
- when public transport is used instead of owning a car for work travel (eg disposing of the second car in the family).

Table 1: Savings Using Public Transport instead of Car for Work Travel

Distance Home - Work	Weekly Distance Travelled	Annual Distance Travelled	Savings: Car retained		Savings: Car not retained		Greenhouse Gas Emissions Saved ³⁰
			Per week	Per Year	Per Week	Per Year	
Km	km	km					Tonnes/year
25	250	11500	\$46.50	\$2148	\$175.40	\$8103	3.8
20	200	9240	\$38.10	\$1760	\$141.20	\$6523	3.0
15	150	6930	\$29.60	\$1368	\$107.00	\$4943	2.2
10	100	4620	\$21.20	\$979	\$72.80	\$3363	1.5
5	50	2310	\$12.80	\$591	\$38.60	\$1783	0.8

These comparisons reflect the savings to an individual by using public transport instead of driving a car to work each day. In addition, there are considerable benefits to the community through reduced pollution emissions, less congestion on the roads, and deferred costs of infrastructure upgrades. This has to be matched against the cost to government of supporting and promoting public transport usage.



Promotional image on the cover of a ticket wallet issued by Adelaide Metro (Passenger Transport Board) for travel by train and bus in Adelaide, March 2001

³⁰ Go Zone Brochure Adelaide Metro, July 2001

2.5 Integrating Land Use and Transport

The focus of population growth and demographic demand is diversified. No longer is it a simple matter of extending bus routes and building railway stations to serve new residential and industrial estates. Redevelopment of old residential areas and relocation of employment areas is placing pressure on how services are operated in older areas where the road and pathway network is already established.

Although new urban strategies have the effect of increasing the density of houses, census data shows that household occupancy rates are falling. This implies a change in the community profile, as well as an increase in population, in areas affected by urban renewal.

Demand for housing choice in proximity to employment locations and public transport takes on a new dimension under sustainability principles, and cannot be adequately addressed by applying the practices of recent decades.

Four key conclusions of relevance to public policy can be drawn from research data on cities around the world as to how car dependence can be reduced³¹.

- Public transport infrastructure as a separate system from streets used by cars
- Pedestrian / cycle orientation, including good walking spaces and traffic-free shopping streets
- Urban densities that limit low-density sprawl and reflect urban transit corridors
- Planning and control as an expression of cultural values and to resist the market pressures that work contrary to transit benefits.

Further research would need to be done on what impact differential energy pricing policies by government would have on car dependence.

In September 2001, the State Government released a Planning Policy Package of documents on Integrating Land Use and Transport, jointly prepared by Transport NSW, RTA and Planning NSW. The documents filled a long-term vacuum in this State³². They included:

- Overview
- The Right Place for Business and Services: Planning policy
- Improving Transport Choice: Guidelines for planning and development
- Employment and Journey to Work Patterns in the Greater Metropolitan Region - an analysis of the 1996 Census data
- Draft State Environmental Planning Policy No 66 - Integration of land use and transport

The introduction to the Guidelines provides the overall perspective, and strongly supports the thrust of this Paper.

The government's major plans and strategies embody the critical objectives of:

- reducing the growth in vehicle kilometres travelled (VKT)
- improving air quality and reducing greenhouse gas emissions
- building more compact cities
- promoting economic development and creating jobs.

Local action is required if these objectives are to be realised. Councils in particular have a major role in applying these broader strategies for land use and transport issues, in ways appropriate to their local conditions.

³¹ *Reducing Automobile Dependence* Peter Newman, Environment and Urbanisation, Vol 8, No 1, 1996

³² *Integrating Land Use and Transport - A Planning Policy Package* NSW Dept of Urban Affairs and Planning, August 2001

Achieving sustainability in transport requires us to look differently at travel. We need to focus on:

- the movement of people and of goods, rather than the movement of vehicles,
- maximising **accessibility** (the ability to undertake a range of daily activities with a minimum of travel), rather than **mobility** (the ability to move freely).

This raises the challenge not only to make better transport and land use planning decisions, but also to better integrate these decisions for sustainable outcomes.

This is essentially what is being said by the Federal Government in the Auslink Green Paper (see §3.4).

The Guidelines are based on:

- 10 Principles of Accessible Development
- the Land Use Planning Process
- Location and Design Guidelines
- Practice Issues and Initiatives.

The Guidelines cover commercial, retail, leisure, health, education and industrial centres, housing, public transport, parking, pedestrians, cycleways and urban design. Particular attention is given to creating priority for non-car access modes ahead of the traditional concentration on car access and parking.

The draft SEPP provides the legislative requirement to address sustainable transport issues in processing any development application.

The Guidelines list the key transport planning concepts which are pursued in this Paper.

Some key concepts need to be understood when planning for transport choice. These concepts identify people's basic travel needs.

Convenience — the transport mode needs to be easy to find and use, and to transfer from one mode to another.

Information — reliable information at accessible locations is essential to encourage use of various travel alternatives.

Proximity — transport facilities and services, such as cycle paths and bus services, need to be in close, convenient and obvious locations to people's trip origins and destinations.

Destination choice — the more destinations that can be linked on a public transport route, the more attractive it will be.

Directness — routes should take the shortest and least deviating course, with priority to achieve fast travel times for walking, cycling and public transport (e.g. pedestrian links, dedicated bus lanes, and bikeways).

Security — the environment for walking and waiting needs to be comfortable and safe from personal attack or conflicts with traffic (e.g. waiting areas sheltered from the elements, natural surveillance, good lighting, bike lanes on major roads).

These concepts should be considered simultaneously in planning decisions. There may need to be trade-offs between, for example, directness and linking destinations. The preferred outcome will be the one that best contributes to reducing car dependency.

2.6 National Strategy to Tackle Urban Traffic Emissions

This text is taken from the Newsletter of National Transport Secretariat, Issue 9, September 2002.

The Australian Transport Council (ATC) on 8 August approved the *National Strategy for Lowering Emissions from Urban Traffic* and the first *National Action Plan* to support the strategy. The strategy and action plan, developed by the National Transport Secretariat in collaboration with transport agencies throughout Australia, provides a groundbreaking national approach to reducing greenhouse emissions from the transport sector.

The National Strategy provides a long term overarching framework for reducing emissions from the transport sector. It is underpinned by six outcomes that drive a package approach to the reduction of emissions. The six outcomes are designed to complement each other and also assist in building partnerships across portfolios.

The first national Action Plan builds on the large range of activities already underway in each state and territory. The Action Plan also contains a series of ambitious national actions. To be achieved, they will require a series of steps to be taken over a five to ten year timeframe. The actions include providing more choices for urban travellers, cleaner performance by the vehicle fleet, improved access with less movement, and a greater understanding of the full impact of transport choices. ATC has endorsed a regular review and release of subsequent action plans to support the strategy.

The Strategy and the Action Plan create a cohesive, strategic and proactive framework for reducing transport generated emissions and showcases the transport sector's policy setting capability.

Ministers are committed to the Strategy and Action Plan. The challenge now is for policy makers to be bold in the advice they give to Ministers, driving a proactive rather than a reactive approach to supportable and sustainable action.

As part of the First National Action Plan:

- An information sharing workshop for travel behaviour practitioners from around Australia has been held to share experiences, methodologies, success and failures and there is strong support for convening this forum on a regular basis
- A study being undertaken by the NTS will investigate incentive and disincentive programs to encourage sustainable travel. It will review whether existing policies have a positive or negative impact on influencing the use of more sustainable forms of transport and the results will be available in December 2002.
- A meeting between transport and land use planning professionals will be facilitated by the NTS to develop a National Charter of Land Use and Transport Planning Principles. The purpose of the charter is to achieve better coordination of land use and transport planning across agencies, jurisdictions and levels of government to facilitate effective and sustainable development.

The concerns about urban traffic emissions in the Lower Hunter are supported by the national concerns which led to the adoption of this National Strategy and Action Plan. The actions outlined in this Issues Paper are in accord with the national approach which has received ministerial approval. It is reasonable to expect support from the NTS for the implementation of the National Strategy in the Lower Hunter and in the monitoring of the outcomes.

2.7 Alternative Fuels

Simply pumping more and more petrol into more and more cars is not a sustainable long-term business plan³³.

Air pollution can be reduced by the adoption of cleaner fuels and more efficient vehicles. The technology is now available for this to happen, without the need for major conversions.

³³ *Sustainable Transport*, Speech by Greg Bourne, Regional President BP Australasia, Energy in Western Australia Conference, Perth, March 2003

Three bus companies in Melbourne have successfully operated buses using canola and ethanol as fuels in place of diesel. The operational performance had been satisfactory, but pricing has become an issue because of the excise duties³⁴.

All new buses delivered to State Transit in Sydney are powered by CNG. Again, performance has been satisfactory, and fuelling facilities have been installed at several depots.

Several councils have individual vehicles in their truck fleets undergoing trials, but have not proceeded to full fleet operation on alternative fuels. There is no real reason why this cannot be done.

Debate is emerging on the merits of using alternative fuels such as ethanol. Even if there are some difficulties, the basic point is that these alternative fuels are renewable, whereas petrol and diesel are not renewable. As well, the alternative fuels produce less pollutants than petrol and diesel. In a sustainable approach to transport, these basic points override other considerations, and efforts need to be concentrated on overcoming the relatively minor difficulties. The federal government has to be convinced of the environmental benefits flowing from excise adjustments that will make alternative fuels more attractive than conventional fuels.

The NRMA has available a series of information sheets on alternative fuels and their application to the transport industry.

Toyota launched its Prius hybrid petrol-electric car on the Australian market during 2002. It has already been introduced into the fleets of several Queensland government departments. Lake Macquarie Council has one in its fleet for use by the General Manager.

These vehicles are too expensive at present for individual car owners to compete with normal car prices. In the March Quarter of 2003, Australian sales of Commodore, Falcon and Camry totalled over 45 800 cars. Sales of the Toyota Prius totalled just 65³⁵.

Vehicles using alternative fuels will cause less pollution, but they take up about the same road space as conventional vehicles.

³⁴ Australasian Bus and Coach, 12 July 2002, pages 22-23

³⁵ *Car makers face the green test* Australian Financial Review, 22 May 2003

3 Opportunities in the Lower Hunter

Refer to Volume 2 of this Issues Paper for the regional context from which the opportunities and actions for the Lower Hunter have evolved. It gives detailed background information on the region's profile in terms of population characteristics, existing transport systems and planning initiatives. It discusses issues relating to the provision of efficient and effective public transport and describes sustainable transport initiatives in other regions.

3.1 Roles of Local Government

The opportunity for Local Government to initiate, stimulate and implement sustainable transport projects permeates most of the processes and projects that are presented in this Issues Paper.

Traditionally, State Government controls the planning processes for determining the corridors for appropriate transport modes for new and existing developments.

Local Government is excluded from any significant role in this³⁶, even though travel associated with the corridors will be dependent on infrastructure for which local government is generally responsible.

In the development of sustainable transport at the regional level, local government needs to be more actively involved. Local government is in a position to:

- identify and pursue the transport systems and operations patterns that will best achieve its sustainable urban management strategies
- determine the transport infrastructure to support land use patterns that it approves
- provide the support infrastructure for local public transport (such as roads, footpaths and community facilities)
- understand the travel needs of the local communities
- be committed to achieving higher modal split for sustainable transport options as its main travel management strategy
- implement networks of pathways to encourage alternative transport modes such as walking and cycling
- have a major impact on whether public transport becomes attractive through:
 - ◇ its control of land development processes, which can include the achievement of higher urban densities that will stimulate greater use of alternative transport modes
 - ◇ its responsibilities for addressing social issues at the local level
 - ◇ its ability to access funds from government programs
 - ◇ its ability to initiate and manage innovative transport schemes and pilot projects³⁷
 - ◇ its social programs which can include the preparation and distribution of Public Transport Guides which make it easier for people to understand how the system works, irrespective of individual modes, routes and operators.

Local government around the world will need to take up the challenge of sustainable development, writes **Paul Scobie**.

Newcastle Herald 24.9.02
Paul Scobie is a
Newcastle City Councillor

³⁶ Submission on Auslink Green Paper Maitland City Council, Feb 2003

³⁷ These opportunities were discussed, and case studies presented, at a National Conference on Integrated Transport of Local Communities held in Melbourne in December 2002

In many cases, these opportunities overlap with State Government responsibilities, where priorities may be different, and local issues are subsumed into broader objectives. A key role for local government is to facilitate the appropriate processes whereby service providers come together to access funds and deliver the services that the region requires. This approach has been suggested in the Transport Cluster concept developed in recent times by the Industry Development Centre - Hunter³⁸.

Traditionally, the major role of Local Government in transport has been in the building, maintenance and management of roads, with an emphasis on private vehicles. In some sectors of local government, buses have often been regarded as a nuisance, and a social necessity only for lower socio-economic groups. State government guidelines for enhancing public transport provision in new developments, in place since the 1970's, have been largely ignored in development approvals.

These attitudes are now changing, as public transport is seen as an integral part of the urban transport systems for all of the community. Greater use of public transport can be seen as an effective means of controlling the growth in the usage of roads and the increase in road congestion.

Little will be achieved just by putting on new bus services in either new or existing areas. Rather, people have to be helped to understand the benefits that bus travel gives in terms of cost, time, convenience and reliability.

Not all of the bus routes can go close to all residential areas and desirable destinations: there has to be an integration of local feeder buses with the main line buses that travel along the arterial roads. For this system to work effectively, there need to be good transfer points at convenient locations.

Local Government can facilitate public transport improvements by ensuring that buses do not have to follow circuitous routes to reach transfer points, and that adequate facilities are provided at these points, including shelter, seating, phones and departure information. In some locations, retrofitting of these facilities will be needed. In new projects, they can be provided as part of the development approval process.

In order to increase the use of train services, there have to be adequate and safe facilities for bus - train transfers at the key stations. In many cases, getting a bus close to the station entrance is difficult and circuitous, and there is no shelter or protection for waiting passengers. Local Government can ensure that the appropriate infrastructure and traffic management is in place to facilitate efficient bus-train transfers either through the allocation of its own funds or by influencing the priorities for state funds.

Local Government can provide the leadership that is needed for the greater use of alternative renewable fuels, especially in fleet vehicles. It can:

- set new fuel emission benchmarks for the region by converting all of its fleets, both cars and trucks
- facilitate the establishment of filling stations for a range of renewable fuels, so that these fuels are readily available to potential users
- encourage the state government to insist that all new buses and trains in the region are powered by renewable fuels
- work with transport industry groups to facilitate the use of renewable fuels in the region's truck fleets
- maintain pressure on state and federal governments for fuel pricing policies that favour alternative fuels.

³⁸ *TransHunter: A Vision for Transport in the Hunter: Transport Cluster Map*, Hunter Region Development Organisation, April 1998

Local Government can also provide leadership in the way in which it provides travel benefits to its staff. It is common practice for some form of leaseback vehicle to be included in the salary package of senior staff, even down to middle management levels. This has the tendency to increase the number of cars in a household, incur car parking costs, reduce the incentive for alternative forms of travel by council staff, and impair the understanding of alternative transport issues by council managers who are involved in making decision on these matters.

There would seem to be an opportunity for councils to offer senior staff an alternative package that encouraged the use of public transport, and to make this more financially attractive to the employee. This concept could be extended to all staff through arrangements for annual TravelPass tickets. The Council would purchase the tickets on behalf of staff, and recover the costs by regular salary deductions. These arrangements are already in place at Willoughby Council and the University of New South Wales.

Local Government has an important role to play in addressing these issues for the well-being of its constituents, and to present these requirements for the performance of the public transport systems to the State Government and to the system operators. In the Lower Hunter it can do this effectively by working as a regional group rather than as individual councils. In the development of this Issues Paper, the transport issues and solutions have been examined for the region, without a restriction imposed by local government boundaries.

3.2 Regional Transport Management

There is no government or private sector agency in the Hunter Region responsible for ensuring that the regional public transport services are integrated with each other. The State Government established a Public Transport Authority in July 1996 to assume the coordination function for all public transport in NSW, but it has been ineffective in the Hunter Region.

While the Lower Hunter is in a unique situation as a regional centre with government-operated bus and train networks (the only case in Australia), it has not been able to fully exploit this benefit. The priorities and issues that are important to the Hunter Region are assessed by the transport agencies in relation to situations in Sydney, rather than the perspective from the Hunter Region. Criteria for public transport provision in Sydney are significantly different to those in the Lower Hunter, particularly if the Lower Hunter is pursuing sustainable strategies.

Alternative management regimes need to be examined for transport in the Hunter Region, as has been done successfully with the Newcastle Port Corporation and with Newcastle Airport Ltd.

- The Newcastle Port Corporation, established in 1995, has succeeded in its first years of local management in diversifying the range of cargoes handled, increasing shipping numbers and tonnages, and improving the operating practices for ships in the harbour.
- Newcastle Airport at Williamstown is owned by a company with two shareholders: Newcastle City Council and Port Stephens Council. Patronage has more than doubled in recent years, there are more airline operators, more services, a greater choice of destinations, improved passenger amenities, maintenance facilities, and long term plans for future growth.

Between 1997 and 2001, various proposals were discussed between regional leaders, transport operators, business representatives, the unions and the Minister for Transport advocating a regional management structure that would achieve efficiencies and integration of the region's train, bus and ferry services while improving the services to the community within the same funding resources as are currently applied³⁹. A more coordinated regional approach is now needed to focus on achieving a decisive outcome.

³⁹ *Chamber leads transport push* Newcastle Herald 5 February 2001

A regional management approach could better create the policies for improved service standards and achieve effective integration of the region's public transport systems. It is not sufficient merely to improve the infrastructure for public transport. The management of the systems, networks and operations has to be conducive to delivering a product that will achieve the sustainable modal choice objectives.

There are several models that could be adopted for effective local government involvement. The appropriate one will depend somewhat on the structure and function of the regional management organisation.

One of the risks with regional management of public transport is that it may cut the region off from a traditional source of funds. However, under the current management regimes, the region is not receiving the funding priorities that it deserves, or that it needs to proceed toward sustainability. Hence, regional management models need to be accompanied by a secure funding agreement in order to achieve the operational efficiencies, innovative services and infrastructure projects that are required. It would be expected that appropriate funding arrangements would be covered under a heads of agreement with the State Government for the development and operation of the regional organisation.

The most effective strategy for public transport in the Lower Hunter is most likely to be one that advocates an autonomous regional transit body responsible for all public transport planning and coordination in the Lower Hunter. This is the approach that is adopted in most of the regional centres and Europe and United Kingdom where high quality integrated public transport systems provide regional services in conjunction with the national rail networks.

In whatever model that is adopted, there needs to be an agreement with the NSW Ministry of Transport for the full funding of all concession fares and school student travel payments based on the number of passengers carried. This provides the revenue guarantee, as well as the incentive to improve services and increase patronage. This funding is intended to cover both capital and operational costs, hence there is an opportunity under a new regime to link the funding to more efficient use of transport resources, particularly in relation to provision of off-peak and rural services.

There would also be the opportunity to examine alternative regimes for government financial contributions to public transport operations. The regime in NSW has not produced increases in service levels to the same extent as has been achieved in other states, and there are as yet no plans for integrated fares (as distinct from integrated tickets) in regional areas in NSW as there are in other states. An alternative funding regime could be trialed in the Hunter Region before the government decided on what changes were appropriate for the rest of the state.

Because regional transport infrastructure is generally old, funding for asset renewal and infrastructure provision will likely become more pressing. This could be partly funded from efficiencies achieved through improved operations and increased patronage. Current levels of deficit funding could also be reduced over time. There would also be opportunities to consider private sector finance options with appropriate incentives from the government.

Regional management would be expected to utilise the assets better, increase patronage, reduce costs, and provide a standard of service that reflected the objectives of the Hunter Region. Hence, the government would not be encumbered with additional costs, but it would achieve greater benefits from the better use of current funds.

The regional management approach can be extended from public transport to the broader transport infrastructure including roads. At present regional roads grants are funded by the RTA to the local councils who distribute them according to their own priorities. With regional management, regional roads funds and responsibilities would be handled by the regional organisation. Other funding programs and responsibilities, such as fuel levies, parking fees and vehicle emission testing, could also be transferred to the regional organisation, enhancing its ability to develop the transport infrastructure with a truly regional and sustainable focus.

The support for regional management is not confined to the transport systems of the Hunter Region. Although there are different systems of government in other countries, it is still valid to compare ways in which region issues are addressed. Several examples are given in Vol 2, §6.2.

In the UK, the Commission for Integrated Transport has blamed the malaise of that country's transport system on lack of appropriate investment and on the ineffectiveness of the planning system. It has called for stronger regional authorities, providing a bridge between national policy formulation and the implementation of local transport, so as to match the strength and achievements of regional planning in mainland Europe⁴⁰.

