Hornsby Shire Council

Hornsby Integrated Land Use and Transport Strategy

Final Report

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Hornsby Shire Council

Hornsby Integrated Land Use and Transport Strategy

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Hornsby Integrated Land Use and Transport Strategy

Executive Summary

Introduction

Hornsby Shire Council is committed to developing an Integrated Land Use and Transport Strategy (ILUTS) that will provide a framework for action and promote viable and sustainable transport for the Shire. Council's prime objective for the development of this strategy is to reduce car travel by promoting other modes of transport, particularly in view of the unsustainable historical increase in motor vehicle traffic associated with population growth.

At a strategic level Hornsby Shire Council has already expressed its intent of *creating a living environment*. The development of the ILUTS will therefore build on a number of existing Council initiatives and policies including the Local Agenda 21 program, Hornsby Shire Housing Strategy and Council's Sustainable Management System.

The ILUTS is intended to:

- Develop a series of action plans, consistent with the identified strategies, that will form a program of more detailed studies, investigations and projects;
- Define a range of indicators to assist Council in monitoring the implementation and effectiveness of the Strategy; and
- Recommend an Implementation Program outlining a clear means of progressing the Strategy, including priorities, responsibilities and potential funding opportunities.

The Strategy has been developed over three stages:

- **Stage 1 State of Play** – establishing existing conditions and the framework for developing an integrated land use and transport strategy;
- **Stage 2 Development of Integrated Strategies** – develop broad land use and transport strategies that will address the existing issues and aim to achieve Council's intent of creating a living environment; and,
- **Stage 3 Development of Action Plans and Program of Implementation** – develop and document action plans with measurable indicators for Council to implement.

A multi-modal transport model has also been developed to test the strategy options and assist Council in planing their activities in the future.

Public and stakeholder consultation has contributed to the development of the study, through:

- Workshops with Council Officers;
- Meeting and discussions with key stakeholders including State Government Departments and private bus operators;
- Information leaflet delivered to all households within the Shire along with the recent rates notices; and
- Direct feedback and discussions with the community via telephone and email based on the information provided in the leaflet.

Policy Context

State Government policy as defined in Shaping Our Cities, Action for Air, Action for Transport 2010, Action for Bikes 2010, Connecting the Central Coast and Integrating Land Use and Transport (Draft SEPP 66) support the principles of the ILUTS, in particular:

- A reduction in car use and an increase in the use of more sustainable alternatives;
- Development of urban areas that are pleasant and attractive places to live and work in; and,
- An integrated approach to the planning of land use and transport that results in an overall reduction in the need to travel by car.

At a local level, Hornsby Shire Council policies also support the development of the ILUTS. The key findings of the local policy and planning guidance reviews include:

- A high proportion (around 87%) of the Shire is zoned Open Space, Environmental Protection or Rural and is currently constrained from many types of development;
- Standards in the LEP control development densities by land use zone;
- The LEP allows for greater densities in town centres, particularly in the medium and high density residential zones and the business zones;
- Provisions in the LEP allow for developments to exceed density controls at certain locations and subject to special provisions;
- 12 hectares of land are zoned for high density residential, and this land is located in Hornsby town centre; and,
- Parking requirements for new development in Hornsby are set as absolute levels, generally in accordance with RTA guidelines.

Existing Situation

The Hornsby Shire is the second largest local government area in the Sydney region in terms of geographical area (510 square kilometres). It is located in the north of the Sydney Metropolitan area, covering an area between Epping, Wisemans Ferry and Brooklyn. The Hawkesbury River forms Hornsby's northern boundary and the F3 Freeway and the Main North Rail Line generally form the Shire's eastern boundary with Ku-ring-gai LGA. The western boundary generally adjoins Baulkham Hills LGA.

External to Hornsby Shire, Sydney CBD and regional centres at Parramatta, Chatswood and a new centre at Rouse Hill will have an impact on land use and transport within Hornsby. The Sydney CBD and regional centres provide (or will provide) major employment and retailing opportunities and may attract population as well as retail and commercial functions from Hornsby.

Key findings from the analysis of land uses include:

- Hornsby is generally regarded as a "bushland" Shire with urban areas concentrated in the south. Extensive areas of the Shire are zoned Open Space, Environment Protection or Rural and planning policies restrict development in these zones. Substantial parts of the western and north-western parts of the Shire are rural interspersed with some urban village settlements.
- The majority of the residential areas are low density suburbs, with medium and high density areas concentrated in Hornsby town centre and other district centres. The development of Cherrybrook release area is largely complete in the western part of the Shire.
- Hornsby Shire has a comprehensive and well established transport network that links the key activity centres and residential areas within the Shire to major external centres such as Chatswood, North Sydney and Sydney CBD.

An analysis of socio-economic and demographic data for the Hornsby Shire area identified the following:

- The population of Hornsby in 1996 was approximately 136,000, early census data indicates that the population had increased to 146,000 by 2001. The population of Hornsby Shire grew 3 to 4% more than the population of the Sydney metropolitan area between 1981 and 1996 with over 70% of that growth occurring in Ward B (Cherrybrook Release Area).

- Hornsby has a "mature" population profile (i.e. the population is characterised by a similar number of people in each 5 year age range). The population ageing, with the population generally below the age of 20 declining and the population over 65 years increasing;
- The number of occupied dwellings in Hornsby increased by over 10,000 between 1981 and 1996 to approximately 46,000 dwellings in 1996 and by a further 3,600 to almost 50,000 in 2001.
- Average dwelling occupancy in Hornsby fell from 3.09 to 2.85 persons per dwelling between 1981 and 2001. In 1996 the Sydney average was 2.73 persons per dwelling.
- In 1996 Hornsby had a resident labour force (people working or looking for work) of almost 70,000 people. Approximately 30% of the resident workforce work within Hornsby with other major employment locations for residents being neighbouring LGAs and the Sydney CBD.

The main transport routes which traverse Hornsby include:

- The M2 motorway, which provides a major road connection through the southern part of the Shire, north of Epping, connecting the Sydney CBD with major centres at Baulkham Hills, Castle Hill and Parramatta.
- The Pacific Highway and F3 Freeway which traverse the eastern part of the Shire to provide a north-south regional connection between Sydney and Newcastle.
- The Pennant Hills Road, which currently provides a link between the M2 and F3 and, with the Cumberland Highway, is identified as part of the National Network.
- The Main North Line on the rail network, which extends from Sydney CBD, through Strathfield and Hornsby to Newcastle, with stations located throughout the Shire.
- The North Shore Rail Line extends south from Hornsby through Waitara providing direct links to Chatswood, North Sydney and Sydney CBD.

The following transport proposals are relevant to the study:

- A Federal study is currently considering the connection between the M2 and the F3. It is widely recognised that Pennant Hills Road cannot continue to provide a key link in the development of an orbital motorway for Sydney and should be replaced.
- It is hoped the Parramatta Rail Link (PRL) will ultimately link Parramatta and Chatswood via Epping with a new 28km railway. Following a reassessment of the project the Epping to Parramatta section has been deferred indefinitely. Work has, however, commenced on the Chatswood to Epping section of the line. Three new stations will be added to the CityRail network with completion of the Chatswood to Epping section and Epping station will be upgraded.
- The North West Rail Link (NWRL) is proposed to be completed in two stages – from Epping to Castle Hill and then on to Rouse Hill. At this stage there is no program date for construction or funding available.
- Integrated ticketing, due for full implementation in 2005, will offer increased opportunities for seamless interchange between public transport services, including those operated by the private sector.
- The Sydney to Newcastle rail line is being improved to effect reductions in journey time and improved station facilities. This will improve the transport options for those living on the Central Coast, reducing the attractiveness of driving to stations in Hornsby Shire.
- The development of the Transitways in Western Sydney will have a similar impact. Through the improvement of public transport options in the areas to the west of Hornsby Shire, it is hoped that pressure on local rail services and associated parking can be reduced.

A number of findings arose from an analysis of current transport conditions and data:

- Some rail services are over crowded with the most popular stations being Hornsby, Epping and Pennant Hills. These three stations also have the best bus service provision.
- The facilities provided at the 14 stations in the Shire vary greatly. Four are staffed on a 24 hour basis (Berowra, Hornsby, Pennant Hills and Epping) and five are fully accessible (Asquith, Cowan, Hornsby, Pennant Hills and Epping).
- A number of stations have car parking and this was generally found to be adequate to meet demand. Parking demands are exacerbated by people driving from areas outside the Shire to access rail services.
- Bus services in the Shire are principally provided by State Transit Authority, Shorelink, Harris Park and Glenorie. Additional services are provided by Westbus and Red Arrow.
- The bus services are largely confined to the south, south-west and eastern parts of the Shire, focusing on Hornsby, Pennant Hills, Castle Hill and Carlingford.
- Bus stop infrastructure and facilities vary greatly throughout the Shire from the excellent interchange facilities provided at Hornsby and Pennant Hills stations to very basic provision in suburban areas.
- Pedestrian and bicycle networks are constrained by local topography and major barriers, such as rail lines, arterial roads and bushland.
- Traffic volumes on arterial roads through the Shire have increased since 1996 with particular increases on the Pennant Hills Road and Beecroft Road since the M2 opened in 1998.
- The arterial roads in the Shire are significant as road accident corridors with intersections being particularly dangerous. The majority of fatal accidents occur on arterial roads.
- Journey to work data from the 1996 census shows that 54% of residents drive to work compared with 53% across the metropolitan area. Hornsby Shire residents are more likely to commute by train but less likely to catch a bus, walk or cycle to work in comparison with the metropolitan average.
- Car ownership in the Shire correlates with urban density and public transport provision. Generally, higher car ownership is observed in northern and western areas while lower car ownership is focused on the residential areas served by the rail lines. Socio-economic characteristics are also important indicators of car ownership with pockets of relatively high ownership in areas well served by public transport, such as Cheltenham, and vice versa.

Local centres were examined through site visits to identify the particular characteristics and issues facing each locality. This information fed into the identification of issues and will be utilised towards the end of the study with the identification of a range of actions for each.

Action Plans

Early work on the ILUTS established the need for topic based action plans. For each action plan topic objectives, issues, opportunities and constraints were identified and these form the basis of each action plan. The action plans are necessarily inter-related and it should be noted that the realisation of the administration action plan and the land use and development action plan are fundamental to meeting the objectives of the other action plans and the overall aims of the ILUTS. The importance of Council's adoption of the ILUTS package and its commitment to the longer term benefits which will result is highlighted in these two action plans and cannot be over emphasised.

Action Plan - Administration

The implementation of the ILUTS actions will be dependant on the management and administration structures in place and the political will to achieve change. Many of the actions will require Council to work closely with other stakeholders, including public transport operators and State Government.

Objectives –

- Ensure all Council policies and the Management Plan support and in turn, are supported by, the ILUTS.
- Develop clear working relationships within Council to manage the implementation of the ILUTS.
- Develop effective working relationships with external stakeholders to implement the ILUTS.

Approach –

The realisation of the ILUTS through the effective implementation of the projects identified through the action plans is the responsibility of HSC. This responsibility must be recognised and embraced from the outset at all levels of Council. Councillor and senior management commitment to the aims and objectives of the ILUTS is particularly important and will be significant in developing proactive working relationships with stakeholders.

This action plan is based on the following approach:

- HSC input based on:
    - Steering Group.
    - Working Group.
    - Department and officer input.
- Review of HSC policies and programs;
- Development of strong cooperative relationships with stakeholders, based on:
    - Regular workshops.
    - Email.
    - Project working groups.

The administration of the ILUTS should largely be accommodated within existing Council resources.

Action Plan – Land Use & Development

This land use and development action plan summarises the objectives, issues, opportunities and constraints identified in the ILUTS Topic Paper 1. It then sets out actions to help achieve the objectives by capitalising on the opportunities of the Shire and recognising the constraints.

Land use patterns that support the development of public transport services and the use of sustainable alternatives to the car are central to the achievement of the ILUTS aims and objectives.

Objectives –

- Develop an evaluation system or framework for assessing urban growth proposals within the Shire to ensure adherence to overall aims and objectives of the ILUTS.
- Promote additional housing and employment in the existing areas to enable a more effective use of public transport and other services.
- Promote vital and viable centres that attract and sustain a broad range of land uses and services.

Approach –

There is a close relationship between the actions in this plan and those in the administration action plan and a fundamental shift in Council thinking and policy is required to implement them.

A major component of the Land Use and Development Action Plan will be for Council to formally adopt the ILUTS and its overriding principles and objectives.

Directing future urban growth towards locations which would best satisfy ILUTS objectives requires Council to consider and weight the significance of each criteria. For example, the weighting of ILUTS principles, such as higher densities, mixed uses, accessibility and structured development needs to be considered against other criteria such as community aspirations, and conservation and environmental outcomes. In some cases a trade off of values may be necessary.

A framework for weighting these criteria can be developed to guide the future refinement of planning policies, determine major land rezoning, development applications and locating future land uses.

Once a framework for weighting criteria has been established it should be used to review and critically examine the consistency of Council's existing planning instruments and policies, including:

- LEP objectives, zonings and development standards;
- Development control plans;
- Residential land strategies;
- Sensitive urban land study;
- Employment lands/commercial centres studies;
- Rural lands study.

While broad scale changes are not necessarily envisaged or required, a review of the consistency of existing policies against the ILUTS objectives should be undertaken on a rolling program, consistent with envisaged and already adopted programs for review.

To promote the ILUTS objectives such a review could focus on the location specific actions suggested under other ILUTS action plans, for example:

- Development controls relating to residential subdivisions and road layouts (Local Street Management).
- Land use zones and development controls along arterial roads (Arterial Roads).
- Land use zones and development controls with 400m of high frequency bus stops and 800m of rial stations (Public Transport).
- Development controls relating to cycle parking and shower and change facilities in commercial buildings (Walking and Cycling).

Many of the ILUTS principles are addressed in the planning of centres and Council already has a number of place-based planning controls or DCP's, such as Hornsby Town Centre DCP (interim), Pennant Hills Commercial Centre DCP, Epping Commercial Centre Masterplan and Westleigh LES and Masterplan.

Priority could therefore be given to the evaluation and review of policies applying to centres, as this will provide an opportunity to re-assess or introduce controls. Such as those relating to density, accessibility, mixed use and connectivity, which are consistent with ILUTS aims and objectives.

Suburb specific targets relating to employment, residential, transport services and provision of facilities (retail, health, education etc) could also be set to focus on the objectives of the ILUTS study.

Similarly, there is an opportunity to examine set targets for an appropriate mix of employment, residential and service uses within commercial centres and it will be possible to set guidelines relating for an appropriate mix depending on the centres place in the centre hierarchy. This may form part of the non-statutory components of an integrated local plan envisaged by the PlanFirst review.

Once targets have been set, the impact of subsequent revisions to planning instruments and development controls could be monitored and the overall contribution to the achievement of ILUTS objectives assessed (e.g. regular reporting on development yields/trends in areas identified for development).

Preparation of the evaluation framework can be undertaken in the short-medium term, providing Council is committed to the project and can undertake to commit resources (either within Council or by appointing a consultant to assist Council) to draw together a weighting framework.

The monitoring and review of Council's other policies in accordance with the weighting framework will require substantially more resources and will require a longer time frame to implement. As with some of the actions in other ILUTS Action Plans, resources are likely to be most efficiently utilised by progressively rolling out the review in accordance with existing review programs. The review of controls as they apply to town and village centres could be advanced, depending on availability of resources and existing work programs.

Action Plan - Travel Demand Management

Travel demand management is about managing the unrestrained demand for car travel by encouraging greater use of public transport, walking and cycling, more efficient use of vehicles and reducing the actual need to make trips. This is central to the overall aims and objectives of the ILUTS and can only be achieved effectively through combining land use and transport responses and proposals. It is likely that some proposals will focus on a range of marketing, education and information initiatives to maximise use of existing and proposed infrastructure.

Objectives –

- Develop and implement a comprehensive educational and information campaign focusing on the community, workplaces and schools.
- Recognise the principles of travel demand management in all aspects of the ILUTS.

Approach –

The action plan seeks to develop a range of related projects under the umbrella of travel demand management for implementation by Council. These projects will be closely related to a number of other action plans recommended under the ILUTS.

In order to achieve the stated objectives the following actions are recommended:

- Development of an identity or brand - The identity should be simple, encompassing the principles of travel demand management and desirable transport choices. The identity will include a logo and visual image that will guide the look of the information developed, making it easily recognisable and interesting;
- Information development - The information sources to be developed include Shire wide public transport information; Why and how; and a cycle/ pedestrian route map.
- Information delivery:
    - Workplace initiatives - Hornsby Shire Council has the opportunity to lead by example in implementing their own Green Travel Plan to cover their offices and other workplaces. This would fit with Council's commitment to the Earthwise program and the Management Plan aims and objectives. It would be appropriate for Council to instigate their own plan before promoting the concept more widely.GTPs work best in larger workplaces – those with more than 150 to 200 employees. GTPs in hospitals and colleges offer additional benefits by including patients, visitors and students who contribute greatly to the daily travel to and from the workplace. Alternative approaches could also be adopted to offer smaller companies opportunities to reduce their overall car use, including area wide green travel plans, encompassing companies in a business

park or similar cluster; Information packs for the company management and their employees; and options and ideas for making the workplace more accessible.

- School initiatives - a TravelSMART type program could be linked to infrastructure improvements in the vicinity of schools, making cycling and walking safer and more viable options.
- Community initiatives - with the development of Shire wide information materials to support a community based initiative, local action could be taken relatively easily, focusing on delivery and the provision of personalised travel information and taking into account the individual community and their available options. Personalised trip information can be provided for the journeys made by members of individual households. Households in the target community could register an interest in involvement in the program or a more proactive approach can be taken to encourage participation through phone calls and/or personal visits. Experience shows that if more effort is put into this type of program the results are greater. Community events can also raise the profile of a delivery program and provide an additional means of promotion and delivery.

To ensure the principles of TDM are recognised in all aspects of the implementation of the ILUTS, it is recommended that a framework approach is adopted by Council. Council should use the framework to evaluate all ILUTS projects and look to extend the analysis to other Council programs and projects.

Council will need to commit resources to the development and staffing of the TDM program. The program will require dedicated staff time to manage it and maintain momentum. The Council GTP will only be successful with a high level of management endorsement and support and the success of the workplace program is largely dependent on adoption of Council's GTP.

The information resources can be developed in manageable portions if necessary, focusing on areas of the Shire rather than the whole areas. Council can seek sponsorship and advertising to assist in funding information development and artwork. It is possible that local operators and State Government will contribute to the development of local transport information and other activities identified within this action plan.

Council can also apply to the Australian Greenhouse Office (AGO) for funding for travel behaviour change programs. The AGO, through the Greenhouse Gas Abatement Program (GGAP) makes funds available to community, workplace and school related programs and has already committed to supporting projects in Victoria, Queensland, South Australia and the ACT.

The success of this action plan, possibly more than any other, is reliant on the commitment of Council to the ILUTS and strong and coordinated administration. Travel demand management is central to the aims and objectives of the ILUTS.

Action Plan – Public Transport

Public transport is a key part of the ILUTS but there are considerable issues surrounding the current provision of services and the expansion of them in the future.

Objectives –

- To improve the quality of all public transport facilities and infrastructure, providing the best facilities possible.
- To raise the profile of all existing public transport services in the Shire and promote any future improvements.
- To maximise opportunities to interchange between services and between modes.
- Increase the priority for public transport relative to private motor vehicles.
- To effect improvements to bus and rail services in the Shire.

- To develop alternatives to conventional public transport to serve rural communities and the National Park.

Approach –

This action plan seeks to develop a range of related projects to support and promote public transport services within the Shire. Council will need to work closely with the public transport operators and State Government in implementing this action plan, recognising that a partnership is required to effect improvements.

Due to the organisation of public transport infrastructure and service provision, this action plan takes a broad approach based on:

- Definition of public transport service criteria;
- Public transport facilities audit;
- Lobbying and liaison;
- Corridor based projects;
- Service based projects; and,
- 'Spot' improvements.

The improvement of facilities will need financing. Council may be able to source funds from State Government, specifically through the interchange program funded through the Parking Space Levy and also from the private sector (section 94 contributions and developer agreements). As some of the identified projects are relatively innovative it is possible Council could look towards State Government for partnership funding to develop the project as a pilot within the metropolitan area.

Action Plan - Arterial Roads

Pennant Hills Road experiences high traffic levels as it currently provides the most direct connection between the F3 and the M2. These high levels of through traffic, including a large number of goods vehicles, compromise safety and local amenity. The implementation of a direct link between the F3 and the M2 may offer additional options for consideration.

Objectives –

- To reduce the impact of arterial roads on activity centres and residential areas.
- To reduce the barrier effect of arterial routes for local trips.
- To effect a reduction in the number of accidents occurring on arterial routes and improve overall safety for all road users.
- Increase bus priority along arterial routes with consequent positive benefits on bus travel times and reliability.

Approach –

The objectives of this action plan will be difficult for Council to realise and it is dependent on the input and cooperation of the RTA. Reductions in traffic volumes along arterial roads will allow Council to revisit land uses and potentially seek to increase densities along corridors well served by bus and rail services.

Council should commence a dialogue with the RTA with the view to achieving improvements, including the implementation of bus priority measures, increased crossing opportunities, including the provision of new pedestrian crossings, and measures to reduce the incident of accidents, particularly those involving vulnerable road users. In summary:

- Agree Shire wide priorities;

- Lobby RTA, State Government agencies and Commonwealth Government regarding the outcome of the DOTARS study;
- Instigate regular liaison meetings with RTA representatives to progress improvements.

This action plan requires a low resource commitment from Council with lobbying and liaison tasks generally falling within existing staff responsibilities.

Action Plan - Local Street Management

A number of issues have been identified that specifically relate to local street management. The management of local streets will assist in the creation of vibrant interactive neighbourhoods where people are encouraged to walk, cycle and socialise in streets through the provision of a safe, comfortable and attractive local environment.

Objectives –

- To reduce the number of vehicles using local streets that do not have business there, such as rat running and commuter parking.
- To reduce vehicle speeds and the intrusion of traffic into residential areas.
- To improve opportunities for public transport, walking and cycling in residential areas of the Shire.

Approach –

This action plan seeks to increase the liveability of local residential neighbourhoods, reducing the negative impacts of traffic and creating areas that are conducive to walking and cycling. The general principles of the action plan are considered to be:

- Reduce road widths in residential areas;
- Revisit street design to reduce traffic speeds and dominance;
- Provide for improved access on foot and by bicycle;
- Create community areas (pocket parks, playgrounds); and,
- Reinforce community characteristics through urban design features.

The suggested approach includes the following steps:

- Identify neighbourhood areas –
    - Utilise road hierarchy (revisit if necessary),
    - Assess residential neighbourhoods,
    - Identify contiguous communities;
- Identify local community, transport and access issues –
    - Survey (traffic) data;
    - Accident data;
    - Community consultation;
    - Establish and confirm problems;
    - Develop solutions and detailed design proposals to address problems; and,
    - Implementation, monitoring and review.

Following agreement of the proposed design the scheme will need to be implemented. Given that any area wide scheme is likely to include a range of measures, some more difficult and costly to implement than others, it may be necessary to stage implementation over a period of time.

Following implementation, the scheme should be monitored and reviewed on a regular basis to ensure it is achieving the stated aims and objectives. It may be necessary to review aspects of the scheme on the basis of the monitoring outcomes.

Council will necessarily take the lead in the implementation of this action plan and the principle stakeholders will be community groups and organisations. The early stages of the action plan implementation – the identification of neighbourhood areas – will be relatively low cost, however, design and implementation of measures will require a greater level of resources.

Action Plan - Car Parking Management

Car parking management is important to a number of the action plans and the approach to car parking will be important to the overall implementation and realisation of the Strategy.

Objectives –

- To use car parking as a travel demand management tool and to support the principles of ESD.
- Revisit the DCP to ensure it is consistent with the objectives of the ILUTS.
- Manage commuter car parking demand to ensure optimal use with minimal impact on local residential areas.

Approach –

The car parking management action plan was completed as a separate document early in the study, responding to Council's requirement for policy direction in this area at an early stage. It was developed to meet the following general policy principles:

- There should not be any increase in parking provision in most centres unless it is associated with new development.
- Commuter parking should not be expanded except where demand substantially exceeds off-street supply and on-street parking is detrimental to the safety and environmental amenity of the local community and all other alternatives, that is increasing the accessibility of the station by non-car modes, have been exhausted.
- Consideration should be given to the parking needs of those who drive to railway stations after the morning peak period.
- Pay parking could be introduced as a means of managing the use of existing provision.
- Any reduction of long term parking spaces must be considered in conjunction with adequate alternative transport access (e.g local bus service improvements; North West Rail Link, bicycle links and storage facilities).
- Any apparent parking shortage should be reviewed with an objective to increase effective utilisation of existing spaces (e.g. by converting all day parking spaces for short term use).
- Effective enforcement is a priority (this can now be effectively carried out by Council since the enforcement responsibility has been transferred from the Police)
- Encourage shared use of off-street parking spaces at major centres where night time activities are promoted.
- Where applicable, Council should encourage reduced parking provisions for employee parking in major business developments

Action Plan - Walking and Cycling

Walking and cycling have a valuable role to play in an integrated land use and transport system. Walking is particularly accessible to a large proportion of the community and has minimal environmental impacts and positive social benefits. Much work needs to be completed to provide a pleasant cycling environment and encourage people to make journeys on their bikes.

Objectives –

- To widely promote the benefits of walking and cycling within the Shire.
- To create streets and roads that are safe and conducive to walking and cycling.
- Increase the priority for pedestrians and cyclists relative to vehicular traffic.
- To ensure the recommendations of the Hornsby Shire Bike Plan and Pedestrian Access and Mobility Plans (PAMPs) are taken forward to implementation, reviewed periodically and revised.
- To develop a formal pedestrian planning strategy for the whole Shire.

Approach –

To achieve the identified objectives, the suggested approach looks to five principal areas of implementation:

- Develop formal strategy – Council has developed PAMPs and a Bike Plan for the Shire and there is a need to bring these together in a coordinated document that can be communicated across Council departments, forming the basis of this action plan. The development of a cohesive strategy will require some Council attention but given the work done to date should not be an onerous task. The strategy should not be a long document, ensuring it is easy to disseminate through Council.
- Publicity and promotion – Given the importance of walking and cycling to younger age groups, publicity and promotion through schools, linked to the travel demand management action plan, is recommended. Walking and cycling can be promoted through a range of media, incorporating practical information on routes and safe riding or walking to addressing motivational factors such as care for the environment and improved health and fitness.
- Education - Both children and adults will generally benefit from specialist education, particularly related to cycling. Courses for beginners and 'lapsed cyclists' can provide the necessary road skills and improve confidence. Local bicycle user groups (BUGs) often offer cycle 'buddy' assistance. Buddies can assist cyclists in identifying safe routes, for example, between home and work, and accompanying the new cyclist a few times to give confidence. Council can promote and support this type of scheme. Cycle and walk maps are particularly useful to local people as they look to make trips by these modes. This task is covered in the travel demand management action plan.
- Integrating pedestrian and cycling planning priorities into all Council activities - Planning for pedestrians and cyclists should not be undertaken a discreet section within Council in isolation from other Council activities. A holistic approach should be adopted that permeates all aspects of Council's work, the first stage of which is the development of a strategy as described above.
- Links and connections between existing facilities - A considerable effort has already been made by Council to implement pedestrian and cycle facilities throughout the Shire, including dedicated paths, however, the network lacks connectivity and facilities are frequently isolated. These existing facilities could be made of much greater relevance through a focus on providing links and connections between existing infrastructure. Additional connections and linkages should be identified through the Hornsby Shire Bike Plan and completed PAMPs and prioritised. The network can then be publicised through maps and community information.
- Provision of new facilities - New facilities will be required and these will largely be identified within the Hornsby Shire Bike Plan and the PAMPs, particularly those recently completed for Pennant Hills and Cherrybrook. Additional PAMPs for other areas may need to be completed and all PAMPs and the Bicycle Plan will require regular review. New facilities will include on and off road paths and trails; crossing facilities (signalised and unsignalised); cycle parking facilities and signage.

To assist implementation the full list of facilities will need to be assessed and priorities in line with available budget resources set out clearly. This will require the recommendations of various plans to be brought together into a single implementation framework, with coordinated spending priorities.

This action plan will require potentially significant resources to realise, however, the more costly items will have already been identified within other documents, in particular, the Hornsby Shire Bike Plan and the PAMPs. The publicity and promotion of walking and cycling will require some resource allocation but this can, and should, be done in conjunction with the travel demand management action plan. In this way materials will be integrated and the messages will be consistent throughout the material.

Action Plan - Access to the National Park and Other Areas of Open Space

Hornsby Shire includes large areas of National Park and other bushland that attracts visitors from the local, metropolitan and wider regional area. At present access to these areas is dominated by the private car, but consideration needs to be given to improving and promoting access by other modes to ensure the future sustainability of these areas.

Objectives –

- Develop sustainable options for accessing National Park destinations.

Approach –

The suggested approach focuses on short, medium and long term actions:

- Short term – increase awareness of existing public transport routes and opportunities for visiting national parks and areas of open space using existing paths and trails;
- Medium term – develop public transport links to support existing facilities or develop facilities that can be accessed through existing public transport services;
- Long term – jointly develop public transport routes and facilities.

The actions focus on the following National Parks and areas of open space within Hornsby Shire:

- Ku-ring-gai Chase National Park;
- Marramarra National Park;
- Berowra Valley Regional Park;
- Muogamarra Nature Reserve;
- Long Island Nature Reserve; and,
- Pennant Hills Park and links to the Lane Cove National Park.

While there are numerous smaller areas of parkland and open space they mostly serve a local function. The areas identified are destinations in their own right, attracting visitors from across the metropolitan region. Some of the smaller areas may benefit from similar approaches with a local focus.