All of the public transport operators in the Lower Hunter belong to associations which are members of the International Union of Public Transport. It has committed them to making a major contribution to liveable communities and sustainable development through improving public transport as outlined in the Toronto Protocol (Vol 1, page 5). Regional management of transport in the Lower Hunter would enable the commendable aspirations of the Toronto Protocol to be implemented as a regional priority.

3.3 Sustainable Transport Plan

The most fundamental starting point for sustainable transport in the Lower Hunter is a Regional Sustainable Transport Plan.

This Plan would adopt a comprehensive approach to sustainable transport, and would include a number of Strategies, such as:

- ◇ Integrated Transport Management Strategy
- ◇ Roads Management Strategy
- ◇ Freight Transport Strategy
- ◇ Public Transport Strategy
- ◇ Innovative Transport Strategy
- ◇ Travel Behaviour Change Strategy
- ◇ Pathways Strategy (including cycleways).

Traditionally, it is expected that the State Government prepares regional plans. However, despite several attempts and submissions, a Hunter Region Plan has not been produced to match the *Shaping Our Cities* Plans for the Sydney Metropolitan Area and for Central Coast. The last Hunter Region Plan was produced in 1989.

Planning NSW has announced that it is assembling regional planFIRST strategy teams, and that the Hunter Region will be one of the first to benefit from this planning reform. Local councils, businesses and individuals will have the opportunity to shape their own regional strategies⁴¹. It is clear that the initiative for achieving sustainability rests with the regional community, which now has the opportunity to pursue its plans and priorities within the planFIRST process.

The planFIRST process has begun in the Hunter Region, and nominations for the Regional Forum to assess regional strategies were called for in December 2002.

Regional plans usually present a broad approach to a range of environmental issues, and do not address the level of detail that is necessary for a sustainable transport plan. If a Sustainable Transport Plan is to be produced for the Lower Hunter, it may have to be initiated by the Councils in the Lower Hunter, prepared in conjunction with various transport agencies and presented to the appropriate state government agencies for ratification. This could be done in conjunction with the planFIRST process.

In Vol 2, §6.2.3, an example is given of the successful collaboration between local and state government agencies in the development of the Gladstone Transport Plan in Central Queensland.

⁴⁰ *Study of European Best Practice in the Delivery of Integrated Transport*, Commission for Integrated Transport, Britain, reviewed in Planning, December 2001

⁴¹ Sue Holliday, Director-General Planning NSW in *New Planner*, 52, 2002

The Lower Hunter Sustainable Transport Plan:

- would not be incompatible with what would be expected in a Hunter Region Strategy Plan, and could in fact form the transport component of such a plan
- would build on the issues identified in the council policies and community consultation processes already in place
- would set the sustainable transport targets to be achieved for the region
- would undertake the analysis of the issues raised in this Paper and present them in an integrated prioritised program to guide major development decisions and government funding allocations
- would examine the transport systems that would be appropriate for the Lower Hunter Region, and which would enable the sustainable targets to be reached
- would identify the appropriate management and funding arrangements.

3.4 Auslink National Land Transport Plan

In May 2002, the Minister for Transport and Regional Services announced a dramatic change to the Federal Government's role in developing Australia's transport infrastructure. A National Land Transport Plan, known as Auslink, aims to make the land transport system safer and more efficient with less impact on the environment.

In November 2002, the Department of Transport and Regional Services issued the *Auslink* Green Paper.

This text is taken from a Background Briefing 'Auslink - A National Land Transport Plan' released by Dept of Transport and Regional Services in May 2002

Auslink aims to deliver more strategic spending of Commonwealth transport funding, greater opportunities for private sector involvement and a better deal for infrastructure investment in metropolitan and regional Australia. The plan consists of the following points:

- the Federal Government will sponsor the development of an indicative rolling 5-10 year transport infrastructure development plan. The plan will be developed on a national participatory basis.
- on the basis of the national plan, the Government will seek project bids that advance the plan's strategic priorities. **The Government will issue invitations to the states and territories, local government, regional development bodies and the private sector to put forward their most attractive bids.** Private sector proposals will be given equal treatment with all other bids.
- non-engineering transport solutions, such as new technology and traffic management, will also be eligible for funding.
- transparent decision-making criteria across transport modes will be used, doing away with the separate and inconsistent treatment of road, rail and intermodal investments.
- the Government will amalgamate its land transport funding programmes, so money can be allocated to the projects that have the greatest benefits, regardless of their transport mode. Funding for regional projects will be quarantined.
- to increase the value of the Government's infrastructure spending, proponents will be encouraged to leverage their proposals. If there are two proposals evaluated as equally beneficial, the one with the greater level of investment by the proponent will have greater chances of acceptance.
- the Government will consider establishing a national advisory body to assist in the development of the national infrastructure plan. The final decisions on spending Commonwealth funds would still rest with the Federal Government.

- the Government will improve the planning focus and funding arrangements for the National Highway System, to yield higher returns to the community. The Government will move beyond the current 100 percent Commonwealth funding responsibility for the National Highway System, to allow joint funding of a broader national land transport network. The new network will cover critical road and rail links and their intermodal connections.
- the Government will seek to renegotiate the 1991 Roads Agreement, to replace it with a far broader Transport Infrastructure Inter-Governmental Agreement, involving the Commonwealth, states, territories, and local government. It will cover road, rail, intermodal connections, and non-engineering solutions.

AusLink will not involve a reduction in the Commonwealth's transport expenditure. The Federal Government's transport and infrastructure priorities will be clearly identified in the national plan's strategic priorities and for each round of project bidding. These will also identify those areas that are clearly not Commonwealth responsibilities. The Government's funding will focus on the new national cross-modal network and within this, on the projects that deliver higher national benefits.

The benefits of this new approach to land transport infrastructure planning and funding include:

- developing a modern land transport network, as a more effective engine for growth, competitiveness and social equity
- improving opportunities for private sector investment in infrastructure development
- addressing the imbalances between: modal and intermodal funding, engineering and non-engineering solutions, and urban and regional investment.

The release of the *Auslink Green Paper*, a comprehensive discussion paper, was accompanied by a call for submissions by 7 February 2003⁴². The Government intends to develop a formal statement of Government policy (White Paper), with the new Auslink funding arrangements in place by July 2004.

To be effective, the Auslink regime must embrace all modes of transport in a truly integrated manner, so that the available funds can be expended on the mode or modes that most effectively meet the transport need.

While the Green Paper places an emphasis on freight corridors and logistics, these objectives cannot be achieved without recognition of other transport demands, often using infrastructure in conjunction with freight services.

• **Auslink and Sustainable Transport**

The Green Paper touches on the issues and importance of a sustainable approach to transport infrastructure provision. It needs to develop this further. It is through the adoption of a realistic approach to sustainability in transport systems that an effective resolution can be found to many regional transport problems.

A sustainable approach to transport management involves encouraging the use of modes of transport that:

- use less polluting fuels
- create less congestion
- reduce the number of trips made in private cars
- make it safer for users of the infrastructure
- enable greenhouse gas reduction targets to be met.

⁴² *Auslink Green Paper: Towards a National Land Transport Plan* Dept of Transport and Regional Services, Canberra, November 2002

This approach cannot be adopted without taking all transport demands and modes into an integrated transport and land use planning strategy.

National transport corridors, as identified in national strategies, have to pass through regions, and the use of these corridors has impacts on, and has to be integrated with, the transport and planning strategies of that region.

Some of the most significant strategies for sustainable transport involve:

- much greater amounts of freight moving by rail rather than road
- much greater use of public transport for both urban and inter-regional travel
- planning processes and infrastructure provision that will encourage more local trips to be made by walking and cycling.

The opportunities for more people to make trips by walking, cycling and public transport will reduce the growth in demand for road space for car travel, thereby reducing urban traffic congestion, pollution, and the need for additional infrastructure.

Similarly, increased opportunities for freight to be moved by rail, and for inter-regional travel to be made by rail, will reduce the conflicts between large and small vehicles on the roads, and reduce the need for increased road capacity. Funds can be more effectively spent in improving the quality of the road system and enhancing road safety.

• **Auslink and Regional Planning**

None of these strategies will be effective if they are applied only in rural corridors. They have to be integrated with urban planning and infrastructure provision at terminals to enable goods and people to access the sustainable transport systems close to their destinations.

This is why Auslink has to adopt a fully integrated approach to the National Transport Plan and include all transport modes and regional planning processes. These processes are in place to some extent already, usually at a state or local government level. Auslink can be the catalyst that converts the existing processes into enhanced and effective regional planning and transport integration.

The more essential role for Auslink is to create and enhance effective regional planning processes, rather than just work out how to supply project funds. Although there may be an expectation of some funding from the federal government, much of the funding could come from better and more effective allocation of state government, local government and private sector funding. Auslink should take a broad strategic approach at this stage to ensure that all the available options are included in the strategic regional plans. This would be more effective than the approach implied in the Green Paper, wherein some aspects of transport and urban environments were excluded from consideration.

• **Auslink and Port Logistics**

The Newcastle Port Corporation is promoting the opportunity to develop a modern Multi-Purpose Freight Terminal on the site of the former Newcastle Steelworks. This terminal should be part of a national freight strategy for the handling of container, general and bulk cargos based on rail transport, modern information technology and freight logistics.

In order to maintain 24-hour access to the port, the road and rail corridors have to be planned and built where they will not encroach on the amenity of urban areas. This can still be done, and it provides an opportunity to show how the Auslink approach can achieve genuine regional benefits.

Outside the immediate port environs, the transport corridors have to cater for a wide range of transport needs. The existing corridors within urban areas cannot cope with the expected growth in demand from port traffic, interstate freight, coal transport, the provision of services to achieve sustainable passenger transport, and the travel patterns of new urban development. Freight corridors need to be established where they do not impinge on urban amenity, so that the existing corridors can be used for enhanced passenger services by sustainable modes.

Access to Newcastle Port from the inland regions of NSW is crucial for the competitiveness of Australian exports on overseas markets. The current inefficiencies and delays of having to export through Port Botany are forcing exports from inland NSW through Melbourne and Brisbane, thereby creating large amounts of unnecessary freight transport movements. The Auslink process should be able to identify these inefficiencies and allocate funding priorities accordingly.

• **Auslink and Sustainable Transport in the Lower Hunter**

The Hunter Region is large enough for the development of a sustainable transport system, but small enough for it to be implemented relatively easily. It needs the level of coordination and cooperation between the various levels of government and the private sector that are envisaged in the Auslink Green Paper.

This Issues Paper on Sustainable Transport in the Lower Hunter Region lists a number of Action Strategies that need to be considered for a regional sustainable transport system (Vol 1, §4). Each of these strategies requires coordination between the various transport modes and operators, as well as an appropriate regional land-use strategy.

It would appear that the Action Strategies would qualify as a regional project under the Auslink guidelines. Certainly the Auslink process would enable the strategic issues to be processed in a coordinated manner, greatly enhancing the chance of success and the effectiveness of the investments.

It is hoped that the Auslink process may be able to examine the Lower Hunter Sustainable Transport Report in more detail and consider using it as a pilot project to demonstrate the effectiveness of the Auslink approach.

Auslink gives the Lower Hunter Region the opportunity to plan and develop an integrated sustainable transport system with support from federal government and private sector funding in addition to the state and local government funding that would need to be spent on transport infrastructure and operations.

Chapter 4 of the *Auslink* Green Paper includes specific details on a New Approach for Local Government and Transport Infrastructure for Australia's Regions. It is the specific statements and proposals in this chapter that give rise to positive expectations for the Hunter Region from the Auslink policies.

• **Responses to Auslink Green Paper**

The Dept of Transport and Regional Services received over 550 submissions to Auslink from State and Local Governments, Industry, Environment Groups, Tertiary Education and Research Groups, Bicycle Groups and interested members of the public⁴³.

Submissions from the Lower Hunter Region included those from Hunter Councils, individual councils, Hunter Business Chamber, Hunter Planners Network, Newcastle Cycleways Movement, Dudley Progress Association and Transit Planners.

The Council submissions emphasised several key points:

⁴³ All the submissions are available on the website www.dotars.gov.au/transinfra/auslink/submissions

- Auslink is an opportunity to consider the total transport agenda, in a framework set by a commitment to sustainable development.
- The Auslink emphasis is too much on the freight task, and needs to be broadened to include, with equal priority, the passenger transport task as part of an integrated land transport strategy.
- Insufficient emphasis is given to the wider objectives of sustainability. Rather than simply catering for projected increases in freight movements, Auslink should be considering the management of freight within a sustainable cities context.
- Increased investment in rail infrastructure is critical to fostering sustainable development and transport patterns in the Hunter Region.
- Consideration of public transport issues is an essential component of a sustainable national transport plan. Auslink should pay particular attention to urban public transport, not dismiss it.
- There is a fear that Auslink may take away federal funding for road maintenance and leave this to State and local government.
- State planning strategies need to be incorporated into the whole process of implementing Auslink to ensure a coordinated approach
- In addition to provision of a more efficient national transport network, regional economic growth will also have to be supported by government policy encouraging decentralisation of industry.
- Auslink may provide for further development of a comprehensive regional strategy that supports the council's urban strategies
- Auslink could provide funding for:
 - ◊ the development of regional transport forums representing state and local government and businesses involved in regional strategies
 - ◊ the development of integrated transport strategies by local councils to support those developed at the regional level.
- The economic focus for private sector funding may be too narrow.
- Social equity issues associated with assessment of projects need to be taken into account as well as the commercial and economic outcomes.
- The funding guidelines are wide enough to encompass specific integrated transport projects in the Lower Hunter, such as transport interchanges and innovative transport services.

The Councils submissions for Auslink to include public transport in an integrated national transport plan are strongly supported by professional groups such as the International Union of Public Transport in Australia and New Zealand, the Rail, Tram and Bus Union, Institution of Engineers, and the Australasian Railway Association.

3.5 Urban Development Processes

There are a significant number of reports about what needs to be done in urban planning to facilitate the provision of high quality public transport and to increase patronage.

The task now is to place the outputs from these studies into urban design guidelines so that all new developments and Government works programs can be more public transport supportive.

Some of the main issues to be addressed under the suggested urban design principles include:

- Opportunities should be taken whenever possible to increase urban densities and to limit the spread of isolated residential development. Higher urban densities provide the impetus for support of alternative transport modes throughout the region. To gain this benefit, higher urban densities must be developed in conjunction with higher quality public transport services.

- Usually, residential and industrial estates need to have two access points and a direct connecting road with pathways so that bus stops are within easy walking distance of all buildings, as part of a pedestrian/cycle friendly, highly inter-connected street system
- Prior to the approval of any new subdivision for residential or industrial purposes, there should be an agreement about modifications to the existing public transport network to cater for the new development, including when the modified services will commence, and the frequency at which they will operate
- Estate development can only proceed in a way that allows the bus network to operate through the estate from the time of initial occupation
- In established urban areas, the provision of pathways, good lighting and shelter at stops are pursued in order to improve pedestrian safety and efficiency
- Sites for mixed use, transit-supportive redevelopment projects are identified and designed in conjunction with the public transport network
- The expansion of major shopping and employment areas needs to incorporate provision for public transport services and facilities for their passengers.

A draft State Environmental Planning Policy (SEPP 66) has been produced by Planning NSW in collaboration with Transport NSW and the RTA. It is supported by policy documents which can be used to provide the appropriate context for local government to address issues related to land use and transport, especially when they arise in development applications and strategic policy decisions. (see Vol 1, §2.5)

3.6 Transport Planning Studies

Relatively little is known at a regional level about why people travel where they do, how often, by what mode, and what choices they are prepared to make. Some information is available on journey to work travel, but this represents only 12% of the total trips made in a day⁴⁴.

The Household Travel Survey⁴⁵ has thrown some light on travel patterns, but the sample size is so small that further surveys and analyses would be needed to obtain a more accurate regional understanding.

Although a reasonable attempt can be made to provide improved transport services based on local knowledge, the changes that need to be made will gain greater community acceptance if they are based on good data sets and surveys.

Issues that can be studied include:

- ◇ Origin and destination for various trip purposes
- ◇ Chosen and preferred modes of travel
- ◇ Location and capacity of transport generators
- ◇ Potential for public transport usage in localities
- ◇ Potential transitway corridors
- ◇ Transit mode issues and options
- ◇ Stated preference surveys to test acceptance of planned improvements.

There is no up-to-date transport model for the Lower Hunter. This makes it difficult to test the transport impacts of new developments, various urban management strategies, and changes in modal choice. The RTA has started work to remedy this situation by creating a multi-mode transport model for the Hunter Region. The intention is that council staff will be trained in its use, and they will be able to test the transport implications and modal split options for new developments and settlement plans.

⁴⁴ Information brochures and Issues Papers from the NSW Transport Data Centre (Department of Transport)

⁴⁵ *Travel in Newcastle and Wollongong*, Issues Paper 2002/01, Transport Data Centre, Transport NSW, Feb 2002

Work needs to be undertaken to enable appropriate planning and modelling of transport tasks and opportunities, including:

- Creating a compatible database of population, employment and land uses that can be used for regional transport modelling
- Updating and upgrading the regional travel model to include multi-modal options, and the ability to assess modal split options, major development impacts, various land use strategies, and travel demand management analyses
- Use of the model to determine the capacity of the current road system under current and foreseeable growth trends
- Use of the enhanced model to assess the transport impacts of major developments and infrastructure projects currently under consideration for the Lower Hunter Region
- Determination of the extent of travel beyond the capacity of the current road system that has to be channelled into other modes through transit oriented development and transport projects
- Preparation of a strategic transport network plan that best meets the adopted urban strategies
- Estimation of the impacts of achieving the target modal split for public transport usage.

3.7 Coordination

Many opportunities for coordination have not been explored seriously. Some examples illustrate this point.

- Raymond Terrace - Newcastle services could operate at twice the current frequency (hourly on weekdays and two-hourly at weekends) with no additional cost to the bus company if the buses terminated at Hexham and connected with the CityRail trains, if a suitable interchange was built, and if fares were integrated.
- Metford station and bus interchange was built in 1995 to serve the nearby residential suburbs and TAFE College. The Dept of Transport announced at the time that 'by 2011, up to 60 000 new homes are expected in the Metford Station catchment'⁴⁶. (The correct figure should have been 6 000 new homes). However, there are no coordinated bus services to meet with the trains, and only occasional services between the station and Metford TAFE. There is no connection to the station from Raymond Terrace Rd on the northern side where much of the new development is planned to occur.
- Maitland and Victoria Street stations are important commuter stations with good residential catchments. Maitland Station was upgraded in 2002, and Victoria Street will be upgraded in the near future, including bus interchange facilities. However, the bus services to these stations are poor, and are not coordinated with trains. At night times and weekends, buses are only available 'on call', but prior bookings have to be made during office hours. This is not very satisfactory for casual travellers.
- There is no coordination of Maitland line trains with bus routes at the Newcastle end of the line. Many travellers from Maitland do not have a destination in the Newcastle CBD, yet the transport system does not recognise this. There are no coordinated buses from stations at Waratah and Hamilton to the industries, regional centres and regional hospitals. Of the workers who travel from Maitland to Newcastle, 19% work in the CBD and 81% elsewhere in the city. (See Table 3, Vol 2, §2.3)
- There are no integrated fares between the private bus operators and CityRail for combined bus + train travel. Such combined tickets are available at some stations in the Sydney Metropolitan network.

⁴⁶ DoT News, NSW Dept of Transport, October 1994

- Most buses from Cessnock, Raymond Terrace and Port Stephens to Newcastle travel only to Newcastle CBD. Many passengers desire to travel to other destinations, as indicated by the patronage on the occasional trips that divert via University, John Hunter Hospital and Charlestown. There needs to be interchange facilities in the Mayfield area so that passengers can transfer to a number of bus routes for travel throughout the Newcastle / Lake Macquarie area, with integrated ticketing so that the costs would be no greater than if services were direct. This would provide the opportunities for people to travel by more services to many more venues.
- Until recently, the Rover timetable for Cessnock - Maitland buses showed times for connecting Blue Ribbon services to Maitland Hospital and Green Hills shopping centre, but the Blue Ribbon times and route numbers related to superseded timetables. The October 2002 timetable does not show connections with Blue Ribbon services.
- For many years residential development has been under way in the southern part of Rutherford, west of Wollombi Road. However, there is still a gap of about 125m in the road network which prevents buses operating through the area between New England Hwy and Wollombi Road. As well, the area is within easy walking distance of the site of Farley railway station, which was closed in September 1975 and subsequently demolished.

With just a little bit of foresight, coordination and land use planning, bus routes could have been much more efficient and operated to this station and continued through to Telarah shopping centre and railway station. Travel distances would be much shorter than the existing bus routes. Singleton trains pass through Farley 5 times a day, and additional services could be operated as an alternative terminus to Telarah Station, especially if the frequency of trains on the Maitland - Newcastle corridor was increased.

- Residential development at Warabrook occurred after the new railway station was built in 1995. Yet the subdivision plan was not altered (as it could have been) to allow buses to gain access to the station and for new bus routes to possibly terminate there. It is now impossible to get a normal bus to the station, thereby denying the full benefits of train travel to residents and workers beyond walking distance within the station catchment area. The planned cycleway linking the suburb to the railway station has not yet been built.

To ensure the success of coordinated transport systems, there has to be an ability for radio communication between the transport modes to ensure that connections are maintained when unavoidable delays occur. This coordination has to be able to occur:

- between bus drivers in the same company where buses are scheduled to make connections
- between the networks of different companies where buses are scheduled to make connections
- between station staff and bus driver where train-bus connections are scheduled.

In an integrated transport network, there would be a central operations control which would be able to carry out these functions and issue instructions to drivers.

3.8 Employment Centres

3.8.1 Sustainable Approach

Regional employment centres are locations which generate large numbers of people, particularly during the daytime on weekdays. These people come from near and far throughout the region.

With the changing nature of manufacturing and service industries in recent years, most of the traditional industrial public transport services have ceased, and no replacement ones have emerged to the new employment centres.

A sustainable transport strategy would dictate that comprehensive employee access systems for employment areas are as important as the environmental management programs for the site development. The employee access systems can then be expanded to cater for visitors, tourists and freight transport.

The dispersed residential location of workers and their variable work times are deterrents to implementing access transport systems as an alternative to the private car. However, this does not mean that such systems should not be investigated and implemented.

Employers already absorb considerable costs in providing and maintaining car parking facilities for employees. Employees carry the financial burden of having a car that stands idle for most of the day, and often sustains superficial damage at the same time. A comprehensive approach to alternative access schemes should be able to offer cheaper travel modes.

In the planning for the major industrial developments, the developers should be required to assess where the thousands of expected workers will come from and how they will travel each day to and from the sites. Instead of providing massive car parks for these workers, the opportunity could be taken to encourage the developers to instead fund initiatives for sustainable transport packages. This would probably be cheaper for the developer, it would be environmentally better for the region, and it would lay the foundation for the region's sustainable transport system for the future.

Traffic generation and related matters are considered by councils in the assessment of development applications. Generally, this assessment is superficial and peripheral to the approval process. It relates mainly to traffic management, rather than the assessment of sustainable alternatives. In the assessment of individual development applications, it is not feasible to consider the cumulative impact of traffic generated by a number of projects using the same road network.

Major industrial developments are not just about creating jobs. They also need to enhance the sustainable environment of the region.

The traditional system of providing public transport by bus has become much more difficult. People live in many locations, often up to an hours travel distance from the work site. The only way that bus services could respond to this is for a network of services to operate from designated locations that could be used as interchanges with security parking. The bus services would operate in express mode along arterial roads, with priority at intersections, so that bus travel times would be competitive with car travel times.

The interchanges would be much closer to where people live. Some workers would choose to be driven to the interchange by a family member, to catch a local bus, or to ride or walk. There may be the opportunity for the number of cars in the household to be reduced, thereby producing household savings of up to \$8000 a year (see Vol 1, §2.4). For those who drive their car to the interchange, the distance travelled by car is less, thereby leading to a reduction in pollution and congestion on the roads.

As far as possible, the express bus services should operate to a number of employment locations as part of a region-wide network, so as to increase the patronage and provide a choice of travel options.

As the alternative travel systems in the region are developed, these bus services would be replaced with other more attractive travel modes which would still give fast and convenient access between a designated parking area and the workplace.

A number of options are available, as demonstrated by the strategies that could be adopted for specific employment areas. It may be worthwhile for one of these employment centres to be selected as a demonstration project to show how sustainable commuter transport systems can be implemented.

3.8.2 Tomago

The largest employer at Tomago is Tomago Aluminium. There are also a number of fabrication and ship building plants. The area has been earmarked for the Austeel steel production plant.

Already around 2000 people work at Tomago, and this workforce will almost double with expansion of the aluminium smelter and the construction of the proposed steelworks and other infrastructure projects.

Due to the isolation of the industrial plants at Tomago, the only way to get there is by private car. This causes considerable congestion on the arterial road network, particularly at Wallsend Rd and Pacific Hwy Sandgate.

In all of the environmental considerations for the new developments, there has been no overt assessment of the impacts of how these additional workers will travel to and from the site each day, and what alternative transport systems might be available, particularly given the large increase in the number of workers and the limited number of roads that can be used to access the Tomago area.

Given the extent of state government involvement in the development of the major plants at Tomago, there is a compelling case for the inclusion of sustainable transport projects as part of the development consent, especially in relation to employee travel to and from the sites.

3.8.3 Williamstown Airport / RAAF Base

Williamstown Airport has increased in importance in recent times as a hub within the regional transport system, and as a large industrial employment area.

With the RAAF base, the aircraft maintenance facilities and the airport terminal, nearly 1000 people work in this site. Most of the workers have to travel long distances to Williamstown, and much of the residential accommodation on the RAAF base is being phased out.

Port Stephens Council has built a cycleway between Raymond Terrace and the RAAF base. It is well used by workers, and shows the value in low-cost infrastructure to provide alternative transport opportunities.

Apart from the employment aspects, airline passengers need to get to and from the airport. Other than car travel, there is a limited bus service and an expensive taxi service.

Growth of airline travel will be stimulated by enhanced ground transport services. The relatively low volume of passenger traffic makes this difficult to do with a stand-alone system, hence there needs to be integration with other transport needs in the area. These would include:

- Tomago industrial area
- Links from Nelson Bay to Raymond Terrace and Newcastle.

3.8.4 Hunter Employment Zone at Tomalpin

State and local government approval has been granted in principle for the development of the largest industrial site in NSW at Tomalpin, south of Weston and Kurri Kurri.

The 870ha site is expected to attract a wide range of industries requiring large sites and environmental envelopes. Products will move by road using the National Highway extension of the F3 and by rail using the South Maitland Railway (SMR). Both road and rail access will be provided to the Newcastle Port.

Various reports have indicated that up to 10 000 workers could be engaged on the site, generating 12 000 vehicle movements a day through local streets⁴⁷. The site would rate as one of the largest employment centres in the Region, similar to Newcastle CBD and Cardiff industrial area.

Workers at Tomalpin will come from all over the region. Although it will ease unemployment in the Cessnock area, it will primarily be a regional facility attracting workers from throughout all parts of the Hunter Region. As such, it runs the risk of exacerbating unsustainable journey to work habits that are already well established in the region. The average vkt (vehicle kilometres travelled) for people to get to work will actually increase unless sustainable transport systems are put in place.

The development plans for Tomalpin should include the building of cycleway links to Cessnock, Kurri Kurri and Maitland. Generally the grades in the area are suitable for cycling.

Preliminary investigations have been undertaken into the use of the SMR for both freight and passenger trains, and for the extension of the rail line into the HEZ. However the operational logistics of the regional rail network will have to be considered and resolved as well as providing the appropriate rail infrastructure.

3.8.5 Cardiff / Glendale

The Cardiff / Glendale area ranks with the Newcastle CBD as the largest concentration of workers in the Hunter Region. About 15000 people travel to Cardiff / Glendale each day for work.

While the Newcastle CBD is reasonably well endowed with public transport services, the Cardiff / Glendale area is poorly serviced. During the morning peak hour:

- In the Newcastle CBD between 8.00 and 9.00am, there are:
 - ◇ 5 trains from the Central Coast, each stopping at 3 stations within easy walking distance
 - ◇ 4 trains from Hunter Valley, each stopping at 3 stations within easy walking distance
 - ◇ 46 bus services arriving from throughout the Newcastle / Lake Macquarie area, each stopping at up to 10 bus stops along the length of Hunter St
 - ◇ 7 bus services from towns in the Lower Hunter, each stopping at 10 bus stops along Hunter St
 - ◇ 3 ferry trips from Stockton to Queens Wharf.
- In the Cardiff / Glendale area between 7.30 and 8.30am, there are:
 - ◇ 4 trains from Central Coast, stopping only at Cardiff Station, over 1km from the closest part of the industrial area
 - ◇ 3 trains from Newcastle, stopping only at Cardiff Station, over 1km from the closest part of the industrial area
 - ◇ 13 bus services arriving in the northern part of the employment area
 - ◇ 5 bus services arriving on the edge of the southern part of the employment area.

Much of the growth of employment in the Cardiff / Glendale area has occurred at a time when the traditional large employment associated with the steelworks has been dissipated.

The development of a regional transport interchange at Glendale will assist with access for workers, but the crucial requirement to attract workers out of their cars is high frequency public transport services from throughout the Newcastle / Lake Macquarie area. In the short term, this can only be done by bus. Until the road bridge is built over the rail line at Glendale, the provision of sustainable bus routes to the Cardiff industrial area will remain extremely difficult.

⁴⁷ Various reports in *Newcastle Herald*, including 21.9.01, 22.3.02

The proposed closure of Pasminco Smelter on adjoining land at Boolaroo provides a further opportunity to pursue a sustainability approach to development of the Cardiff / Glendale area. The smelter site already has rail access, and this should influence the future uses of the site. Opportunities for new east-west road access through the site could have significant traffic and transit implications.

3.8.6 Thornton / Beresfield

The Thornton / Beresfield area is the most recent large employment area to be developed in the Lower Hunter. It includes the Thornton industrial estate on the northern side of the New England Hwy, the Holmwood industrial estate on the southern side, and the Donaldson and Bloomfield coal mines. It has the potential for significant expansion.

There is a railway station at Thornton, but this is beyond the normal walking distances to the work places. The roads are long cul-de-sacs with no provision for through travel. There are no feeder bus services. The only normal bus services are occasional trips along the New England Highway between Beresfield and Maitland.

The opportunity could have been taken when these industrial areas were developed to require provision of adequate intermodal transport services and to design the road network so that buses could move through the industrial areas in an efficient manner that was attractive to workers and visitors.

Thornton station could also provide a significant service to commuters between the new residential areas and various parts of the region. Families moving into new estates are often in economic circumstances where an alternative to owning a second car would be appreciated. A sustainable transport approach would ensure that these areas were served by coordinated feeder bus services to the railway station, and that the decision to provide these services was not left entirely in the hands of a local operator.

3.8.7 Kooragang

Employment at Kooragang will increase significantly with the development of the ProTech steelworks, which will probably be the stimulus for other industrial plants.

Due to its isolation, access to Kooragang is mostly by private car. The Port Stephens and Lemon Tree Passage buses run through the area, but are not effective in providing public transport for the workers.

3.9 Regional Centres

3.9.1 Newcastle CBD

The historical focus on the City Centre of Newcastle needs to be re-addressed. Despite many comments that there is too much public transport focussed on the City Centre, it is still, and will continue to be, the business heart of one of only four major centres in the greater metropolitan area where employment and commerce is concentrated (the other three being Sydney CBD, Parramatta and Wollongong)⁴⁸.

The Newcastle CBD has remained a destination of significant importance, despite the rise of importance of other destinations in recent times. People travel to the City Centre from throughout the Hunter Region, and the public transport systems need to reflect this. As well, there are a large number of other travel generators along the routes to the City Centre.

Mixed with this, there are the extensive harbour foreshore open spaces and the coastal beaches that attract large crowds at all times, but especially at weekends. At night times at weekends, it is estimated that there are up to 10 000 people in the City Centre at late night entertainment venues.

⁴⁸ *Shaping our Cities: the planning strategy for the greater metropolitan region of Sydney, Newcastle, Wollongong and Central Coast*, Dept of Urban Affairs and Planning, 1998

In a telephone survey undertaken by Hunter Valley Research Foundation for Newcastle Buses in May 2001, 18% of respondents indicated the Newcastle CBD as the destination of their most recent bus trip. 14% indicated Charlestown. This ratio is very close to the ratio of bus routes that served these two centres at that time. A subsequent survey of respondents to the Bus Plan proposals revealed a higher proportion of bus travellers stated Newcastle CBD as their destination (26%), but the same proportion nominated Charlestown.

All this indicates that the way in which public transport is operated to the City Centre needs to be reviewed. The current focus of train, bus and ferry services gives a unique opportunity to build on what we have, rather than look at what can be taken away.

Although the Newcastle CBD has more public transport services than any other employment, shopping or recreation centre, the bus and train services are not patronised at the level of capacity that is provided. Part of the difficulty is the access to bus or train services in the area where people live. These have been reduced as a result of a rationalisation of services to the CBD, resulting in an overall reduction in accessibility.

Both the Newcastle City Council and the Honeysuckle Development Corporation have pursued parking policies that are not integrated with sustainable transport policies⁴⁹. This is partly due to the lack of integration on transport planning between the various planning bodies and service providers. They each have their own performance objectives which make it difficult to pursue projects that require coordinated action by several agencies.

It could be argued that, given the city's sustainability objectives, the Council should be prepared to spend as much on alternative transport strategies as on car parking strategies.

Last week Professor Ian Lowe argued for stronger measures to persuade people to travel into cities by public transport. He cited cities like York, Venice and Vienna where private vehicles are banned from CBDs. In Newcastle two more CBD carparks are planned, at Civic and Honeysuckle. Professor Lowe also strongly advocated for more pedestrian-only malls, citing Brisbane's Queen St Mall, where retailers in neighbouring streets are petitioning for inclusion. Newcastle City Council is considering reintroducing private vehicles into the Hunter St Mall. Initiatives to improve public transport seem hollow when council also plans to make it easier to access the CBD by private vehicles.

Keith Parsons, Cooks Hill

Newcastle Herald 14 March 2002

The train services to the CBD are only as effective as the accessibility to the railway stations near to where people live. Most potential users of the rail services live beyond walking distance from the station, hence rely on driving their car, getting a lift or catching a bus to the station. While commuter parking is not generally a problem, the lack of dependable bus connections is a major deterrent, particularly for the homeward trips at the end of the day.

The bus services along Hunter Street offer an ideal opportunity for people to use public transport to move from one part of the CBD to another. This could be successfully promoted as an advantage over the other commercial centres in the region.

There needs to be some form of City Centre ticket that encourages and allows unlimited travel within the CBD. This could be linked to parking station fees and it could be an add-on to the normal bus and train fares. CityRail offers a 'City Hopper' ticket as an add-on to train fares for unlimited bus and train travel around the CBD in Sydney.

For several years, there have been suggestions for an inner city loop bus, particularly at peak shopping times like Christmas. In December 2002 the Newcastle Alliance was successful in arranging a City Loop Bus to operate between 9.30am and 5.00pm on weekdays in December up until Christmas Eve.

Extensive advertising was placed in the local media. The route included Darby St as far as Parkway Avenue and Newcastle West as far as Stewart Avenue. The free service operated with two buses to achieve an average 15 minute frequency. However the buses were not readily recognisable as a City Loop service.

⁴⁹ *A Car Parking Policy for Newcastle* Nelson English, Loxton & Andrews, June 2000

Estimates by the Newcastle Alliance indicate that between 150 and 250 people used the City Loop Bus each day, an average of about seven people per half-hour trip.

The main advantage of City Loop Bus in December 2002 was not only to demonstrate the potential of such a service, but also to underline that this type of service has to be well planned, integrated and promoted. If it is to benefit primarily the CBD, it has to be considered as a permanent feature of the city centre, and integrated with train, bus and ferry fares as well as parking station fees. It also provides an opportunity for marketing incentives for CBD shops.

3.9.2 Charlestown

The Charlestown commercial centre is strategically located as a focus of the bus transport network.

Charlestown is served by:

- 6 through bus routes and 9 terminating routes in the Newcastle Buses network
- 1 through route and 2 terminating private bus routes
- 4 long-distance coach routes.

There are no rail services at Charlestown. Hence the importance of a hierarchy of bus routes and services is greater than at most regional centres.

Recent development approvals indicate that the urban form in Charlestown is about to change. Several multi-storey developments will soon be built containing a mixture of residential and commercial facilities. This will stimulate redevelopment of parts of the commercial area.

Charlestown is the ideal location for a regional transport interchange. Provision for this should be included in planning for the future of the regional centre and in the approvals for site developments. Sites to be considered for the transport interchange would include the mall in Pearson St. It is important to ensure that buses travelling to and from the interchange are not forced into circuitous routes with long delays. It may be necessary to change the traffic arrangements on surrounding roads to facilitate the efficient operation of buses.

It is understood that the opening of the Charlestown Bypass in March 2003 is likely to have only a short-term impact on reducing traffic volumes on the Pacific Hwy through Charlestown.

3.9.3 Kotara

Commercial development adjacent to the Garden City shopping centre has seen Kotara emerge as a significant regional centre, with a wide range of retail and professional services. This will be enhanced during 2003 by the planned expansion of the Garden City shopping centre and the addition of cinemas.

Although the commercial area is adjacent to the rail line, the nearest railway stations are at Adamstown and Kotara, each over 1km away. The Newcastle Urban Strategy indicates that these stations would remain and the areas within their pedestrian catchment would be targeted for higher-density redevelopment.

In accord with state planning policy, as enunciated in the Planning Policy accompanying the draft SEPP 66 documents, a commercial centre at the size of Kotara should have a railway station, given that the rail line is so close. The new station would attain regional status, and be an additional stop for the Sydney - Newcastle trains and the Newcastle suburban trains⁵⁰.

⁵⁰ *Transport Infrastructure Study for the Hunter, North and West Regions of NSW* Newcastle and Hunter Business Chamber, June 2000, §20: CityRail Trains

In 2000, Newcastle City Council and State Rail commissioned a pre-feasibility study for a new railway station to serve the Kotara commercial area. The terms of reference for the study did not include the relocation or closure of existing stations. The study identified suitable locations for a railway station and the required access facilities and commuter parking. The locations were consistent with objective in the Newcastle Urban Strategy of encouraging and attracting more travel by modes other than the private car⁵¹.

The study was exhibited for public comment between May and August 2002. A report has not yet been presented to Council on the exhibition process.

Planning studies should now be undertaken to determine the optimal site of the station, the provision of a bus-rail interchange, the location and integration of commuter parking, and access to the adjoining commercial and residential developments.

The pre-feasibility study noted that it may be difficult, because of site constraints, to allow the full functions of a regional interchange to be achieved at Kotara. However, given the commercial facilities that have already been approved and built, it is imperative that the local and state planning processes enable commensurate intermodal transport facilities to be provided. In the short term this would include protecting critical land sites from incompatible development, and ensuring that the necessary road and pathway corridors remain vacant.

Given that the commercial developments that justify this station under state planning policies are already in place, the construction of the station should be treated as a matter of priority.

3.9.4 John Hunter Hospital

Although John Hunter Hospital is centrally located within the Newcastle / Lake Macquarie area, access is difficult due to the nature of the road system and the hilly topography.

However, it is the largest hospital in the region, and one of the largest in the State. Hunter Health has a strategic program to locate and consolidate more facilities on the site, and private hospitals and medical facilities are being co-located.

Public transport is only available by bus: 4 government bus routes and 2 private bus routes. For many areas in the Lower Hunter, it is necessary to change from train to bus, or bus to bus, to reach John Hunter Hospital.

Buses serving John Hunter Hospital have to divert off Lookout Road and negotiate the traffic congestion around the hospital entrance to get to the hospital bus stop, which is also used as a place of interchange between several routes. This diversion adds 4-5 minutes to the length of the bus trip for passengers who are not going to the hospital.

On site parking is provided for 1100 vehicles, and Hunter Health has plans for a new 150-vehicle parking station. At times all parking spaces are full. Hunter Health operates a part-time shuttle bus around the site to overcome problems with long walking distances.

Hunter Health has a strategy in place for a second road access to the site. The planning for this needs to incorporate a bus interchange in a location that enables the buses to make a continuous forward movement through the site, minimising the additional travel distance compared to the direct route along Lookout Road.

⁵¹ *Kotara Station Pre-Feasibility Study Final Report* Sinclair Knight Merz, June 2001

The proposed road link between New Lambton Heights and Jesmond (State Highway 23) would provide an ideal opportunity to incorporate a public transport system for access to John Hunter Hospital. This system would overcome some of the difficulties of using the current road system to get to the hospital. It could link the hospital with Stockland Mall Jesmond, Callaghan campus of the University of Newcastle, the regional rail network at Warabrook, the industrial plants at Steel River, Mayfield North and Kooragang, and possibly Newcastle Airport at Williamtown.

The hospital campus is linked to the cycleway network at Jesmond Park. The steep topography in the area poses difficulties for cycle access. However, provision still needs to be made, given the importance of the hospital as a regional facility. Cycleway access through Blackbutt Reserve would link it to the New Lambton area and the Fernleigh Track. Cycleway access through George McGregor Park would link it to the Rankin Park and Elernmore Vale areas.