The Great North Walk deserves special mention. This 250km trail from Sydney Cove to Newcastle passes through Hornsby Shire, traversing Pennant Hills Park, Berowra Valley Regional Park and Ku-ring-gai Chase National Park.

This action plan can be initiated with relatively limited resources but will require greater resources to realise the medium and long term opportunities. This action plan should be funded in partnership with Stakeholders, particularly NPWS and the transport operators. It is likely Council will have to take a lead in realising the action plan through the organisation of meetings, development of proposals and conduct of local research.

Transport Model

A multi-modal transport computer model has been developed based on road and public transport networks in the Hornsby Shire and adjoining regions by Masson Wilson Twiney. The model has been specifically tailored to quantify travel responses to a range of strategic land use/transport initiatives that Hornsby Council may wish to explore.

The model is intended to be a tool to assist Council in;

- Developing sustainable land use planning and zoning control,
- Assessing the effects of changing existing zoning controls at a neighbourhood or centre level,
- Formulating parking policy for both commuter and commercial centres,
- Providing quantitative data to support S94 Plans that require developer contributions towards improved road and public transport services,
- Providing supportive data to Council submissions to State Government seeking improved transport infrastructure,
- Providing strategic data to more detailed local area models that Council may wish to use for further investigations.

The model is ***not*** intended to;

- Examine individual developments,
- Conduct road and transport capacity assessments at the local level (intersections or short lengths of roads),
- Assess the adequacy or block location of car parks.

Contents

Appendices

Annexes

1.0 Introduction

1.1 Hornsby Shire Council is committed to developing an Integrated Land Use and Transport Strategy (ILUTS) that will provide a framework for action and promote viable and sustainable transport for the Shire. Council's prime objective for the development of this strategy is to reduce car travel by promoting other modes of transport, particularly in view of the unsustainable historical increase in motor vehicle traffic associated with population growth.

1.2 At a strategic level Hornsby Council has already expressed its intent of *creating a living environment*. The development of the ILUTS will therefore build on a number of existing Council initiatives and policies including the Local Agenda 21 program, Hornsby Shire Housing Strategy and Council's Sustainable Management System.

1.3 The ILUTS is intended to:

- Develop a series of action plans, consistent with the identified strategies, that will form a program of more detailed studies and investigations;
- Define a range of indicators to assist Council in monitoring the implementation and effectiveness of the Strategy; and
- Recommend an Implementation Program outlining a clear means of progressing the Strategy, including priorities and responsibilities.

1.4 The Strategy has been developed over three stages:

- **Stage 1 State of Play** – establishing existing conditions and the framework for developing an integrated land use and transport strategy;
- **Stage 2 Development of Integrated Strategies** – develop broad land use and transport strategies that will address the existing issues and aim to achieve Council's intent of creating a living environment; and,
- **Stage 3 Development of Action Plans and Program of Implementation** – develop and document action plans with measurable indicators for Council to implement.

1.5 This report brings together all three stages of the study in a single integrated document and includes:

- Policy context at the state and local level;
- Description of the existing land use and transport conditions at the Shire wide level;
- A summary of relevant census data, including population, vehicle ownership and journey to work statistics;
- Description of the existing land use and transport conditions in each of the main activity centres within the Hornsby Shire;
- Planned transport projects of relevance to Hornsby Shire;
- Summary of the key issues identified to date through the study process;
- Identification of the objectives for each issue or topic area;

- A description of the opportunities and constraints leading on to the development of a vision for the ILUTS and the intended outcomes of the Strategy;
- Action plans for each topic, detailing how the vision will be attained and the issues mitigated through a series of activities and actions to be undertaken by Council and others;
- A description of the transport model developed in parallel with the Startegy; and,
- Summary of the consultation activities undertaken to date.

1.6 This report comprises two separate documents – this main document and the Site by Site Analysis included in **Annex 1**. Annex 1 was produced in October 2002 and remains unchanged.

2.0 Policy Context

2.1 In recent years transport and planning policy at both state and national levels has recognised the need to reduce the growth in car use due to the negative impacts of congestion and reduced air quality. The promotion of other more sustainable modes of transport, the integration of land use planning with transport and a general reduction in the need to travel have all been recognised as contributing to the solutions to the problem.

2.2 A series of policy documents exist that provide the framework for land use planning and emphasise the need to promote and plan for alternatives to the private car. There is clear political support for a reduction in car use and increased use of more sustainable modes, such as public transport, walking and cycling. The following relevant policies are summarised here:

State Policies

- Shaping our Cities. PlanningNSW (formerly Department of Urban Affairs and Planning). December 1998.
- Action for Air. Environment Protection Authority February 1998
- Action for Transport 2010 – an integrated transport plan for Sydney. Transport NSW (formerly Department of Transport) 1999.
- Action for Bikes – BikePlan 2010. Roads and Traffic Authority September 1999.
- Connecting the Central Coast – The Central Coast Action Plan. TransportNSW and RTA. August 2002.
- Draft State Environmental Planning Policy No 66 – Integration of Land Use and Transport. PlanningNSW 2001.
- Bushland in Urban Areas (SEPP 19). PlanningNSW.
- Housing for Older People and People with Disabilities (SEPP 5). PlanningNSW.

Local Policies

- Hornsby Shire Local Environmental Plan. Hornsby Shire Council. 1994.
- Hornsby Development Control Plans. Hornsby Shire Council.
- Hornsby Lands Employment Review. Hirst Consulting. August 1998.
- Hornsby Shire Housing Strategy Stage 2. Hornsby Shire Council. February 1997.

State Policies

Shaping our Cities

2.3 *Shaping Our Cities* is the NSW Government's planning strategy for the future of the Greater Sydney Metropolitan Region. The key aims of the strategy are:

- An enhanced environment for healthy living, recreation, and a sustainable ecology;

- Attractive, safe and affordable neighbourhoods that meet people's housing needs;
- A robust economy that can provide employment and a high quality of life for all people; and,
- Viable public transport systems and urban structures with equitable access to jobs, services and leisure.

2.4 The key planning principles in *Shaping Our Cities* are to:

- Manage the supply of new and redeveloped housing so as to create a compact urban structure with choice in home type and affordability;
- Identify and create opportunities for employment and business growth in locations that support access by public transport and minimise conflict with other uses;
- Enhance opportunities for walking, cycling and using public transport and contain the growth of travel demand in all land use and development decisions;
- Improve the design and quality of the urban environment by requiring good architecture, protecting built heritage and building a well-located, safe and useable public domain;
- Protect and improve natural and cultural environments to sustain resources, Aboriginal heritage and to enhance the enjoyment of parklands; and,
- Manage the planning system efficiently, provide for consultation and encourage investment, job creation and business confidence.

Action for Air

2.5 *Action for Air* is the NSW Government's Air Quality Management Plan which sets out strategies for addressing regional air pollution through measures to reduce emissions from vehicles, industrial sources and household activities. In particular:

- The scope is broad addressing Government organisations, industry and the community; and,
- The objectives and strategy are specifically focused on reducing the need to travel by private car as well as improving energy efficiency in homes and businesses.

2.6 Some key considerations with respect to land use planning are to:

- Provide housing near public transport facilities;
- Design for accessibility and locate facilities to reduce the need to travel by car;
- Provide safe, convenient and direct walking and cycling routes;
- Include facilities to encourage walking and cycling; and,
- Promote energy efficient buildings.

2.7 The policy document also confirms the commitment to Government targets to reduce vehicle kilometres travelled (VKT). These targets include:

- Halting the growth in per capita VKT by 2011; and

- Halting the growth in total VKT by 2021.

2.8 Meeting these targets will present a tough challenge to all levels of Government and the community, and will undoubtedly require further actions by all stakeholders in addition to the implementation of measures within existing State Government policy documents.

Action for Transport 2010

2.9 *Action for Transport 2010* sets out a Ten-Point Action Plan for transport in Sydney, designed to address the multiple challenges of:

- Reducing traffic congestion;
- Improving air quality;
- Reducing greenhouse emissions;
- Increasing public transport use;
- Expanding CityRail capacity;
- Making freight more competitive; and,
- Improving road safety.

2.10 The ten-point plan identifies a number of initiatives and infrastructure improvements to address these challenges across the Sydney Metropolitan area, including a new network of bus only transitways, heavy and light rail, road improvements, integrated ticketing and real time public transport information.

2.11 *Action for Transport 2010* identifies the suburbs close to the rail lines within Hornsby Shire as locations for more housing, given the proximity to employment locations, major centres and rail services.

2.12 There are three major transport infrastructure projects identified in *Action for Transport 2010* that are of direct relevance to the Hornsby area:

- **Parramatta Rail Link** – the section between Epping and Chatswood is due to be completed by 2008 and will provide a link from Hornsby and Epping to Macquarie University, Macquarie Shopping Centre and Macquarie Park Industrial Precinct and Chatswood, thereby improving public transport accessibility to some key trip attractors in the northern Sydney region. The link between Epping and Parramatta will be the second phase of the project, to be completed by 2010.
- **North West Rail Link** – according to Action for Transport this new rail line was to be completed in two stages with the first stage between Epping and Castle Hill to be completed by 2010. This is now unlikely as funding has not yet been identified. The North West Rail Link is discussed in more detail in Section 4.
- **Hornsby to Newcastle High Speed Rail** – due to be completed in two stages. The first stage to Warnervale is due to be completed by 2007 and work on the second stage to Newcastle should have commenced by 2010.

2.13 There are no major relevant road infrastructure projects included in *Action for Transport 2010,* however, it is widely recognised that the existing missing link between the F3 and the M2 needs to be addressed, and to this end the Federal Government (managed locally by the RTA) has commissioned Sinclair Knight Merz to

evaluate options to relieve Pennant Hills Road. These projects, and others of relevance, are discussed in more detail in Section 4.

Action for Bikes – BikePlan 2010

2.14 The NSW Government policy document *Action for Bikes* includes the Bicycle Masterplan that provides the framework for completing the regional cycle network in addition to more general strategies to improve the cycling environment. The document includes strategies to:

- Improve the bike network;
- Make it safer to cycle;
- Improve personal and environmental health; and,
- Raise community awareness.

2.15 The Bicycle Masterplan includes a number of routes to link key activity centres using a combination of off-road and quiet street paths. The Masterplan identifies existing on-road bike routes in Hornsby Shire:

- Along the Pacific Highway to the north of Epping;
- Along the length of the Sydney –Newcastle Freeway (F3); and,
- Running east-west along the M2 north of Epping.

2.16 A further arterial off-road route is planned linking Hornsby and South Turramurra, due to be constructed by 2009.

Connecting the Central Coast

2.17 State Government recently released *Connecting the Central Coast*, setting out plans for the development and provision of roads and transport services for the Central Coast. Connecting the Central Coast aims to:

- Develop road and rail infrastructure to meet current and future needs;
- Provide greater access to public transport;
- Provide better access through improved bus services to key regional commercial, retail and industrial centres of Gosford, Erina, Wyong, Tuggerah and North Warnervale;
- Encourage cycling and walking;
- Accommodate freight movements to and through the region; and,
- Support economic development and local jobs growth.

2.18 Given these objectives, it is likely the proposed improvements will have an impact on Hornsby Shire, for example:

- Relieving congestion on the rail network between Berowra and Hornsby;
- Reducing the dependence of Central Coast residents on accessing public transport, particularly rail, within Hornsby, thereby reducing the demand for rail commuter car parking at stations in Hornsby; and,
- General improvement of transport connections between the Sydney metropolitan area and the Central Coast will benefit Hornsby.

Integrating Land Use and Transport (Draft SEPP 66)

2.19 The political support for moderating the unsustainable growth in car travel is demonstrated through the Draft State Environmental Planning Policy (SEPP 66). It provides a framework for integrating land use and transport planning at the regional and local levels. It aims to ensure that urban structure, building forms, land use locations, development design, and the layout of subdivisions and streets help achieve the following planning objectives:

- Improving accessibility to housing, employment and services by walking, cycling and public transport;
- Improving the choice of transport and reducing the dependency on cars for travel;
- Moderating growth in the demand for travel and distances travelled, especially by car;
- Supporting the efficient and viable operation of public transport services; and,
- Providing for the efficient movement of freight.

2.20 It applies to the preparation of LEPs and DCPs as well as to the assessment of development having a gross floor space of more than 1,000m^2 and raises the following issues as matters for consideration:

- The Integrated Land Use and Transport Policy Package (or an otherwise detailed strategy or plan);
- Adequate consultation with the Director-General of Transport NSW and any appropriate planning agency, transport agency or transport provider;
- Accessibility of sites to transport nodes including public transport and walking and cycling facilities; and,
- Features such as:
- Urban form and structure that encourages walking, cycling and public transport use;
- Parking requirements that discourage car use in areas with good public transport access;
- Facilities for cyclists;
- Densities that help achieve viable public transport services; and,
- Provision for taxis.

Regional Environmental Plans (REPs)

2.21 There are no REP's which specifically apply to land in Hornsby, however, *SREP 5 Chatswood Town Centre, SREP 19 Rouse Hill Development Area* and *SREP 28 Parramatta* are relevant in as much as they provide planning controls relating to regional centres in proximity to Hornsby. Land use decisions made in these centres, particularly those which relate to commercial and transport infrastructure, are likely to influence land use and transport in Hornsby. These regional centres are considered further in **Section 3.**

Bushland in Urban Areas (SEPP 19)

2.22 SEPP 19 establishes an assessment process to protect and preserve bushland within certain urban areas as part of the natural heritage or for recreational, educational and scientific purposes. The policy is designed to protect bushland in public open space zones and reservations, and to ensure that bush preservation is given a high priority when local environmental plans for urban development are prepared. Hornsby is identified, within Schedule 1 of SEPP 19, as an area to which the policy applies.

Housing for Older People and People with Disabilities (SEPP 5)

2.23 The aims of SEPP 5 are to encourage the provision of housing that meets the needs of older people or people with disabilities. The policy permits (with Council consent) housing for older people or people with disabilities to be carried out on urban land or land adjoining urban land despite the provisions of any other Planning Instrument. SEPP 5 also includes some controls, such as reduced parking requirements and maximum floor space ratio, which if complied with can not be used as grounds for refusal by council in determining a DA for SEPP 5 housing

2.24 Councils can be exempted from the provisions of SEPP 5 if they can demonstrate that there is adequate provision under its planning instruments to meet the demands for SEPP 5 housing in their LGA. Hornsby Council has submitted a strategy to support their exemption from the policy.

Sydney Metro Strategy

2.25 The Department of Infrastructure, Planning and Natural Resources (DIPNR) is currently leading a process to develop a Metro Strategy for the Sydney region. It is understood that the strategy will seek to determine a how forecast population growth should be accommodated in the region, addressing questions regarding population centres, densities and transport provision.

2.26 While the outcomes of the strategy are unknown it is likely that it will be led by objectives of sustainable development and the need to reduce car dependency through the provision of alternatives and focusing new development in accessible locations. It is considered likely that the ILUTS will be largely compatible with the Metro Strategy.

2.27 The Metro Strategy was due to be completed in early 2005, however, the project program has already been extended to allow for additional community consultation and may be subject to further delay.

Local Level

Hornsby Shire Local Environmental Plan 1994 (LEP 1994)

2.28 Hornsby Shire LEP 1994 specifies the land use zones that apply to Hornsby. It also sets out development standards for future developments. Key considerations are as follows:

- Land use zones are defined and permissible and prohibited land uses are identified for each zone;
- Development standards apply to each zone in respect of development density;
- Density controls in the residential and business zones are set as maximum floor space ratios; and,
- Schedule B of the LEP allows maximum floor space ratios to be increased in specific locations, subject to development meeting other provisions (e.g. use, amenity controls etc.).

2.29 **Table 2.1** provides a summary of land use zones in the Shire. It identifies the land use zones in which multi-unit housing is permissible and the relevant density controls that apply.

Table 2.1 – Summary of key provisions in Hornsby LEP 1994

	Approximate * coverage %	Approximate * area (ha)	Multi-unit housing	Density control
Rural	15	7,459	Prohibited	2-10ha/allotment
Residential (all)**	9.4	4,805	Permissible	0.4:1 to 1.6:1
- Residential A (low density)		*(4,775)*	Permissible	0.4:1
- Residential B (medium density)		*(28)*	Permissible	0.6:1
- Residential C (medium/high density)		*(68)*	Permissible	1.2:1
- Residential D (high density)		*(12)*	Permissible	1.6:1
Business (all)	0.3	132	Prohibited only in "E"	0.5:1 to 2:1
Industrial	0.3	171	Prohibited	1:1
Special Uses	3	1,553	Permissible	n/a
Open Space/Env/Nat Parks/Water	72	36,752	Prohibited	n/a
Total	**100**	**50,872**		

*Data provided by Hornsby Council and extracted from Council GIS zoning plans in 2002

**Residential breakdown does not tally with total due to different source data

2.30 Key issues:

- Waterways and land zoned for Rural, Industrial, Open Space or Environmental Protection comprise approximately 87% of the area of the Shire and many types of development, including multi-unit housing are prohibited in these areas;

- Residential, business and industrial zones comprise approximately 5,100ha of land in Hornsby, the majority of this area (over 90%) is zoned for low density residential use;
- Approximately 80ha of land in Hornsby is zoned Residential C or D;
- In general higher densities are allowed in town centres (i.e. where land is zoned Residential C, Residential D, or Business);
- Multi-unit housing is permissible in all residential and all business zones (except Business E);
- Sub-division of multi-unit housing in low-density areas must comply with minimum allotment sizes as specified and strata sub-division is prohibited; and,
- In certain locations Council may consent to development which results in a floor space ratio greater than that indicated in the zone. For example, FSR in parts of Hornsby town centre may be increased to 4:1 where the additional floor space is used exclusively for multi-unit housing and other environmental provisions are met.

Hornsby Development Control Plans (DCPs)

2.31 Hornsby has a number of DCPs that provide detailed controls for various types of land use, for specific land use zones or specific areas. Relevant issues from the DCPs are as follows:

- Density standards are set in the LEP. DCPs for specific land use zones adopt the density controls of the LEP;
- Detailed controls relating to building height and building envelopes are included in the DCPs;
- Hornsby Car Parking DCP provides specific parking requirements for most types of land use and some land use types are subject to parking studies; and,
- Residential parking standards are generally consistent with RTA guidelines.

Hornsby Employment Lands Review (August 1998)

2.32 An Employment Lands Review was prepared for Council by Hirst Consulting. Some of its relevant key findings were that:

- Less than 30% of the resident workforce works within the Shire, which means that a high number of residents commute to locations outside the Shire for employment;
- The most significant work destinations outside the Shire are Baulkham Hills, Ku-ring-gai, Parramatta, Ryde, Sydney CBD and Willoughby (Chatswood);
- Approximately two-thirds of retail spending by Hornsby households is within the Shire, the remainder is spent outside the Shire, representing a high level of “escape expenditure”;
- Some centres within Hornsby capture expenditure from outside the Shire;

- Approximately one-third of retail expenditure is directed to Hornsby town centre, with one third to district centres, and the remaining third to local centres;
- The Westfield development at Hornsby town centre is likely to increase retail expenditure in the Shire;
- Hornsby, Pennant Hills and Epping provide for most office space in the Shire;
- Demand for office space appears to be falling on account of regional trends, and there is a slow uptake of available office space;
- Industrial land provides for approximately 20% of the available jobs in the Shire;
- Shop-top housing should be encouraged in all commercial centres to increase mix and diversity of function; and,
- The stock of land currently zoned for industrial use is deemed to be sufficient, but should not be reduced.

Hornsby Shire Housing Strategy Stage II (February 1997)

2.33 Stage II of the Hornsby Shire Housing Strategy was completed in February 1997. Its major finding was that a concentrated housing strategy could be introduced by amending the Hornsby LEP to rezone a number of identified precincts to higher density multi unit housing.

2.34 It also recognised the environmental constraints and the need to retain potentially productive agricultural land, supporting the conclusion that the existing boundaries of urban areas should be maintained and the expansion into rural areas should not be encouraged. The strategy seeks to provide certainty about where development will occur and ensure infrastructure is in place to service that future development.

2.35 Amendments were subsequently made to the LEP in accordance with the recommendations in the strategy.

Summary of Relevant Policy Objectives

2.36 The following issues have emerged from a review of the policy context for land use and transport in Hornsby:

- Clear policies exist at the State level to integrate land use and transport to reduce the need to travel by car;
- Priorities and strategies are in place at the State level to promote the use of public transport and walking and cycling;
- State government objectives seek to increase residential densities around rail nodes and major centres;
- State policy (draft SEPP 66) encourages a mix of uses in urban areas to reduce the need to travel and promote sustainable development;
- A high proportion (around 87%) of the Shire is zoned Open Space, Environmental Protection or Rural and is currently constrained from many types of development;
- Standards in the LEP control development densities by land use zone;

- The LEP allows for greater densities in town centres, particularly in the medium and high density residential zones and the business zones;
- Provisions in the LEP allow for developments to exceed density controls at certain locations and subject to special provisions;
- 12 hectares of land are zoned for high density residential, and this land is located in Hornsby town centre; and,
- Parking requirements for new development in Hornsby Shire are set as absolute levels, generally in accordance with RTA guidelines.

3.0 Description of Existing Situation (Shire Level)

Location and Context

3.1 The Hornsby Shire is the second largest local government area in the Sydney region in terms of geographical area (510 square kilometres). It is located in the north of the Sydney Metropolitan area, covering an area between Epping North, Wisemans Ferry and Brooklyn – shown in **Figure 3.1**.

3.2 The Hawkesbury River forms Hornsby's northern boundary and the F3 Freeway and the Main North Rail Line generally form the Shire's eastern boundary with Ku-ring-gai LGA. The western boundary generally adjoins Baulkham Hills LGA.

3.3 Sydney CBD and regional centres at Parramatta, Chatswood and a new centre at Rouse Hill will have an impact on land use and transport in Hornsby. The Sydney CBD and regional centres provide (or will provide) major employment and retailing opportunities and may attract population from Hornsby. The proximity of the northern parts of the Shire to Newcastle is also likely to have a similar influence.

Land Use

Distribution of Land Uses

3.4 The majority of Hornsby is bushland or rural in character and less than 15% is zoned or used for urban development. An indication of the broad development pattern is provided in **Figure 3.2**.

Bushland areas

3.5 The northern and central parts of Hornsby including the Hawkesbury River, Ku-ring-gai Chase National Park, Murramurra National Park, Muogamarra Nature Reserve and Berowra Valley Regional Park provide large areas of bushland. Pennant Hills Park also provides a large area of bushland and open space close to the urban area.

3.6 Development is generally prohibited in these areas, which provide a valuable recreational resource for the population of Hornsby and the wider Sydney Region. Maintaining transport access to them is therefore important.

Rural uses

3.7 Large areas in the north and western parts of the Shire accommodate rural land uses. These include agricultural, horticultural, rural residential and other low intensity uses that extend along much of the boundary with Baulkham Hills.

Commercial Uses

3.8 The largest commercial centres include the sub-regional centre of Hornsby, and district centres of Pennant Hills, Epping, Carlingford, Thornleigh and Dural Service Centre. Local centres are located in the south or strung out at intervals of approximately 10km along the north-south road/rail corridor in the east.

3.9 **Table 3.1** provides a summary of the commercial centres in Hornsby.

Table 3.1 – Commercial Centres, Hornsby Shire

Centre	Commercial floorspace (m^2)		
	Retail	Office	Total
Hornsby	63,745	61,664	147,212
Pennant Hills	12,195	44,644	63,134
Thornleigh	15,972	29,269	46,856
Epping	2,362	44,074	46,490
Carlingford	31,155	3,269	34,566
Dural	11,354	1,046	14,728
Beecroft	6,833	2,213	9,102
Asquith	6,322	1,138	7,890
Cherrybrook	6,060	939	7,382
West Pennant Hills	3,908	2,070	6,163
Berowra Heights	3,327	1,889	5,216
Berowra	1,774	2,748	5,012
Westleigh	3,529	343	4,307
Brooklyn	1,209	949	2,683
Mt Colah	1,703	135	2,323
Neighbourhood centres	13,587	5,186	19,669
Total	185,035	201,574	422,731

Source: Employment Land Review 1998

Residential Areas

3.10 Much of the southern part of the Shire is zoned for residential development. A significant proportion, 98%, provides low-density residential suburbs, with medium density development generally located around the district centres. Hornsby town centre and Pennant Hills include high-density residential land use zones.

3.11 The residential areas and main centres in Hornsby extend along the east west road/bus corridor in the south of the Shire, and the north south rail/road corridor in the east. The Cherrybrook release area represents a relatively large development area, located away from these existing transport corridors.

Industrial

3.12 Approximately 171 hectares of the Shire is zoned for industry and this provides for approximately 20% of the jobs in the Shire (Employment Lands Study 1998).

3.13 The employment lands study recommended that existing industrial lands should be maintained and that a review of industrial lands be undertaken in response to identified environmental constraints. This review is currently being undertaken.

Summary of Key Land Use Findings

3.14 The review existing land uses has identified the following findings:

- Hornsby is generally regarded as a “bushland” Shire with urban areas concentrated in the south;
- Extensive areas of the Shire are zoned Open Space, Environment Protection or Rural and planning policies restrict development in these zones;

- A bus and road transport corridor traverses the southern part of the Shire (east-west) and a north-south road/rail corridor exists along the Shire's eastern boundary;
- The development of Cherrybrook release area is largely complete in the western part of the Shire;
- The majority of the residential areas are low density suburbs, with medium and high density areas concentrated in Hornsby town centre and other district centres; and,
- Substantial parts of the western and north-western parts of the Shire are rural interspersed with some urban village settlements.

Transport Network

3.15 Hornsby Shire has a comprehensive and well established transport network that links the key activity centres and residential areas within the Shire to major external centres such as Chatswood, North Sydney and Sydney CBD.

3.16 The main transport routes which traverse Hornsby, include:

- The M2 motorway, which provides a major road connection through the southern part of the Shire, north of Epping, connecting the Sydney CBD with major centres at Baulkham Hills, Castle Hill and Parramatta;
- The Pacific Highway and F3 Freeway which traverse the eastern part of the Shire to provide a north-south regional connection between Sydney and Newcastle;
- The Pennant Hills Road, which currently provides a link between the M2 and F3 and, with the Cumberland Highway, is identified as part of the National Network; and,
- The Main North Line on the rail network, which extends from Sydney CBD, through Strathfield and Hornsby to Newcastle, with stations located throughout the Shire.

3.17 These routes are illustrated in **Figure 3.3**.

Rail

Network

3.18 The study area is served by two rail corridors that run from central Sydney to Hornsby, the North Shore Line via Chatswood and the Northern Line via Strathfield. The lines converge to the south of Hornsby and then proceed north via the Central Coast to Newcastle. Services are operated by State Rail as part of the CityRail network, which extends north to Berowra.

3.19 Additional longer distance services link Sydney CBD with the Central Coast via both the North Shore and Northern Lines, linking the main stations within Hornsby Shire to regional locations to the north such as Woy Woy, Gosford and Newcastle.

3.20 Stations within the Hornsby Shire include Waitara on the North Shore Line and Epping, Cheltenham, Beecroft, Pennant Hills, Thornleigh, Normanhurst, Asquith, Mt Colah, Mt Kuring-gai and Berowra on the Northern Line. Hornsby is served by both the North Shore and Northern Lines. Rail services on the Northern and North Shore Lines are well used. In particular services between Berowra and Sydney CBD on the North Shore Line are crowded during the peak periods.

3.21 The Parramatta Rail Link (PRL) and North West Rail Link (NWRL) will be impact on rail services in Hornsby Shire (see Section 4), largely bringing improvements to services and increasing seating capacity.

3.22 Details of the rail services to and from stations in the Shire are contained in **Appendix A**.

Patronage

3.23 The rail network and patronage at stations in Hornsby Shire is shown in **Table 3.2** and **Figure 3.4**. The figures show that Hornsby and Epping are the most heavily used stations in the Shire by a considerable margin, followed by Pennant Hills. Beecroft, Normanhurst and Waitara all show similar levels of use.

3.24 Bus service provision is best at Hornsby, Epping and Pennant Hills. There is no State Rail car park at either Epping or Pennant Hills.

Table 3.2 – Rail Patronage by Station (2000)

Station	Total Number of Passengers[1]
Hawkesbury River	540
Cowan	160
Berowra	3,560
Mt Kuring-gai	860
Mt Colah	1,380
Asquith	4,220
Hornsby	21,120
Waitara	6,000
Normanhurst	5,260
Thornleigh	3,940
Pennant Hills	8,600
Beecroft	5,120
Cheltenham	2,980
Epping	17,840

Station Facilities and Infrastructure

3.25 There are 14 stations in Hornsby Shire, all are on the CityRail network except for Hawkesbury River and Cowan. The stations vary greatly in terms of facilities and quality. Four are staffed 24 hours a day (Berowra, Hornsby, Pennant Hills and Epping) and five are easy access, with lifts at Hornsby, Pennant Hills and Epping and ramps at Asquith and Cowan.

3.26 From an analysis of station facilities it is clear the Hornsby, Pennant Hills and Epping are the best stations in Hornsby Shire and this is supported out by the patronage figures, which indicate that these are also the busiest stations.