3.9.5 Maitland

The traditional City Centre in Maitland is in a heritage precinct which in some ways restricts access. However, this could be turned to advantage of the City Centre with some of the public transport options for the Lower Hunter. They may be able to operate directly into the Heritage Mall while still keeping the Mall free of cars.

Much of the shopping that previously occurred in the City Centre now takes place in the Green Hills shopping centre, 5km away. The two centres complement each other.

There is rail access to the City Centre from High Street or Maitland stations, each about 1km away. There is no rail access to Green Hills.

The local Maitland bus routes service both the City Centre and Green Hills. On weekdays, there are 2-3 trips an hour, unevenly spaced, between the two centres via the local streets through East Maitland.

The Cessnock buses serve the City Centre only. Travel to Green Hills requires an uncoordinated connection with the local Maitland services.

3.9.6 Cessnock

The City Centre in Cessnock has suffered for a long time from disruption by heavy vehicles and from parking issues. These are now being alleviated by Council's traffic management program.

There are local bus services linking most areas of Cessnock to the City Centre, but the frequencies are very low in several areas. Route maps and information are not readily available to those who are unfamiliar with the bus system, although some improvements have been put in place in recent times.

Cessnock City Council is considering an ambitious plan to revive Cessnock's main street by creating a new Civic Centre. The opportunity may exist to include a bus interchange in this facility so as to make it easier for people from all suburbs to get to the Centre, and to transfer there to buses going to other places. If buses are given priority access to the Centre, this could help to reduce the pressure from car parking as well as making the Centre more accessible to a wider range of people in the community.

3.9.7 Raymond Terrace

Raymond Terrace has a larger shopping centre with a range of commercial, professional and government services that are better than would normally be expected for a town of its size. Its catchment area extends over a vast area of the Lower Hunter, including Seaham, Clarence Town, Dungog, Williamtown, and Port Stephens.

Raymond Terrace is situated on the Pacific Hwy, which gives it access to the long-distance coach services and the Countrylink coaches running between Taree and Newcastle. There are only a limited number of local bus services throughout its catchment area.

Within the town centre, there is a small area in Sturgeon St which is designated as a bus terminal used by local buses. Coaches use kerbside stops in Adelaide St on the edge of the town centre. Apart from some uncovered seating, there are no passenger facilities or information displays at any of these locations.

3.10 Major Projects

Throughout the Lower Hunter Region, there are a large number of studies being undertaken on a wide range of topics in an effort to resolve issues and plan for a better environment in the future. While these studies do not usually address transport issues, they are often inextricably associated with some aspects of transportation. Hence the opportunity will usually exist to investigate sustainable transport options for the plans that are presented as outcomes from the studies.

Some of the studies currently underway can be used as examples of how sustainable transport might be enhanced.

3.10.1 North Wallarah Peninsula

The North Wallarah Peninsula development south of Caves Beach (about 500ha) has to deal with environmentally sensitive coastal lands, numerous ridges and valleys, and access to Pacific Hwy and existing residential lands. Most residents will have to travel out of the site for access to almost all of their activities.

The application of sustainable transport principles would ensure that the road system was not a series of long cul-de-sacs. Public transport services would be able to pass through the site and link to existing centres such as Swansea, Belmont and Charlestown, as well as providing express links to the rail services at the new interchange at Warnervale. To achieve this efficiently, the current arbitrary boundaries of the public transport operators may need to be altered.

It is particularly important that there is a road link through the new development between the existing development at Caves Beach and the Pacific Highway. This is necessary to ensure that efficient public transport services can operate through both areas and provide an attractive alternative to car travel. The sustainable transport principles in this case have to be balanced against the limited perspectives of some local residents.

There needs to be a network of pedestrian and cycle pathways that would take account of the hilly terrain and enable access to local activities without the need for car travel. At selected locations such as schools and Swansea shops, there would be safe cycle storage facilities (provided free, in the same way that car parking is provided free).

3.10.2 Thornton - Killingworth Sub-Regional Strategy

Work on a sub-regional strategy for the area between Thornton and Killingworth was commenced in 2002, involving Planning NSW, Newcastle Council and Maitland Council. The outcome from the strategy will be very similar to the Port Concept Plan, which was released early in 2003.

The strategy study aims to produce an analysis of the major conservation and development opportunities in the area and produce a concept plan for public exhibition and comment. The study has three stages: context, analysis and strategic directions (Phase 1), detailed community and stakeholder consultation (Phase 2) and strategy development (Phase 3).

The first phase involves a review of studies, strategies, data, trends, policies and targets from a range of government and non-government sources; liaison with key stakeholders; analysis and discussion of the findings and development of issues papers based on a number of themes.

One of the focus themes of the study is Infrastructure, Transport and Services. The consultant is to identify and articulate the availability, level of service and limitations over a range of infrastructure issues, including major road/rail transport routes, public transport routes (including type of service and frequency) and trip nodes.

The anticipated timeframe for completion of the first stage is June 2003.

Within the Thornton - Killingworth corridor, Thornton North is a 900ha area that has been earmarked for residential development in the short term. Detailed planning is currently being undertaken by Maitland City Council. The Master Plan will address all issues including transport. The Council is liaising with the State Government to increase the public transport profile. It is envisaged that public transport services will feed into Thornton Station initially, and later also into Metford. Both stations will need improved safety and access arrangements, and a new access off Raymond Terrace Road will be needed at Metford Station.

The Thornton - Killingworth corridor provides ample scope for the adoption of sustainable transport principles to landuse planning and development.

3.10.3 Coastal Planning

Newcastle Council is currently conducting a Coastal Management Study. Recommendations include relocating and enlarging car parking areas on sensitive land close to beaches. The opportunity could be taken to assess the need for so much car parking, and what alternatives may be available for access to the beaches that would take the pressure off coastal lands, particularly at peak times.

For example, a voucher giving families 10 free trips on public transport to the beach would cost (at current fares) about \$53. This might be a lot cheaper than Council providing free car parking. A network of safe cycleways linking suburbs to beaches would be more effective and have greater regional benefits than persisting with car parking and catering only for one mode of transport.

A sustainable transport approach would encourage coastal management to be undertaken jointly by all three coastal councils in the Lower Hunter, rather than as individual council projects.

People who travel to beaches by means other than car need to have somewhere to store their belongings securely. For this purpose, secure lockers need to be available in much the same way as car parking is provided.

This has been recognised at Glenelg Beach in Adelaide, where parking space is limited and large numbers of people travel there on the Glenelg tram (2-car sets with 120 seats every 15 minutes on Saturday and every 20 minutes all day Sunday). Locker security is provided electronically, and the bank of lockers is closed off at night time by a roller shutter.



3.10.4 Regional Sports Stadium

Media, business and political campaigns are supportive of large amounts of government funding for a new sports stadium at Broadmeadow.

Sports stadiums are notoriously uneconomic ventures, but they serve a valid need in the community as the venue for major events with large crowds.

Given the costs involved, a sustainable approach would argue that the site of a sports stadium should be chosen so that other regional benefits can be obtained. As such, site considerations should include:

- walking access to major public transport corridors, so that:
 - ◇ as many people as possible can travel by regular public transport services
 - ◇ normal services do not have to be diverted when there are major events
 - ◇ additional services can be readily accommodated
- cycle parking and linkages to regional cycleways
- only limited car parking can be accommodated on site
- parking provision at regional parking stations and interchanges with public transport links to the stadium site
- remoteness from residential development so as to minimise adverse noise impacts
- multiple access points onto arterial roads so that congestion during major events can be controlled.

In the development approval process, there needs to be a requirement that all events ticketing will include remote parking and public transport access. This has to be matched with performance agreements from regional public transport providers that they will run the services that are needed to allow these sustainability targets to be met. Negotiations along these lines are currently underway for the new 52 500 seat Suncorp Stadium in Brisbane, where the target has been set for 80% of patrons to catch public transport with fares being included in the event ticketing⁵².

⁵² *Stadium gate price must cover transport* The Courier Mail, Brisbane 2 Dec 2002

As well as the regular public transport services, there needs to be a network of event-specific bus services that operate regularly for designated events with intense promotion and integrated entry ticketing. The intense promotion would include access to route and timetable information through a number of media outlets so that patrons can easily be fully informed.

The current site of the Energy Australia Stadium at Broadmeadow does not meet all of these site criteria.

- Although it is close to Broadmeadow railway station, it is not within perceived easy walking distance
- Hunter line trains do not stop at Broadmeadow station
- Many of the main bus routes do not go past or close to it
- Car parking occurs in residential streets for up to a kilometre from the site during major events
- Major congestion occurs along Turton Rd during major events
- The site is proximate to established residential areas.

In fact, there is probably no site that meets all criteria, but there are several sites that may be better by sustainability standards. Public transport access should be the primary consideration. Potential other sites would include:

- Woodville Junction, possibly on the old gas works site. Train access from both the Hunter Valley and Central Coast lines is available, but it is not on main bus routes. It would be close to proposed regional transport interchange.
- Former Broadmeadow loco depot. Good access for Central Coast trains and regional buses, but not for normal train services on the Hunter line.
- Islington Junction, at rear of vacant industrial plants off Clyde St. Good access for train services on the Hunter line, but it is not on main bus routes.
- Glendale: Good access for Central Coast trains and regional buses. Transfers needed at Hamilton for Hunter line trains.

3.10.5 Parking

City centre parking strategies try to get as many cars as possible close to commercial activities. This is a strategy that can never satisfy everyone. It also takes up valuable commercial space that could be used to enhance retail activities or community services. Integrated public transport and parking strategies enable everyone to get close to where they want to go in a more economical and efficient manner. It is quite possible that providing free public transport within the City Centre would be more economically rewarding than providing inner city parking stations, when all the opportunity costs are taken into account.

Innovative options need to be examined for contributions to public transport in conjunction with car parking contributions from developers. Car parking will still be needed, but it should not be treated as the only travel mode that has to be accommodated and paid for in a development proposal.

There needs to be a review of attitudes to parking, and this can be inculcated into the briefs for parking studies. Roads are expected to allow mobility for all, but they have been taken over almost exclusively by cars and trucks. Other mobility modes are given low priority, or not provided for at all. What makes it worse (from the perspective of sustainability) is that much of the available road space is taken up with vehicle parking, rather than being allocated to safe mobility by alternative travel modes.

Parking should only be allowed on roads when all other travel modes have been adequately and safely catered for. Otherwise, parking has to be provided on off-road sites, and the parking space users will have to be prepared to pay for the cost.

Travel demand strategies and alternative travel systems will reduce the demand for parking in sensitive locations, but they will not eliminate it. These strategies will only be effective when the alternative transport systems are frequent and convenient enough to be attractive. The difficulty will be managing the transition phase between the current culture and the sustainable targets.

3.11 Road Corridors

The Lower Hunter has a reasonably good network of arterial roads linking the various urban centres, and connecting the major developments within the urban centres. However:

- There are some gaps in the network which need to be filled to achieve sustainability
- The network provides only for car, bus and truck transport: provision for pedestrians and cyclists needs to be added
- There is no regional transport plan to provide the context for major road projects and funding.

In planning for future growth in road traffic, it is not just the capacity of the roads that has to be considered. It is the capacity of the intersections of arterial roads to handle opposing traffic flows that pose the greatest problem. With the dispersal of employment and commercial centres, there are several locations where peak traffic flows have to cross each other. There is no capacity within the urban environment to solve these intersection conflicts with grade separation, without causing unwanted environmental impacts. Hence, the sustainable approach has to be some form of travel demand management whereby the growth in traffic causing intersection conflicts is controlled.

The RTA has a classification system for State and Regional Roads. Plans for new signposting of these roads will enhance their value as a regional road hierarchy that reflects the needs for travel within and through the Lower Hunter.

State Roads are fully funded and maintained by the RTA. Regional Roads are funded as a block grant to each council at a fixed rate per kilometre of regional roads in the local government area. Councils are then free to allocate the funds to their regional roads according to their local priorities. This leads to inconsistencies in the standards of regional roads as they pass through local government areas.

A more effective approach would be for a regional transport agency to negotiate with the State Government on which regional roads it would accept responsibility and funding for, and then allocate these funds on a regional perspective.

There have recently been calls for a third road bridge over the Hunter River between Morpeth and Maitland. The response should be to examine how a new crossing would fit into future transport strategies in the Hunter, and in particular with commuter trips to the Newcastle / Lake Macquarie area and to regional shopping centres. In a sustainable transport system, other options would be examined to determine what alternatives were possible, and/or what other transport modes could be incorporated into a new bridge and the associated road works, and what priority should be attached to this project from a regional perspective.

Examples of regional arterial road links that need to be implemented include:

- Completion of missing links in State Highway 23:
 - ◊ New Lambton Heights - Jesmond
 - ◊ Shortland - Sandgate
 - ◊ Sandgate - Tomago across Kooragang Island
 - ◊ F3 (Weakleys Drive) - Heatherbrae (Pacific Highway)
- Incident management to direct traffic onto alternative road routes between Maitland and Newcastle when the main link through Hexham is blocked
- Unrestricted heavy vehicle access across Hunter River South Arm. A link associated with the extension of SH 23 at Sandgate may be preferable to a duplication of the Tourle St bridge

- Modes and routes for transport of raw materials and finished products associated with Austeel, Protech Steel and other major industrial developments
- Review of regional road links as a result of major industry projects at Tomago and Kooragang, taking into account other regional travel needs and mode options
- Local links between Maitland and the National Highway extension of the F3 from Seahampton to Branxton
- A high quality link between Newcastle Airport and Newcastle City.

There is often a community concern about new arterial road projects. The approach from a sustainable transport objective might be:

- It is unacceptable for large volumes of arterial road traffic to move through residential streets that are not designed for this type of use
- Attractive alternative modes of travel should be provided for those who are willing to use them
- New arterial roads should not be designed and built solely for cars, buses and trucks. They should also include pathways and cycleways, with provision for track-based transport systems within the same corridor (eg light rail, PRT)
- Feeder access (pathways, commuter parking) should be provided at bus bays so that express buses can use arterial roads
- There must be facilities for pedestrians to safely cross the arterial road at frequent intervals, and especially at bus bays
- Transit lanes would give faster travel and intersection priority for public transport and high occupancy vehicles.

3.12 Rail Corridors

Train travel is the most effective travel mode from the perspective of urban sustainability.

- It produces less fuel pollutants per passenger than other transport modes
- It has a demonstrated ability to attract more patronage than other modes doing the same task

The American Public Transit Association estimates that urban rail services generate economic and social benefits from reduced congestion, pollution and accidents and increased tax revenue in the ratio of \$4 for every \$1 invested⁵³.

The Lower Hunter Region has the advantage of two major rail corridors that can be used as the nucleus of a regional public transport system.

Passenger services share the rail corridors with freight trains of various types. However:

- if sustainable transport systems for both passenger and freight services are adopted
- if the projected port, industrial and mining developments proceed
- if the projected growth and switch to rail for interstate freight occurs⁵⁴,

there will be insufficient capacity in the existing rail corridors through Newcastle / Lake Macquarie to handle all of this rail traffic⁵⁵.

⁵³ 2000 Yearbook Australasian Railway Association, page 7

⁵⁴ *Brisbane - Melbourne Rail Link: Economic Analysis* Bureau of Transport Economics Working Paper 45, Canberra, October 2000

⁵⁵ *Transport Infrastructure Study for the Hunter, North and West Regions of NSW*, Discussion Paper prepared by Newcastle and Hunter Business Chamber, June 2000

The Commonwealth Government is committed to improving sustainability in freight logistics. It will continue to assist the freight industry in developing intelligent transport solutions that will reduce urban congestion through a more efficient utilisation of transport infrastructure and equipment⁵⁶.

The most pressing problems in this regard in the Lower Hunter are:

- the need for coal trains to cross the paths of passenger trains at Sandgate to gain access to the coal loader at Kooragang
- the movement of long freight trains on steep grades through the urban areas of Newcastle and Lake Macquarie
- bridge clearances for double-stack container trains linking Newcastle Port with the Melbourne - Brisbane Inland Railway.

If passenger train frequencies are increased to every 15 minutes between Newcastle and Maitland (as desirable under sustainability targets), there will be insufficient time for coal trains to cross the passenger lines at Sandgate. Some form of grade separation may be warranted.

Future passenger trains between Newcastle and Maitland could operate in either heavy or light rail mode. The light rail mode would have the advantage of being able more easily to be extended over the South Maitland rail line to Cessnock (subject to upgrading).

Freight trains operating south of Newcastle have to climb the 1:75 grades and curves on both sides of Tickhole Tunnel at Kotara and pass through two level crossings. Replacement of these level crossings will be difficult, expensive and disruptive to the adjoining urban development.

The alternative approach is to build a by-pass freight railway west of Newcastle / Lake Macquarie, generally in a line between Fassifern and Hexham. Much of the land through which this railway might pass is now owned by the State Government (following the transfer of former BHP land at West Wallsend), and is earmarked for future industrial development. The State Government is already committed to a feasibility study for this new rail line⁵⁷.

The relocation of freight trains from the main rail line between Islington and Fassifern:

- removes the conflict of passenger and freight trains crossing at Islington Junction
- enables the operation of local passenger trains at high frequencies in addition to the Newcastle - Sydney intercity trains.

The NSW Government has undertaken investigations for upgrading the Newcastle - Sydney rail line. Its stated aim in 1998 was to reduce travel times by 30 minutes within 10 years. This would involve:

- realigning sections of the rail line where the curvature restricts the speed of trains
- increasing the separation of passenger and freight trains
- building new stations at Warnervale, Glendale and Kotara (Garden City).

This upgrade will provide the opportunity to operate a high-frequency regional passenger train service between Warnervale and Newcastle to meet local needs. These trains (either heavy or light rail) would be designed to stop at the minor stations and connect at interchanges with the fast trains between Newcastle and Sydney.

⁵⁶ *Freight Logistics in Australia: Commonwealth Government Response* Minister for Transport and Regional Services, July 2002. Priority 5: Sustainability

⁵⁷ *Action for Transport 2010: An Integrated Transport Plan for New South Wales* Minister for Transport, Nov 1998

In March 2003, the State Government announced it was not committed to proceeding with this project⁵⁸. It appears that this may have arisen from unrealistic expectations from a new 26km rail tunnel between Woy Woy and Berowra. Most of the initial benefits espoused by the government can be achieved without massive capital expenditure in long tunnels. In fact, most of the benefits between Warnervale and Newcastle can be achieved by applying the current track maintenance program to track re-alignment and re-grading, thereby achieving the improvements without substantial additional capital expenditure.

Significant improvements in train travel times can also be achieved by reviewing train operations practices. Despite the incessant disruption to train services for track maintenance over the last 25 years, train travel times have hardly been improved. When the Newcastle electrification was opened in 1984, the early morning *Newcastle Express* took 2 hours 20 minutes from Newcastle to Sydney⁵⁹. In 2003, the fastest train from Newcastle to Sydney takes 2 hours 21 minutes, albeit with 5 extra stops. About 10 minutes of this time is allocated to 'recovery time', which is often spent waiting outside stations in Sydney prior to entry.

A review of train operations should also include a review of station functions and locations. However, this review should await a determination on whether local train services in the future will be operated in light rail or heavy rail mode.

3.13 Transit Corridors

Several former rail corridors are still substantially vacant and mostly in some form of public ownership. These can be developed as transit corridors to supplement the rail network. The mode of travel within the transit corridors can be determined later: the important issue at the moment is to preserve the corridors for use by the future regional public transport system.

The details of significant corridors are shown in Table 2.