Table 3.4 – Station Facilities

[1] Boarding and alighting in a 24 hour day. Data from State Rail Authority (counts undertaken in 2000)

Station	Platforms	Platform Cover (approx)	Easy Access?	Ticket Windows	Ticket Machines	Ticket Gates	Staff Level (AM)	24hr Station	Kiosk/ News
Hawkesbury River	2	10%	N	1	1	N	1	N	N
Cowan	2	<5%	Y (ramps)	1	1	N	1	N	N
Berowra	2	10%	N	1	1	N	2	Y	N
Mt Ku-ring-gai	2	10%	N	1	1	N	1	N	N
Mt Colah	2	5%	N	1	1	N	1	N	N
Asquith	2	10% nthbd 50% sthbd	Y (ramps)	1	2	N	2	N	N
Hornsby	4	80%	Y	3	2	Y	13	Y	Y
Waitara	2	90%	N	1	1	N	1	N	N
Normanhurst	2	10%	N	1	2	N	1	N	N
Thornleigh	3	10%	N	1	1	N	1	N	Y
Pennant Hills	2	50%	Y	2	1	N	3	Y	Y
Beecroft	2	50%	N	1	1	N	2	N	N
Cheltenham	2	10%	N	1	1	N	1	N	N
Epping	3	50%	Y	3	3	Y	5	Y	Y

Rail Station Parking

3.27 A number of stations in Hornsby Shire incorporate car parking for rail travellers and on-street parking can be particularly prevalent in unrestricted streets around stations. The Hornsby Parking Strategy (**Appendix B**) has reviewed the situation at key stations within the Shire and concluded:

- Parking provision around stations is currently adequate;
- Some on-street parking close to stations should be restricted in such a way that it is made available to those arriving by car at the station after the morning peak period;
- No further off-street parking should be provided in the future unless demand substantially exceeds supply to the extent that safety and amenity within the local area are reduced and all available options to improve public transport use as an alternative (e.g. feeder bus services) have been exhausted;
- New transport infrastructure, in particular the Rouse Hill to Parramatta and Castle Hill to Blacktown T-ways, and in the longer term the North West Rail Link, will reduce parking demand at the stations in Hornsby Shire; and,
- Efforts are being made through initiatives outlined in *Connecting the Central Coast* to encourage Central Coast residents currently driving to stations in Hornsby Shire to catch trains from stations closer to home.

3.28 It should also be noted that from analysis of rail patronage and bus service coverage, those stations with the greatest accessibility by bus (Hornsby, Pennant Hills and Epping) also are the most popular stations in the Shire with more passenger entries and exits than others.

3.29 The Central Coast Rail Upgrade work (see Sydney – Newcastle Rail Link in Section 4) will see rail commuter parking at Central Coast rail stations increased and services improved. It is expected that these measures will go some way to encouraging people from the Central Coast to catch trains at a local station rather than driving to stations in Hornsby Shire.

Road

3.30 There are a number of major road routes through the Hornsby Shire that provide access to central and western Sydney and the Central Coast, generally running within the same corridors as the rail lines. The road hierarchy is shown on **Figure 3.5**.

3.31 The Pacific Highway is a north-south route linking Sydney CBD and the North Shore suburbs with Hornsby and the Central and North Coast towns. Within Hornsby Shire the Pacific Highway is now bypassed by the F3 Sydney-Newcastle Freeway, which provides a motorway standard road link north from Wahroonga, immediately to the east of Waitara.

3.32 Pennant Hills Road links the F3, to the north, with the M2, to the south, and provides access between Hornsby, Parramatta and Epping (via Beecroft Road) via a number of smaller commercial centres along the route. Pennant Hills Road, with the Cumberland Highway to the south forms part of the National Route 7, linking the M5 with the M2 and F3. Following completion of the Sydney Western Orbital from the M5 to the M2, Pennant Hills Road will continue to be the link from the M2 to the F3.

3.33 The M2 Hills Motorway runs east-west in the south of the Shire to the north of Epping, linking to the Sydney CBD in the east (via the Gore Hill Freeway) and Blacktown and the Baulkham Hills area in the west.

3.34 The development of the EMME/2 traffic model as an integral part of the ILUTS will further inform on current levels of traffic flows and forecasts for the future.

Traffic Volumes

3.35 Annual average daily (AADT) volumes are available from the RTA. Data for counts within the Hornsby Shire for 1996 and 1999 are summarised on **Figure 3.6**. General trends show an increase in volumes during this period, however the opening of the M2 Motorway in 1998 has also had a significant impact on traffic volumes on a number of roads within the Shire. Traffic volumes on the M2 are available from the operators on the motorway (Hills Motorway) and were between 60,000 and 70,000 in 1999.

3.36 Roads in the south of the Shire have been most affected by the opening of the M2 Motorway, particularly roads around Epping town centre and Pennant Hills Road immediately to the north of the motorway.

3.37 Pennant Hills Road is the most heavily trafficked road within the Shire, with volumes of between 55,000 and 84,000 in 1999. Traffic growth on some sections of Pennant Hills Road has reached almost 10 percent between 1996 and 1999, largely due to the opening of the M2 Motorway.

3.38 Traffic volumes on Beecroft Road in Epping have fallen around 3 percent between 1996 and 1999 to 61,000 vehicles, also due to the opening of the motorway. Substantial decreases have also been experienced Copeland Road, Castle Hill Road, Boundary Road, Carlingford Road and Epping Road.

3.39 In the north east of the Shire, The F3 Freeway carried around 74,000 vehicles in 1999 at its southern end, an increase of 3.4 percent on the 1996 volume. The Pacific Highway also runs through the north east of the Shire, and carried between 18,000 and 35,000 vehicles per day in 1999, an increase of around 3 percent over 1996 volumes.

Road Safety

3.40 All injury accidents for the period 1999 to 2001 inclusive are shown on **Figure 3.7**. Collision only accidents have been omitted from the analysis at this stage. From the Shire wide map it can be seen that there is a correlation between accident locations and the arterial road network, particularly intersections, with the F3 also being a significant accident corridor.

3.41 The detailed map shows clusters of accidents at:

- Mount Colah, around the intersection of Pacific Highway and Belmont Parade;
- Asquith, around the intersection of Pacific Highway and Jersey Street North;
- Throughout Hornsby town centre, with an apparent focus on the commercial area;
- Along Edgeworth David Street, from Pacific Highway to Sherbrook Road;
- Pacific Highway, immediately south of Hornsby town centre;
- Pacific Highway, in the vicinity of Waitara Station;
- Pennant Hills Road, particularly through Normanhurst, Thornleigh and Pennant Hills, the intersection with Beecroft Road and on the approach to the intersection with Castle Hill Road;
- Carlingford, around the intersection with Pennant Hills Road and Carlingford Road;
- Epping around the town centre; and,
- At the intersection of Castle Hill Road and the Old Northern Road.

3.42 There have been 22 fatal accidents in the Shire in the three years for which data has been analysed. This equates to just over seven fatal accidents per annum. It appears the majority of fatal accidents have occurred on arterial routes.

3.43 **Figure 3.8** shows those accidents involving pedestrians that have occurred between 1999 and 2001 inclusive. Most pedestrian accidents occur in the southern part of the Shire. There is a particular focus on Hornsby town centre, with accidents tending to be clustered in the southern part of the town centre, close to the station and commercial centre. Elsewhere two smaller clusters are noted at Thornleigh and Pennant Hills Stations, both accident groupings focused on the Pennant Hills Road.

3.44 There were five pedestrian accidents resulting in a fatality over the three year period, compared with a total of 22, indicating that just over 20% of all fatal accidents involved a pedestrian.

3.45 **Figure 3.9** shows accidents involving cyclists in the three year period from 1999 to 2001, inclusive. The main accident cluster is focused on Hornsby town centre. Most cycle accidents have occurred on arterial roads although a few are recorded as occurring in residential areas. There were no fatalities involving cyclists in the three year period.

Buses

Bus Network

3.46 Buses in Hornsby are provided by both State Transit Authority (STA) and private operators. There are three main private companies: Shorelink (part of Transdev), Harris Park (incorporating CityBus Direct) and Glenorie. Westbus, Red Arrow (a joint

venture between Westbus and Harris Park) and the Central Coast Airport Bus also operate in the area. STA's services are confined to the southern corner of Hornsby Shire, around Epping and North Epping.

3.47 The bus network in Hornsby is predominantly confined to the south, south-west and eastern parts of the Shire, with Hornsby, Pennant Hills, Castle Hill and Carlingford are the main focal points of the network. The Shire network with service levels is shown on **Figure 3.10**.

3.48 **Figures 3.11** and **3.12** show longer distance bus connections from Hornsby Shire to other parts of the Sydney metropolitan area on a weekday and a Saturday, respectively. On a weekday there are good connections to the employment centres, such as Parramatta, Sydney CBD and Macquarie Park in North Ryde and other commercial areas such as Castle Hill and Carlingford.

3.49 The availability of services reduces on Saturdays with only Castle Hill, Sydney CBD and Macquarie Park having a significant number of services, that is, over 41 in each direction through the day, indicating a 20 to 30 minute service frequency. Services to other centres, such as Parramatta and Carlingford are substantially reduced in comparison to weekdays and direct connections to destinations such as Manly and Sydney Airport are not possible.

3.50 Detail of services and service frequencies are shown in **Appendix C**.

Regulatory Regime

3.51 Bus services in Hornsby Shire are predominantly provided by private bus companies. Under the Passenger Transport Act 1990, bus operators are given exclusive operating rights for a specified contract area or service for five years and ongoing contract renewal if they meet the terms and conditions of their service contracts; there are around 240 commercial and 1,821 non-commercial contracts in NSW[2]. In reality contract renewal is virtually an automatic process unless there has been exceptionally poor performance by the bus company.

3.52 There are two forms of contract: commercial and non-commercial. Non-commercial contracts generally apply to the provision of school related services where there is no timetabled service provision. The Passenger Transport Act 1990 sets out minimum service levels (MSL) and these set standards for:

- Service frequency;
- Service coverage – spatial; and,
- Service coverage – temporal.

3.53 Within metropolitan Sydney the MSL standards are based on the net patronage potential in the contract area. The net patronage potential is based on the population size, the number of private vehicles and the degree of alternative transport options. The MSL can and does vary significantly between contract areas.

3.54 The existing system leads to a situation that where car ownership is highest so MSL are lowest, thus the contract system reinforces the dependence on private vehicles. Notwithstanding this it is claimed by the Bus and Coach Association that services operated by private bus companies are significantly better than that required by the MSL. There is currently no system by which performance of services operated by private bus companies can be monitored by Government.

[2] Independent Pricing and Regulatory Tribunal of NSW, Report on fares for taxis, private buses and private ferries, June 2002.

3.55 Government subsidy is given to private operators to reimburse for the cost of carrying schoolchildren for free under the School Student Transport Scheme (SSTS) and for providing half price concessions to pensioners, retirees and the unemployed. On State operated public transport, pensioners can purchase an 'all-day go anywhere' ticket for $1.10 which is seen as much more favourable with greater positive social impacts than the half price fares supported on the private bus system.

3.56 There is currently an on-going debate about the sustainability of the SSTS. The cost to the public sector has increased at a greater rate than the number of children in school, that is, the cost per student has increased. The SSTS cost $13million in 1970 and is now $427million[3] to provide bus, rail and ferry transport for the 670,000 children who live more than 1.6km from their school in NSW. The SSTS applies to all school students who live more than the specified distance from their school, including private school students. The reason for the cost increase is seen as the 'dezoning' of schools in 1989, which means that children can go to the school of their choice, regardless of distance or the schools' traditional catchment area.

3.57 The main fare product on private buses is the single cash fare while STA offers a range of products[4], including *multiride* (TravelTens) and multimodal weekly tickets, which are offered at a discount to equivalent cash fares. Given the structure of public transport provision in Hornsby, with rail corridors and feeder bus services, there is a clear need for multimodal ticketing to encourage integrated public transport use and dissuade people from driving to stations rather than using feeder bus services.

Bus Stop Facilities and Infrastructure

3.58 The main bus terminals are at Hornsby, Pennant Hills and Epping. The bus station at Hornsby provides good quality facilities adjacent to the rail station. A taxi rank is also incorporated into the interchange. Pennant Hills bus station is located in Station Street, adjacent to the station. It provides a high quality facility with shelter, seating and information and includes a taxi rank. The Langston Place bus station in Epping is quite a new facility, again adjacent to the station. It is close to the shops on the eastern side of the rail line and easily accessed from the west side via a footbridge over the rail line.

3.59 The design, quality and general level of provision of bus stop facilities varies across the Shire. Bus stops range from a sign on a telegraph pole to the high quality bus interchange at Hornsby Station. Bus stop styles also vary depending on the main provider of services at the stop.

3.60 It is considered that the large number of very basic stops, lacking a flag, information and shelter do not encourage increased bus use within the Shire, nor do they contribute to increasing the visibility of public transport to the local community.

3.61 Harris Park, in developing the City Bus Direct services, has begun renewing stop infrastructure and in particular providing bright and obvious flags with information and a photograph of the low floor, high quality bus.

3.62 Transport NSW has developed and released guidelines for NSW public transport signage and information systems. The guidelines identify different types of information and provide detailed design information. The guidelines identify different stop types and the level of information that should be provided. Introduction of the guidelines is intended to standardise designs for public transport signage, promoting good graphic standards and materials that are durable, cost effective and easily maintained. This document aims to standardise public transport information and

[3] Sydney Morning Herald, Back to the drawing board on pupils' free travel to school, 24/9/02.

[4] Independent Pricing and Regulatory Tribunal of NSW, Report on Fares for Private Buses, August 2001.

stops, leading to an increase in quality. It does not necessarily aim to improve the basic level of stop infrastructure.

3.63 Bus stop infrastructure contributes greatly to the perception of public transport by non-users. Through the improvement of facilities and infrastructure so the visibility and perception of services can be improved, leading to increased use.

Pedestrians

3.64 Hornsby Shire is serviced by a network of pedestrian routes utilising both on and off street facilities. Footpaths and crossing facilities are generally provided in commercial areas and in the majority of residential streets. Off-street paths run through the many bushland and park areas, often linking residential areas with local activity centres.

3.65 Local topography, rail lines and arterial roads act as significant barriers to pedestrian movement. As has been noted above road safety of pedestrians is of concern in Hornsby town centre and along Pennant Hills Road, particularly close to Thornleigh and Pennant Hills Stations.

Bicycles

3.66 Hornsby Shire Council undertook to develop a comprehensive Bike Plan for the Shire in 1988. Council did not adopt the 1988 Draft Hornsby Bike Plan. In 1997 Council commissioned Sinclair Knight Merz to review and update the 1988 study, leading to the adoption by Council of the Hornsby Bike Plan in October 1998.

3.67 The 1998 Plan set out the principles and background to the development of a comprehensive cycle network consisting of a range of facilities, including:

- RTA regional routes;
- Truck cycle routes;
- Recreational routes;
- Local cycle routes; and,
- Cycle furniture, including bicycle storage lockers, bicycle racks, holding rails, transitions and bicycle parking.

3.68 The 1998 Plan was to be implemented over a 10-year period, depending on the availability of funding. A number of the recommendations, particularly relating to trunk routes, were identified as being the responsibility of the RTA. Council was identified as a main provider of facilities included within the Plan.

3.69 Through the site visits conducted for the ILUTS, it has become evident that the existing cycle network within Hornsby Shire is incomplete and fragmented. Where facilities do exist they are of limited use given the lack of continuity. No directional signs were observed during the site visits and there is no comprehensive map showing cycle facilities in the Shire. The RTA 'Cycleways 3' shows the cycle facilities on the Pacific Highway and F3 only.

3.70 The 1998 Bike Plan does not appear to include an audit of facilities already in place and contains only recommendations. It is unclear what facilities currently exist and what is still to be implemented. It also appears that the implementation framework set out in the 1998 Bike Plan has given way to ad hoc implementation aligned with road maintenance activities.

3.71 As noted above most accidents involving cyclists have occurred on the arterial road network with a cluster around Hornsby town centre.

Demographic and Socio-economic Data

Demographics

3.72 This section provides a summary overview of relevant population characteristics and trends in the Hornsby Shire. Data is largely sourced from Hornsby Social Atlas, Hornsby Employment Lands Review 1998 and the 1996 Census. First Release Community Profile data from the 2001 Census has been used to provide data for 2001 and will be updated as the 2001 census data is released in final form.

Table 3.5 - Summary of Relevant Census Data

	1981	1986	1991	1996	Growth 1981-1996	2001*
Population by Ward: Hornsby						
- Ward A Rural	8,067	8,736	9,959	11,308		?
		(+669)	(+1,223)	(+1,349)	3,241	
- Ward A Urban	25,064	25,632	27,391	29,064		?
		(+568)	(+1,759)	(+1,673)	4,000	
- Ward B Urban	39,027	45,382	52,189	57,353		?
		(+6,355)	(+6,807)	(+5,164)	18,326	
- Ward C Urban	38,753	37,693	38,188	38,935		?
		(-1,060)	(+495)	(+747)	182	
- Total (all Wards)	110,911	117,433	127,727	136,746		145,968
		(+6,522)	(+10,294)	(+9,019)	25,835	(+9,222)
Population: Sydney Met. Area	**3,105,550**		**3,538,749**	**3,741,290**		
					635,740	
Occupied dwellings: Hornsby	35,939	36,547	41,186	46,079		49,688
		(+608)	(+4,639)	(+4,893)	10,140	(+3,609)

*2001 data sourced from ABS Community Profile First Release Data

3.73 **Figure 3.13** illustrates the growth in the Shire's population by ward and clearly shows that the major increases in population to 1996 have been in Ward B, resulting from the development of release areas such as Cherrybrook.

3.74 A summary of the other relevant population characteristics and trends is provided below:

- The population of Hornsby in 1996 was approximately 136,000, early census data indicates that the population had increased to 146,000 by 2001;
- The percentage of the Shire's population in rural areas appears relatively stable at between 7 and 8%;
- The population of Hornsby Shire grew 3 to 4% more than the population of the Sydney metropolitan area between 1981 and 1996;
- Over 70% of the population growth in Hornsby during the period 1981-1996 was in Ward B;
- Most population growth in Hornsby occurred in the Cherrybrook Release Area, which includes the districts of Cherrybrook and Castle Hill in Ward B, and Dural in Ward A;

- Hornsby's has a "mature" population profile (i.e. the population is characterised by a similar number of people in each 5 year age range);
- The population of Hornsby is ageing, with the population generally below the age of 20 declining and the population over 65 years increasing;
- The number of occupied dwellings in Hornsby increased by over 10,000 between 1981 and 1996 to approximately 46,000 dwellings in 1996 and by a further 3,600 to almost 50,000 in 2001;
- Occupancy rates in Sydney fell from 2.91 to 2.73 persons per dwelling between 1981 and 1996, compared to a fall from 3.09 to 2.97 in Hornsby;
- The dwelling occupancy rate decreased further between 1996 and 2001 to 2.85 persons per dwelling;
- In 1996 Hornsby had a resident labour force (people working or looking for work) of almost 70,000 people; and,
- Approximately 30% of the resident workforce work within Hornsby with other major employment locations for residents being neighbouring LGAs and the Sydney CBD.

Journey to Work

3.75 Journey to work mode share for the Hornsby LGA and the Sydney Metropolitan Area is shown in **Table 3.6**. Data is shown graphically by collector district on **Figures 3.14 to 3.17**.

3.76 The data shows that 54% of people in Hornsby drive to work, compared to 53.1% across the metropolitan area. Train use is higher among Hornsby residents than across the metropolitan area, while bus use, walking and cycling are all lower.

Table 3.6 - Journey to Work Mode Share

Mode	Hornsby LGA		Sydney Metropolitan Area	
	Total Trips	Percentage of Total Trips	Total Trips	Percentage of Total Trips
One method only:				
Train	7,319	10.9%	127,908	7.6%
Bus	614	0.9%	78,901	4.7%
Ferry/tram	18	0.0%	4,825	0.3%
Taxi	103	0.2%	7,548	0.5%
Car, as driver	36,230	54.0%	890,138	53.1%
Car, as passenger	3,278	4.9%	106,044	6.3%
Motor bike/motor scooter	269	0.4%	7,590	0.5%
Bicycle	179	0.3%	8,193	0.5%
Other	544	0.8%	18,620	1.1%
Walked only	1,541	2.3%	62,815	3.7%
Total	*50,095*	*74.6%*	*1,312,582*	*78.3%*
Two methods:				
Train and other	4,302	6.4%	76,456	4.6%
Bus and other (excluding train)	110	0.2%	7,955	0.5%
Other two methods	333	0.5%	8,829	0.5%
Total	*4,745*	*7.1%*	*93,240*	*5.6%*
Three methods:				
Train and other	419	0.6%	8,706	0.5%
Bus and other (excluding train)	7	0.0%	612	0.0%
Other three methods	19	0.0%	372	0.0%
Total	*445*	*0.7%*	*9,690*	*0.6%*
Worked at home	3,588	5.3%	66,342	4.0%
Did not go to work	7,366	11.0%	165,518	9.9%
Not stated[5]	881	1.3%	28,089	1.7%
Total	67,120	100.0%	1,675,461	100.0%

Source: Australian Bureau of Statistics 2001 Census of Population and Housing

3.77 **Figures 3.14** through **3.17** show journey to work within Hornsby LGA by mode share. **Figure 3.14** shows car use is greatest (over 55% of mode share) in western and central areas of the Shire, with a high reliance on cars in some southern areas, such as Cherrybrook and Cheltenham. Areas served by the rail line generally have less than 55% car mode share. Car passenger trips (**Figure 3.15**) are not necessarily highest (over 5% mode share) where car as driver is highest, and tends to be more significant in the eastern parts of the Shire.

[5] Includes cases where method of travel to work could not be determined.

3.78 Public transport use is shown on **Figure 3.16** and is clearly heavily influenced by the rail corridors and to a lesser extent the bus network. There is a strong correlation between relatively high public transport mode share (greater than 20%) and the rail corridor, particularly from Waitara to Mount Colah. Pockets of high public transport use can be seen around stations, in particular Normanhurst, Thornleigh, Pennant Hills, Epping and Berowra.

3.79 Walking and cycling (non-motorised) mode share is shown on **Figure 3.17**. Relatively high use of these modes (that is over 4% combined) is seen in the Hornsby / Waitara / Asquith area and in pockets associated with the Northern Line and Pennant Hills Road. It is likely walking and cycling are influenced by the presence of commercial land uses in the locality. There is relatively high walking and cycling mode share in the rural western and northern parts of the Shire. This is possibly influenced by the prevalence of local employment in the agricultural industry.

Vehicle Ownership

3.80 **Figure 3.18** shows average vehicles per household in Hornsby Shire by collector district. Focusing on the areas of the Shire that are not within the National Park or Berowra Valley Regional Park, the highest car ownership is seen in western areas, while lowest car ownership is seen in the east, particularly in areas served by the rail lines. There is a pocket of low car ownership (average 0.5 – 1.0 vehicles per household) around Hornsby town centre and Waitara, extending south to Normanhurst. Large areas of the Shire can be seen to have 1.5 to 2 cars per household.

3.81 This pattern can be seen clearly on **Figure 3.19**, which shows those areas where the proportion of households without a car exceeds 15%. Again, the Hornsby town centre / Waitara area is clearly shown. The pocket of particularly low car ownership to the west of Cherrybrook is the Castle Hill retirement village, an extensive complex with understandably low car ownership.

3.82 **Figure 3.20** shows those areas where over 35% of households have only one car. It can be seen that there are higher proportions of single car households in the corridor served by the rail lines, with pockets of single car households in the Cherrybrook and Dural areas, possibly reflecting the relatively good bus provision to these areas and the local socio-economic characteristics.

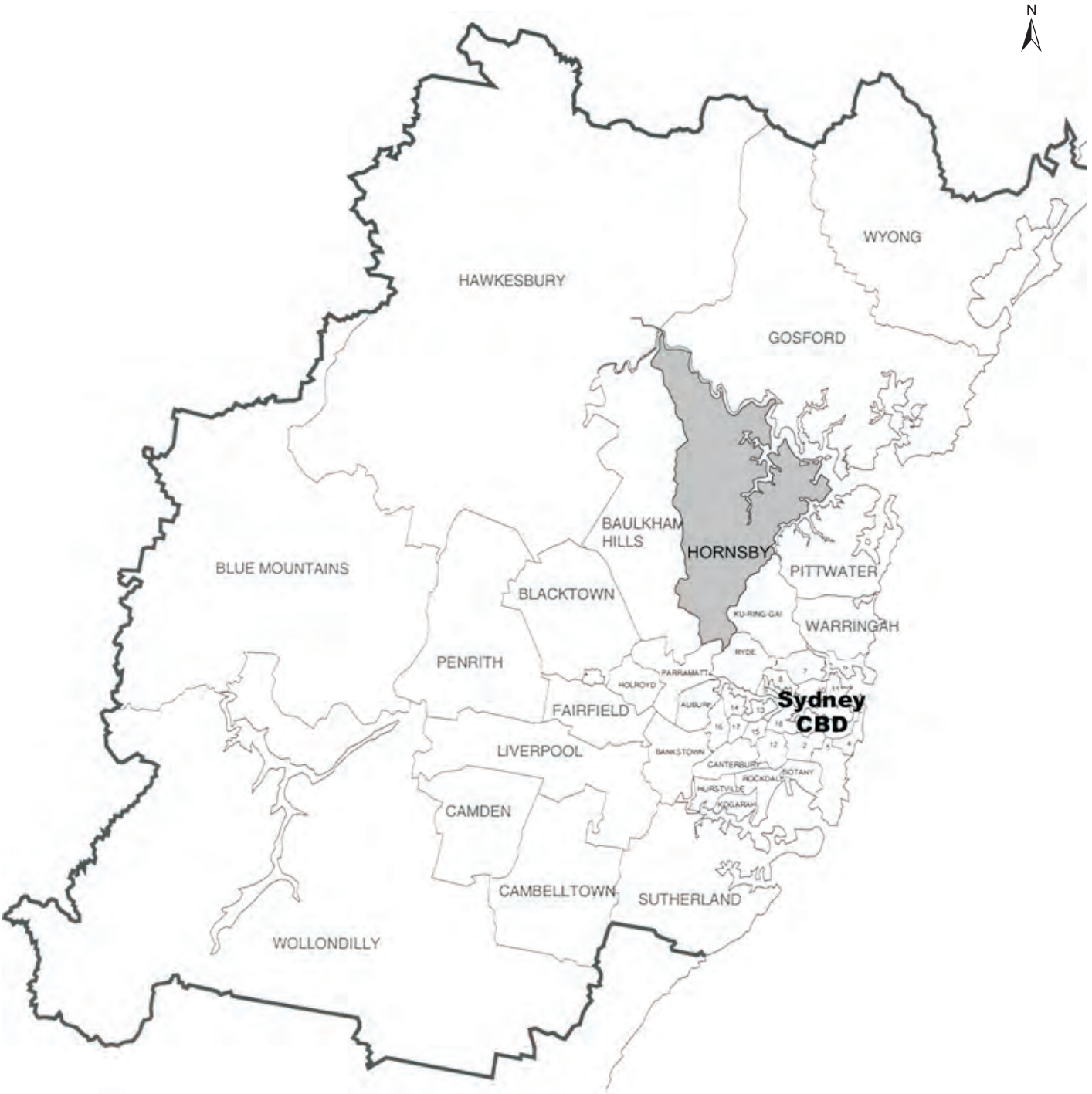
3.83 High car owning households (more than 15% of households with more than 3 vehicles) are shown on **Figure 3.21**. The data shows that the more remote areas of the Shire, particularly with respect to public transport accessibility, have a relatively high proportion of households with more than three vehicles. There are also pockets of high car ownership extending into southern areas of the Shire, especially the Cheltenham area, probably reflecting the socio-economic characteristics of the area.