Table 2: Potential Transit Corridors

Corridor	Opportunities	Restrains
Newcastle East - Woodville Junction	Inner city transport corridor Improved access between City Centre and foreshore Direct rail to City Centre	Existing use by heavy rail Rail safety considerations Mode change for longer distance travellers
Woodville Junction - Hanbury Junction	Part of link between City Centre, University, western suburbs and Maitland	Limited room alongside existing rail tracks Need to cross main railway lines
Hanbury Junction - University - Wallsend Former Wallsend rail line	Still mostly vacant Supports nodes at University and Wallsend Parts used as cycleway	Identify corridor through University campus Crossing of Jesmond bypass Some buildings on corridor in Wallsend
University - Mayfield Former County Route reservation	Links University campus to Warabrook Station, Steel River, CSIRO and industries	Needs route identification
Wallsend - Glendale Former Speers Point steam tram line	Still mostly vacant Links University, Wallsend to new railway station at Glendale Immediate use as cycleway	Corridor to be reserved in new urban development New alignment to be found through Glendale
Wallsend - Blue Gum Hills	Reservation included in Structure Plan	No node at western end
Glendale - Killingworth, West Wallsend	Benefits identified in draft Structure Plan Parts of former colliery railway and steam tramway still vacant	Corridor to be identified and reserved

⁵⁸ *High-speed train promise derailed* Newcastle Herald, 4 March 2003

⁵⁹ *Newcastle Electrification Timetable* State Rail Authority 4 June 1984

Corridor	Opportunities	Restrains
Hanbury Junction - Maitland	Within existing rail corridor, with diversions to transport nodes	Integration with existing rail services and infrastructure
Woodville Junction - Garden City via Adamstown	Within existing rail corridor Integrated with possible urban village and transit centre on existing industrial land at Hamilton and disused Broadmeadow rail land Provides City Centre - Garden City link	Needs integrated approach to rail developments
Woodville Junction - Garden City via Gully Line Former Gully Line corridor	Still mostly vacant Passes regional sports centres Parts used as cycleway	Route identification where building has occurred in corridor
Garden City - Belmont Former Belmont rail line	High speeds through undeveloped areas Initial use as cycleway	Fernleigh tunnel Access to Garden City Limited adjacent urban development (existing & future)
Garden City - Charlestown Former Gully Line	Link between regional centres	Corridor regarded as local open space Access to Charlestown (slope)
Belmont - Merewether Heights East Charlestown By-pass	High speed transit: East Lakes - City RTA corridor vacant	Passes through sensitive environmental areas
Warnervale - Morisset - Newcastle	Expand Morisset - Newcastle weekday heavy rail services Convert to light rail with higher frequencies Connect with Newcastle - Sydney trains at major interchanges	Shared track with long distance trains, InterCity electric trains, freight trains and coal trains Proposed track upgrade deferred by State Government
Fassifern - Toronto Former branch rail line	Link to Newcastle-Sydney railway	Integration with historic project Limited catchment along existing route
Awaba - Wangi Former coal railway	Stimulate development on Wangi Power House site Potential for adjacent urban development Link to Newcastle-Sydney railway Initial use as cycleway	Corridor impacted by coal haulage road
Maitland - Newcastle	Already in use by heavy rail Convert to light rail with higher frequencies	Shared track with long distance trains Grade separation with coal trains
Maitland - Cessnock South Maitland rail line	Rail corridor in use (single track) Corridor can accommodate two tracks Several station platforms in place Close to Gillieston Heights, Kurri TAFE, Kurri, Weston, Abermain, Neath, Aberdare, Cessnock, Bellbird Integration with tourism (one of top 10 destinations in NSW) Can be integrated with Hunter Employment Zone at Tomalpin	New station site needed at Cessnock
Hexham - Kurri Former Richmond Vale rail line	Corridor still vacant Initially suitable for regional cycleway Links to Minmi and Blue Gum Hills Regional Park Transit corridor for HEZ at Tomalpin	3 tunnels to be cleaned out Two bridges to be replaced Threatened by F3 Freeway extension
East Greta (Gillieston Heights) - Heddon Greta - Pelaw Main	Corridor still vacant Initially suitable for regional cycleway Transit corridor for HEZ at Tomalpin	Crosses Main Road at Heddon Greta

These corridors do not adequately serve all parts of the urban area. Hence buses would need to operate some trunk routes, as well as feeder routes into suitable railway stations. These are shown in Table 3.

Table 3: Potential Trunk Bus Routes using Road Network

Route	Issues
City Centre - University	Identify best road link between Newcastle Rd and University
University - Glendale	Via Stockland Mall?
City Centre - John Hunter Hospital - Glendale	Access to John Hunter Hospital
University - John Hunter Hospital - Charlestown	Access to John Hunter Hospital Charlestown Road congestion
City Centre - The Junction - Charlestown	Via City Road: Transit lane priority
City Centre - Garden City - Charlestown	Via Broadmeadow Transit Centre: Transit lane
Glendale - Charlestown	Identification and implementation of a direct route
Belmont - Charlestown	Transit lane priority
City Centre - Wallsend	Transit lane priority
Toronto - Glendale	Include in upgrade of MR217
Hexham - Raymond Terrace Hexham - Tomago - Williamstown	Bus-rail interchange at Hexham
Nelson Bay - Williamstown - Newcastle	Bus stations with commuter parking, local feeder services, airport services
Raymond Terrace - Medowie - Newcastle	Direct service through Medowie, with local feeder services
Maitland: City Centre - Green Hills	Direct service between two major centres
Cessnock - Maitland	Direct service via Abermain, Weston, Kurri

During 2003, the RTA is evaluating potential sites for Bus Lanes and Transit Lanes on arterial roads. Sites being considered include Newcastle Road at Jesmond and Pacific Highway between Belmont, Charlestown and Newcastle City. To enhance the potential values of these initiatives, the number of buses using the corridors needs to be increased.

There are many 'paper roads' in rural areas. These should be identified and preserved for transit use by a mode to be determined in the future. In the meantime, many can be put to good use as walking trails and cycleways.

3.14 Transport Interchanges

3.14.1 Design Principles

Transport interchanges are the means by which modal integration is achieved. Hence the design and location of interchanges is critical to the success of the transport network.

The design of interchanges should include features that are essential to offset the inconvenience and disincentive of passengers having to change vehicles, such as:

- All buses travelling in the same direction use the same bus stand
- Where it is necessary to cross a road, pedestrian facilities are provided
- All passenger waiting and transfer areas are covered and protected from the weather
- The area is well lit at all times
- Conspicuous security and surveillance is provided
- The walking distance between buses and trains, and between buses and ferries, is minimised

Transport interchanges are best located in conjunction with commercial centres.

All train, bus and ferry services should operate with integrated fares and tickets. This means that:

- Fares for travel on the Lower Hunter public transport systems are set independently of fares in other regions
- The time-based ticketing system on Newcastle Buses is extended to cover travel on trains, ferries and private buses in the Lower Hunter Region
- Passengers are able to make a trip through the Lower Hunter Region using more than one travel mode without having to pay additional fares
- All tickets are available for sale at railway stations, on buses, at information centres and selected retail outlets such as newsagents

The role of taxis can be enhanced. This means:

- Bus and train passengers are able to arrange through network control for taxis to meet them at a specified transport node
- Further opportunities for multiple hiring and flat fares for designated tasks are pursued

These examples of achieving transport integration will need to be managed and implemented in accord with an overall transport objective arising from the region's transport studies.

Two **regional intermodal transport interchanges** are under consideration in the Lower Hunter:

- Woodville Junction
- Glendale

There are also several potential sites for district transport interchanges.

3.14.2 Woodville Junction

The proposal for a multi-modal transport interchange at the railway junction just west of Hamilton Station was put forward by the Lord Mayor's Transport Reference Group in December 2001. The proposal was based on a consultants report *Proposal to Boost Public Transport Usage at a Regional Level*, funded by Hunter Health and the University of Newcastle.

The report proposed a large transport interchange on vacant railway land which would offer full-time facilities for all transport modes. It would cater for:

- Country trains, which would pass through on a new platform, replacing the stop at Broadmeadow.
- Double-deck Intercity (Sydney - Newcastle) trains which would terminate there
- Local suburban electric (Warnervale - Newcastle) trains
- Local suburban diesel trains (Scone, Dungog, Maitland - Newcastle)
- Local, district and trunk bus routes serving the Newcastle / Lake Macquarie area, many of which would be rearranged to terminate there
- Intercity bus routes from towns in the Lower Hunter, which would probably terminate there
- Long distance coaches, which would pass through the interchange instead of their present stop at Newcastle Station
- The chosen transport mode to serve the Newcastle inner city corridor
- Commuter car parking
- Travel agency and information services
- Supporting commercial services.

The report did not however examine the operational details of how these changes to the transport systems would be implemented, how the proposed increases in service levels would be achieved, nor what impacts the interchange would have on travellers from various parts of the Hunter Region.

Much of the community debate following the release of the report centred solely on the future transport mode in the inner city corridor, and this has coloured much of the public opinion.

In February 2002, Newcastle Council resolved that it 'supports a thorough investigation and evaluation of the recommendations of the Transport Reference Group'.

Consequently, a consultant was engaged and instructed to address the following:

- Has the study satisfied the terms of the original brief?
- Are the recommendations of the study consistent with the principles and relevant city-wide strategies of the Newcastle Urban Strategy?
- Are the recommendations of the study consistent with the strategies outlined in the issues paper *Activating Public Transport in the Newcastle Region*?
- Identify any other issues which may require further investigation for the feasibility and desirability of the proposal to be determined.
- Provide an assessment of the net benefits of the proposal.

The report from the consultant was made available to councillors in April 2003. It has not been considered by the Council.

The Evaluation Report makes several pertinent observations⁶⁰.

- Neither the original Brief for the Woodville Junction proposal nor the Brief for the Evaluation Report required a consideration of the proposal in a regional context taking into account the range of options that may be possible
- The Woodville Junction proposal warrants further consideration, but not as an isolated project
- The initial report on the proposal does not deal with the 'urban village' concepts which have been adopted in the Newcastle Urban Strategy
- To achieve the benefits postulated for the Woodville Junction interchange, there would need to be:
 - ◇ urgent institutional reform in the region's transport and infrastructure management, such as a single specific purpose authority
 - ◇ urgent overhaul of the current transport systems to eliminate wasteful and inefficient use of community resources,
 - ◇ a professional approach systems analysis, including data collection and modelling
 - ◇ an extensive planning process based on real data to test options and to optimise solutions.
- The planning and management studies necessary to make a proper determination about the interchange proposal would cost about \$1.3m, and the Councils of the Lower Hunter could be expected to be involved in the joint funding of these studies with various state government agencies.
- A comprehensive transport, land use and travel demand model should be developed for the Lower Hunter along the lines of the Sydney Strategic Travel Model operated by the Transport Data Centre in (former) Transport NSW.

⁶⁰ *Evaluation of Woodville Junction Proposal* SGS Economics and Planning, December 2002

- The proposal is not just a one-off project or a marginal change to the region's transport system. It is a significant infrastructure proposal involving major capital costs and potential implications for the whole of the city. It involves fundamental changes to public transport operations, patronage and forecasts, and these need to be quantified.
- Insufficient information is available at present to adequately assess the feasibility of the project, or to evaluate it by reference to the social benefits in comparison to the costs.
- In general, interchanges are most likely to be successful if they are located within commercial centres. If located on the fringe (as is Woodville Junction), many CBD travellers would have to change twice (once at each end of their journey).
- There has been no evaluation of whether greater benefits would be achieved if the funds required for Woodville Junction interchange were spent on upgrading the public transport systems throughout the region.
- The funds required for this project are equivalent to two years of funding for the entire interchange program throughout the state.
- The interchange concept requires major changes to bus routes, which are notoriously difficult to achieve. There is also a risk that bus routes could be changed due to public pressure after the interchange is built so as to avoid the need for transfers (as happened at Edgecliff in Sydney's Eastern Suburbs).
- A shared heavy/light rail option should be explored within an analytical framework that can test the full range of options.

The proposal has not been formally considered by any of the other councils in the Region.

The Woodville Junction Interchange and the transport mode for the inner city rail corridor would have a profound impact on public transport in the whole of the Hunter Region, not just the City of Newcastle or the Newcastle / Lake Macquarie area. It could also form the foundation of a Lower Hunter sustainable transport system, and of a strategy for economic and commercial development in the Lower Hunter. Hence, the decision about this project cannot be made solely by Newcastle City interests alone.

The main benefit of this interchange would be that people would be able to change from one transport mode to another with comfort and security, and gain access to the highest level of services available. It would mean, for example, that people coming by train would be able to gain access to the entire regional bus network in a more effective way than is now possible at Newcastle Station (the de facto regional interchange).

However, for this benefit to be realised, there would need to be a drastic re-arrangement of the regional bus network which in most cases would inconvenience bus travellers. Bus travellers greatly outnumber train travellers in the Lower Hunter.

Hunter Health has indicated that it could operate a shuttle bus from Woodville Junction to the John Hunter and Mater Hospitals for the benefit of train passengers⁶¹. This could be done at present at Hamilton Station, where train - bus transfers can be made without stairs. This type of transport should be handled by transport providers, rather than the health system, so that the benefits can extend to the whole community, not just a select group of travellers.

A Lower Hunter Sustainable Transport System (see §4.4) envisages a network of interchanges which will allow people to travel from their home in a local bus and transfer to a trunk service by a priority transport mode. The strongest resistance to the Woodville Junction proposal, in its present form, has come from those who realise that having already changed once on their journey, they may need to change again just prior to their final destination in the City Centre.

⁶¹ Statements by Katherine McGrath, CEO Hunter Health, on ABC Radio Newcastle, 8 April 2003, and in Newcastle Herald, 14 April 2003

When the Eastern Suburbs Railway was opened in Sydney in 1979, it was envisaged that people would change from district buses at the new Edgecliff interchange and travel by train to the city. Many bus routes were re-arranged to terminate at Edgecliff. A surcharge of 25% was placed on the bus fare for through travel on the remaining bus routes, compared with the 40c fare for combined bus-rail travel between the Eastern Suburbs and the Sydney CBD⁶². Community pressure resisted these arrangements, and the direct bus routes to the City Centre had to be re-introduced. The distance between Edgecliff and the Sydney CBD is similar to the distance between Woodville Junction and Newcastle CBD.

Cities in other parts of Australia where the rail services have been removed from the city centre have found that in the long term they become disadvantaged. Train travellers to Gympie, Maryborough and Bowen in Queensland have to depend on connecting bus services to gain access to the town. Local government in Bunbury (WA)⁶³ is actively pursuing strategies for the return of train services to the city centre. Coordinated bus services between the relocated rail station and the city centre have proved to be unreliable, inconvenient and even non-existent. Community groups in Wodonga have opposed federal government plans to remove the existing railway station from the city centre⁶⁴.

Based on world-wide trends and experience, it is unlikely that bus-based transport modes for the inner city corridor will attract the growth in patronage that is needed for sustainability. Given that the rail infrastructure is already in place, it makes sense to use this as the anchor for the regional transport system, and design the interchange accordingly.

If the TramTrain concept (Vol 1, §2.3.4) was adopted for the inner city rail corridor in Newcastle, there is a real possibility that this would lead to acceptable arrangements for other public transport services to be focused on the Woodville Junction interchange. In particular:

- The TramTrain would serve as the primary transport mode in the Lower Hunter Sustainable Transport System between Newcastle - Maitland and Newcastle - Wyong using the existing heavy rail lines
- The TramTrain could be considered for other transit corridors, such as Woodville Junction - University - Wallsend - Glendale, Woodville - Charlestown, Fassifern - Toronto, and Maitland - Cessnock
- The TramTrain would pass through interchanges at Woodville Junction, Kotara (Garden City), Fassifern, Morisset, Warnervale, Hexham, Maitland, Tomalpin, Cessnock
- The TramTrain could be extended into the City Centres such as Charlestown, Maitland, Cessnock and Toronto, using street running if necessary.

Another option might be to emulate the successful project in Newcastle UK to extend the Metro light rail system to Sunderland (similar to the Lower Hunter situation between Newcastle and Maitland). The Metro vehicles share the existing rail tracks with conventional trains (see Vol 2, §6.2). In both locations, the light rail vehicles are not involved with on-street running, and this may make shared use of rail tracks more technologically feasible than with the TramTrain mode.

3.14.3 Glendale Transport Interchange

The Glendale Transport Interchange is a project that has been actively promoted by Lake Macquarie City Council. The project involves:

- Lake Macquarie Council, Transport NSW and CityRail
- building a:

⁶² *New Tickets and Fares* Public Transport Commission, 22 July 1979

⁶³ E.g News item on ABC Radio Bunbury 11 July 2001, reporting on submissions to the Bunbury Transport Vision 20-30 Study

⁶⁴ E.g News item on ABC Radio Albury-Wodonga 22 April 2002, reporting on community submissions to the findings of an independent panel inquiring into the station relocation

- ◇ new railway station at the south-eastern corner of Glendale Supercentre
- ◇ bus-rail interchange on the northern side of the railway station
- ◇ bridge over the rail line to give access to the Cardiff Industrial Area
- ◇ commuter car park
- retaining rail access to EDI Rail (former Cardiff Railway Workshops)
- land transfers with Glendale Supercentre.

It is essential for the achievement of regional sustainability benefits that all these structures are built and opened as the one integrated project.

The Glendale Transport Interchange would be used by:

- Country trains, (additional stop serving western Newcastle / Lake Macquarie area)
- Double-deck Intercity (Sydney-Newcastle) trains (replacing stop at Cardiff)
- Local suburban electric (Warnervale -Newcastle) trains (additional stop)
- Local, district and trunk bus routes serving the Newcastle / Lake Macquarie area, many of which would be rearranged to terminate there
- Long distance coaches, which may be encouraged to divert off the F3 Freeway
- Commuter car parking
- Travel agency and information services
- Supporting commercial services
- Pedestrian access to Glendale Supercentre, EDI Rail, Regional Sports Centre, Cardiff Industrial area
- Cycleway access to Glendale TAFE, Wallsend, Edgeworth and West Wallsend.

Access to the interchange site is difficult due to the previous land disposal policies of State Rail. The risk is that compromises will be made that will disadvantage bus travel. Most of the buses serving the interchange will not be terminating there, rather they will be passing through the interchange to serve other parts of the bus network. Normally, the majority of the people on the bus will not be using the interchange. It will be a deterrent to their use of public transport if the diversion via the interchange takes several minutes during which they make no progress on their trip.

The real success of the Glendale Transport Interchange will be measured by its ability to stimulate sustainable transport systems in the urban growth areas in the Killingworth and Blue Gum Hills corridors. Critical to this will be the transit corridors linking Glendale to West Wallsend, and Glendale to Wallsend and Callaghan Campus of the University of Newcastle.

Other key transit corridors from Glendale will include the links to John Hunter Hospital, Charlestown, Warners Bay and Toronto.

3.14.4 District Transport Interchanges

There are several other locations where district interchanges are needed as focus points in the sustainable transport network. Their locations and their functions, within the context of current transport modes, are shown in Table 4. All of the District Interchanges would be linked by a primary transport mode (to be determined) in the Lower Hunter Regional Sustainable Transport System.

The regional interchanges at Woodville Junction and Glendale are included in Table 4 because they will also perform the role of District Interchanges.

Table 4: Location and Functions of District Transport Interchanges

Location	Primary Transport Mode	Feeder Transport Mode
Charlestown	Trunk bus routes	District bus routes Long distance coaches
Kotara (Garden City)	Newcastle - Sydney rail Trunk bus routes	Local rail services District bus routes
Hexham	Maitland - Newcastle rail	Trunk bus routes to Raymond Terrace, Tomago and Williamtown (Airport)
Wallsend	Trunk bus routes	District bus routes
Glendale	Newcastle - Sydney rail Country rail	Newcastle suburban rail Trunk and district bus routes Long-distance coaches
John Hunter Hospital	Trunk bus routes	District bus routes
Fassifern	Newcastle - Sydney rail Country rail	Newcastle suburban rail District bus routes
Belmont	Trunk bus routes	District bus routes
Warners Bay	Trunk bus routes	District bus routes
Broadmeadow 9 Ways	Trunk bus routes	District bus routes
Woodville Junction	Newcastle - Sydney rail Country rail	Newcastle suburban rail Trunk and district bus routes Intercity buses Long-distance coaches
Williamtown	Trunk bus routes	Regional air services Local bus routes
Maitland	Hunter Valley - Newcastle rail Country rail	Cessnock - Maitland intercity buses Trunk and district bus routes
Suburban railway stations	Local rail services	District and local bus routes
University of Newcastle	Trunk bus routes	Intercity buses District and local bus routes
Morisset	Newcastle - Sydney rail	Newcastle suburban rail District bus routes
Warnervale (Proposed)	Country rail Newcastle - Sydney rail	Newcastle suburban rail (terminus) Trunk and District bus routes (Central Coast)

3.15 Demonstration Projects

One of the most effective ways to start the process of change in attitudes to public transport usage is to initiate some demonstration projects with the proposed higher service standards. Projects have to be selected where the existing infrastructure is suitable or can be readily modified, and where there is a reasonable chance of a favourable patronage response.

Projects for consideration are outlined below.

3.15.1 Inter-regional Direct Trunk Services

People often need to travel between regional centres for a variety of reasons, but tend to use their car and cope with the parking hassles at each end. A fast, direct bus service between regional centres could capture much of this travel and generate additional travel and economic activity without causing environmental and congestion problems on the roads.

Regional shopping centres already have elementary facilities for bus terminals and transfers, but these facilities are not designed to handle intense activity. Some modifications to the transport infrastructure at the regional centres may be needed. This could be arranged through the State Government's Transport Interchange Program and coordinated with the periodic expansion and modernisation of the centres. However, care is needed to ensure that the new facilities don't impose circuitous and time-consuming movements for either buses or pedestrians.