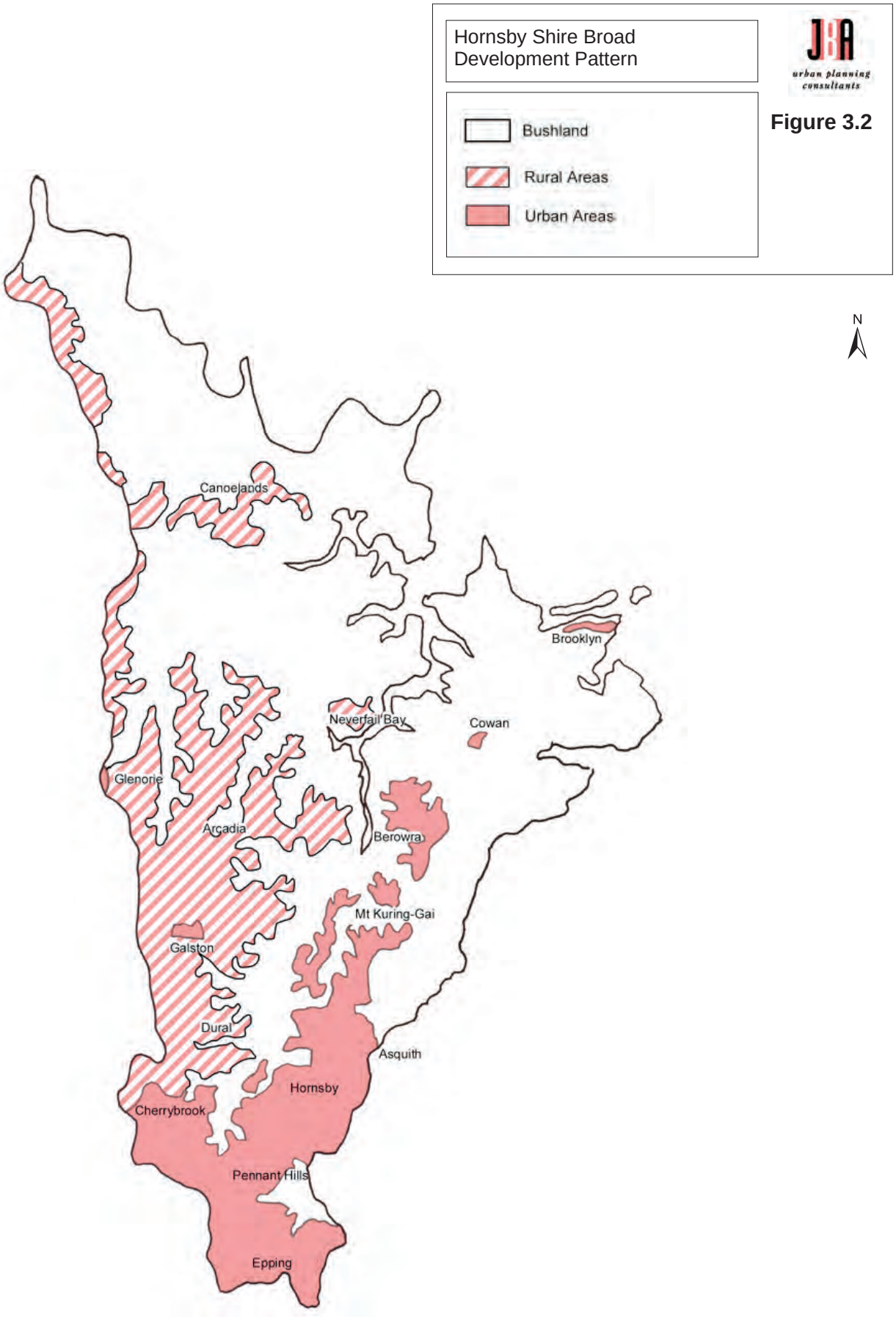
Location of Hornsby Shire within the Sydney Metropolitan Area

Hornsby LGA

urban planning consultants

Figure 3.1



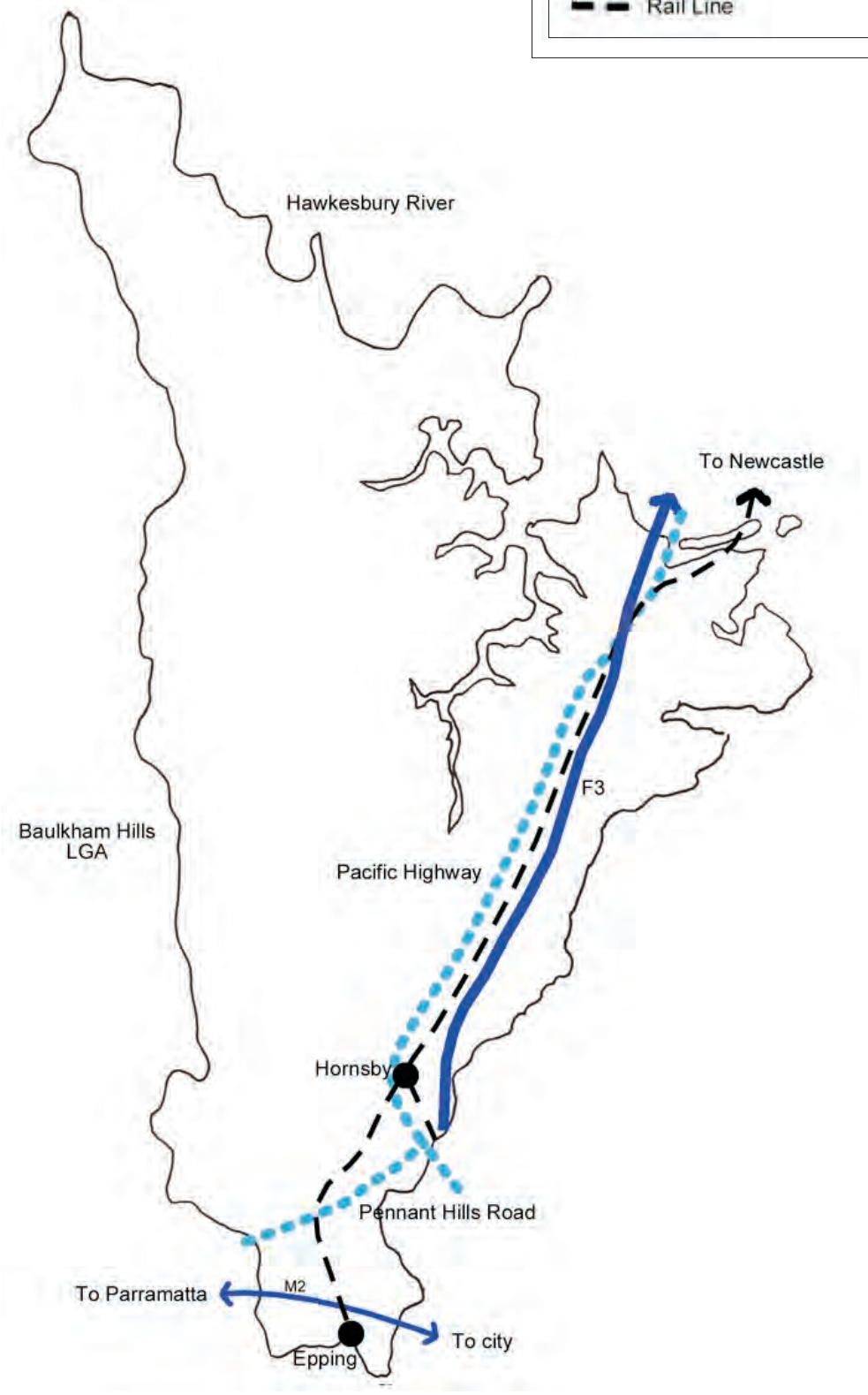

Hornsby Shire Broad
Development Pattern
urban planning
consultants
Figure 3.2
Bushland
Rural Areas
Urban Areas
N
Canoelands
Brooklyn
Neverfail Bay
Cowan
Glenorie
Arcadia
Berowra
Mt Kuring-Gai
Galston
Dural
Asquith
Hornsby
Cherrybrook
Pennant Hills
Epping

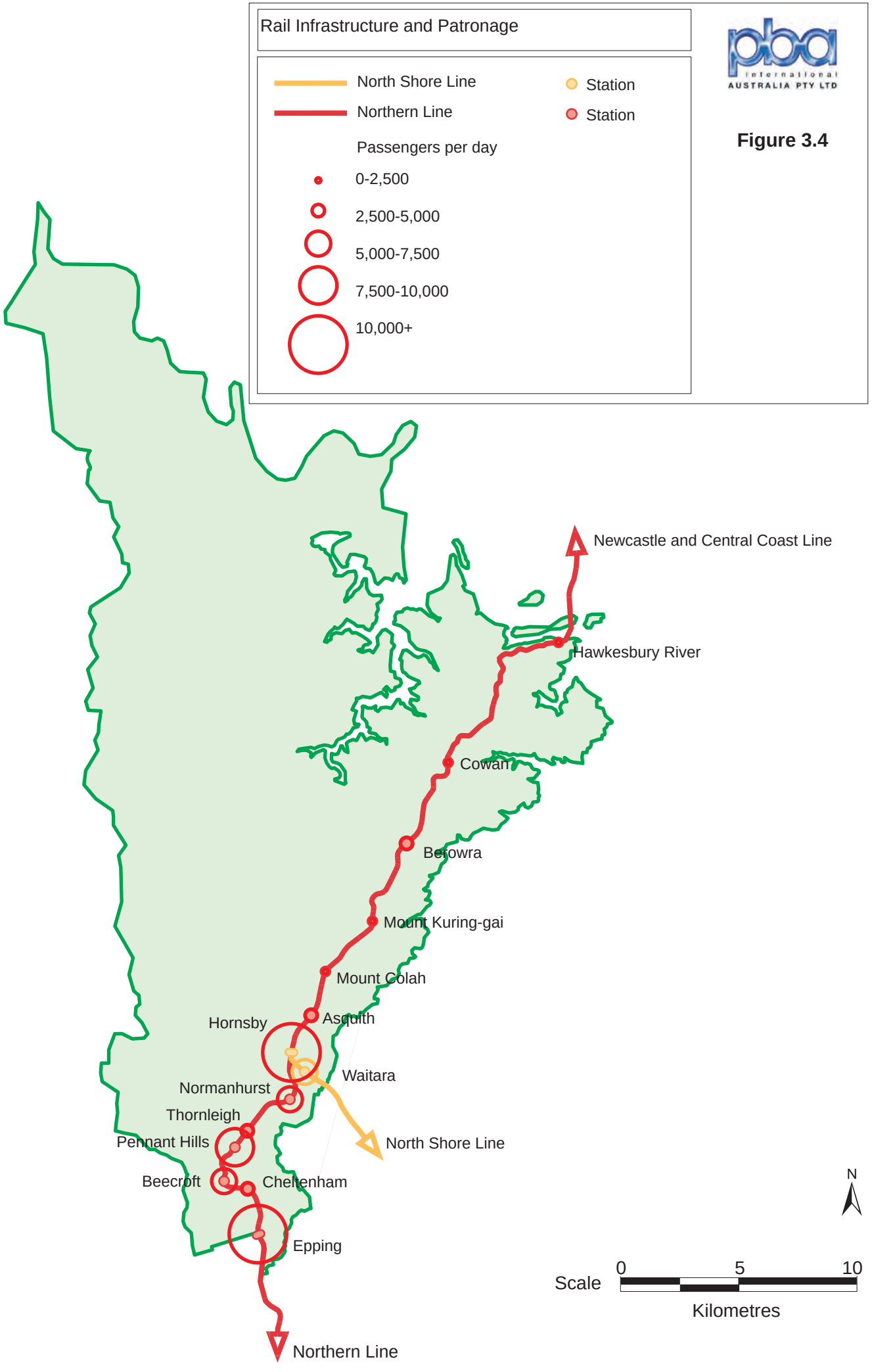
Main Transport Routes

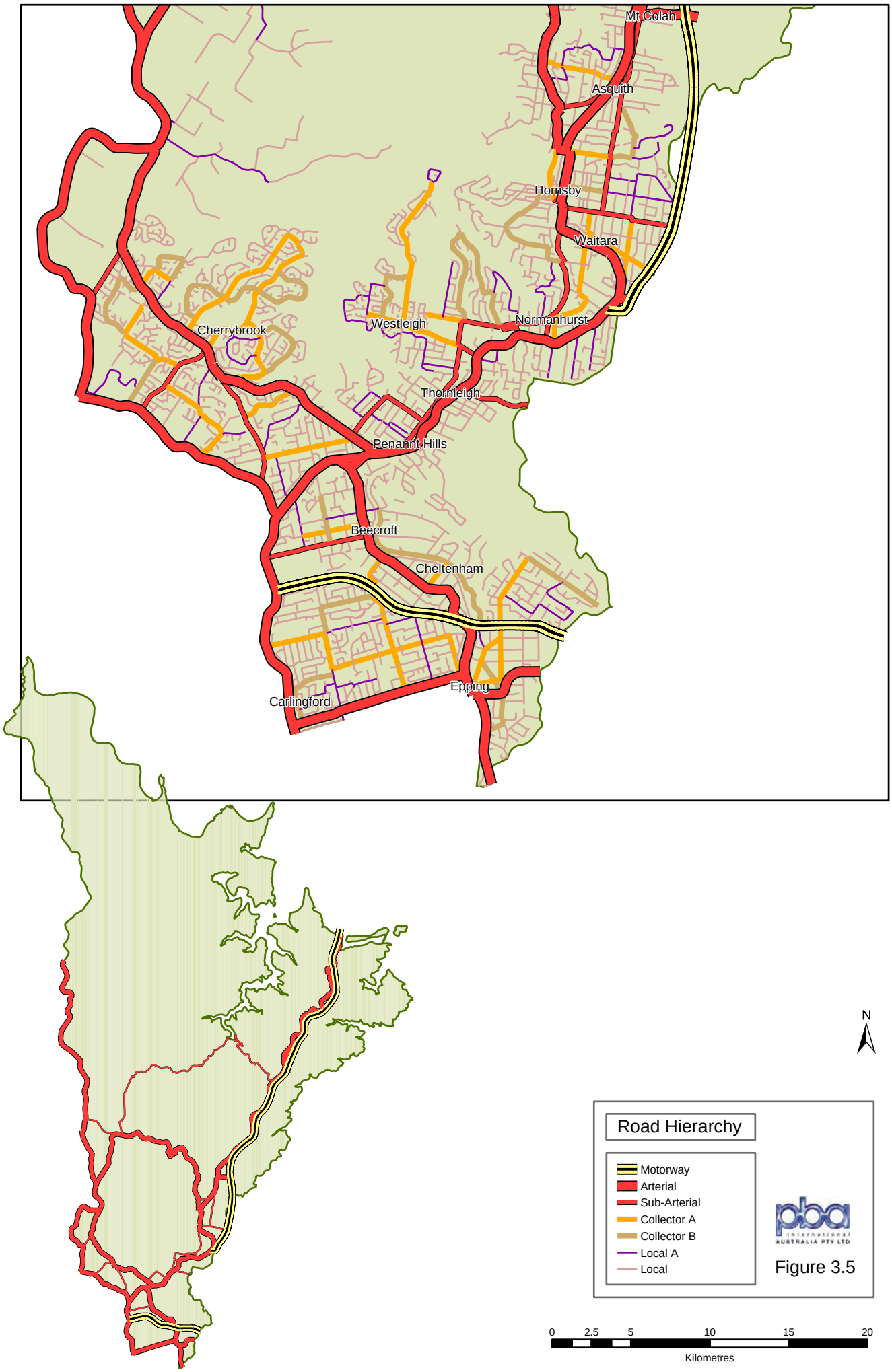
urban planning consultants

Motorway
Highway
Rail Line

Figure 3.3




Rail Infrastructure and Patronage
North Shore Line
Northern Line
Station
Station
Passengers per day
0-2,500
2,500-5,000
5,000-7,500
7,500-10,000
10,000+
Figure 3.4
Newcastle and Central Coast Line
Hawkesbury River
Cowan
Berowra
Mount Kuring-gai
Mount Colah
Asquith
Hornsby
Waitara
Normanhurst
Thornleigh
Pennant Hills
North Shore Line
Beecroft
Cheltenham
Epping
Northern Line
N
Scale
0
5
10
Kilometres


Mt Colah
Asquith
Hornsby
Waitara
Westleigh
Normanhurst
Cherrybrook
Thornleigh
Pennant Hills
Beecroft
Cheltenham
Epping
Carlingford
N
Road Hierarchy
Motorway
Arterial
Sub-Arterial
Collector A
Collector B
Local A
Local
Figure 3.5
0
2.5
5
10
15
20
Kilometres

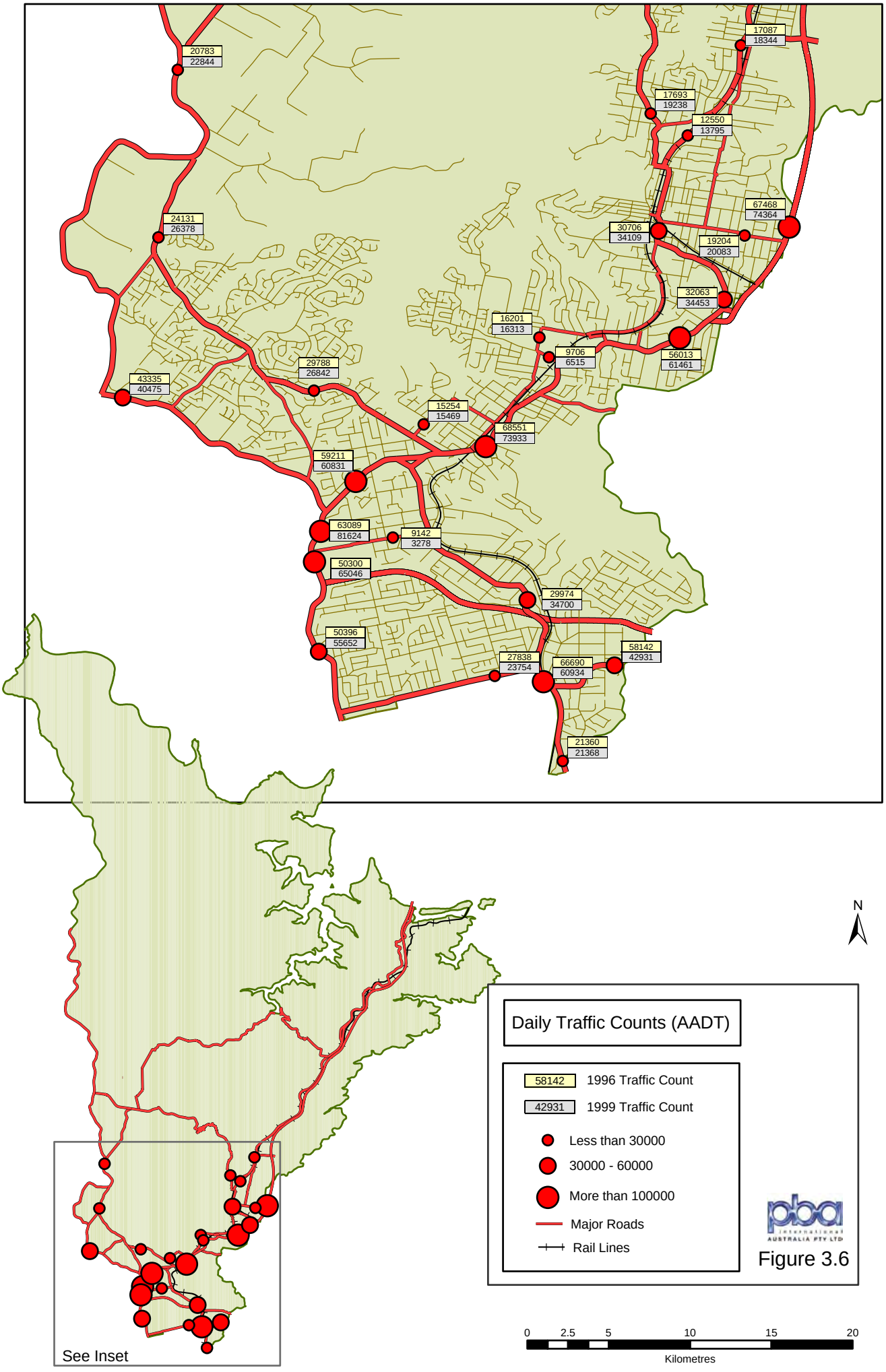

20783
22844
17087
18344
17693
19238
12550
13795
24131
26378
67468
74364
30706
34109
19204
20083
32063
34453
16201
16313
9706
6515
56013
61461
29788
26842
43335
40475
15254
15469
68551
73933
59211
60831
63089
81624
9142
3278
50300
65046
29974
34700
50396
55652
58142
42931
27838
23754
66690
60934
21360
21368
See Inset
N
Daily Traffic Counts (AADT)
58142 1996 Traffic Count
42931 1999 Traffic Count
Less than 30000
30000 - 60000
More than 100000
Major Roads
Rail Lines
0 2.5 5 10 15 20
Kilometres

Figure 3.6

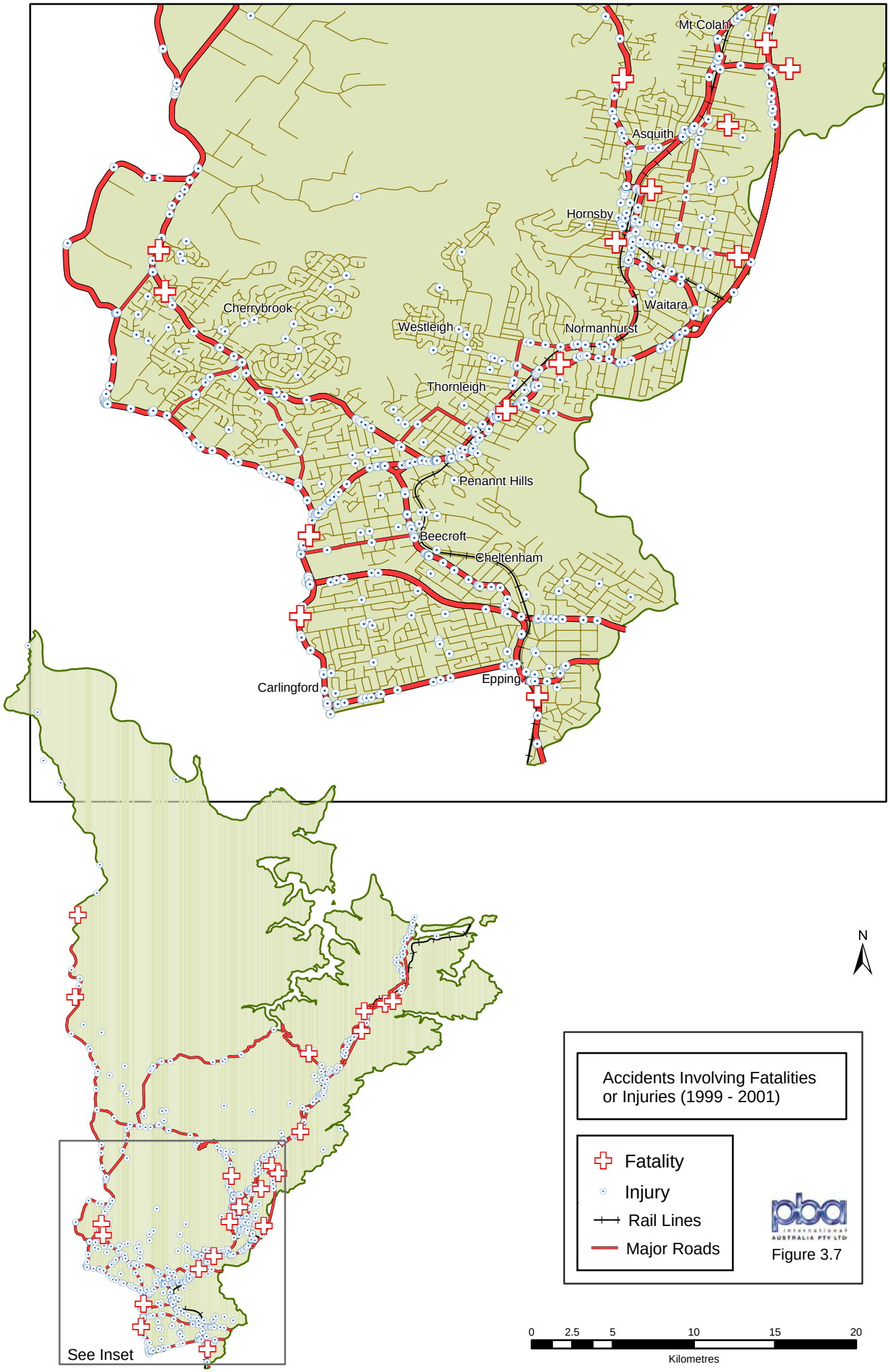
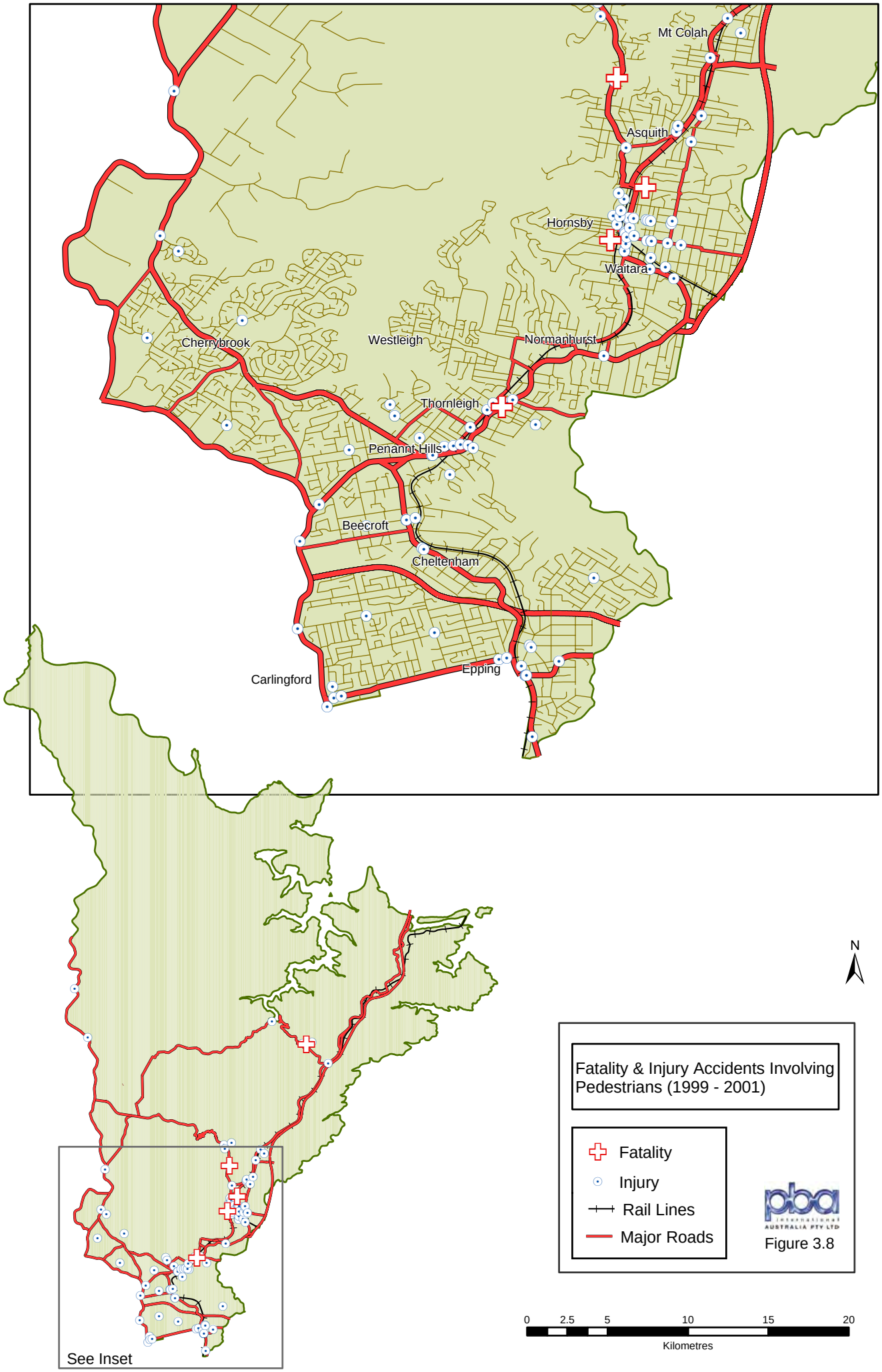

Mt Colah
Asquith
Hornsby
Waitara
Normanhurst
Westleigh
Cherrybrook
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping
See Inset
N
Accidents Involving Fatalities or Injuries (1999 - 2001)
Fatality
Injury
Rail Lines
Major Roads
0
2.5
5
10
15
20
Kilometres

Figure 3.7


Mt Colah
Asquith
Hornsby
Waitara
Cherrybrook
Westleigh
Normanhurst
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping
See Inset
N
Fatality & Injury Accidents Involving Pedestrians (1999 - 2001)
Fatality
Injury
Rail Lines
Major Roads
Figure 3.8
0
2.5
5
10
15
20
Kilometres

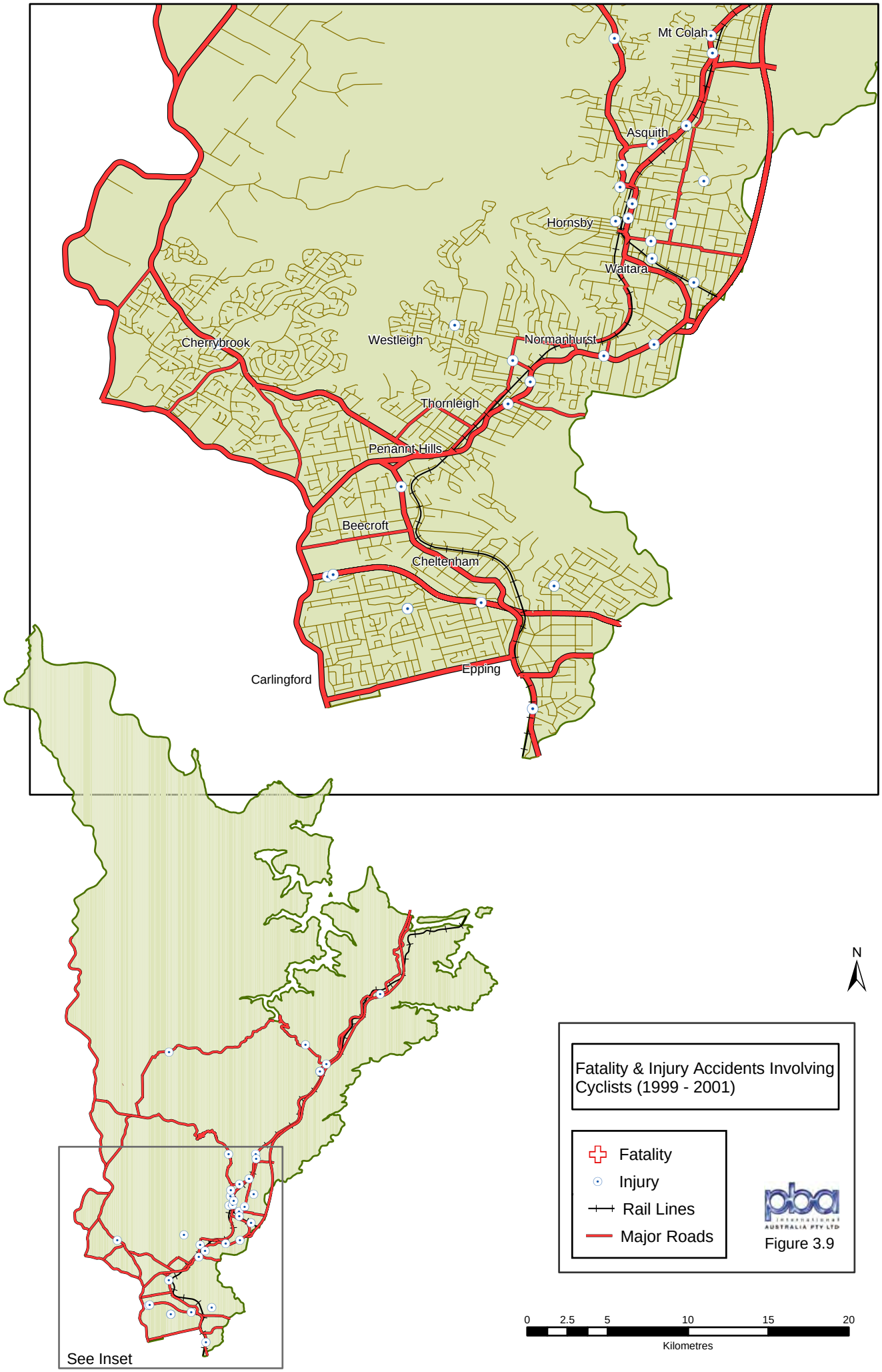

Mt Colah
Asquith
Hornsby
Waitara
Westleigh
Cherrybrook
Normanhurst
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping
See Inset
N
Fatality & Injury Accidents Involving Cyclists (1999 - 2001)
Fatality
Injury
Rail Lines
Major Roads
0
2.5
5
10
15
20
Kilometres

Figure 3.9

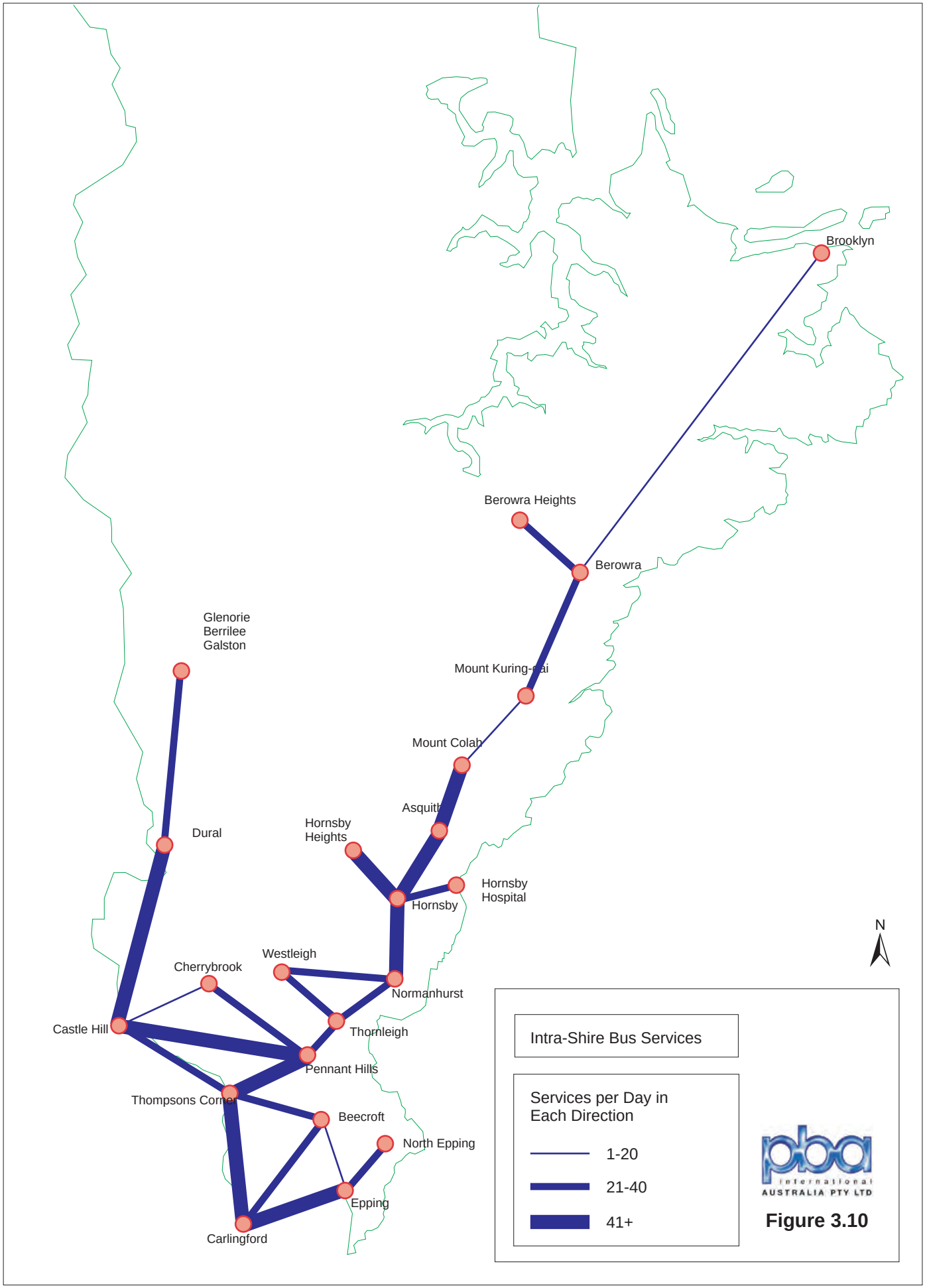

Brooklyn
Berowra Heights
Berowra
Glenorie
Berrilee
Galston
Mount Kuring-gai
Mount Colah
Asquith
Hornsby
Heights
Dural
Hornsby
Hospital
Hornsby
N
Westleigh
Cherrybrook
Normanhurst
Castle Hill
Thornleigh
Pennant Hills
Thompsons Corner
Beecroft
North Epping
Epping
Carlingford
Intra-Shire Bus Services
Services per Day in
Each Direction
1-20
21-40
41+
pba
international
AUSTRALIA PTY LTD

Figure 3.10

Asquith
Hornsby
Waitara
Westleigh
Normanhurst
Cherrybrook
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping

N

Bus Services

630 Bus Route Number

Bus Service Providers

- Airbus
- Citybus Direct
- Glenorie
- Harris Park
- Hills Bus
- NightRide
- Red Arrow
- Shorelink
- Sydney Buses
- Westbus

pbda international AUSTRALIA PTY LTD

Figure 3.10a

0 0.5 1 1.5 2

Kilometres

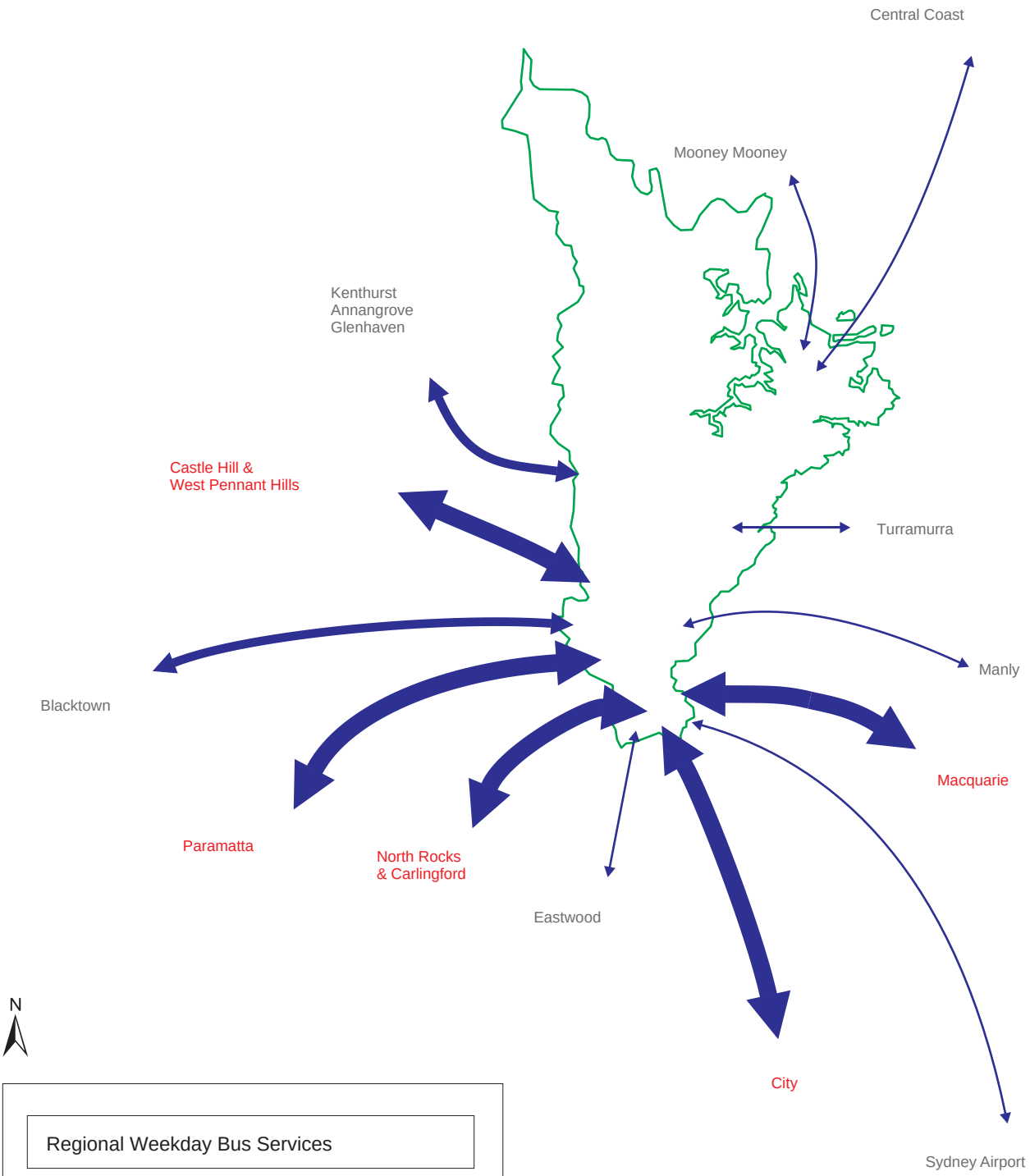
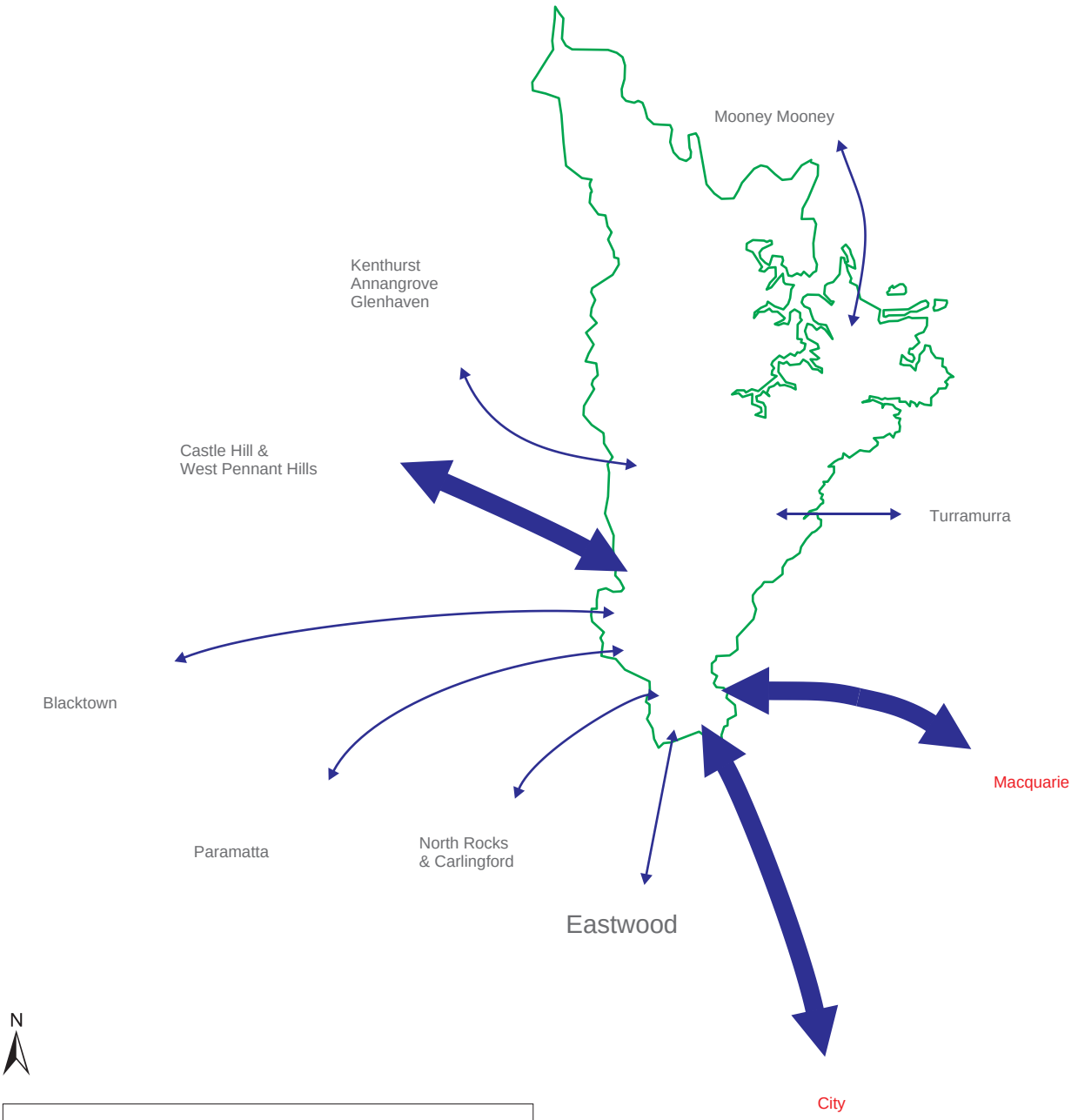

Central Coast
Mooney Mooney
Kenthurst
Annangrove
Glenhaven
Castle Hill &
West Pennant Hills
Turramurra
Manly
Blacktown
Macquarie
Paramatta
North Rocks
& Carlingford
Eastwood
City
Sydney Airport
N
Regional Weekday Bus Services
Services per Day in
Each Direction
1-20
21-40
41+

Figure 3.11



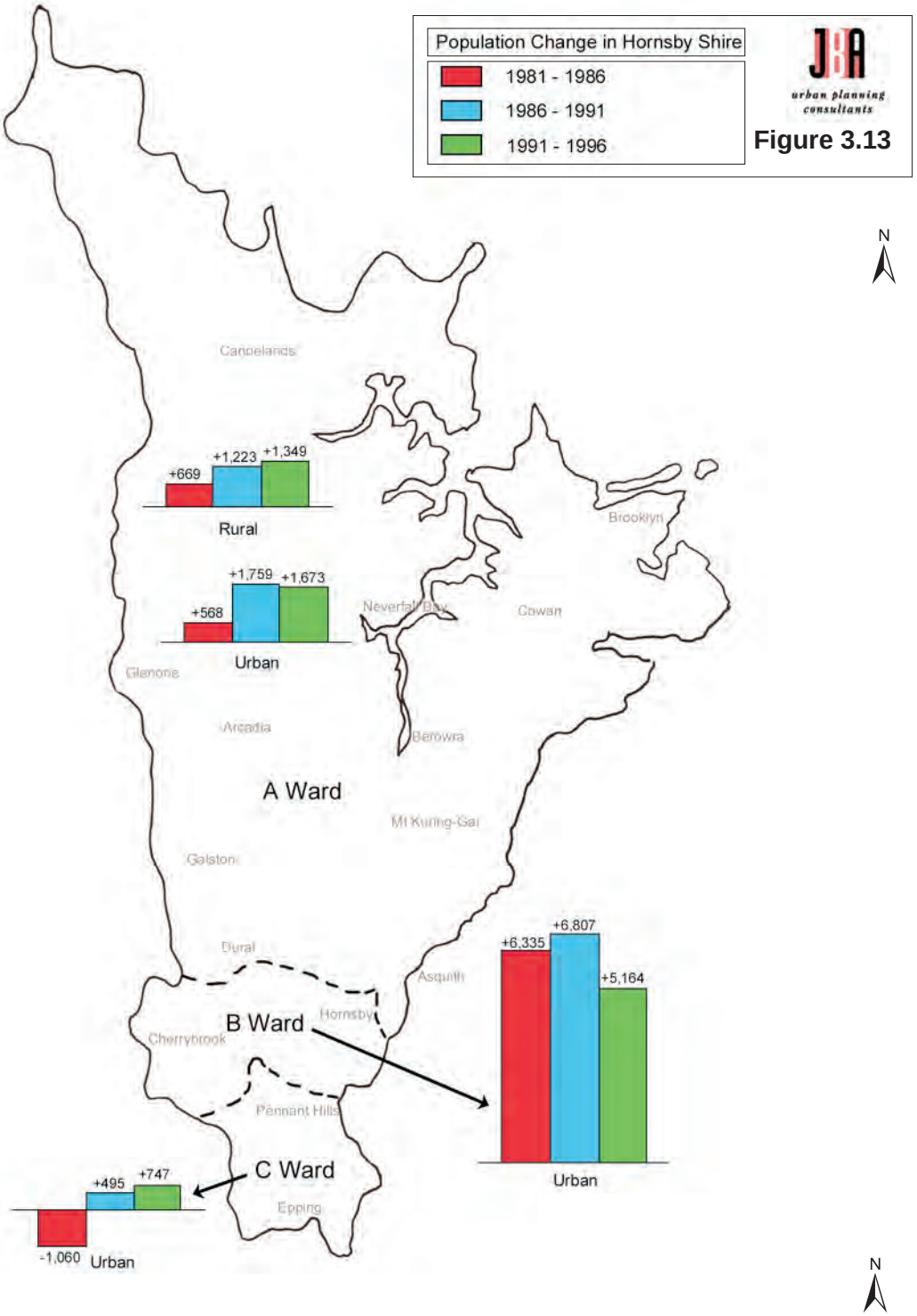
Regional Weekend Bus Services

Services per Day in Each Direction

- 1-20
- 21-40
- 41+

pba international AUSTRALIA PTY LTD

Figure 3.12


Population Change in Hornsby Shire
1981 - 1986
1986 - 1991
1991 - 1996
urban planning consultants
Figure 3.13
N
Canoelands
+669
+1,223
+1,349
Rural
Brooklyn
+1,759
+1,673
+568
Urban
Neverfail Bay
Cowan
Glenorie
Arcadia
Berowra
A Ward
Mt Kuring-Gai
Galston
Dural
+6,807
+6,335
+5,164
Asquith
Hornsby
B Ward
Cherrybrook
Pennant Hills
C Ward
+495
+747
Epping
-1,060
Urban
Urban
N

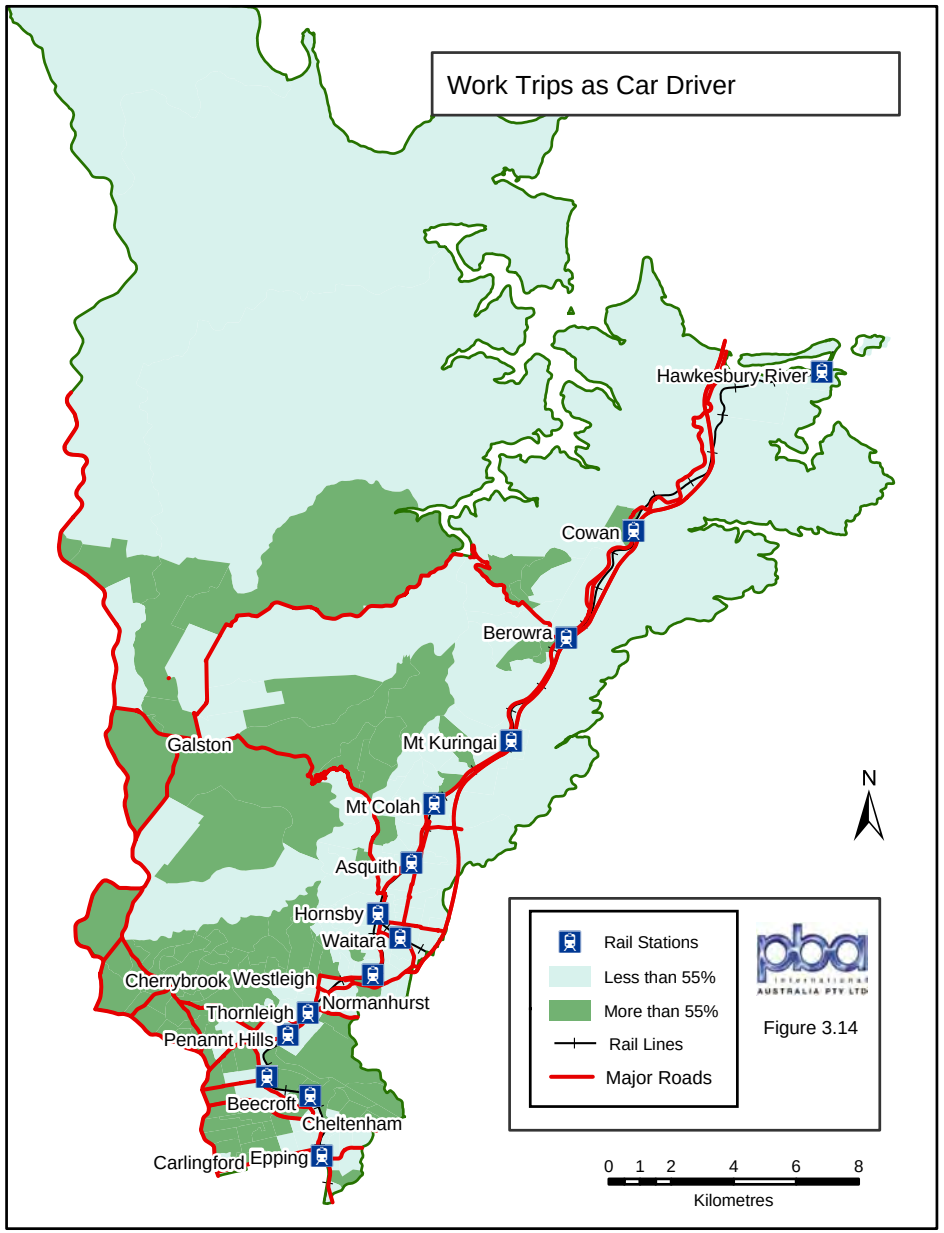


Figure 3.14

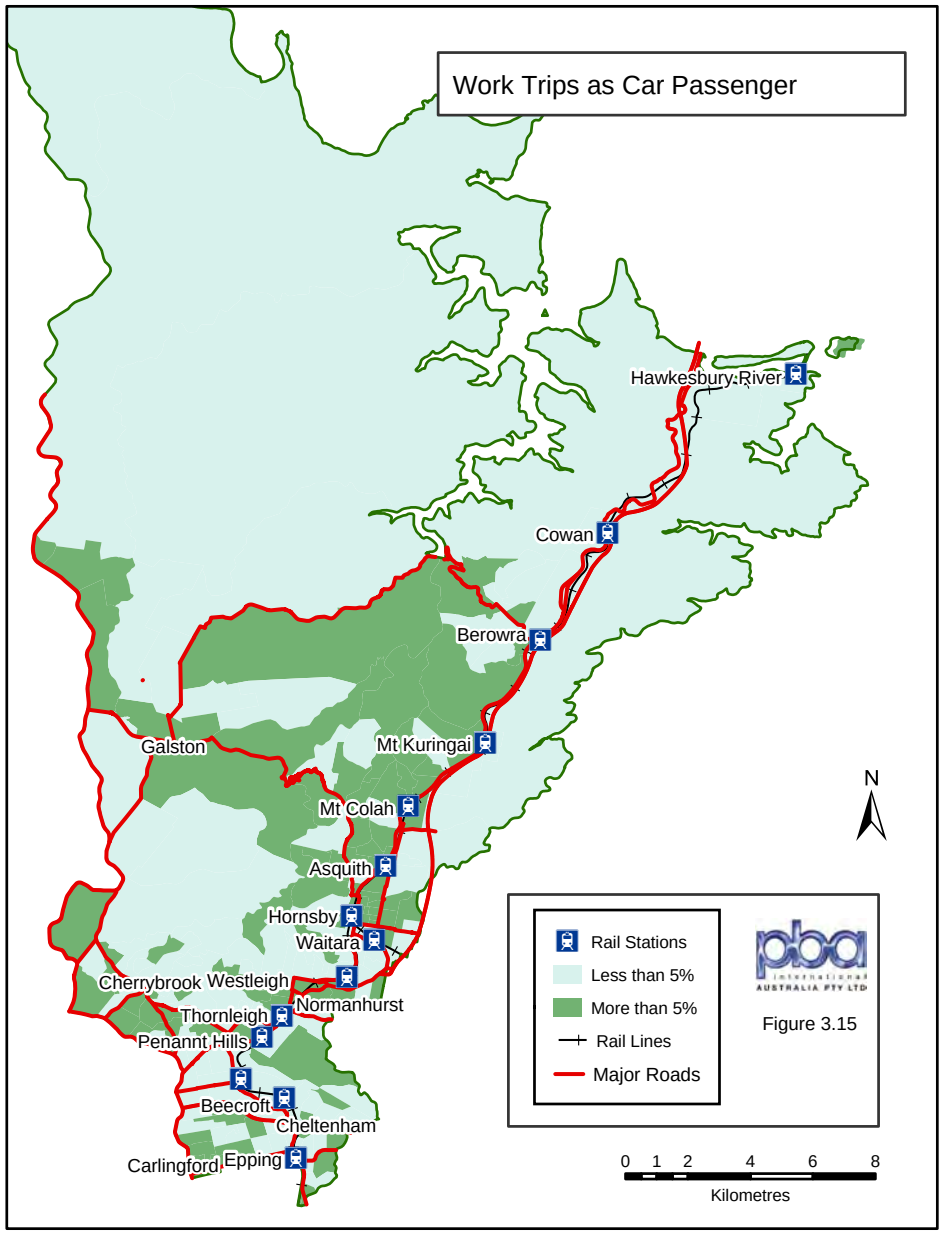
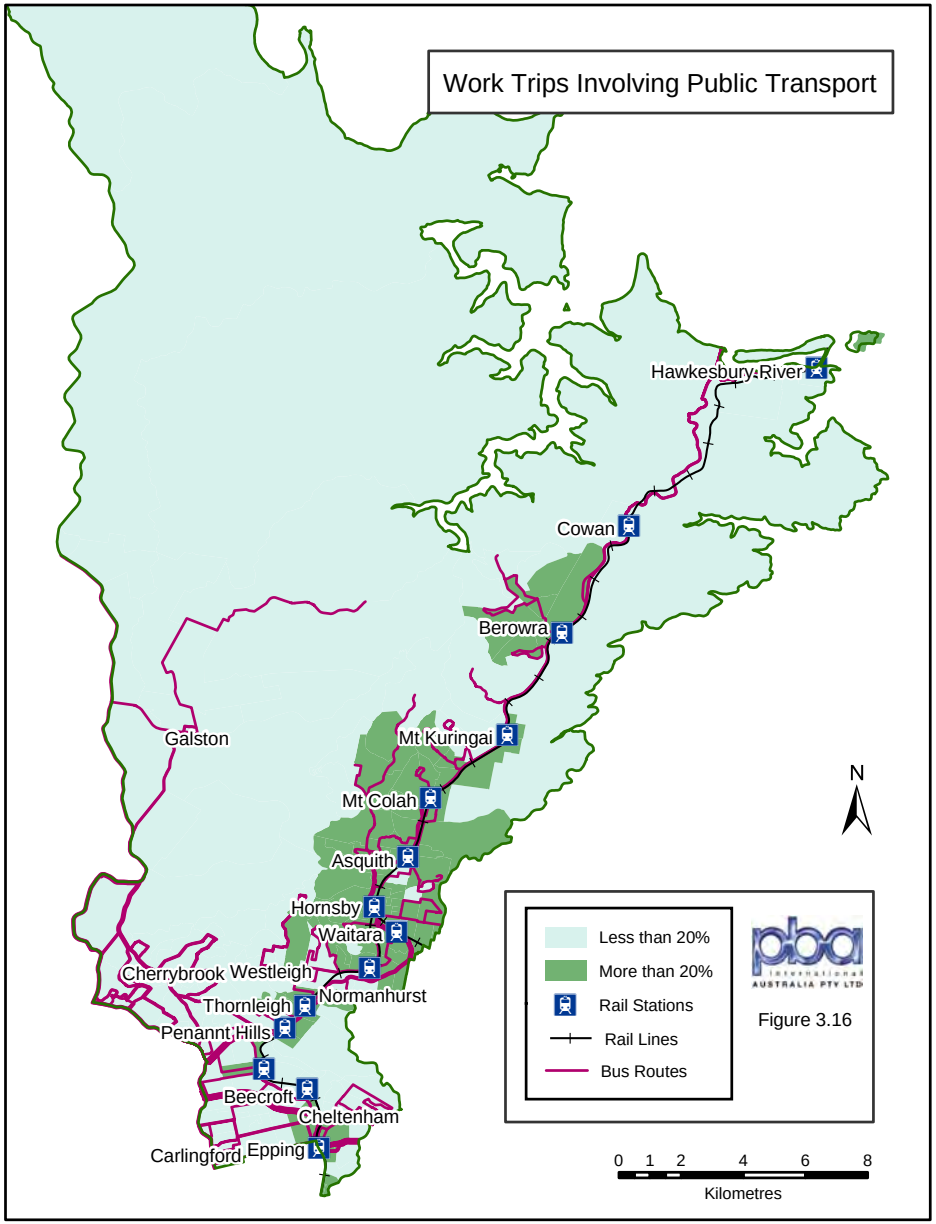
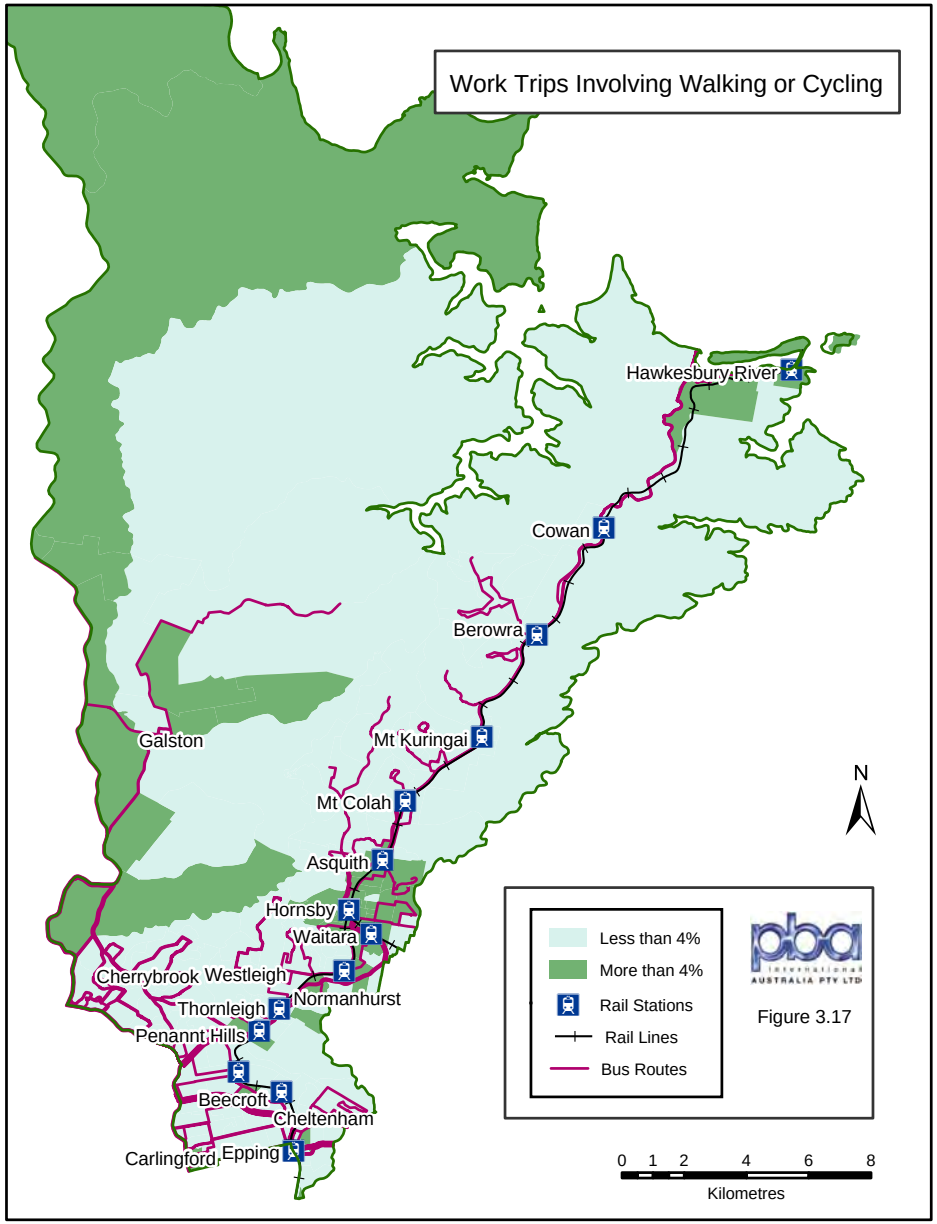