Possible routes for consideration could be:

- ◇ Charlestown - Newcastle City Centre via City Road
- ◇ Newcastle City Centre - University via Griffiths Road
- ◇ University - Glendale via Jesmond and Wallsend shopping centres
- ◇ Newcastle - Wallsend via Griffiths and Newcastle Road
- ◇ Newcastle - Glendale via The Junction and Garden City
- ◇ Charlestown - Mayfield via John Hunter Hospital and University
- ◇ Maitland City - Green Hills via New England Hwy
- ◇ Maitland City - Newcastle, Kotara and Charlestown.

3.15.2 Swansea - Newcastle Priority Service

The objective of this demonstration project would be to show how patronage can be increased and road congestion decreased when there is a coordinated focus on services in a primary trunk corridor.

The trunk corridor chosen is Swansea to Charlestown and Newcastle along the Pacific Highway.

There would be coordinated tasks to be undertaken and performed by various agencies.

- **Newcastle Buses**

- Run a service every 15 mins in peak and 30 mins off peak along the highway and down City Road.
- Provide connections with feeder services to:
 - ◇ Swansea from Caves Beach, Swansea residential areas, Busways services south of Swansea
 - ◇ Belmont from Blacksmiths, Pelican and Marks Point
 - ◇ Charlestown from Valentine, Eleebana, Jewells, Dudley, Redhead
 - ◇ Glendale Station and Cardiff industrial area
 - ◇ John Hunter Hospital and University

- **Department of Transport / State Government**

- ◇ Fund the demonstration service for 2 years
- ◇ Joint ticketing with private bus companies and CityRail.
- ◇ Evaluation

- **Lake Macquarie Council**

- ◇ Infrastructure along the route- seats, shelters, foot paving and lighting
- ◇ Reduce all day parking in Charlestown to encourage workers to catch bus
- ◇ Incentives in new developments to encourage public transport.

- **Roads and Traffic Authority**

- ◇ Bus or Transit Lane along Pacific Highway and through Charlestown
- ◇ Bus Priority signals (eg at Dudley Road southbound)

- **Newcastle Council**

- ◇ Discourage all day parking

- **Existing Developments in Charlestown**

- ◇ Issue/subsidise special weekly bus tickets for to/from Charlestown.

3.15.3 District Feeder Services

It would be possible to choose a particular suburb and design a new type of bus service to feed into a regional and district centre, preferably where there are good trunk bus service links.

The chosen suburb would ideally have a population profile with a high propensity for public transport usage. The Mayfield, Islington, Maryville and Carrington areas would be ideal for this purpose.

On the other hand, areas such as Blue Gum Hills would benefit from such a project because of the current low level of public transport integration. Although the population level is adequate, the current high levels of car ownership may mean that it would take longer to achieve the desired results.

This type of service may be suitable in the development stages of large new residential areas, such as North Lakes and Thornton.

3.15.4 Local Services

The concept of local services is quite different to anything that exists at present. In a sense, it is a cross between the current meandering route bus services and the restricted personalised service offered by community transport groups.

The concept is that low-floor accessible buses are used exclusively on this service. The bus has a designated area to cover at a regular frequency, but it can operate on a flexible route in response to passenger demand. Passengers who live off the designated route can phone and ask to be picked up.

One substantial advantage of developing a demonstration project with local services is the sources that are available for funding and community involvement. Community transport funds and health care funds could be made available to extend this type of service to many housebound people who would otherwise have difficulty with mobility. Community workers are an invaluable source of information in planning for these types of services.

Local services are needed most in what are traditionally off-peak times. Hence, the buses can be drawn from bus fleets that would otherwise be idle.

This type of service allows disability access to public transport to be broadened to cater for all those who have mobility impairments, such as:

- ◇ the aged and the frail
 - ◇ adults with children, prams, strollers and trolleys

A demand-responsive service along these lines has operated successfully in the Lilydale area east of Melbourne since 1977. Invicta's *Telebus* now carries 35 000 passengers a month and is fully integrated into the district rail and bus network⁶⁵.

3.15.5 University of Newcastle

As noted in Vol 2, §4.3, the University of Newcastle has been pro-active in promoting access to its Callaghan campus by public transport as a travel demand management strategy to protect the environment of the campus and reduce the need for car parking.

⁶⁵ Demand Responsive Public Transport Workshop, Planning Research Centre, Sydney, April 2000

However factors external to the University have negated the benefits of the University's efforts. Patronage on the buses has fallen dramatically in the last few years, and patronage on the trains from Maitland has also fallen significantly following the cessation of coordinated train-bus timetables at stations in the Maitland area⁶⁶.

The largest component of the fall in patronage has occurred in the morning peak hour. Although there are sufficient buses to carry the passengers, many of them get caught in traffic congestion that banks back from the Western Entrance to the University in University Drive. As a result, many staff and students cannot depend on buses to get them to the campus in time for the 9 o'clock lectures, and they tend to choose other more reliable means of transport.

A solution to this problem is possible with the application of some traffic management measures, such as:

- change to the traffic signal phases at the roundabout to allow more time for eastbound traffic to flow
- provision of a transit lane eastbound along Newcastle Road between Douglas St and Blue Gum Rd to allow buses to avoid the congestion from the roundabout in Newcastle Rd at the Jesmond By-pass
- provision of a bus lane in University Dr east of Blue Gum Rd to allow buses to gain fast access to the roundabout over Jesmond By-pass
- investigation of a slip lane at the western entrance of the campus to allow traffic to turn left from University Dr prior to reaching the roundabout.

These measures require joint action by RTA, Newcastle City Council and the University. However, the benefits would be significant not only for bus services but also in reducing traffic congestion.

Adjustments to the traffic signal phases at the Western Entrance roundabout undertaken by the RTA late in March 2003 have already produced significant reductions in traffic queues and bus delays. Further work needs to be done to ensure that the improvements can still be achieved on days with higher than normal traffic flows.

From a sustainability perspective, the University has adopted the appropriate policy of charging for on-site car parking. This has generated a large amount of on-street parking in surrounding residential streets, even when ample parking is available on the campus. Even at peak times, there are still vacant parking spaces on the campus in the remote parking areas.

The University's environmental management policies need to be supported by more effective public transport services, promotion of alternative transport modes, and a more embracing culture for public transport usage throughout the region.

The State Government built Warabrook Station in 1995 on the edge of the University's Callaghan Campus. Despite a 15 - 20 minute walk between the station and the campus buildings with no weather protection, the station has attained the highest patronage of any suburban station in the Hunter Region. Stations with lower patronage are staffed and have many more passenger facilities. Warabrook does not have a public phone, drinking water, toilets or train departure information. The provision of these basic facilities is warranted by the patronage and importance of this station.

3.15.6 Late Night Services

Several trials of late night bus services have shown the benefits of these specially designed services, but they are difficult to operate, and require innovative funding considerations. However, the primary responsibility for funding should rest with the venues that provide the entertainment which attracts the crowds. The funds could come as a contribution from the liquor licence fees.

⁶⁶ *University of Newcastle Travel Modes Survey Semester 1, 2003*, Transit Planners, June 2003

The demand for late night services appears to fall into two categories:

- ◇ Movement within the City Centre between venues
- ◇ Travel from the City Centre to home.

The main problem area with late night services is in the Newcastle CBD. However, the people have come from throughout the Lower Hunter. Similar problems, albeit on a smaller scale, occur in Maitland and in some other areas during the holiday seasons.

There is commonly an expectation that taxis will meet the demand for late night transport. Some work has been done on providing marshals at designated ranks, but this addresses only part of the problem. There are frequent complaints about long delays and difficulties in securing a taxi ride not only from the City Centre but also from many of the suburban entertainment venues.

There is no regulatory mechanism to ensure that sufficient taxis are on the road to meet the travel demand. Each taxi owner is free to decide whether or not his/her vehicle is on the road at any particular time. Unless this problem can be overcome, alternatives to taxi transport will have to be found and implemented.

Newcastle Council has trialed an inner city late night bus service to move people between venues. This type of service is best operated free to the passengers, and paid for out of the fees paid to the government by the entertainment venues.

A difficulty with such schemes is the need to integrate with the wider range of public transport services, and the need to obtain special funding. A comprehensive approach to public transport would encompass these particular needs and provide for a more expansive and more permanent response to the situation.

Newcastle Buses has for some time operated Night Owl buses from the Newcastle City Centre on the main bus routes between midnight and 3.30am early on Saturday and Sunday mornings.

There are difficulties associated with late night services such as security (buses) and the inability to move large numbers of people in short periods (taxis). The solution would seem to lie in a combination of the benefits of both modes: door-to-door transport (taxis) but with larger vehicles (small buses).

For travel out of the City Centre, one option might be for buses to operate from designated locations in the City Centre along corridors to suburban areas at regular frequencies. As well as the driver, the buses would carry a passenger supervisor who would defuse behavioural problems and find out passenger destinations. The driver would be able to drop passengers close to their home (within reason). A flat fare would apply which would be dearer than the normal bus fare, but cheaper than the taxi fare.

Once established, this type of transport could be self-funding, given the number of people who are in the City Centre on Friday and Saturday nights. Funding for development and promotional costs could possibly come from the licence fees paid to the State Government by the late night entertainment venues.

Transport regulations may need to be amended or interpreted liberally to allow the appropriate services to be provided. The cooperation of bus operators, the taxi industry and the unions will be essential if this new market opportunity is to be developed in response to meeting a genuine community need.

3.16 Promotions and Marketing

A promotions and marketing package needs to be well researched and developed. In it:

- The transport systems in the Lower Hunter would be extensively marketed and promoted through various media
- Network information would be produced and widely distributed
- Network information would be incorporated into tourism marketing.

One of the mechanisms to facilitate changes in travel behaviour would be to produce a Lower Hunter Transport Guide. It would show all scheduled public transport services in the Lower Hunter, grouped geographically rather than by individual operator. It would include a bus and train network map, a cycle path map showing safe bike routes, and comprehensive information on how to access and use the region's transport systems.

In 1998, the RTA produced a Cycleways map for Newcastle and Lake Macquarie as part of a series of maps covering the Newcastle, Central Coast, Sydney and Illawarra regions. The Newcastle map needs to be extended to cover the cycleways and safe cycling routes throughout the Lower Hunter.

The University of Newcastle produces an annual Transport Guide listing the public transport services from all localities throughout the Lower Hunter⁶⁷. Hunter Health has produced transport guides for access by public transport to three of its main hospitals: John Hunter, Mater and Belmont⁶⁸

The Dept of Transport prepared and distributed a Sydney Public Transport Directory in 1998. All capital cities in Australia have some form of public transport guide. South Australia has a StateGuide listing the timetable for all inter-town coach services throughout the State.

Regional Transport Guides are produced throughout Britain by County Councils or the Regional Passenger Transport Executive. They are widely distributed at transport terminals and information offices, and are free or a nominal price⁶⁹.

A major difficulty with the compilation and distribution of Guides is the lack of any coordination by bus and train operators with their changes to routes and timetables. Each operator makes its own decision on when to modify its own services, often with very little public notification or coordination with other operators. An integrated regional public transport system would require that all operators' route and timetable changes occur at the same time and on no more than two dates each year (eg 1 March and 1 September).

Public transport services should be provided in conjunction with all major events. This means:

- Service details are included in all of the event promotions
- Public transport fares are included in the event ticketing.

Day trip packages using the rail and bus networks can be promoted to people in Sydney. Day visitors can be directed to many of the region's entertainment and recreation venues. This would be particularly appropriate for the region's vineyards, where public transport services and alternative transport systems are not readily available.

Loyalty programs can be an effective means of promoting public transport by giving some discounts on travel costs, even to those paying full fare. These programs can often be developed effectively with major shopping centres and employers.

Subject to re-pricing of periodical tickets on the government transport systems, major employers could be encouraged to include discount public transport tickets in the employment package instead of providing subsidised vehicles and parking spaces for staff.

⁶⁷ *Callaghan Campus Transport Guide 2003*, University of Newcastle, November 2002

⁶⁸ *Easy Guide: How to get to John Hunter Hospital, Mater Hospital, Belmont Hospital*, Hunter Health, 2003

⁶⁹ Examples include: *Set of 4 Public Transport Services Guides* covering south-west England (Cornwall County Council); *Peak District Bus and Train Times* (Derbyshire County Council); *Northumberland Public Transport Guide* (Northumberland County Council)

3.17 Pathways

Pathways are extremely important as a means by which pedestrians and cyclists can gain direct access to the urban road network, bus routes and activity destinations such as shops. Past and present urban design practices have created situations where pedestrians and cyclists often have to travel long distances to make a short trip. They therefore tend to use this as an excuse to go by car.

Pathways are also essential for the mobility of elderly and disabled people with motorised scooters and wheelchairs.

In order to enable people to use alternative sustainable means of travel, pathways have to be provided so that the walking and cycling distances are the minimum possible on easy grades. This can be achieved relatively easily in new subdivisions. It is much harder to 'retrofit' them in older subdivisions, but it still has to be done if sustainability targets are going to be met. For the foreseeable future, more people live in older areas than in new estates. Hence, there is a greater priority to fix up deficiencies in older areas than to rely solely on better design in new areas.

Local Government already has in place comprehensive asset management programs for various types of pathways. It is the appropriate body to implement programs for pathways as an alternative transport infrastructure, and to spread its road funding into facilities other than those for cars⁷⁰. Federal funding is available for these types of sustainable projects.

In this Issues Paper, the term 'pathways' refers to both footpaths and cycleways.

3.17.1 Footpaths

Many people may live close to a bus route, but be faced with a long walk to the bus stop because of the road layout in their area. Footpaths can overcome this problem, linking one street to another to provide the shortest walking distance.

This problem is prevalent in housing estates with long cul-de-sacs, and where two estates have been built at different times beside each other, with poor connecting links.

Footpaths are needed along the verges of roads so that people are able to walk safely and comfortably to a range of local facilities and to bus stops. There is a large amount of backlog work to be done in building footpaths, particularly along urban roads where there is no adjacent development and across old bridges.

Local Government can identify locations where there are poor pedestrian linkages, and develop a program to rectify the deficiencies. In new developments, it can ensure that footpaths are provided as part of the subdivision plan. They need to be designed so as to overcome concerns about personal safety and security.

The footpath strategies advocated in this Issues Paper provide a regional context to the Pedestrian Access and Mobility Plans prepared by the individual councils.

3.17.2 Cycleways

The State Government has undertaken to fund 200km of regional cycleways throughout NSW each year for 10 years. This will not go very far to meeting the needs of the Lower Hunter for sustainable travel. On a per capita basis, this would generate about 14km of regional cycleways each year in the Lower Hunter.

⁷⁰ *Local Government's Role in Bus Transport*, Peter Adams, AITPM Newsletter 1995:2, p 25

Local cycleways are primarily the responsibility of the local council, with some joint funding available from the RTA⁷¹.

Cycleways have to date been treated mainly for recreational purposes, rather than as a genuine form of alternative transport. In many cases, cycleways have been built where it was easy to do so, without completing the critical links to the destinations that they could serve

Mechanisms have to be found to ensure that both local and regional cycleways not only keep pace with urban growth, but catch up on the deficit of past years. This can be helped by a change in mindset that would recognise the importance of cycleways as a means of sustainable transport and insist that they be provided as a part of the road network, not as an optional extra when funds are available.

Good cycleways work in conjunction with the public transport network to provide a set of alternate transport options. They reduce people's dependence on cars, and lead to a lowering of the growth rate in car ownership and car usage. There needs to be a network of cycle paths feeding every railway station and major bus stop. The catchment area around stations and bus stops is 1.3km² for an 8 minute walk. For the same physical effort and time, cycle paths increase this catchment area tenfold to over 12km².

The RTA has set a target of increasing local cycle commuting to 10% of all journeys by 2010. Completion of the regional cycleway network would have to occur to enable this target to be reached. Achieving this target in Lake Macquarie alone would have substantial environmental benefits. Each year it would:

- ◇ eliminate up to 4.2 million car trips
- ◇ reduce local car trips by up to 58.8 million km
- ◇ reduce local greenhouse gas emissions by up to 5000 tonnes
- ◇ allow Hunter Health to redirect over \$7 million from the treatment of preventable cardiac and obesity related illnesses to other health services⁷².

For cycle strategies to be successful, cycle lockers have to be provided in the same way that commuter car parking is provided. This has been done successfully throughout the suburban rail network in Brisbane, where 1700 bike lockers are fully utilised each day. This is a ratio of one locker for every 20 rail commuters⁷³. Bicycle lockers are much cheaper to install and maintain than car parking spaces.

Just as car parking areas are provided at major centres, bike storage facilities can be provided where cycleways intersect with main bus routes, at shopping centres, and at major activity centres. The risks from vandalism and theft can be minimised by thoughtful design and community involvement. Bicycle lockers should be provided free in the same way that most car parking is provided free.

Better integration of cycling into the public transport system can be achieved by providing bicycle racks on buses and extending the facilities for bicycles to travel on trains.

Early in 2002, Brisbane City Council began trials with bicycle racks at the front of buses. The State Government is supporting the trials which will continue into 2003⁷⁴.

Safety is a major concern for people who may consider cycling. The current practice of marking cycleways within the road carriageway does little to alleviate these safety fears. It still gives priority to cars, and allocates cycle space only when room is available. There needs to be much more emphasis on providing cycle paths separate from the road carriageway.

⁷¹ RTA *Action for Bikes: BikePlan 2010*

⁷² Research undertaken by Darrell Stone for Newcastle Cycleways Movement

⁷³ *A Case Study of Bicycle Parking at Selected Brisbane Rail Stations* Alan Parker, 25th Australasian Transport Research Forum, Canberra, October 2002

⁷⁴ *The Courier Mail*, Brisbane, 25 February 2002

Many roads and bridges are still being built without separate provision for cyclists. In other words, the traditional approach of building only a road carriageway with traffic lanes, shoulder and footpath still persist. Recent examples, where there is ample room to provide a separate cycle carriageway, include sections of the West Charlestown Bypass, Wallsend St Kahibah, Burwood Rd Whitebridge and Lake Road between Wallsend and Glendale. Some recent road projects have been funded under the Roads to Recovery program and could have included provision of separate cycle carriageways.



A 1 km section at the northern end of Burwood Road Whitebridge was rebuilt by Lake Macquarie City Council during 2002, adjoining the newly completed Fernleigh Track. Apart from a short section across Flaggy Creek, the new road work contains no provision for pedestrians or cyclists, even though this is a popular area for walking and cycling, and there was ample width to include a separate pathway.

The opening of the Fernleigh Track in December 2002 as a cycle and pedestrian path has demonstrated that immense value of this type of facility. However, it needs to be linked by designated cycleways into the city centre and to other inner city destinations.

Most arterial roads have a kerbside lane which is used predominantly for car parking. The sustainable approach to transport would advocate that this road space is allocated to cycle and bus lanes. Provision for parking is not a primary or sustainable function for roads, especially when other modes have not been adequately catered for.

Where possible, cycle ways should be provided in their own pathway separate from the road, but still direct at an acceptable grade. Where this is not possible, and where safe lane space is not available on arterial roads, it may be possible to use the local road system parallel to the arterial roads.

Irrespective of which way it is done, the important factor is that safe cycleways are provided as a matter of urgency, that the local and regional networks are completed, and that the funding is negotiated at a regional level. The inclusion of the cycle paths in a Lower Hunter Regional Sustainable Transport Plan will assist with this process.

3.17.3 Shared Paths

In the Lower Hunter there are still a number of former rail corridors and stock routes that are strategically located for future transit corridors. It is important that the land tenure on these parcels of land be clarified, and converted where necessary for community use, as a priority action. Under no circumstances should they be amalgamated with adjoining lands or made available for development until the potential for future use in a sustainable transport system has been assessed.

Crown land, unformed cadastral roads, stock routes, utility easements and former rail lines can all be used to develop a network of pathways throughout the region. The main work involved is defining the path, making sure that the path is trafficable, bridging waterways and signposting.

In the short term, most of these corridors and routes can be used for walking trails and cycleways. In rural areas, this means clearing the pathway and designating the track for pedestrian and cycle use. These rural paths would enable two-way travel: rural people going to town, and urban people visiting rural areas.

One advantage of former rail corridors is that the grades are suitable for walking and cycling. In some cases, bridges would need to be repaired, and cuttings and tunnels cleared. Trails that could be created in the short term include:

- ◇ The Junction - Glenrock
- ◇ Adamstown - Belmont (extending work already underway)
- ◇ Cockle Creek - West Wallsend
- ◇ Wallsend - Glendale
- ◇ Glendale - West Wallsend
- ◇ Hexham - Minmi
- ◇ Minmi - Kurri Kurri (Richmond Vale line)
- ◇ Maitland - Cessnock (unused part of South Maitland Railway corridor)
- ◇ Heddon Greta - Stanford Merthyr
- ◇ Weston - Elrington
- ◇ Cessnock - Paxton, Ellalong.