Figure 3.15


Work Trips Involving Public Transport
Hawkesbury River
Cowan
Berowra
Mt Kuringai
Galston
Mt Colah
Asquith
Hornsby
Waitara
Westleigh
Cherrybrook
Normanhurst
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping
N
Less than 20%
More than 20%
Rail Stations
Rail Lines
Bus Routes
Figure 3.16
0 1 2 4 6 8
Kilometres


Work Trips Involving Walking or Cycling
Hawkesbury River
Cowan
Berowra
Mt Kuringai
Galston
Mt Colah
Asquith
Hornsby
Waitara
Westleigh
Cherrybrook
Normanhurst
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping
N
Less than 4%
More than 4%
Rail Stations
Rail Lines
Bus Routes
Figure 3.17
0 1 2 4 6 8
Kilometres

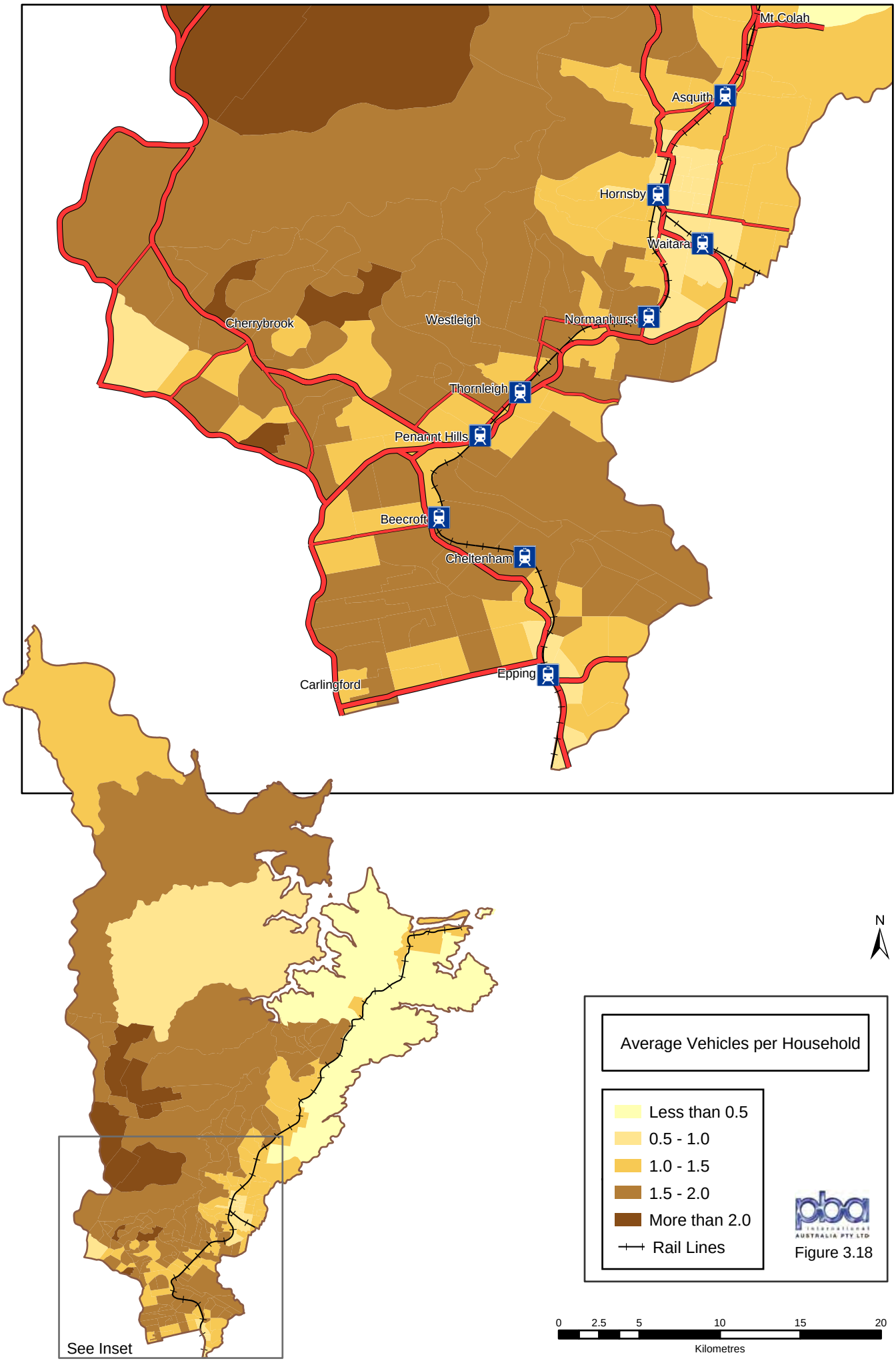
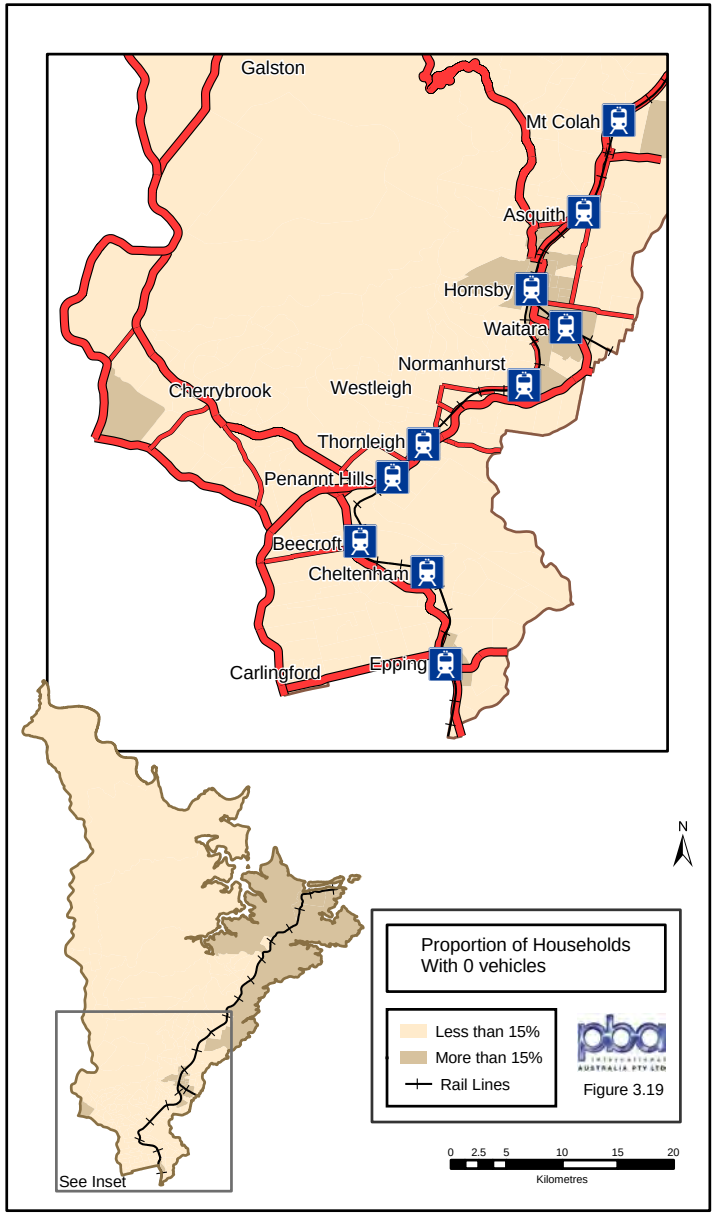
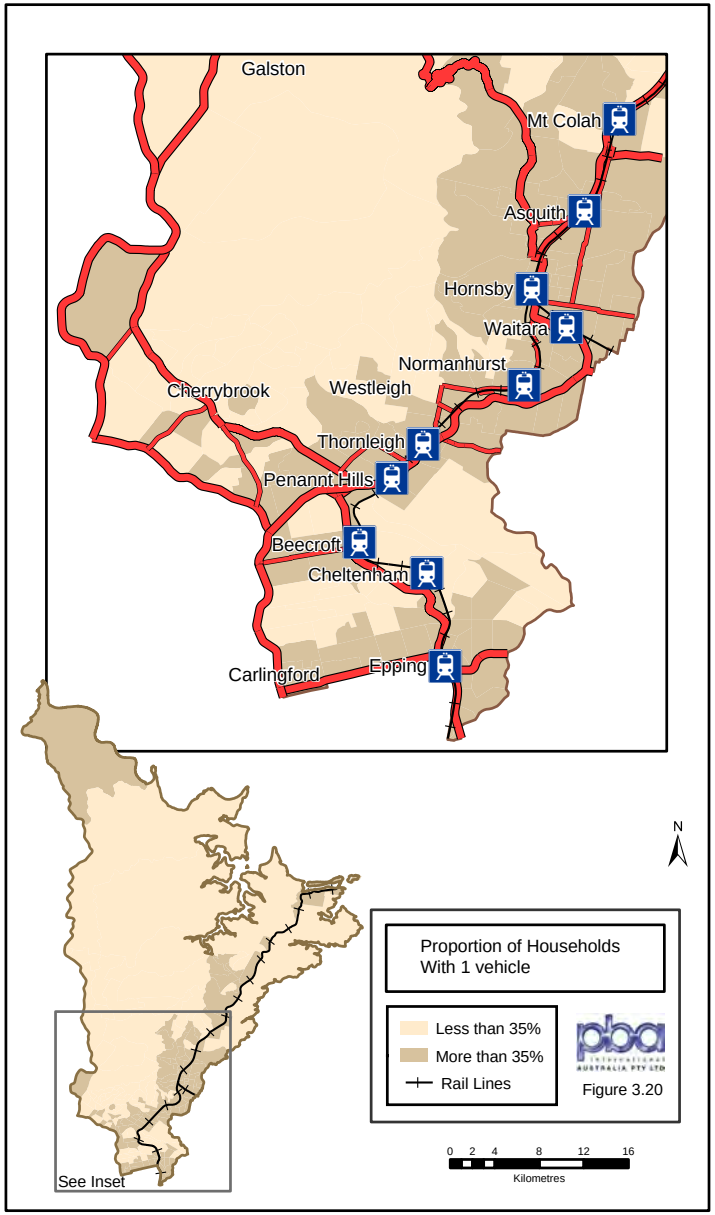

Mt Colah
Asquith
Hornsby
Waitara
Cherrybrook
Westleigh
Normanhurst
Thornleigh
Penannt Hills
Beecroft
Cheltenham
Carlingford
Epping
See Inset
N
Average Vehicles per Household
Less than 0.5
0.5 - 1.0
1.0 - 1.5
1.5 - 2.0
More than 2.0
Rail Lines
0
2.5
5
10
15
20
Kilometres

Figure 3.18

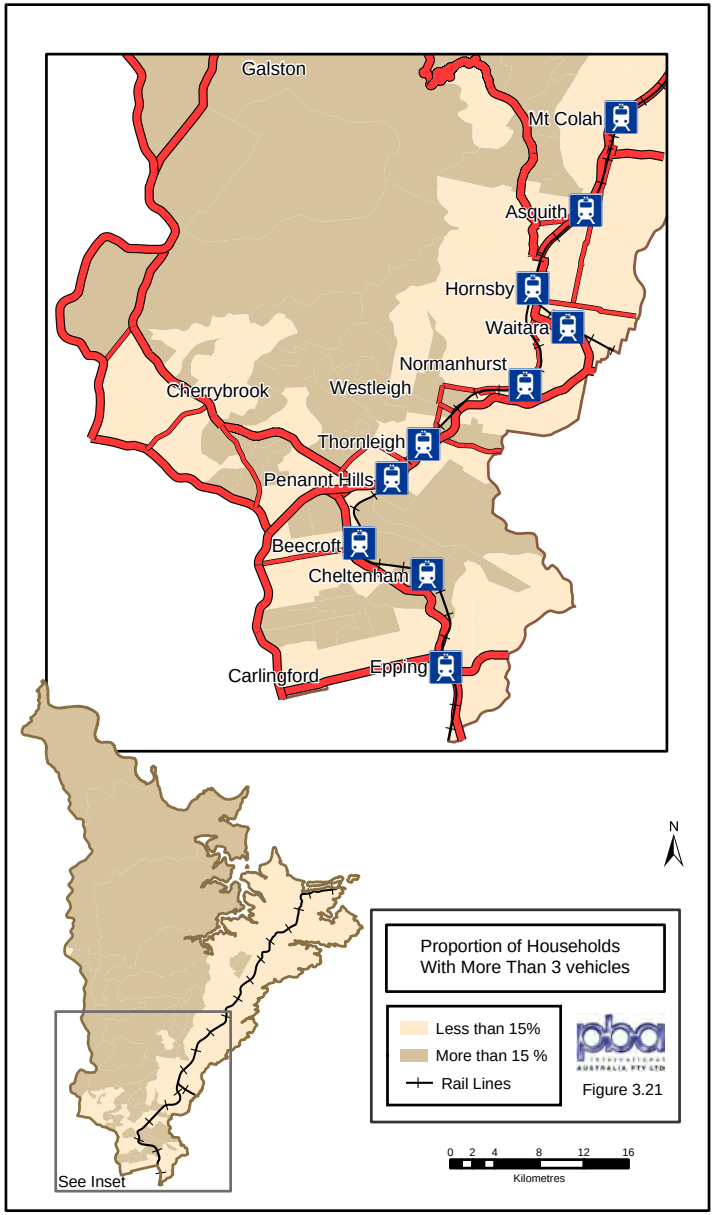
0 Vehicles per Household



1 Vehicle per Household



3 or More Vehicles per Household



4.0 Current Proposals

4.1 There are a number of land use and transport proposals and infrastructure schemes that will impact on Hornsby Shire. These include:

- F3 – M2 Link;
- Parramatta Rail Link;
- North West Rail Link;
- Newcastle Fast Rail Link;
- Integrated Ticketing; and,
- Rouse Hill – Parramatta and Blacktown – Castle Hill T-ways (transitways).

The F3 – M2 Link

4.2 The F3 provides a 'bypass' to the Pacific Highway to the north of Pennant Hills Road. This relieves pressure on this key route by removing the majority of long distance through traffic. However if an incident occurs on the F3 then drivers divert back to the Pacific Highway, which can cause congestion and other related problems.

4.3 The National Highway network currently identifies Pennant Hills Road / Cumberland Highway as the route between the F3 and the M4 and M5 motorways. The completion of the Sydney Western Orbital in 2007 will effectively link the M5 and M2 via the M4, relieving the Cumberland Highway. Pennant Hills Road will remain the National Highway route between the M2 and the F3 Newcastle Freeway.

4.4 This 'missing link' has been the subject of study since 1993. At that time recommendations were made to either retain and upgrade Pennant Hills Road or identify a route through Galston Gorge. Unsurprisingly neither of these options found favour with the local community and both were officially abandoned in 1995.

4.5 Hornsby Shire Council has made a number of submissions to Federal and State ministers regarding the missing link and the Sydney Orbital. Council has identified the unsuitability of Pennant Hills Road as a long term option to link the M2 and F3, the need for extensive community consultation in the development of an alternative and the unacceptability of any surface route options that compromise areas of National or Regional Park (Galston Gorge, Berowra Valley and Lane Cove). In particular Council stated that investigations into a long term solution should include:

- A second crossing of 'Hawkesbury River';
- Public transport;
- Consideration of a tunnel from the F3 at Pearces Corner to the M2 at North Ryde; and,
- Better access for residential areas as well as commercial and industrial areas.

4.6 The Department of Transport and Regional Services (DOTARS) has commissioned consultant Sinclair Knight Merz to undertake a study to consider new options for a link between the F3 and M2, relieving pressure on Pennant Hills Road and completing the Sydney Orbital. The RTA is coordinating this study. Specifically the study is seeking to identify a route that:

- Provides an improved north-south National Highway through northern Sydney;

- Reduces traffic, including heavy vehicles, on the interim National Highway corridor along Pennant Hills Road; and,
- Improves access for freight and other traffic from the Hunter Region and Central Coast to Sydney's industrial centres, markets and ports.

4.7 The study is taking into account:

- Current and future traffic levels;
- Future planned land developments;
- Public transport needs;
- Potential environmental and social effects; and,
- Economic benefits.

4.8 The study initially focused on three general route options:

- Type A – linking the Sydney Orbital at the M2 with the southern end of the F3 at Wahroonga. The majority of the length would be in a tunnel. The cost of this type of option would be in the region of $1bn.
- Type B – Linking the M2 or Western Sydney Orbital with the F3 south of the Hawkesbury River but north of Hornsby. The cost of this type of option would be in the region of $1.5bn.
- Type C – Linking the northern part of the Western Sydney Orbital with the F3 in the vicinity of Mount White or Kariong, would include a new crossing of the Hawkesbury River. The cost of this type of option would be in the region of $2bn.

4.9 In terms of the impact on Pennant Hills Road, the further east the link is routed, the greater the positive impact on Pennant Hills Road:

- Type A – 20 – 30% reduction in traffic on Pennant Hills Road;
- Type B – 10 – 15% reduction in traffic on Pennant Hills Road; and,
- Type C – 5 – 10% reduction in traffic on Pennant Hills Road.

4.10 Following the decision that Type A routes should be pursued, four options were considered. A preferred alignment was announced on 6th May 2004. The preferred (Purple) option will include eight kilometres of tunnel and will connect the F3 at Wahroonga to the M2 at the Pennant Hills Road interchange, i.e. it will follow the Pennant Hills Road alignment. The press release notes that this option was the most favoured by the public.

4.11 The preferred option will significantly reduce traffic along Pennant Hills Road and improve amenity along the corridor. In particularly the study report notes the opportunity for the tunnel link to be considered as part of an integrated land use and transport opportunity which could improve all transport modes along the corridor. In particular[6]:

- Reallocation of road space on Pennant Hills Road to allow wider footpaths, a cycleway and bus priority measures;

[6] Taken from, SKM, F3 to Sydney Orbital Link Study Main Report, April 2004

- Improved access for buses and park and ride commuters to Pennant Hills and/or Thornleigh rail stations;
- Redevelopment of Pennant Hills and Thornleigh railway stations, including new commuter car parking arrangements and related private sector urban development around the stations;
- Redevelopment of pennant Hills railway station as a sub-regional interchange (in association with private sector urban development);
- Provision of regional bus services from Hornsby and Pennant Hills to Blacktown, Parramatta and Penrith using Pennant Hills Road and the M2; and
- Improved long-distance bus and rail services from the central coast to Western Sydney destinations.

4.12 The link will be subject to an Environmental Impact Statement which is due to be commissioned in the later half of 2004 and then take around two years to complete. No date has been given for commencement or completion of the construction at this stage.

4.13 It is clear from the work already presented by Sinclair Knight Merz that the F3 will need upgrading to maintain the current level of service as traffic volumes continue to increase. Increasing the freeway beyond three lanes in each direction is not identified as an option, hence, in the longer term demand management strategies will be necessary to maintain even the existing, relatively poor level of service.

Parramatta Rail Link

4.14 It is hoped the Parramatta Rail Link (PRL) will ultimately link Parramatta and Chatswood via Epping with a new 28km railway. Following a reassessment of the project the Epping to Parramatta section has been deferred indefinitely. Work has, however, commenced on the Chatswood to Epping section of the line. Three new stations will be added to the CityRail network with completion of the Chatswood to Epping section and both Chatswood and Epping stations will be upgraded. Works have also commenced on a new $100 million transport interchange at Parramatta.

4.15 In both the short and long term, the PRL will:

- Increase the long-term capacity of the CityRail network;
- Ease congestion on the Main West Line;
- Link key regional centres, including Macquarie Park, North Ryde and Northern Sydney and in the longer term centres in Western Sydney;
- Increase the overall use of public transport;
- Improve air quality by effecting a modal shift; and,
- Expand Sydney's metropolitan rail system.

4.16 The PRL (Chatswood to Epping section) will effectively relieve congestion on the Main West Line by diverting trains to the Sydney CBD via Epping and Chatswood, rather than the current route through Strathfield. This will have the impact of increasing seat capacity on the Northern Line and the North Shore Line south of Chatswood, bringing benefits to Hornsby Shire residents. There will also be the direct impact of improved interchange at Epping.

4.17 A consortium, Thiess Hochteif Alstom, has been awarded the Major Civil and Rail Systems contract for the Chatswood to Epping section and work has commenced, with the link due to open in mid 2008. As stated the Epping to Parramatta sections has been deferred indefinitely.

4.18 The works on the Parramatta transport interchange commenced in 2003 and are planned to be completed in 2006. The masterplan for the Chatswood interchange is currently being developed and it is expected that works will commence in 2004.

4.19 The PRL will improve rail accessibility to Hornsby Shire, benefiting local residents. Following completion of the Parramatta to Epping section, and given the operation of the T-ways (see below) by that time, public transport provision to the Hills District will be greatly improved, reducing reliance from these areas on accessing the rail network in Hornsby. This will bring benefits to local communities, reducing the current parking around stations and increasing local access to public transport.

North West Rail Link

4.20 The North West Rail Link (NWRL) was identified in Action for Transport 2010 as necessary to meet the demands of the north west growth corridor and address the high dependency on cars (85% of people in Baulkham Hills drive to work) and ensure access to employment and educational opportunities by the community. Further details of the proposal were released in 2002.

4.21 The first stage of the project will see a rail link from Epping to Castle Hill, to be followed by a western section to Mungerie Park/Rouse Hill. The eastern section, 11.6 kilometres, will be in a tunnel between the existing Northern Line and the Norwest Business Park. The second, western, section will be a surface rail line from the Norwest Business Park to the Mungerie Park/Rouse Hill town centre. There will be six new stations in total, including Franklin Road, Castle Hill, Hills Centre, Norwest Business Park, Burns Road and Mungerie Park/Rouse Hill.

4.22 The main advantages of the NWRL are identified as:

- Improve access to employment opportunities, education and health facilities;
- Connect Sydney's north west to the metropolitan rail network;
- Reduce car dependency;
- Improve local environments; and,
- Improve travel times for all journeys.

4.23 While *Action for Transport* committed to delivery of the NWRL by 2010, funding is not available to meet this undertaking and the current focus of investigations is on protecting the corridor for the entire length of the rail link. It remains possible that both stages will be implemented concurrently. The project would cost approximately $1.4bn if both stages were completed together, more if they were undertaken separately.

4.24 At this stage there is no timescale for completion of the link but it will clearly not be before 2010. The project timeframe is dependent on the completion of the second stage of the PRL, identification of funding and further investigations into the engineering and design options.

Sydney to Newcastle Rail Link

4.25 A series of rail improvements will be carried out on the line between Berowra and Newcastle in line with the commitment in *Action for Transport 2010*. The improvements will include:

- New train carriages with a greater capacity than existing carriages to service the Central Coast;
- Work is continuing to upgrade the rail line, reducing journey times and increasing the reliability of both passenger and freight services - $2 million will be spent on upgrade investigations in 2002/03;
- A new station will be built at North Warnervale, incorporating a bus interchange and commuter car park;
- Woy Woy Station will be upgraded with improvements to the bus interchange, improved cycle storage facilities and extension of the car park by about 300 spaces;
- Tuggerah Station will be upgraded, with improved bus links, a bus interchange and about 200 more commuter parking spaces;
- Gosford Station, one of the busiest on the Central Coast, will see an expanded car park facility offering about 1,100 spaces and improvements to the bus facilities; and,
- Wyong Station will become fully easy access with lifts to all platforms.

4.26 The focus on improving the rail link to Sydney CBD from Central Coast towns and the expansion of commuter car parks in the region is likely to alleviate pressure to provide rail commuter parking at stations in Hornsby that serve a relatively high proportion of Central Coast residents, for example, Berowra.

Integrated Ticketing

4.27 The complexity of public transport ticketing and the lack of an integrated system encompassing publicly and privately operated services is a major barrier to the promotion, and use, of public transport. The prevalence of privately operated bus services through Hornsby Shire makes this a major issue in the development of the ILUTS and the achievement of the core objective of reducing car use in favour of alternative modes.

4.28 Transport NSW is currently leading a project to develop an integrated ticketing system for the Sydney metropolitan area that will encompass all public and private services. A contract was awarded to Integrated Transit Solutions in August 2001 to design and build a system based on smartcard technology. The cards will be 'contactless', allowing passengers to board and interchange between services with little interruption. The system will be phased in from 2005.

4.29 The advent of integrated ticketing will significantly improve the attractiveness of public transport in Hornsby Shire, particularly for those who need to interchange between modes. It is likely that integrated ticketing will encourage the use of feeder bus services linking with rail stations, thereby reducing the parking demand by rail commuters.

4.30 Although integrated ticketing will bring a number of advantages to public transport passengers it will not encourage operators to offer discounts for multiple trips or time-

based travel and therefore it is anticipated that the existing price differentials between private and State owned public transport services will remain.

Rouse Hill - Parramatta and Blacktown - Castle Hill T-ways (Transitways)

4.31 The Rouse Hill to Parramatta and Castle Hill to Blacktown T-ways will not directly impact on Hornsby Shire, however, in providing a viable public transport alternative for the growth areas of north west Sydney, it will have an indirect impact on the ILUTS study area. There is substantial anecdotal evidence that people drive from the Hills District to stations on the Northern Line to access public transport services to Sydney CBD. With the completion of the T-way these commuters will have an public transport alternative available.

4.32 One T-way will run from Rouse Hill to Parramatta via the Weastmead Health Campus and the University of Western Sydney. It will incorporate T-way only infrastructure and shared use lanes. The 19 T-way stations along the route will be served by local buses in addition to T-way services to meet the needs of the broader community. Rouse Hill will eventually incorporate a major bus/rail interchange, following completion of the NWRL.

4.33 In addition a T-way from Castle Hill to Blacktown will intersect with the Rouse Hill to Parramatta T-way at Burns Station Interchange. In total this route will be 15km long and include 19 T-way stations. This T-way will further enhance transport alternatives for those living to the west of Hornsby Shire and currently without rail access.

5.0 Issues and Objectives

5.1 There are a number of existing land use and transport issues that have been identified through the initial stages of the project either from a document review, during the site visits, in discussions with Council or at the stakeholder meeting. Site specific issues are included in **Annex 1**[7] and more general issues are outlined in this section under a series of topic based headings. For each topic a number of objectives have also been identified which seek to address the issues within the overall aims and objectives of the ILUTS. Section 6 then repeats these topic based objectives, identifying the opportunities and constraints that will impact on the achievability of each.

5.2 The issues, objectives, opportunities and constraints will form the basis of the action plans that will outline the implementation of the ILUTS to achieve the identified objectives.

5.3 The identified topics are:

- Administration;
- Travel demand management;
- Land use development;
- Arterial roads;
- Local street management;
- Car parking management;
- Public transport;
- Walking and cycling; and,
- Access to National Parks and other areas of open space.

Administration

5.4 The implementation of the ILUTS actions will be dependant on the management and administration structures in place and the political will to achieve change. Many of the actions will require Council to work closely with other stakeholders, including public transport operators and State Government.

- The responsibility for planning and delivery of the integrated land use and transport initiatives will inevitably be spread across Council departments and external stakeholders.
- Coordination between departments and with external stakeholders is vital to achieve objectives, however, the necessary relationships may not already be in place.
- Council has existing policies and a Management Plan in place and the ILUTS needs to recognise Council's existing position. Some existing policies may conflict with the principal aims and objectives of the ILUTS.

[7] Annex 1 Site by Site Analysis, issued in Draft in October 2002 remains unchanged.

Objectives

- Ensure all Council policies and the Management Plan support and in turn, are supported by, the ILUTS.
- Develop clear working relationships within Council to manage the implementation of the ILUTS.
- Develop effective working relationships with external stakeholders to implement the ILUTS.

Travel Demand Management

5.5 Travel demand management is about managing the unrestrained demand for car travel by encouraging greater use of public transport, walking and cycling, more efficient use of vehicles and reducing the actual need to make trips. This is central to the overall aims and objectives of the ILUTS and can only be achieved effectively through combining land use and transport responses and proposals. It is likely that some proposals will focus on a range of marketing, education and information initiatives to maximise use of existing and proposed infrastructure.

5.6 Some issues specifically relating to travel demand management include:

- Vehicle use contributes to greenhouse gas emissions, causes congestion and has a negative impact on personal health and road safety. The continuing growth in vehicle kilometres travelled (VKT) is increasingly being recognised as a major challenge facing Australia and State policy, as set out in *Action for Air*, which recognises that air quality will reduce dramatically if action, particularly in reducing vehicle use, is not taken.
- There is high car ownership in some areas of Hornsby Shire, particularly within those communities located away from rail stations.
- There are many rural communities within Hornsby Shire where population density will never be sufficient to support conventional public transport services and for whom walking and cycling do not present realistic alternatives due to the distances to basic amenities.
- The only comprehensive information source for public transport services operating within and through the Shire is via the '131500' telephone or internet service. However this service is not well publicised and does not include any printed material and so most residents rely on information from a variety of sources. This will inevitably lead to problems with access and consistency. Without information people will be unaware of the public transport services available.
- Public transport facilities, particularly bus stops, in the Shire can be of a very poor standard perpetuating the perception that public transport is inferior to cars.
- There are many schools within the Shire, some attracting students from a wide area. Car based school trips cause local congestion and are detrimental to road safety around the school.
- The topography of the Shire, combined with rail lines and arterial roads create significant barriers to public transport, walking and cycling as effective modes of transport.

Objectives

- Develop and implement a comprehensive educational and information campaign focusing on the community, workplaces and schools.
- Recognise the principles of travel demand management in all aspects of the ILUTS.

Land Use Development

5.7 The following issues have emerged from a review of the population, land use and policy context for Hornsby:

- Hornsby is a large shire, with substantial areas of land in the north and west which are not suited to development on account of its ecological or agricultural value. It also contains sensitive land within the urban areas which cannot be developed on account of constraints imposed by its natural features.
- A well developed bus and road transport corridor traverses the southern part of the Shire and an established road and rail corridor is located along the Shire's eastern boundary. Transport infrastructure in the north and western parts of the Shire is less well established.
- Urban residential areas are generally low density, with pockets of medium to high density development in and around town centres and transport nodes.
- Hornsby has experienced population growth at around 10,000 persons every 5 years for the last 20 years, a large part of this growth has been accommodated in the western part of the Shire which has poor access to public transport.
- Policies at the State level seek to integrate land use and transport to reduce the need to travel by car. Some rural parts of the Shire are therefore constrained for more intensive development by density controls at the local level as well as the lack of access to public transport.
- Hornsby has a relatively large resident work force compared to the number of jobs available in the Shire. Much of the workforce therefore commutes to work outside the Shire.
- Commercial employment sites in Hornsby centre are not being realised, primarily as a result of competition from larger commercial centres such as Chatswood, North Sydney, Parramatta and the Sydney CBD and this results in a relatively high level of commuting out or across the Shire for employment and retail needs.
- Large areas of land release in the Shire (such as Cherrybrook) have been developed at low densities in advance of significant investment in public transport infrastructure.
- Parts of the Shire, for instance National Parks, State Forests and the Hawkesbury River, are highly attractive and popular for recreation and tourism. Village areas throughout the shire are under increasing pressure for additional residential development. These areas are often poorly accessible by public transport and have limited capacity to cope with increasing levels of vehicle access. This results in adverse environmental as well as parking and congestion problems.

- The Shire has large areas of rural land which lack sufficient population density to attract and sustain public transport services and are subsequently heavily car dependent.

Objectives

- Develop an evaluation system or framework for assessing urban growth proposals within the Shire to ensure adherence to overall aims and objectives of the ILUTS.
- Promote additional housing and employment in the existing areas to enable a more effective use of public transport and other services.
- Promote vital and viable centres that attract and sustain a broad range of land uses and services.

Arterial Roads

5.8 Pennant Hills Road experiences high traffic levels as it currently provides the most direct connection between the F3 and the M2. These high levels of through traffic, including a large number of goods vehicles, compromise safety and local amenity. Traffic volumes on the eastern part of Pennant Hills Road have increased dramatically since the opening of the M2. The ongoing DOTARS study into an alternative link has stalled due to the complexity of the project and a completion date is not available. Regardless of the study timeframe it will take a number of years for any recommendations to become a reality. A number of issues identified are specifically associated with Pennant Hills Road:

- There is a significant road safety problem associated with Pennant Hills Road;
- Traffic flows on Pennant Hills Road are forecast to increase with an increasing proportion of heavy and very heavy vehicles;
- The completion of the Sydney Western Orbital in 2004 is expected to increase traffic on Pennant Hills Road between the M2 and F3; and,
- Reducing traffic volumes on Pennant Hills Road as a result of the proposed MF3-M2 link will allow road space to be reallocated and priority for buses, cyclists and pedestrians to be provided.

5.9 Other issues include:

- The Shire Roads Hierarchy provides the basis for determining the most appropriate function of roads within the Shire.
- The Pacific Highway and George Street, passing through Hornsby town centre, remain the unofficial ‘bypass’ of the F3 at times of severe congestion or closure. Traffic volumes on the F3 are forecast to increase and it is recognised that even with upgrading and widening the level of service will inevitably reduce. In the longer term congestion on the F3 and the inevitable rise in incidents will increase traffic volumes on the Pacific Highway, impacting on Hornsby town centre and settlements to the north.
- Many commercial and retail areas throughout the Shire are located on heavily trafficked arterial roads, which affects access within, to and from the centres and is detrimental to the local economy.

- A high proportion of road accidents within the Shire occur on arterial routes, with a high level of accident severity.
- Arterial routes act as a barrier to pedestrians, cyclists and local traffic, impeding local activity.
- Bus services in the Shire tend to operate along arterial routes and are subject to congestion which can impact on journey times and reliability. Bus stops along arterial routes can be difficult to access from local residential areas and do not present pleasant and safe waiting environments.
- The relatively high proportion of heavy traffic on arterial routes exaggerates the impact of the road on the community and the environment. Detrimental impacts include, noise, vibration, particulate emissions and road accidents.

Objectives

- To reduce the impact of arterial roads on activity centres and residential areas.
- To reduce the barrier effect of arterial routes for local trips.
- To effect a reduction in the number of accidents occurring on arterial routes and improve overall safety for all road users.
- Increase bus priority along arterial routes with consequent positive benefits on bus travel times and reliability.

Local Street Management

5.10 A number of issues have been identified that specifically relate to local street management. The management of local streets will assist in the creation of vibrant interactive neighbourhoods where people are encouraged to walk, cycle and socialise in streets through the provision of a safe, comfortable and attractive local environment.

5.11 The issues identified include:

- 'Rat running' occurs through some residential areas due to heavy traffic elsewhere and this can be exacerbated by congestion on the arterial road network.
- There is a high level of commuter parking in some residential streets, particularly those close to stations and activity centres, which detracts from local safety and amenity and can reduce parking for residents and their visitors.
- High vehicle speeds are experienced on some local streets compromising road safety and amenity.
- Existing street patterns are not designed to encourage walking, cycling or buses. The topography creates cul-de-sac suburbs unsuitable for penetration by bus services and making walk and cycle routes indirect and lengthy.
- There is a commonly held perception that local streets are not safe for children to use due to 'stranger danger' and traffic hazards.
- Each precinct suffers different problems and therefore solutions need to be tailored to individual needs.

Objectives

- To reduce the number of vehicles using local streets that do not have business there, such as rat running and commuter parking.
- To reduce vehicle speeds and the intrusion of traffic into residential areas.
- To improve opportunities for public transport, walking and cycling in residential areas of the Shire.

Car Parking Management

5.12 Parking has been looked at in detail and a report is contained in **Appendix B**.

5.13 The paper has identified the following key parking related issues in Hornsby Shire:

- The parking DCP sets a minimum standard for car parking provision and does not offer the opportunity for parking restraint, even in the most accessible locations in the Shire. The inflexibility of the current parking code for Hornsby town centre is constraining development opportunities.
- There is a need to positively manage parking supply to support a mode shift away from car use and the principles of ESD.
- Commuter parking at stations in the Shire is in high demand with parking extending beyond SRA car parks to residential streets. People drive into Hornsby Shire from other council areas in the west and north to access the rail services. This reduces the parking available for more local residents, increases traffic flows on the network at peak times and increases parking in residential streets.
- Each centre has specific parking issues and these have been detailed in the parking paper. In particular there is a need to examine the role of additional on-street parking controls, including implementing a charging regime, close to train stations and in the main activity centres.
- River settlements have specific parking issues related to the accommodation of vehicles at landing points. Parking at Brooklyn for Dangar Island residents is a particular problem.

Objectives

- To use car parking as a travel demand management tool and to support the principles of ESD.
- Revisit the DCP to ensure it is consistent with the objectives of the ILUTS.
- Manage commuter car parking demand to ensure optimal use with minimal impact on local residential areas.

Public Transport

5.14 Public transport is a key part of the ILUTS but there are considerable issues surrounding the current provision of services and the expansion of them in the future. These are:

- Existing rail services on the North Shore Line between Berowra and Hornsby and Sydney CBD via North Sydney are already crowded during peak hours. Some small increases in capacity may be possible through the introduction of

services on the Parramatta Rail Link and by operating 8-car trains on all services, however, services are likely to remain crowded on this line in the future.

- Services operating on the Northern Line between Hornsby and Sydney via Strathfield are operating within capacity and there may be some scope to increase patronage on this line, however, it is recognised that peak hour 'limited stop' trains are more popular than 'all stops' trains and anecdotal evidence suggests these tend to be overcrowded.

- The current system of giving different subsidies to private and State owned bus operators places limitations on the provision of services in the Shire that do not exist in STA contract areas.

- Should the SSTS be reduced, through the introduction of a means test or similar measure, it is likely that a relatively high proportion of students attending schools in Hornsby would be affected, given the prevalence of private schools. This may have the impact of increasing the number of pupils being driven to school by parents, thus exacerbating morning peak hour traffic and increasing congestion around schools.

- Young people and the elderly rely on public transport services for independent travel. Inadequate public transport services can have social consequences.

- Rural areas of the Shire lack sufficient population density to create demand for conventional public transport services.

- Many of the bus stops within the Shire lack even basic infrastructure. This is particularly noticeable away from the activity centres and stations. Investment by operators in vehicles and service improvements is currently not matched by corresponding investment in infrastructure at bus stops and along corresponding access links.

- The provision of public transport to National Park areas will remain challenging. It is difficult to provide public transport to dispersed locations to meet the needs of people making recreational trips.

- There is a lack of bus priority in the Shire.

- Analysis of the census data for journey to work modal split and vehicle ownership, tends to indicate a correlation between these factors and public transport accessibility. Higher public transport use and lower car ownership tend to be focused in the areas served by the rail stations and to some extent the bus network. The conclusion is that public transport availability does impact on car use and that increased public transport accessibility does have the potential to reduce car use. Given this it is likely that those areas of the Shire with relatively poor public transport will remain essentially car dependent unless public transport is improved.

- The current mix of State Government and privately managed public transport operations within Hornsby Shire presents a number of issues for the better integration of services. Issues such as fully integrated ticketing, coordination of timetables, reduced ticket prices for multiple purchase, periodical or multi-modal tickets, provision of infrastructure and information need to be addressed to achieve the ideal of 'seamless' journeys.

- Bus services are critical to extending the rail catchment within the Shire, particularly in lower density areas of the Shire.

Objectives

- To improve the quality of all public transport facilities and infrastructure, providing the best facilities possible.
- To raise the profile of all existing public transport services in the Shire and promote any future improvements.
- To maximise opportunities to interchange between services and between modes.
- Increase the priority for public transport relative to private motor vehicles.
- To effect improvements to bus and rail services in the Shire.
- To develop alternatives to conventional public transport to serve rural communities and the National Park.

Walking and Cycling

5.15 Walking and cycling have a valuable role to play in an integrated land use and transport system. Walking is particularly accessible to a large proportion of the community and has minimal environmental impacts and positive social benefits. Much work needs to be completed to provide a pleasant cycling environment and encourage people to make journeys on their bikes.

- It is noted that in some locations within the Shire the opportunities for walking and cycling are limited by topography, existing street layout, barriers such as the rail lines and heavily trafficked streets.
- The Hornsby Bike Plan proposes a number of routes to provide a safe and convenient network for cyclists within the Shire, however, implementation has evidently been ad hoc leading to a fragmented network offering little continuity for cyclists.
- There are high levels of accidents involving pedestrians, particularly in Hornsby Town Centre and on Pennant Hills Road close to Thornleigh and Pennant Hills stations.
- The general walking environment in residential areas of the Shire can be poor with missing footpaths and a lack of safe crossing points.
- Hornsby Shire Council is currently progressing Pedestrian Access and Mobility Plans (PAMPs) in Pennant Hills and Cherrybrook. These studies will raise issues and make recommendations for improving the pedestrian environment in these areas. Some of these recommendations may be transferable to other areas. The ILUTS should be informed of the outcomes of the PAMPs.
- There is currently no formal Council strategy for pedestrian planning, although Council undertakes a number of projects to promote and enhance the walking environment.

Objectives

- To widely promote the benefits of walking and cycling within the Shire.
- To create streets and roads that are safe and conducive to walking and cycling.
- Increase the priority for pedestrians and cyclists relative to vehicular traffic.
- To ensure the recommendations of the Hornsby Shire Bike Plan and PAMPs are taken forward to implementation, reviewed periodically and revised.
- To develop a formal pedestrian planning strategy for the whole Shire.

Access to the National Park and Other Areas of Open Space

5.16 Hornsby Shire includes large areas of National Park and other bushland that attracts visitors from the local, metropolitan and wider regional area. At present access to these areas is dominated by the private car, but consideration needs to be given to improving and promoting access by other modes to ensure the future sustainability of these areas. Specific issues include:

- The dependency on car access as a means of accessing the National Park and other areas of open space in the Shire is detrimental to the environment and conflicts with the aims of conservation and preservation.
- It will always be difficult to provide attractive public transport services for recreational visitors to the Shire given the dispersed travel patterns.
- Communities living within the National Park and other designated areas of bushland are dispersed and as such it is unlikely they can be served effectively with conventional public transport services, as planning policies based on sound development principles preclude the ability to increase density in these areas.

Objectives

- Develop sustainable options for accessing National Park destinations.

6.0 Opportunities and Constraints

6.1 This section explores the opportunities and constraints in achieving each of the objectives identified in the previous section. The objectives seek to address the issues that have been identified in line with the overall aims and objectives of the ILUTS. It should be recognised that some issues and objectives are relevant to more than one topic area and some overlap will result.

Administration

- **Objectives**
    - Ensure all Council policies and the Management Plan support and in turn, are supported by, the ILUTS.
    - Develop clear working relationships within Council to manage the implementation of the ILUTS.
    - Develop effective working relationships with external stakeholders to implement the ILUTS.
- **Opportunities**
    - Existing Council policies, such as Local Agenda 21 and the Management Plan, support integrated land use and transport planning.
    - State Government policies support land use and transport integration.
    - The local bus operators have demonstrated their willingness to get involved and take a proactive role in service provision and the identification of priority measures.
    - Revenue generated through the implementation of parking charges can assist the implementation of the ILUTS.
- **Constraints**
    - The political will to implement the sometimes difficult initiatives at all levels may be lacking.
    - A number of agencies from both the public and private sectors, with potentially conflicting agendas, will need to work together to implement any one project.
    - State Government has not developed a metropolitan wide plan for development which is required to ensure a consistent approach to development between municipalities.

Travel Demand Management

- **Objectives**
    - Develop and implement a comprehensive educational and information campaign focusing on the community, workplaces and schools.
    - Recognise the principles of travel demand management in all aspects of the ILUTS.

- **Opportunities**
    - A broad range of experience in travel behaviour change is available to draw on from within Australia and overseas. This includes personalised marketing to communities, within workplaces and to students in schools and these projects have been shown to reduce VKT.
    - Council can take the lead through the implementation of its own Green Travel Plan and examination of its business to minimise car travel to and from work and for business trips.
    - Funding may be available for innovative travel behaviour change programs from State Government.
    - The community is aware of the environmental consequences of unrestrained car travel and is enthusiastic and willing to get involved.
- **Constraints**
    - There is a high level of car dependency in most areas of the Shire that will be difficult to break down.
    - The low profile of public transport within the Shire does not encourage public transport use.
    - There are preconceptions about some types of approach that may hinder investigation and implementation.
    - The ILUTS is dependent on coordinated and effective administration.

Land Use Development

- **Objectives**
    - Develop an evaluation system or framework for assessing urban growth proposals within the Shire to ensure adherence to overall aims and objectives of the ILUTS.
    - Promote additional housing and employment in the existing areas to enable a more effective use of public transport and other services.
    - Promote vital and viable centres that attract and sustain a broad range of land uses and services.
- **Opportunities**
    - Council is implementing a concentrated housing strategy which seeks to accommodate future growth in existing centres by identifying precincts suitable for higher density multi-unit housing and shop-top housing opportunities.
    - State government policies encourage and support the integration of land use and transport in assessing development proposals.
    - Residential parts of the Shire currently developed at low or medium densities may provide longer term opportunities to be redeveloped at higher densities as housing stock ages and needs replacing.

- **Constraints**
    - There are strong community aspirations to retain low density residential development.
    - Competition from other centres outside the Shire affects the demand for commercial uses in Hornsby town centre and impacts on the vitality and viability of centres and their ability to retain population.
    - Previous patterns of urban development limit opportunities for public transport services.
    - Sensitive land within the urban area is constrained from development on account of its environmental characteristics.
    - Market demands for commercial and retail uses are currently driven by parking availability and are not necessarily consistent with ILUTS objectives.
    - The location of services and employment in Hornsby Shire centres can be encouraged, although provision is ultimately dependent on market forces.

Arterial Roads

- **Objectives**
    - To reduce the impact of arterial roads on activity centres and residential areas.
    - To reduce the barrier effect of arterial routes.
    - To effect a reduction in the number of accidents occurring on arterial routes and improve overall safety for all road users.
    - Increase bus priority along arterial routes with consequent positive benefits on bus travel times and reliability.
- **Opportunities**
    - The DOTARS study is investigating an alternative F3 – M2 Link, which would lead to reduced traffic volumes on Pennant Hills Road and allow available road space to provide priority for buses, cyclists and pedestrians.
    - The ILUTS seeks to promote public transport and a mode shift reducing the growth in car travel, making the most effective use of existing arterial roads without the need for new/wider roads.
    - The Shire Roads Hierarchy is already available and will assist in determining the appropriate function of roads.
- **Constraints**
    - Council has limited or no control of arterial routes and a number of agencies will necessarily be involved in planning and implementing solutions.
    - Potential solutions are likely to be limited by the existing urban structure.

Local Street Management

- **Objectives**
    - To reduce the number of vehicles using local streets that do not have business there, such as rat running and commuter parking.
    - To reduce vehicle speeds and the intrusion of traffic into residential areas.
    - To improve opportunities for public transport, walking and cycling in residential areas of the Shire.
- **Opportunities**
    - There are an increasing number of examples of good practice in local street management and design from around the Sydney metropolitan area, other parts of Australia and overseas that Council can draw on.
    - On-street parking controls using time restrictions will benefit local streets and remove non local traffic.
    - The Shire Roads Hierarchy is already available and will assist in determining the appropriate function of roads.
- **Constraints**
    - There is a need to retain access for residents, visitors and service vehicles in any scheme developed.
    - Some businesses may not welcome reduced access to local areas if they perceive their trade will be affected.
    - The existing street patterns may not be conducive to achieving the stated objectives due to layout and topography.

Car Parking Management

- **Objectives**
    - To use car parking as a travel demand management tool and to support the principles of ESD.
    - Ensure the Parking DCP is consistent with the aims and objectives of the ILUTS.
    - Manage commuter car parking demand to ensure optimal use with minimal impact on local residential areas.
- **Opportunities**
    - Potential revenue stream from charges relating to new restrictions to assist in implementing other ILUTS actions.
    - Car parking management offers a powerful policy tool to achieve the aims and objectives of the ILUTS.
    - State Government is currently investigating a Metropolitan Parking Strategy which will seek to provide a coordinated approach across municipalities.

- The public transport integrated ticketing initiative and Smartcard technologies will offer opportunities to better manage station commuter parking.
- The integrated approach of the ILUTS towards public transport and car parking offers opportunities to restrict parking as public transport services are improved.
- Additional commuter express bus services operating between Sydney CBD and communities in the west of the Shire may reduce the demand for parking at stations. In the longer term the western section of the Parramatta Rail Link and NWRL may have a similarly positive effect.

- **Constraints**
  - There may be a negative reaction from some community members to tighter management of parking supply.
  - Council will need to undertake a significant shift in policy direction to achieve the set objectives.
  - Many parking spaces are not within the control of Council, particularly SRA owned station parking, employee parking provided at commercial buildings and parking associated with retail developments.
  - Restrictive parking controls may affect the competitiveness of Hornsby Shire's activity centres in relation to those in neighbouring municipalities.

Public Transport

- **Objectives**
  - To improve the quality of all public transport facilities and infrastructure, providing the best bus stops, interchanges and stations possible.
  - To raise the profile of all existing public transport services in the Shire and promote any future improvements.
  - To maximise opportunities to interchange between services and between modes.
  - Increase priority for public transport relative to private motor vehicles.
  - To effect improvements to bus and rail services in the Shire.
  - To develop alternatives to conventional public transport to serve rural communities and the National Park.

- **Opportunities**
  - Hornsby Shire benefits from good rail links to Sydney CBD, Strathfield and the Central Coast. These services also link activity centres within the Shire.
  - SRA may be able to increase capacity on existing rail lines through the operation of 8 car trains on all services. The Parramatta Rail Link will

bring additional rail improvements and may relieve overcrowding on the existing lines. In the longer term the NWRL will bring similar improvements.

- Local bus operators are proactive and willing to trial new services.
- There are identifiable opportunities at the local level to enhance interchanges – including provision of information, improving access to stations, improving the cleanliness and comfort of trains and enhancing station environments
- Epping will become a major interchange with the introduction of the PRL and eventually the NWRL.
- The Parking Space Levy provides considerable funds for public transport interchange improvements.
- The integrated ticketing scheme to be implemented in 2004/5 may bring opportunities to combine ticketing on private and publicly provided public transport services.
- The 131 500 information service provides information on all public transport services.
- There is plenty of off-peak capacity on the public transport networks serving the Shire.
- Bus shelters can be provided and maintained through an agreement between Council and a private company (such as Adshel or JC Decaux).
- Council can take a lead in improving bus stop facilities and infrastructure.
- Council can draw on Australian and overseas experience in providing non-conventional public transport services to in rural and low demand areas.

- **Constraints**
  - There is a lack of capacity on rail network in peak hours – which could lead to a mode shift away from rail.
  - Existing system for allocating subsidies to State owned and private bus operators is inequitable and may constrain the expansion of local bus services.
  - A number of agencies will necessarily be involved in effecting improvements to the public transport network.
  - There is no existing formal role for Hornsby Council in the provision of public transport services.
  - Supply led public transport provision can be expensive in the initial phases of operation.

Walking and Cycling

- **Objectives**
    - To widely promote the benefits of walking and cycling within the Shire.
    - To create streets and roads that are safe and conducive to walking and cycling.
    - To give pedestrians and cyclists priority relative to vehicular traffic.
    - To ensure the recommendations of the Hornsby Shire Bike Plan and PAMPs are taken forward to implementation, reviewed periodically and revised as necessary.
    - To develop a formal pedestrian planning strategy for the whole Shire.
- **Opportunities**
    - Current PAMPs for Pennant Hills and Cherrybrook provide the opportunity to improve facilities.
    - Extensive range of 'side benefits' to increased walking – improved health, low cost, increased social interaction and environmental benefits.
    - RTA 50:50 funding is available for PAMPs and their recommendations and is also available for regional bike routes described in Hornsby's Bike Plan. The RTA will fund all schemes in *Action for Bikes 2010.*
    - Council can link the provision of infrastructure to travel demand management programs such as Green Travel Plans and personalised marketing.
    - The Parking Space Levy creates a fund for improving interchanges – including the provision of cycle racks / lockers.
    - A large proportion of households own bikes (although only a small number use them for making regular trips).
    - Hornsby Shire Council already has a comprehensive Bike Plan for the municipality which forms the basis for a cycling network within the Shire.
    - The development planning system offers a means of providing facilities for cyclists within new buildings.
    - A local bicycle user group is already active in the Shire and will provide invaluable support in developing cycling initiatives and promotional campaigns.
    - The ILUTS offers a coordinated approach to improve the local environment to assist in encouraging more trips on foot and by cycle.
- **Constraints**
    - Local topography, arterial roads with high traffic volumes and speeds and rail lines act as barriers to pedestrians and cyclists.

- The propensity to walk and cycle will always be affected by the weather and seasonal impacts such as dark nights.
- The existing low profile of walking and cycling as modes of travel does not publicise them locally.

Access to the National Park and Other Areas of Open Space

- **Objectives**
  - Develop sustainable options for accessing National Park destinations.
- **Opportunities**
  - The Northern Rail line provides significant opportunities for non-car access to Ku-ring-gai National Park, given its proximity to the park boundary and the existence of walking tracks leading from stations into the National Park.
  - Council can draw on national and international experience in dealing with similar problems of access to environmentally sensitive areas.
- **Constraints**
  - It will always be difficult for public transport to compete effectively with the private car for recreational trips.

7.0 Vision and Outcomes

7.1 From an understanding of the overall aims and objectives of the ILUTS and appreciation of the issues a range of topic based objectives have been identified. These objectives necessarily overlap, reflecting the integrated nature of the study, however, they work together to effect better transport and land use outcomes for the people who live and work in the Shire.

7.2 The Council Management Plan states:

"A sustainable future is a challenge to us all and one that drives Council in achieving its intent of creating a living environment…"

7.3 The Plan then sets out the ways in which this will be achieved:

- Engaging the community in the future of the Shire;
- Protecting the natural environment;
- Conserving resources;
- Facilitating increased social well being;
- Aligning service provision to meet changing needs;
- Integrating land use and transport planning;
- Facilitating a diverse local economy; and,
- Achieving financial sustainability.

7.4 Clearly the ILUTS is a central part of achieving Council's vision for the Shire. The strategy will contribute greatly to the integration of land use and transport but will also assist in meeting the other aims identified in the Management Plan.

7.5 Ultimately the ILUTS and its implementation will achieve:

- Town centre areas that contain a wide range of services and are easy to access and move around;
- A better evaluation system or framework for assessing development proposals within the Shire;
- Additional housing and employment in selected activity centres to enable more effective use of public transport and other public services;
- Urban places that encourage community interaction through neighbourhood events, an increase in walking and cycling, a recognisable sense of place and identity and the creation of safe places free of danger from traffic and personal crime;
- Real travel choices for all people when making everyday journeys, for example trips to work, school, shops, visiting friends and health services; and
- People having easy access from their homes to essential facilities and services, such as shops, health, education and employment.

Development of the ILUTS

7.6 The ILUTS is based on the topic based objectives, taking into account the identified issues, opportunities and constraints. The strategy is articulated through the development of a series of topic based action plans (included below), each setting out the way forward to tackle the issues and maximise the opportunities available to realise the objectives. In some cases it may be possible to overcome or minimise the constraints but others will remain.

7.7 The action plans necessarily overlap and the administration and implementation of the ILUTS must take this into account and operate in a coordinated manner. Without strong leadership and coordinated and effective administration and management the ILUTS will be unable to achieve its objectives and the identified outcomes.

8.0 Action Plans

Action Plans – Introduction

8.1 Early work on the ILUTS established the need for topic based action plans The actions plans identified include:

- Administration;
- Land Use and Development;
- Travel Demand Management;
- Public Transport;
- Arterial Roads;
- Local Street Management;
- Car Parking Management;
- Walking and Cycling;
- Access to National Parks and Open Space.

8.2 For each action plan topic objectives, issues, opportunities and constraints were identified, as discussed above, and these form the basis of each action plan. As the action plans are designed as stand alone documents the objectives, issues, opportunities and constraints are repeated. The action plans are necessarily inter-related and it should be noted that the realisation of the administration action plan and the land use and development action plan are fundamental to meeting the objectives of the other action plans and the overall aims of the ILUTS. The importance of Council's adoption of the ILUTS package and its commitment to the longer term benefits which will result is highlighted in these two action plans and cannot be over emphasised.

8.3 The ILUTS has also considered local areas in detail, including land use and transport characteristics and issues. Following agreement of the action plans as presented below, each local centre will be revisited and the relevant action plans highlighted. Suggestions for the local implementation of the action plans will be made wherever possible. In effect this will provide Council with a second tier of local area action plans.