It is understood that Cessnock Council has made an initial move to ensure that the South Maitland Railway corridor is retained by paying a nominal rental for the unused section.

Sections of the water pipeline easement between Chichester, Newcastle and Maitland may also be suitable for rural trails.

A rural path program does not require a lot of capital expenditure. In south west Western Australia, a 63km section of the former Collie - Narrogin railway is being converted to a walking and cycle trail for a total cost of \$120 000⁷⁵.

Rail Trails have been extensively developed in Victoria and South Australia along former country branch railway lines. They have been very successful in promoting tourism and economic activity in rural areas. The 98 km of bitumen sealed rail trail between Wangaratta, Beechworth and Bright is sponsored by the Victorian Government, Bicycle Victoria, Goulburn Ovens Institute of TAFE and Alpine High Country. In 2001, 58 km of rail trail was completed between Bairnsdale and Nowa Nowa, and work is underway to extend this a further 38 km to Orbost⁷⁶.

In many areas of the Lower Hunter, roads often have wide verges. Instead of providing only a footpath, greater benefit for sustainability may be achieved by building a shared pathway for both pedestrians and cyclists within the traditional footpath reserve of the road way.

A successful project for local pathways could be in association with schools (see Vol 2, §5.9). With primary schools and some high schools, it should be possible to designate safe walk and cycle routes for all students living within the school's catchment area. A pro-active program to encourage students to walk or cycle to school would reduce the congestion and safety issues associated with students being delivered to school by car, and would reduce the peak requirements for students travelling by bus. Some success with this approach has been achieved with the TravelSmart program (see Vol 2, §6.3).

Some schools actively discourage cycling for various reasons. It is considered that most of their concerns could be overcome through a comprehensive program related to adequate infrastructure, safety issues, support facilities and education.

⁷⁵ *Railway Digest* Australian Railway Historical Society, October 2001, p 9

⁷⁶ Rail Trail brochures produced by Railtrails Australia, May 2002

4 Sustainable Transport Projects in Lower Hunter

4.1 The Challenges

Transport availability and quality significantly affects the lives of many people. For some it determines where they live, for others transport affects employment opportunities. For people who are aged or with a disability it determines how often or whether they can access the services they need. It is not only the availability of the service that is important but also the quality with which the service is delivered.

A clear vision needs to be set to develop the future of alternative and sustainable transport opportunities in the Lower Hunter. There are many small ways in which to make a start, particularly with walking, cycling and better use of the existing public transport. There would then be a gradual transition towards the achievement of the vision, with an emphasis on integration and consultation.

More efficient public transport services need to be provided and these need to be integrated with each travel mode, with urban development, and with ticketing and timetabling. The underlying factor is that public transport, to benefit the community, must become more attractive to a larger proportion of the community for at least some of their trips.

The argument is often heard that a revival of public transport is not possible in the Lower Hunter because the other travel modes are too easy. In particular, it is stated that most people have access to a car, car parking is not difficult and is usually free, and that public transport takes too long.

These arguments run the risk of treating the whole population as being homogeneous. Surveys undertaken in the NRMA Clean Air 2000 program support the contention that about 40% of the population will never use public transport, 40% are prepared to consider using it for some of their trips, and 20% use it regularly⁷⁷. It is the modal split patterns of the 60% who are favourably disposed to use public transport that form the patronage potential. It is illogical to equate these people with the 40% who will not use public transport at all.

These survey results are similar to those from the Social Survey conducted by Port Stephens Council in 2000 (see Vol 2, §2.6).

This situation is supported by the population profiles of the Lower Hunter community. A selection of these is shown in Tables 6 - 9 in Vol 2, §2.5. The characteristics chosen are those that are likely to have a bearing on public transport usage. It can be seen that although these vary greatly from one locality to another, **there is enough propensity within all urban localities for people to use a sustainable public transport system if it is provided and promoted in a way that is attractive to those people in the community for whom public transport is an acceptable travel option.**

The real issue for regional centres like the Lower Hunter is how the modal split for public transport can be increased. There is enough evidence available from surveys and from similar urban environments that public transport usage will increase in response to the provision and marketing of more attractive and convenient services. This is the approach that underlies the directions advocated in this Issues Paper.

There are many reports by government agencies, and a wide range of academic papers, which not only advocate better public transport services but also demonstrate what needs to be done with urban design and funding programs to facilitate the provision of more attractive services. The task then is not so much to work out what has to be done but more to apply the available knowledge to the Lower Hunter situation.

⁷⁷ NRMA Monitor of public attitudes, Newcastle, 1996

In this context, it has been noted that the public transport systems which have been most successful in reversing the decline in popularity have tended to be ones that are managed locally with a focus on responding to the regional opportunities, markets and strategies. This is predominantly the situation throughout Europe which boasts the largest collection of high quality public transport systems in the world.

The projects which are presented in this Issues Paper have been identified on the basis that they will form part of a regional sustainable transport system which will be pursued jointly by the five councils in the Lower Hunter in cooperation with relevant government agencies. The regional perspective will ensure that there is a consistent and coordinated approach spanning council boundaries. It will overcome the current problems where individual councils are unable to introduce sustainable transport policies because travel patterns extend beyond local government areas, and because councils don't have the resources to tackle regional transport issues individually.

4.2 Regional Transport Advocacy Group

There are a number of community groups and government committees which are attempting to address specific transport issues affecting the Lower Hunter. None of these has been effective in:

- providing a forum for the issues of sustainable transport to be presented, discussed and debated to form a regional opinion
- collecting, synthesising and representing the views of the regional community on sustainable transport issues
- presenting the view of the regional community in response to government decisions, funding and programs
- providing a regional context in which the community and local government can respond to specific issues which will impact on the environment and economy of the region.

Details of some of the regional groups which are attempting to address transport issues in the Lower Hunter are given in Vol 2, §4.4.

A Regional Transport Advocacy Group would enable the community and local government in the Lower Hunter to play an effective role in making and supporting submissions to the State Government and Federal Governments on transport policies, for transport resources, and for innovative transport projects. These submissions would be soundly based on the principles of sustainability as applied to transport, and would represent the views not only of the five councils of the Lower Hunter, but also of the regional community.

It is envisaged that the Regional Transport Advocacy Group would be established as an independent incorporated body with membership open to community members, businesses and councils. Although it may need local government to set it up, it should then operate outside the local government management system so as to give it the freedom and flexibility to address issues quickly and comprehensively, to coalesce community opinion and present it to whichever level of government is relevant, and to manage mobility programs that have a truly regional perspective.

It would be funded through membership fees, sponsorship and/or community development programs. As well as preparing its own submissions, the Group could be resourced to assist other community groups to prepare submissions in response to various policy and development proposals, as is done for example in the Mobility Management Centre in Austria (see Vol 2, §6.4).

Specific topics, in addition to projects listed in this section of the Issues Paper, could include:

- Removal of the fare inequalities for travel on public transport by the application of consistent funding policies for concession travel and for multi-modal travel throughout the Lower Hunter Vol 2, §5.14).

- Regional issues to be considered in the Hunter Region Strategies by the planFIRST team in the Dept of Urban and Transport Planning
- Priorities for the allocation of government funds on transport issues
- Political support for the application of sustainability principles to development projects.

Sustainable transport actions:

- The appropriate mechanism be determined for establishing and maintaining a community-based Regional Transport Advocacy Group for the Lower Hunter
- Existing transport groups be invited to share their resources and expertise with the Regional Transport Advocacy Group
- Local Government initiate the preparation of submissions on sustainable transport issues pertaining to the region
- Submissions be prepared on the issues and policies arising out of this Issues Paper.

4.3 Sustainable Transport Plan

The most fundamental initial requirement for sustainable transport is the preparation of a Sustainable Transport Plan for the Lower Hunter Region. This needs to be initiated and driven by local government within the context of state planning and development processes, and without the restriction of individual local government boundaries.

The concept of a Sustainable Transport Plan is outlined in Vol 1, §3.3. Funds to prepare the plan would be available through various regional development, environmental management and transport improvement programs, as well as from the council’s own planning resources.

Responsibility for managing the Sustainable Transport Plan would be vested with a Sustainable Transport Management Group, established jointly by local and state government agencies. It would have its own funding and be able to access the resources of relevant agencies and institutions. It may be able to incorporate the functions of some existing bodies and thereby enhance their effectiveness. This approach has been successful in establishing the Gladstone Transport Plan in Central Queensland, where the interaction of ports, transport infrastructure, land uses and industrial development has many similarities to the Hunter Region (see Vol 2, §6.2.3).

Possible models for a Sustainable Transport Plan are mentioned in Vol 2, §6.2.

Sustainable transport actions:

- Lower Hunter Councils initiate the establishment of a Sustainable Transport Management Group to be responsible for undertaking the region’s sustainable transport projects
- Lower Hunter Councils establish sustainable transport targets for the region, including modal splits for each travel mode
- The Sustainable Transport Management Group initiates and prepares a Lower Hunter Sustainable Transport Plan
- Processes be developed to implement this Plan, with a view to it being accepted and adopted at all levels of Local, State and Federal Government

4.4 Lower Hunter Regional Sustainable Transport System

Arising out of the Lower Hunter Sustainable Transport Plan, a Lower Hunter Regional Sustainable Transport System would emerge. This would be the system, or combination of systems, by which a transport network would be developed to facilitate the achievement of sustainable transport targets associated with personal travel and the movement of freight. It would be marketed and operated under a catchy name or acronym.

The Regional Sustainable Transport System would be determined after a comprehensive analysis of current and expected travel patterns, and how these need to be modified to achieve sustainability. It would include:

- System corridors where public transport would be given priority
- The appropriate transport mode to be used in each corridor. The modes would be chosen from on-road bus priority, busway, light rail, tramtrain, heavy rail, personal rapid transit or automated people mover
- The location and function of interchanges between the various modes
- Location of stations (all modes) with commuter parking and bicycle facilities
- Service levels (frequency and hours of operation) for each corridor
- Integrated timetables throughout the network
- Feeder services (type and frequency)
- Integrated fares and ticketing
- Cycleways
- Pedestrian pathways
- Management, operating and funding regimes.

Sustainable transport actions:

- A range of sustainable transport systems be evaluated for adoption to meet travel demand in transit corridors in the Lower Hunter
- Community education kits be prepared giving details of the feasible alternative transport modes
- A mobile sustainable transport display be prepared and exhibited at fairs, markets, events and major locations throughout the region.

4.5 Regional Transport Management

The issues associated with regional management of the transport systems in the Lower Hunter are outlined in Vol 1, §3.2, including current problems, successful precedents, management models and funding regimes.

Unless an effective means of managing, coordinating and developing the region's transport systems is adopted, the priorities and funds needed to achieve sustainable transport targets are not going to be readily forthcoming. Already there are several examples of where projects which are justified within the Hunter Region have not been able to proceed because government priorities and funds have gone to major projects mainly in Sydney.

Regional management would be able to utilise the region's assets better, increase patronage, reduce costs, and provide a standard of service that reflected the objectives of the Hunter Region. Hence, the government would not be encumbered with additional costs, but it would achieve greater benefits from the use of current funds.

Various funding models and programs that would support the effective regional management of transport systems have been proved in other regions and are outlined in Vol 2, §6.2.

Sustainable transport actions:

- Evaluation of the various models of regional management, and how they would apply to the Lower Hunter
- Agreement at the local government level on the appropriate management regime to pursue

- Preparation of proposal to State Government, possibly through Hunter Councils
- Obtain support at the community, union and business levels
- Engage the political processes to achieve the desirable outcome.

4.6 Transport and Land Use Planning

There are a significant number of reports about what needs to be done in urban planning to facilitate the provision of sustainable transport systems, including high quality public transport with increased patronage.

The task now is to place the outputs from these reports into council approval processes so that all new developments and government works programs can be more supportive of sustainable transport.

In order to enable better decisions to be made about how many people might travel where and by what mode under a sustainable transport system, there needs to be a number of transport studies and transport models applied specifically to the Lower Hunter Region.

Details of the processes and studies are outlined in Vol 1, §3.6.

SEPP 66 has been produced by Planning NSW in collaboration with Transport NSW and the RTA. It is supported by policy documents which can be used to provide the appropriate context for local government to address issues related to land use and transport, especially when they arise in development applications and strategic policy decisions. Details are given in Vol 1, §2.5.

Freight logistics have to be studied to ensure that sustainable transport modes are not impeded by large freight vehicles in urban streets. Alternative methods of examining freight distribution within urban areas have to be identified and implemented, as outlined briefly in Vol 1, §2.2.7.

Sustainable transport actions:

- Local government support of the planning policies and guidelines in the Land Use and Transport documents accompanying draft SEPP 66
- Develop policies at a regional level on the implementation of SEPP 66, so that there is consistency and leadership across the Lower Hunter.
- Programs be put in place to obtain more accurate and comprehensive details about travel patterns and aspirations in the Lower Hunter
- Surveys and studies undertaken by councils and government agencies be coordinated so as to produce compatible data about transport issues.
- Lower Hunter Councils and RTA to agree on the multi-modal model to be used for regional transport analyses
- Calibrate the regional transport model with the latest population and travel data
- Conduct analyses on regional growth patterns and modal split targets to assess travel demand by various modes in road and transit corridors
- Develop strategies for city freight logistics that respect integrated sustainability issues.

4.7 Transport Corridors

The issues associated with upgrading existing and preserving future rail corridors in the Lower Hunter are outlined in Vol 1, §3.12.

The potential corridors for various forms of transit in the Lower Hunter are outlined in Vol 1, §3.13.

As part of the Lower Hunter Sustainable Transport Plan, these corridors would be protected from encroachment and obstructive development.

Potential transit corridors would be evaluated for the most appropriate transit mode. In many cases, this would allow the corridor to be developed with greater benefit, but using the same funds, than if a single mode approach was taken, such as conventional road or rail.

Sustainable transport actions:

- Regional perspectives on the upgrade of the Newcastle-Sydney rail corridor be documented and presented to Rail Infrastructure Corporation
- A suitable corridor for a direct rail line between Fassifern and Hexham be identified, protected from development and incorporated into the government planning for the future uses of the former BHP lands west of Newcastle
- In order to allow the Newcastle Port to be linked to the Melbourne - Brisbane Inland Rail link and used by double-stack container trains, the upgrading works on the east-west rail corridor through the Hunter Region be identified and added to the State Infrastructure Plan
- Transit corridors be formally identified in accord with appropriate transit modes considered for Lower Hunter Regional Sustainable Transport System
- Potential transit corridors, including rail corridors and cadastral roads, be preserved from incompatible development
- All corridors be put to some initial use, such as a walking trail or cycleway, in order to identify the corridor and initiate alternative travel patterns.

4.8 Transport Integration

To be successful, regional transport systems have to be integrated. People need to be able to travel throughout the region within the one system, irrespective of how many modes and operators this involves.

Regional transport integration involves:

- Coordination of all modes in the overall regional transport task
- Regional management of public transport coordination and integration
- Transport interchanges for changes between modes, and between various types of routes and services
- A common ticketing and fare system for the region, with fares based on the total journey (rather than each individual trip)
- Coordinated timetables and route rationalisation
- Comprehensive information, promotion and marketing.

Details of transport integration concepts and projects are outlined in Vol 2, §6.

Sustainable transport actions:

- Specific projects for transport integration in the Lower Hunter be identified and implemented
- Supportive funding for the implementation of these projects be sought through various sustainability and transport improvement programs
- Assess how these projects fit into future strategies to deliver regional, state and national transport tasks.

4.9 Transport Interchanges

Two major intermodal transport interchanges are under consideration in the Lower Hunter:

- Woodville Junction
- Glendale.

There are also several potential sites for district transport interchanges. Of these, Charlestown and Kotara (Garden City) have the greatest potential.

The concept of transport interchanges is crucial to the achievement of sustainable transport targets. The current projects only consider the existing transport modes, whereas in a sustainable transport system, several other modes have to be considered and included.

Details of the various transport interchange projects and opportunities are outlined in Vol 1, §3.14. Examples of dual light rail and heavy rail operations on shared tracks (as potential modes for linking interchanges) are outlined in Vol 1, §2.3.4 (TramTrain) and Vol 2, §6.2 (Newcastle UK).

Sustainable transport actions:

- Engage the Federal and State Governments on the future impacts of the *Auslink* approach to planning and funding regional transport infrastructure
- Community debate on the wider implications of the Woodville Junction Interchange, not just the inner city corridor issues
- Assessment of the travel benefits between selected origins and destinations using Woodville Junction
- More detailed analysis of how the various transport modes will be able to be modified to fit in with the Woodville Junction interchange concept
- Regional support for the Glendale integrated transport interchange to ensure that the road bridge, railway station and bus interchange are built as the one project
- The design of the Glendale Interchange to ensure that bus access does not increase the journey time for passengers travelling through the interchange to other destinations, and thereby make public transport less attractive for them
- Design of interchanges to take account of the potential transport modes that may be chosen for the Lower Hunter Sustainable Transport System
- Examination of shared use of existing rail lines by light rail and heavy rail as a suitable transport option for the rail-based corridors served by the proposed Woodville Junction interchange
- Investigate how the trunk and feeder bus routes will have to be altered to serve the interchanges
- Examine other locations where district interchanges are needed as focus points in the sustainable transport network, and determine their functions within the context of the Lower Hunter Regional Sustainable Transport System.

4.10 Rural Transport

In the Lower Hunter, 41175 people (9% of the population) live outside designated urban areas in small towns, villages and rural areas. This is a population larger than the urban area in Maitland. These people have the same needs and reasons to travel as do people in urban areas. In fact, their needs are probably greater because of the lower level of services that are available locally. They have the same rights to be able to choose sustainable means of transport.

The fact that it is more difficult to provide for rural transport than urban transport should not be an acceptable excuse for failing to provide it.

Details of mechanisms for improving rural transport services are outlined in Vol 2, §5.10.

The most significant opportunity for improving rural transport revolves around the full-time use of schools buses that currently lie idle outside school start and finish times. With coordinated organisation, consultation and promotion, no additional funding would be needed, assuming that the users of the potential new services pay market fares.

Rural transport can be also improved by the provision of cycle paths. Most country roads are narrow, with rough edges, making cycling difficult and unsafe. Strategies to address these problems are included in Vol 1, §4.17.

Rural roads are able to attract roads funding to assist the councils in their maintenance, and these can be used to incorporate provision for additional travel modes, including pathways for safer walking and cycling. There are also other rural and regional development funds which could be used to broaden the alternatives for rural travel.

Sustainable transport actions:

- Lower Hunter Councils adopt a commitment to a network of rural transport services
- Provision of bus services be negotiated with Transport NSW and school bus operators
- Promotional programs for alternative transport be incorporated into rural services provided by councils and Hunter Health
- Transport service details be included in Lower Hunter Sustainable Transport Guide
- Funding for rural transport initiatives be sought on a regional basis.

4.11 Service Standards

It is necessary to gain some agreement on what the service standards should be in order to achieve the desirable modal splits to meet ecologically sustainable development targets.

These standards need to be derived from the sustainable transport targets. The current approach of setting services standards by the existing patronage levels is not sustainable and has to be replaced.

Details of the standards that need to be examined and applied are outlined in Vol 2, §5.5 - 5.7.

Sustainable transport actions:

- Lower Hunter councils prepare and adopt a set of optimal service standards for the provision of public transport infrastructure and services.
- Councils arrange with service providers and their own works programs for the implementation of these service standards.
- Local councils take a pro-active role in transit network design
- The Lower Hunter Sustainable Transport Plan be used to outline the desirable transit modes and service patterns to meet sustainability targets
- Transport service providers be encouraged to implement the transit plan adopted by councils
- Regional sustainability indicators include the degree to which transit services conform with the transit plan.

4.12 Demonstration Projects

One of the most effective ways to start the process of change in attitudes to public transport usage is to initiate some demonstration projects with the proposed higher service standards. Projects have to be selected where the existing infrastructure is suitable or can be readily modified, and where there is a reasonable chance of a favourable patronage response.

Projects for consideration are outlined in Vol 1, §3.15.

Sustainable transport actions:

- The Sustainable Transport Management Group be funded with the specific objective to initiate and implement a range of sustainable transport demonstration projects
- The projects be carefully monitored and analysed, and the results used to strengthen the case for sustainable transport targets and for the development of the sustainable transport plan
- Immediate action be taken to introduce traffic management facilities that will remove delays to bus services approaching the University of Newcastle in the morning peak hour.

4.13 Road Corridors

For the foreseeable future, roads will be the infrastructure used for most of the region's transport. However, in a sustainable transport system, roads are not provided just for cars, trucks and parking. They are designed and built to accommodate several modes of transport, including transit systems, bus priority, cycleways and pathways.

To accommodate these alternative modes of transport, there needs to be a cultural change in the attitude to car parking on roads.

This new approach will require a significant change of attitude not only within the community but also to the level of cooperation that is necessary between government agencies and transport operators.

Details of sustainable road corridor projects in the Lower Hunter are outlined in Vol 1, §3.11.

Sustainable transport actions:

- A regional road network strategy be developed within the context of the Sustainable Transport Plan
- Arterial road programs be reviewed to ensure that they meet a range of sustainable transport objectives
- The development of major new industries in the region be used as a mechanism to ensure that gaps in the regional road network are completed in accord with sustainable objectives
- All road corridors be developed and expanded to make provision for the safe operation of alternative modes of transport.

4.14 Parking

It is difficult to change the current attitudes and policies towards provision of car parking prior to comprehensive improvements in public transport services. However, a start has to be made, and this can be done through some individual projects and through longer-term strategic policies.

The sustainable transport issues associated with car parking are outlined in Vol 1, §3.10.5.

Sustainable transport actions:

- Off-site parking with integrated public transport services be investigated and implemented for major events such as sports fixtures, regional events and busy shopping periods

- On-site parking requirements be reduced in major developments in return for developer contributions to alternative transport systems
- Fees at existing parking stations be adjusted to include free access to public transport services
- Parking provision policies be reviewed to assess the holistic economic impacts of alternative integrated transport arrangements
- Road space usage priorities be reviewed to ensure that all travel modes are catered for adequately and safely prior to space being allocated for kerbside car parking.

4.15 Employment Centres

Regional employment centres are locations which generate large numbers of people, particularly during the daytime on weekdays. These people come from near and far throughout the region.

Travel to and from these centres causes the most concentrated peak hour traffic in the region. The location of employment centres also means that the peak hour traffic flows for several centres cross each other at major intersections, adding to traffic congestion and delays. There are no easy solutions to this traffic congestion unless the amount of traffic can be reduced through travel demand management strategies.

Details of the sustainable transport options for the major employment centres in the region are outlined in Vol 1, §3.8.

Sustainable transport actions:

- **Tomago**

- Employer-funded alternative transport packages
- Development of a bus-rail interchange at Hexham railway station, with bus services between Hexham and Tomago coordinated with the Maitland - Newcastle trains
- In the short term, priority bus services between designated bus interchanges in Maitland and Newcastle and Tomago, integrated into the wider bus network
- In the longer term, extension of the regional transport infrastructure to include a line through Tomago to Newcastle Airport.

- **Williamtown Airport / RAAF Base**

- Inclusion of existing bus service routes and timetables in all airport travel brochures
- Workers buses for the RAAF Base and airport industrial area from Nelson Bay and Raymond Terrace
- In the longer term, extension of the regional transport infrastructure to include a line from Newcastle through Newcastle Airport to Nelson Bay.

- **Hunter Employment Zone, Tomalpin**

- Design of the entire employment zone to facilitate through movement by all vehicles, with no dead-end streets, and easy walking distances to all buildings.
- In the short term, provision of frequent bus services between Cessnock and Maitland in addition to the buses serving the local residential areas
- Express bus services between designated bus interchanges throughout the region and Tomalpin
- Industry funded commuter transport schemes in place of some employee car parking areas
- Cycleway links to Cessnock, Kurri Kurri and Maitland

- Early resolution of issues associated with use of SMR for freight and passenger services
 - Upgrading of SMR and extension to Tomalpin to be part of the development plan and funding for the HEZ
 - Provision of passenger train services as part of the Newcastle suburban train system from the time of the first major employment project
 - In the longer term, inclusion of Tomalpin in the Regional Sustainable Transport System, including a direct link to western Newcastle along the Richmond Vale rail corridor.
- **Cardiff / Glendale**
 - Priority funding for road bridge over rail line at Glendale
 - Analysis of travel patterns for workers in Cardiff / Glendale area
 - Development of integrated public transport services to meet these travel patterns
 - Provision of regional bus-rail interchange at Glendale
 - In the longer term, development of the Lower Hunter Regional Sustainable Transport system along the corridors radiating from Glendale.
- **Thornton / Beresfield**
 - Feeder bus services to Thornton Station
 - Modification of the road system to allow buses to pass through the industrial estates
 - Inclusion of the Thornton / Beresfield industrial areas in a regional network of express bus services serving commuter bus interchanges.
- **Kooragang**
 - Consider sustainable access to Kooragang for workers as part of the approval process for the ProTech steel plant, including employer funded schemes
 - Provide express buses between commuter bus interchanges in the Newcastle / Lake Macquarie area and Kooragang
 - Make more use of the existing route buses passing through Kooragang for public transport access.

4.16 Regional Centres

Regional Centres are locations that generate large numbers of people throughout the day and usually at weekends. They include the region's Central Business District (CBD) in Newcastle, District Park sports centre, the major shopping centres, John Hunter Hospital and the University.

Because large numbers of people are coming and going all the time from throughout the region, these centres offer the best opportunities to introduce and advocate alternative means of travel, and to encourage a change of attitudes regarding car parking.

Details of the sustainable transport options in the region's main centres are outlined in Vol 1, §3.9.

Sustainable transport actions:

- **Newcastle CBD**
 - Parking strategies to be developed in conjunction with public transport options

- Adequacy of services linking individual residential areas to the CBD be assessed and upgraded where necessary, even if this means using integrated services with guaranteed connections
 - Proposals for promoting inner city bus travel be pursued
 - An attractive form of inner city all-day ticketing be developed and implemented.
- **District Park, Broadmeadow**
 - Investigations into the upgrading of the Energy Australia Stadium include assessment of access criteria, with priority of public transport
 - Assessments be undertaken of alternative sites that may provide greater regional benefits and more sustainable transport opportunities
 - Any upgrade should include commitments from developers, owners and service providers for integrated public transport services for all events.
- **Charlestown**
 - Assess the potential for access to existing and new developments in Charlestown to be handled by alternative means of travel, and the impact this would have on the demand for car parking in the commercial centre
 - Determine what would have to be done to the transport network focussed on Charlestown to achieve the desired level of alternative travel
 - Include the provision of an integrated bus interchange in the plans for future development in the commercial centre
 - In the longer term, include Charlestown in the Lower Hunter Sustainable Transport System.
- **Kotara**
 - Identify and confirm the timing of the need for the new Kotara station based on existing development in the Kotara commercial area, the implementation of the Newcastle Urban Strategy, and the need for sustainable transport in the Lower Hunter.
 - Preserve the available vacant land adjacent to the rail line at Kotara for use as access and parking associated primarily with the railway station.
 - Apply the principles of SEPP66 to gain priority on local and state government funding for the construction of the station
 - Include provision in the design for later incorporation of the Lower Hunter Sustainable Transport System.
- **University of Newcastle**
 - Support by local government and transport operators for the wider distribution of the University Transport Guide
 - Traffic management measures to alleviate traffic congestion in University Dr in the morning peak period
 - Further improvements and expansion of train and bus services to make public transport access more attractive
 - Completion of the cycleway network used for access to the University.
- **John Hunter Hospital**
 - Support for Hunter Health in promoting alternative travel options for access to John Hunter Hospital

- Investigation of alternatives to more on-site car parking
 - Inclusion of a bus interchange on the proposed second access road across the eastern part of the site parallel to Lookout Road
 - Commitment to the early construction of the second access road
 - Full-time operation of the internal shuttle bus linking the bus interchange with various facilities throughout the hospital site
 - Provision of a moving footway between the bus interchange on the new access road and the hospital buildings
 - Improved frequencies of bus services and better integration with connecting services at interchanges throughout the Newcastle / Lake Macquarie area
 - Improve cycleway access, especially from New Lambton through Blackbutt, and from Elernmore Vale
 - In the longer term, connection of John Hunter Hospital to the Lower Hunter Regional Sustainable Transport System.
- **Maitland**
 - Improve the accessibility of the bus services at both the City Centre and Green Hills
 - Introduce a high-frequency direct bus service between City Centre and Green Hills during shopping hours, integrated with train services
 - In the longer term, extend the Lower Hunter Sustainable Transport System to include City Centre and Green Hills.
- **Cessnock**
 - Provide a bus station in the centre of the CBD as part of the transport management program
 - Revise and upgrade the local bus routes so that all areas have frequent services to the CBD
 - In the longer term, connect the Cessnock City Centre to the Lower Hunter Sustainable Transport System, with feeder buses through the CBD.
- **Raymond Terrace**
 - Recognise the strategic location of the town centre to provide commercial services to a vast area of the Lower Hunter from east of Maitland to the coast at Port Stephens
 - Provide a bus station in the town centre to cater for local buses, rural services, and long distance coaches.

4.17 Pathways

Footpaths and cycleways are extremely important as a means by which pedestrians and cyclists can gain direct access to the urban road network, bus routes and activity destinations such as employment, shops and recreation areas.

No longer can walking and cycling be regarded only as recreational travel modes. In a sustainable transport system, they are part of the choice set of travel modes that people are encouraged to use.

Safety is a prime consideration with these modes. For walking and cycling to be accepted, there have to be separate pathways from the roadway. Most people would not regard a white line on a road denoting a cycleway as providing enough safety and protection from other vehicles on the road.

Footpaths are essential for people of all ages to be able to walk to local facilities and to access bus stops and railway stations. It is no longer acceptable that people should be expected to walk along the edge of the road, especially outside built-up areas where vehicles speeds are much higher.

Crown land, unformed cadastral roads, stock routes, utility easements and former rail lines can all be used to develop a network of pathways throughout the region. The main work involved is defining the path, making sure that the path is trafficable, bridging waterways and signposting. These rural paths would enable two-way travel: rural people going to town, and urban people visiting rural areas.

Much of the problems with school transport could be alleviated with the development of safe pathways for walking and cycling throughout the catchment area of local schools. Students could be encouraged to walk or ride to school rather than be driven by car or catch a school bus (which could be better utilised providing peak hour commuter transport).

More details about pathways and successful projects elsewhere are outlined in Vol 1, §3.17 and Vol 2, §5.9.

Sustainable transport actions:

- Locations in urban areas where walking distances are significantly greater than the direct distances be identified
- Programs be put in place to retrofit pathways to enable access over more direct routes in urban areas.
- Specific policies be formulated and implemented to ensure direct pathway access is provided in all new subdivisions for residential, commercial and industrial development.
- Lower Hunter councils adopt an integrated cycleway plan that incorporates their own cycle plans and achieves an integrated regional network.
- The programs for the provision of local cycleways be significantly enhanced, including the joint provision of footpaths and cyclepaths on urban streets
- Re-activate the RTA 'Safe Routes to Schools' program with greater emphasis on sustainable transport modes
- Councils jointly develop a network of rural cycle pathways and walking trails
- Innovative funding programs be adopted, in addition to the current programs, in order to accelerate the rate of development of cycleways.
- Cycleway links be included in the development plans for major industrial areas
- Policies be adopted and implemented that all roads (including rural roads) be provided with a pathway for use by pedestrians, wheelchairs and cyclists that is separate from the road carriageway
- As a matter of priority and to enhance safety, pathway bridges be built where a separate pathway is not already provided on any road bridge.
- Existing rights-of-way, rail corridors, stock routes and unformed cadastral roads be identified and preserved for potential use as transit corridors, and initially as walking tracks and bush cycleways.
- A network of pathways be provided throughout the catchment area of local schools, and programs expanded to provide support facilities to encourage more students to walk and cycle to school.

4.18 Disabled Accessibility

Considerable attention has been given in recent years to modifying public transport vehicles so that they are more accessible for people with disabilities. However, very little attention has been given to the operational logistics of these vehicles, the impact on the marketability of public transport, and how disabled people actually travel between home and the bus stop or railway station.

These issues are outlined in Vol 2, §5.12 and §5.13.

In a sustainable transport system, transport for the disabled is integrated with the many other aspects of public transport, rather than being treated as an issue in itself.

Sustainable transport actions:

- The Sustainable Transport Plan adopt the comprehensive package of provisions for disabled people
- Priority funding be allocated to correcting the backlog in provision of facilities for travel by disabled people
- Transport for disabled people be incorporated into broad-based community transport operations.

4.19 Information, Promotions and Marketing

Information about alternative travel opportunities has to be provided in a number of different ways if it is going to meet the diverse travel needs of the community. It is not just a matter of listing the times of buses at some of the bus stops.

The information needs to be an integrated package in several formats and standardised for all operators in the region. It has to be recognised that people have different information needs at different times, and all of these needs have to be catered for. The information needs to be kept up-to-date and accessible at all locations. Several of the formats currently used do not conform to these requirements.

As with any desirable cultural change, the alternative has to be extensively promoted and marketed. The public transport industry has traditionally been very poor at this, whereas the car industry has very sophisticated marketing campaigns.

Details of information, promotions and marketing programs are outlined in Vol 1, §3.10.4, Vol 1, §3.16 and Vol 2, §5.8. Particular opportunities for local government are mentioned in Vol 1, §3.1.

In November 2002, Transport NSW issued Guidelines for bus stop information, and announced a program of funding to retrofit transit stops with new signage and information. The funding will be made available through local government. More details are given in Vol 2, §5.6.

The TravelSmart program has been specifically designed not only to promote the use of alternative transport services, but also to tailor these to meet the needs of local communities and workplaces, and to facilitate the coordination of services. Funding for TravelSmart has been allocated to each State by the Federal Government, but has not yet been taken up in New South Wales.

Details of TravelSmart programs and funding opportunities are given in Vol 2, §6.3.

Other techniques have also been shown to be successful in the Australian context. These include Individualised Marketing and Travel Blending®. Details are given in Vol 2, §6.4.

Sustainable transport actions:

- Standards for service information displays be developed and included in the Sustainable Transport Plan

- Local councils liaise with service providers to ensure that these standards are maintained throughout the Lower Hunter
- Funding be obtained from appropriate government programs to facilitate the maintenance of regional standards for service information displays.
- The preparation of a Lower Hunter Transport Guide be included in the Sustainable Transport Plan
- The RTA be encouraged to expand its series of Cycleway maps to cover the Lower Hunter
- Changes to service details (routes and timetables) occur at the same time throughout the region, and on no more two occasions each year.
- Regional tourism organisations facilitate the preparation and distribution of a regional transport information package
- Local councils include public transport TravelPass ticket funding arrangements in their staff salary payments
- Approvals for all major events in the Lower Hunter be conditional on public transport service details and integrated ticketing being included in the event management and promotion
- Tourism promotion include packages aimed at encouraging visitors to make use of the region's public transport systems
- Loyalty schemes and employment packages be investigated as innovative programs to promote public transport usage in the Lower Hunter
- Agreement be obtained for Lower Hunter Councils to embark on a TravelSmart program to encourage greater use of alternative transport.
- Investigations be undertaken for suitable locations to conduct Travel Change Behaviour studies such as Individualised Marketing and Travel Blending®.

4.20 Alternative Fuels

The fuels used for transport are one of the major sources of harmful pollutants in the air. Action needs to be taken at a regional level to escalate the adoption of less polluting renewable fuels for use both by existing vehicles and in the design and purchase of new vehicles.

Much of the leadership in this issue can be given by local government. In so doing it may make the region eligible for research and development grants, as well as enhancing the region's environmental benefits.

The issues associated with the use of alternative fuels are outlined in Vol 1, §2.7. The opportunities for local government are mentioned in Vol 1, §3.1.

Sustainable transport actions:

- Local government adopts a leadership role in encouraging and promoting greater use of alternative and renewable fuels
- Education packages be prepared, possibly in conjunction with NRMA and government agencies, on the practical aspects of adopting renewable fuels
- Councils proceed with the conversion of their car and truck fleets to alternative fuels
- New fuelling facilities for alternative fuels be established in conjunction with the transport industry
- Councils as a regional group pressure the federal government to rectify the price discrepancies for the use of renewable fuels.

4.21 Funding Programs

While this Issues Paper has been prepared on the premise that the main opportunities for initiating sustainable transport rest with local government working at the regional level, this does not mean that local government has to shoulder the funding burden. It will work in collaboration with state and federal government programs. A critical role for local government will be to identify regional issues that need action, and to lobby for the appropriate priorities to be allocated to these projects.

There are a number of plans and programs which can be accessed to support regional sustainable transport initiatives in order to obtain funds, resources and information. These are in addition to the normal funding arrangements which can continue to apply, but perhaps with a greater emphasis on coordination and priority for sustainability.

- Based on information in the Green Paper issued in Nov 2002, the new federal government *Auslink* plan for sourcing and distribution of transport infrastructure funds has criteria that would cover sustainable transport projects in the Lower Hunter. Details are outlined in Vol 1, §3.4.
- The *Auslink* approach may also open the door to private sector involvement with infrastructure projects
- More opportunities are becoming available for private sector funding options, through arrangements such as Private Public Partnerships⁷⁸
- The federal government Roads to Recovery funding program has already been used to fund backlog work for road improvements, and could be extended to include separate pathways in the road reserve as well as certain types of transport infrastructure.
- Council Section 94 Contributions Plans may need to be amended to ensure that funds are made available for alternative transport infrastructure associated with new developments.
- A Regional Sustainable Transport Plan will enhance the prospects of capital works for the region being included in the government's capital works budget allocations.
- State and Federal funding of various types is available for infrastructure and operational improvements to public transport services under Public Transport Improvement Programs.
- The State Government provides support for public transport in rural areas through its Country Public Transport Grants Scheme.
- Transport NSW has allocated \$5 million to local government over the next three years to retrofit bus and ferry stops with new signage.
- The Australian Greenhouse Office makes funds available through various programs for sustainable transport improvements that will reduce greenhouse gases. This includes funds through the Travel Demand Management Assistance Package for Local Government, and the Cities for Climate Protection Campaign (for more details see Vol 2, §4.2), and the TravelSmart program (see Vol 2, §6.3).
- Innovative transport and alternative fuel projects can be eligible for research and development funding. Success would be enhanced by the context for these projects provided by the Regional Sustainable Transport Plan.
- Fuel levies can be an effective source of funds at a regional level, particularly if they are directed by a regional body to regional projects. They allocate the charges to the primary cause of congestion and pollution, and direct the funds to improving services that are more sustainable.

⁷⁸ E.g. Innovative funding for local government projects, reported in *Macquarie goes public with major deals*, Australian Financial Review, 17 April 2003

- Land value capture is a technique by which the funding for infrastructure is secured from the development opportunities that accrue from the new facilities. One form of this technique has been adopted recently by the NSW Government to fund transport infrastructure in the growth areas of Northwest Sydney.
- Various unemployment relief programs can be used to implement specific projects.
- Various environmental management programs can be coordinated with sustainable transport projects with the funding applied accordingly.
- It may be possible to obtain sponsorship for specific projects or studies.
- It may be possible to undertake transport research projects through the Centre for Urban and Regional Studies at the University of Newcastle.

Sustainable transport actions:

- The Sustainable Transport Management Group prepares a full appraisal of funding opportunities.
- An application be submitted to Transport NSW for the allocation of federal funding for a Lower Hunter TravelSmart program.
- The Regional Sustainable Transport Plan be used in the assessment of priorities and coordination for the expenditure of funds in existing Federal, State and Local Government programs.
- Ongoing liaison by Lower Hunter councils with the Dept of Transport and Regional Services in response to the Auslink Green Paper regarding the opportunities for sustainable transport projects in the Lower Hunter.

4.22 Action Summary

Table 5 summarises the action strategies into short, medium and long term, and indicates the involvement of government agencies, businesses and the community in a number of roles:

C Consult; I Initiate; M Manage; P Participate.

Table 5: Summary of Agency Involvement in Action Strategies

Action	Priority			Government			Bus- iness	Comm- unity
	Short	Medium	Long	Local	State	Federal		
2 Advocacy Group	✓	✓		I, P			P	M
3 Transport Plan	✓			I, M	P	P	C	C
4 Transport System		✓	✓	I, M	P	P	P	C
5 Transport Management	✓			P, M	P		P	P
6 Land Use Planning	✓	✓		M	P		P	C
7 Corridors	✓	✓		I, M	P	P	P	C
8 Integration	✓	✓		I	M	P		
9 Interchanges	✓	✓		P	M		P	
10 Rural	✓	✓		I, M	M			
11 Service Standards	✓			I, P	M			
12 Demonstrations	✓			I, M	P		P	C
13 Roads	✓	✓		I, P	M	P	P	
14 Parking	✓	✓	✓	I, M	P		C	C
15 Employment Centres	✓	✓		I, M	P	P	P	C
16 Regional Centres	✓	✓	✓	I, M	P		P	C
17 Pathways	✓	✓		I, M	P			C
18 Disabled	✓	✓		P	M	P		C
19 Information	✓			I, P	M			
20 Alternative Fuels	✓	✓	✓	I, P	P	M		
21 Funding	✓	✓	✓	I, P	M	P	P	