8.4 Following completion of the local area plans all the action plans will be reviewed and an overall implementation framework developed. The framework will take account of priorities in realising the ILUTS and the resources available to Council to do so.

8.5 Council should recognise that it will be necessary to commit resources to the realisation of the ILUTS and this will include dedicated staff time.

Action Plan – Administration

Introduction

8.6 The implementation of the ILUTS actions will be dependant on the management and administration structures in place and the political will to achieve change. Many of the actions will require Council to work closely with other stakeholders, including public transport operators and State Government.

Objectives

- Ensure all Council policies and the Management Plan support and in turn, are supported by, the ILUTS.
- Develop clear working relationships within Council to manage the implementation of the ILUTS.
- Develop effective working relationships with external stakeholders to implement the ILUTS.

Issues

8.7 The responsibility for planning and delivery of the integrated land use and transport initiatives will inevitably be spread across Council departments and external stakeholders.

8.8 Coordination between departments and with external stakeholders is vital to achieve objectives, however, the necessary relationships may not already be in place.

8.9 Council has existing policies and a Management Plan in place and the ILUTS needs to recognise Council's existing position. Some existing policies may conflict with the principal aims and objectives of the ILUTS.

Opportunities

- Existing Council policies, such as Local Agenda 21 and the Management Plan, support integrated land use and transport planning.
- State Government policies support land use and transport integration.
- The local bus operators have demonstrated their willingness to get involved and take a proactive role in service provision and the identification of priority measures.
- Revenue generated through the implementation of parking charges can assist the implementation of the ILUTS.

Constraints

- The political will to implement the sometimes difficult initiatives at all levels may be lacking.
- A number of agencies from both the public and private sectors, with potentially conflicting agendas, will need to work together to implement any one project.
- State Government has not developed a metropolitan wide plan for development which is required to ensure a consistent approach to development between municipalities.

Approach

8.10 The realisation of the ILUTS through the effective implementation of the projects identified through the action plans is the responsibility of HSC. This responsibility must be recognised and embraced from the outset at all levels of Council. Councillor and senior management commitment to the aims and objectives of the ILUTS is particularly important and will be significant in developing proactive working relationships with stakeholders.

8.11 This action plan is based on the following approach:

- HSC input based on –
    - Steering Group,
    - Working Group,
    - Department and officer input;
- Review of HSC policies and programs;
- Development of strong cooperative relationships with stakeholders, based on –
    - Regular workshops,
    - Email;
- Project working groups.

HSC Input

8.12 A hierarchical approach is identified for HSC input reflecting the current Council decision making process.

Steering Group

8.13 The Steering Group will comprise Councillors and Senior Management. It must include the CEO and the GMs from the Planning and Transport departments. The Steering Group will be responsible for the overall progression and direction of the ILUTS implementation. The Steering Group will be responsible for resource allocation and the identification of priorities within the ILUTS.

Working Group

8.14 The Working Group will comprise Council officers representing a range of departments and responsibilities. The Working Group will take direction from the Steering Group and be responsible for the administration and implementation of individual projects.

Department / Officer Input

8.15 Projects will necessarily be run by individual Council officers with input and assistance at a Departmental level.

Review of HSC Policies and Programs

8.16 A key task at an early stage will be to initiate a review of all Council's policies and programs, including planning guidance. It is important that Council takes a consistent approach in line with the aims and objectives of the ILUTS. The review should be overseen by the Working Group with recommendations being made to the Steering Group on the resolution of conflicting approaches and policies.

Development of Working Relationships with Stakeholders

8.17 Council cannot realise the ILUTS alone and requires considerable input from Stakeholders. Stakeholders will be able to add value to all projects and in some cases will take the lead in implementation and resource allocation. Council must develop strong and meaningful relationships to ensure it maximises the benefit of Stakeholder input.

8.18 Workshops have been held during the development of the ILUTS with Stakeholders and these have been useful forums in developing the Strategy. The workshops have developed relationships and spread information on the development and content of the ILUTS. Stakeholders have also provided invaluable input into the Strategy and their expertise will be useful in the future. Maintaining these workshops in the future will contribute to the implementation of the ILUTS.

8.19 Council and Stakeholder staff face constraints on their time and so workshops must have meaningful agendas with specified outcomes. Email contact provides a useful opportunity to communicate with Stakeholders and gain input without holding a workshop.

8.20 It is likely that some Stakeholders, such as the TAFE, may have input into specific projects and a limited involvement while others will provide input throughout the implementation process.

Project Working Groups

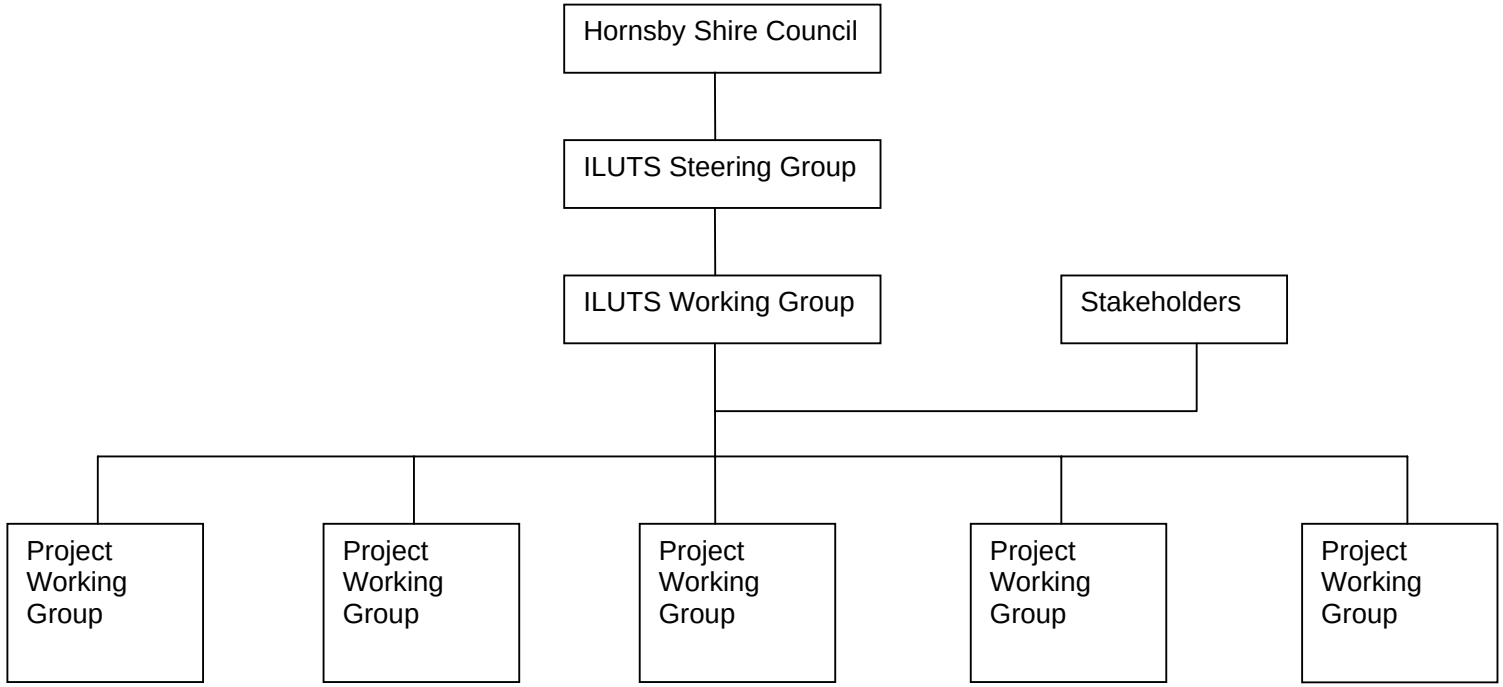
8.21 Every project will demand a specific skill set to realise implementation. A project working group will include the project manager, representatives of the Working Group and key stakeholders. This group will have the responsibility of successfully driving forward the project.

Resources

8.22 The administration of the ILUTS should largely be accommodated within existing Council resources.

ILUTS Linkages

8.23 This action plan is linked to all other action plans and is fundamental to the realisation of the ILUTS.


Hornsby Shire Council
ILUTS Steering Group
ILUTS Working Group
Stakeholders
Project Working Group
Project Working Group
Project Working Group
Project Working Group
Project Working Group

Administration Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
HSC Input					
Steering Group	immediate	low	HSC		The overall success of the ILUTS will depend on the Steering Group and their input into the implementation process.
Working Group	immediate	low	HSC		
Office /Departmental Input	immediate	low	HSC		
Review of HSC Policies and Programs	short	low	HSC		All future policies will also require review.
Develop Relationship with Stakeholders	short - ongoing	low	HSC	All Stakeholders	
Project Working Groups	short - ongoing	low	HSC		

Action Plan – Land Use & Development

Introduction

This land use and development action plan summarises the objectives, issues, opportunities and constraints identified in the ILUTS Topic Paper 1. It then sets out actions to help achieve the objectives by capitalising on the opportunities of the Shire and recognising the constraints.

Objectives

- Develop an evaluation system or framework for assessing urban growth proposals within the Shire to ensure adherence to overall aims and objectives of the ILUTS.
- Promote additional housing and employment in the existing areas to enable a more effective use of public transport and other services.
- Promote vital and viable centres that attract and sustain a broad range of land uses and services.

Issues

- Hornsby is a large shire, with substantial areas of land in the north and west which are not suited to development on account of its ecological or agricultural value. It also contains sensitive land within the urban areas which cannot be developed on account of constraints imposed by its natural features.
- A well developed bus and road transport corridor traverses the southern part of the Shire and an established road and rail corridor is located along the Shire's eastern boundary. Transport infrastructure in the north and western parts of the Shire is less well established.
- Urban residential areas are generally low density, with pockets of medium to high density development in and around town centres and transport nodes.
- Hornsby has experienced population growth at around 10,000 persons every 5 years for the last 20 years, a large part of this growth has been accommodated in the western part of the Shire which has poor access to public transport.
- Policies at the State level seek to integrate land use and transport to reduce the need to travel by car. Some rural parts of the Shire are therefore constrained for more intensive development by density controls at the local level as well as the lack of access to public transport.
- Hornsby has a relatively large resident work force compared to the number of jobs available in the Shire. Much of the workforce therefore commutes to work outside the Shire.
- Commercial employment sites in Hornsby centre are not being realised, primarily as a result of competition from larger commercial centres such as Chatswood, North Sydney, Parramatta and the Sydney CBD and this results in a relatively high level of commuting out or across the Shire for employment and retail needs.

- Large areas of land release in the Shire (such as Cherrybrook) have been developed at low densities in advance of significant investment in public transport infrastructure.

- Parts of the shire, for instance National Parks, State Forests and the Hawkesbury River, are highly attractive and popular for recreation and tourism. Village areas throughout the shire are under increasing pressure for additional residential development. These areas are often poorly accessible by public transport and have limited capacity to cope with increasing levels of vehicle access. This results in adverse environmental as well as parking and congestion problems.

- The shire has large areas of rural land which lack sufficient population density to attract and sustain public transport services and are subsequently heavily car dependent.

Opportunities

- Council is implementing a concentrated housing strategy which seeks to accommodate future growth in existing centres by identifying precincts suitable for higher density multi-unit housing and shop-top housing opportunities.

- State government policies encourage and support the integration of land use and transport in assessing development proposals.

- Residential parts of the Shire currently developed at low or medium densities may provide longer term opportunities to be redeveloped at higher densities as housing stock ages and need replacing.

Constraints

- There are strong community aspirations to retain low density residential development.

- Competition from other centres outside the Shire affects the demand for commercial uses in Hornsby town centre and impacts on the vitality and viability of centres and their ability to retain population.

- Previous patterns of urban development limit the opportunities for public transport services.

- Sensitive land within the urban area is constrained from development on account of its environmental characteristics.

- Market demands for commercial and retail uses are currently driven by parking availability and not necessarily consistent with ILUTs objectives.

Approach

8.24 This Land Use and Development Action Plan identifies the actions related to land use, development and planning policy which can be implemented by Council. These actions are closely related to other action plans recommended under the ILUTS.

Adoption of ILUTS

8.25 The actions presented in this plan require a strong commitment by Council to the ILUTS principles and objectives. There is a close relationship between the actions in this plan and those in the administration action plan and a fundamental shift in Council thinking and policy is required to implement them.

8.26 Actions in this and the other ILUTS Action Plans will deliver the benefits of integrated land use and transport planning, but only if a strategic decision by Council is made to prioritise or significantly weight its objectives. Historically in Hornsby and throughout NSW the longer-term benefits that will accrue from ILUTS have been relegated in favour of easily achievable development outcomes or short-term priorities.

8.27 A major component of the Land Use and Development Action Plan will be for Council to formally adopt the ILUTS and its overriding principles and objectives.

8.28 The adoption of ILUTS by Council, as well as Council's ability to raise the profile and importance of integrating land use and transport decisions, is fundamental to the implementation of the ILUTS objectives and a pre-requisite of each Action Plan.

Develop a Framework for Assessing Urban Growth Proposals

8.29 Development and urban change in Hornsby is influenced by a range of factors, including:

- Demographic trends, such as population growth, immigration, age and household size;
- Housing and employment preferences, which affect location and type of development; and
- Local issues, such as environmental constraints, planning policies, land availability and land ownership.

8.30 Directing future urban growth towards locations which would best satisfy ILUTS objectives requires Council to consider all of these factors and weight the significance of each criteria. For example, the weighting of ILUTS principles, such as higher densities, mixed uses, accessibility and structured development needs to be considered against other criteria such as community aspirations, and conservation and environmental outcomes. In some cases a trade off of values may be necessary.

8.31 This approach to land use planning is recognised by State government and is illustrated by the recent integration of state planning, infrastructure and natural resource agencies (DIPNR). It is also evident in the approach DIPNR is taking to planning for metropolitan growth at the regional and metropolitan level.

8.32 For example, at the metropolitan level it is recognised that planning for land release by identifying each layer of constraints and filling in the gaps is not working. Instead a more co-ordinated approach is required, where the context of future urban expansion is understood and land constraints are considered at a broader scale. This allows each of the criteria to be weighted accordingly and land use decisions can be made in recognition of short and long-term consequences.

8.33 Recommendations of the PlanFirst review reinforce this message. Among other priorities, the review seeks more collaboration between State and local government, a consolidation of competing legislation and the preparation of integrated plans at LGA level.

8.34 For this to be effective the message needs to be reinforced by local government. In particular to achieve ILUTS outcomes, the long-term consequences of accommodating development and land use change need to be considered. The factors influencing those decisions therefore need to be weighted appropriately.

8.35 A framework for weighting these criteria can be developed to guide the future refinement of planning policies, determine major land rezoning, development applications and locating future land uses. An indication of how that framework might look is provided below.

8.36 The value to Council of each criterion and its subsequent weighting might only be established following community consultation and values and weighting will change over time. Such a framework will however provide a process for carrying out fully integrated development assessment.

Indicative framework for assessing urban growth proposals

Criteria	***Value*** ***(High, Medium, Low)***	**Numeric weighting** **(e.g. 1-9)**
Conservation		
Heritage		
Community aspirations		
Housing affordability		
Dwelling mix		
Co-ordinated infrastructure		
Accessibility		
Rural lands		
Modal share		
Etc…		

Review of Council Policies

8.37 Once a framework for weighting criteria has been established it should be used to review and critically examine the consistency of Council's existing planning instruments and policies, including:

- LEP objectives, zonings and development standards;
- Development control plans;
- Residential land strategies;
- Sensitive urban land study;
- Employment lands/commercial centres studies;
- Rural lands study.

8.38 While broad scale changes are not necessarily envisaged or required, a review of the consistency of existing policies against the ILUTS objectives should be undertaken on a rolling program, consistent with envisaged and already adopted programs for review.

8.39 Possible amendments to the Environmental Planning and Assessment Regulation, such as those recommended by the PlanFirst review, may result in changes to the content and nature of local planning instruments. This may provide the impetus to begin this review process.

8.40 To promote the ILUTS objectives such a review could focus on the location specific actions suggested under other ILUTS action plans, for example:

- Development controls relating to residential subdivisions and road layouts (Local Street Management).

- Land use zones and development controls along arterial roads (Arterial Roads).
- Land use zones and development controls with 400m of high frequency bus stops and 800m of rial stations (Public Transport).
- Development controls relating to cycle parking and shower and change facilities in commercial buildings (Walking and Cycling).

8.41 Many of the ILUTS principles are addressed in the planning of centres and Council already has a number of place-based planning controls or DCP's, such as Hornsby Town Centre DCP (interim), Pennant Hills Commercial Centre DCP, Epping Commercial Centre Masterplan and Westleigh LES and Masterplan.

8.42 Priority could therefore be given to the evaluation and review of policies applying to centres, as this will provide an opportunity to re-assess or introduce controls. Such as those relating to density, accessibility, mixed use and connectivity, which are consistent with ILUTS aims and objectives.

Establishing and Monitoring Performance Targets

8.43 Suburb specific targets relating to employment, residential, transport services and provision of facilities (retail, health, education etc) could be set to focus on the objectives of the ILUTS study.

8.44 Similarly, there is an opportunity to examine set targets for an appropriate mix of employment, residential and service uses within commercial centres and it will be possible to set guidelines relating for an appropriate mix depending on the centres place in the centre hierarchy. This may form part of the non-statutory components of an integrated local plan envisaged by the PlanFirst review.

8.45 Once targets have been set, the impact of subsequent revisions to planning instruments and development controls could be monitored and the overall contribution to the achievement of ILUTS objectives assessed (e.g. regular reporting on development yields/trends in areas identified for development).

Resources

8.46 The success of actions in many of the Action Plans linked to the ILUTS study is reliant on the commitment of Council to the ILUTS aims and objectives. Adoption of the ILUTS by Council will be the first step in making this commitment and can be achieved in a relatively short time frame with few resources, additional to those already committed to the project, being required.

8.47 Preparation of the evaluation framework can be undertaken in the short-medium term, providing Council is committed to the project and can undertake to commit resources (either within Council or by appointing a consultant to assist Council) to draw together a weighting framework.

8.48 The monitoring and review of Council's other policies in accordance with the weighting framework will require substantially more resources and will require a longer time frame to implement. As with some of the actions in other ILUTS Action Plans, resources are likely to be most efficiently utilised by progressively rolling out the review in accordance with existing review programs. The review of controls as they apply to town and village centres could be advanced, depending on availability of resources and existing work programs.

ILUTS Linkages

8.49 This Action Plan links to all of the other Action Plans prepared as part of ILUTS. It is also fully dependent on Council's adoption of the ILUTS aims and objectives and the

input from State government and other authorities with a statutory role in the policy and plan formulation.

Land Use & Development Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Adopt ILUTS objectives	Short	Low	HSC	All	
Develop weighting framework	Short-medium	Med	HSC	Community, residents development industry, land owners	
Review of Council policies	Medium-long	Med-high*	HSC	State Government, community, residents, development industry, land owners	Recommendations of the PlanFirst Review identify that each Council will need to reformat the existing statutory components of local plans by Dec 2006 and additional non-statutory components by Dec 2008.
Target formulation	Medium-long	Med	HSC	Community, residents development industry, land owners	
Monitoring of policies	Long	Med	HSC	All	

**Part of cost incorporated as part of Council's ongoing policy and plan review work programs*

Action Plan - Travel Demand Management

Introduction

8.50 The action plan revisits the identified objectives, issues, opportunities and constraints and then sets out a series of actions by which to achieve the objectives, tackling the issues and maximising the opportunities while recognising the constraints.

Objectives

- Develop and implement a comprehensive educational and information campaign focusing on the community, workplaces and schools.
- Recognise the principles of travel demand management in all aspects of the ILUTS.

Issues

- Vehicle use contributes to greenhouse gas emissions, causes congestion and has a negative impact on personal health and road safety. The continuing growth in vehicle kilometres travelled (VKT) is increasingly being recognised as a major challenge facing Australia and State policy, as set out in Action for Air, which recognises that air quality will reduce dramatically if action, particularly in reducing vehicle use, is not taken.
- There is high car ownership in some areas of Hornsby Shire, particularly within those communities located away from rail stations.
- There are many rural communities within Hornsby Shire where population density will never be sufficient to support conventional public transport services and for whom walking and cycling do not present realistic alternatives due to the distances to basic amenities.
- The only comprehensive information source for public transport services operating within and through the Shire is via the '131500' telephone or internet service. However this service is not well publicised and does not include any printed material and so most residents rely on information from a variety of sources. This will inevitably lead to problems with access and consistency. Without information people will be unaware of the public transport services available.
- Public transport facilities, particularly bus stops, in the Shire can be of a very poor standard perpetuating the perception that public transport is inferior to cars.
- There are many schools within the Shire, some attracting students from a wide area. Car based school trips cause local congestion and are detrimental to road safety around the school.
- The topography of the Shire, combined with rail lines and arterial roads create significant barriers to public transport, walking and cycling as effective modes of transport.

Opportunities

- A broad range of experience in travel behaviour change is available to draw on from within Australia and overseas. This includes personalised marketing to communities, within workplaces and to students in schools and these projects have been shown to reduce VKT.

- Council can take the lead through the implementation of its own Green Travel Plan and examination of its business to minimise car travel to and from work and for business trips.
- Funding may be available for innovative travel behaviour change programs from State Government.
- The community is aware of the environmental consequences of unrestrained car travel and is enthusiastic and willing to get involved.

Constraints

- There is a high level of car dependency in most areas of the Shire that will be difficult to break down.
- The low profile of public transport within the Shire does not encourage public transport use.
- There are preconceptions about some types of approach that may hinder investigation and implementation.
- The ILUTS is dependent on coordinated and effective administration.

Approach

8.51 The action plan seeks to develop a range of related projects under the umbrella of travel demand management for implementation by Council. These projects will be closely related to a number of other action plans recommended under the ILUTS.

8.52 In order to achieve the stated objectives the following actions are recommended:

- Development of an identity or brand;
- Information development;
- Information delivery -
    - Workplace initiatives,
    - School initiatives,
    - Community initiatives.

Development of an Identity

8.53 Developing an identity of brand image for the range of travel demand projects will assist in community recognition and ownership of the program and initiatives. The identity will bring focus within Council and among stakeholders and the community involved in the implementation of initiatives.

8.54 The identity should be simple, encompassing the principles of travel demand management and desirable transport choices. The identity will include a logo and visual image that will guide the look of the information developed, making it easily recognisable and interesting. Ideally the logo should be easy to use in a variety of formats and circumstances. The look can relate to other HSC initiatives, incorporating the bushland theme that is evident in much of Council's literature.

8.55 It may be possible and appropriate to use a logo already developed by Council, for example the Earthwise logo with travel demand management projects being implemented under the Earthwise banner.

Information Development

8.56 A range of information is required by the community to inform them about the alternatives available to cars and why they should be using their cars less. The information needs to recognise the constraints facing some of the community in terms of their ability to use alternatives to the car and the availability of alternatives, while promoting the public transport services and other options that do exist.

8.57 There are lots of examples of information available where the style and design along with the actual information, creates a positive image of public transport, walking and cycling and makes people think imaginatively about how they travel, challenging their existing behaviour patterns.

8.58 The information sources to be developed include:

- Shire wide public transport information;
- Why and how; and,
- Cycle / pedestrian route map.

Shire wide public transport information

8.59 Hornsby Shire suffers from a lack of coordinated public transport information. Transport NSW produced a public transport service booklet covering the whole of the metropolitan area and the 131 500 information line and website will provide information on all public transport services throughout Sydney. Unfortunately the current edition of the booklet is now dated and unlikely to be reprinted and while the phone line and website provide a useful service, they rely on access to a phone or an internet connection.

8.60 The number of transport operators providing local services exacerbates the problem with anyone seeking information on public transport having no obvious place to go for that information other than the 131 500 number which relies on knowledge of the service and what it offers. Public transport information is routinely made available in conjunction with public transport services and so if someone does not use public transport, the information can be difficult to find.

8.61 Accessible public transport information is a necessary part of any program seeking to increase awareness and use of public transport. Simply, if people do not know about the services available they will not use them.

8.62 Council must take the lead in developing a Shire wide public transport guide covering all services operating with routes, timetables and any other information, such as bus stop facilities and identifying low floor bus routes.

8.63 Council can seek sponsorship and advertising to help pay for the guide – although this should avoid approaching car retailers – why advertise the competition? This would reduce costs to Council and make the production of the guide more viable in the long term.

8.64 To ensure longevity of the guide, Council will have to consult with the public transport operators to identify any planned timetable changes and also seek a commitment to maintaining network stability over the shelf life of the guide, which would ideally be updated annually.

Why and how

8.65 This information will explain why car use should be reduced and how people can make simple choices to achieve this aim.

8.66 There are lots of reasons why people should seek to reduce car use and Council can help the community focus on these motivators. Not everything will be relevant to everyone but people will pick out the information most relevant to them or their lives. The objective is to make people think about the trips they are making and their transport choices in a proactive way.

8.67 Reasons for reducing car use include:

- Environmental benefits, particularly locally improved air quality and less traffic noise;
- Reductions in the number of road accidents;
- Walk and cycling more has considerable health benefits through the contribution of regular exercise to cardio-vascular health, managing personal weight and combating a range of illnesses such as depression; and,
- Saving money – understanding the real cost of owning and running a car can make a real difference to transport choices.

8.68 There are many ways to reduce car use and not all of them rely on using an alternative mode. Given the rural nature of much of the Shire it will be important to include options for the whole community. Ways to reduce car use include:

- Using an alternative mode – public transport, walking and cycling;
- Car pooling or sharing with a family member, neighbour or work colleague – even if it is an occasional shopping trip;
- Shopping over the phone or internet and having the goods delivered saves on a trip out and can also free up time for other activities;
- Working from home occasionally;
- Combining trips to make better use of the car when it is taken out; and,
- Walking to local shops instead of driving to a large supermarket for odd items such as milk – the few cents extra for a litre of milk at the local store is more than covered by the fuel saving and local shops are supported.

8.69 The information could also include ideas for family days out on public transport – children often get as much pleasure out of travelling by public transport as from the destination.

8.70 The messages should be tailored to the local community as far as possible with localised ideas and examples. Illustrations and fictionalised examples can help achieve this, increasing local relevancy.

Pedestrian and cycle route map

8.71 Hornsby Shire offers plenty of options for walking and cycling both for day to day activities and recreationally. At present the Council does not have a comprehensive map that brings all the routes together in one place. The map would be a great information resource for residents and visitors and encourage more walking and cycling.

8.72 The map should include recreational and local routes with connections to services, amenities and public transport interchanges, all of which should be identified on the map with relevant facilities such as cycle parking and lockers. Recreational use of routes is important and will lead to walking and cycling more for everyday activities. Routes can be identified with a rating, as easy through to difficult.

8.73 The map should avoid identifying any proposed routes as they are of no current value and give a false impression of the available network which can lead to the disappointment and frustration of users. Future editions of the map should be updated to incorporate new additions to the network.

8.74 The map can incorporate interesting local information along the routes with helpful hints and facts to make sure people walk and cycle safely. It can include ideas on how to get started such as, where to purchase a bike, where to get a bike serviced and local bike groups that organise social rides and buddy schemes to help people identify routes between home and work. The map could promote local cycle stores and possibly include offers in conjunction with retailers.

Information Delivery

8.75 Effective delivery of the information resources to the community is crucial and without it the resources will not assist in meeting the overall TDM objective of encouraging a reduction in car use. Much of the information available on public transport services is not effective in achieving a change in behaviour as it is distributed at stations and on buses – essentially if someone does not already use public transport they will not have ready access to available information on services that may be relevant to them.

8.76 Council has the opportunity to widely advertise the availability of the information through the Bushland News and local papers – possibly even printing excerpts of the information leaflets in an imaginative and engaging way. The information can be distributed at community events and from stalls in busy places – Saturday afternoon in Hornsby Town Centre, for example.

8.77 The information will ideally be combined with incentives. Incentives are valuable in getting people to trial other transport options. Popular options include free pubic transport tickets so people can trial local bus services and discounts at bike stores. Promotional gifts, incorporating the logo will attract initial interest and can also act as a reminder around the home or workplace.

8.78 Information can be delivered particularly effectively when combined with other initiatives as discussed below.

Workplace initiatives

8.79 Workplace initiatives seek to reach employees within a workplace and can extend to their families and visitors to the workplace too. Green travel plans (GTPs) are well established as a way of encouraging a reduction in car use for the trip between home and work and also reducing business travel during the day. GTPs offer a range of benefits to both the employer and their employees and will generally make the workplace more accessible by all modes.

8.80 Hornsby Shire Council has the opportunity to lead by example in implementing their own GTP to cover their offices and other workplaces. This would fit with Council's commitment to the Earthwise program and the Management Plan aims and objectives. It would be appropriate for Council to instigate their own plan before promoting the concept more widely.

8.81 GTPs work best in larger workplaces – those with more than 150 to 200 employees. GTPs in hospitals and colleges offer additional benefits by including patients, visitors and students who contribute greatly to the daily travel to and from the workplace.

8.82 Alternative approaches should be adopted to offer smaller companies opportunities to reduce their overall car use, including:

- Area wide green travel plans, encompassing companies in a business park or similar cluster;

- Information packs for the company management and their employees; and,
- Options and ideas for making the workplace more accessible.

8.83 The workplace initiatives, like the Council GTP, should be monitored to ensure they are successful in meeting their aims and objectives and effecting a reduction in car use. Council can take a proactive role in setting up a business group where managers come together periodically to discuss their experiences – both positive and negative – in improving accessibility and reducing car use among employees. This approach has worked well in Cambridge in the UK and in Melbourne.

School initiatives

8.84 School students are a key group in any travel management program. Cars have been increasingly used for the trip to and from school with negative impacts on overall traffic levels, congestion and safety in the vicinity of schools, childhood independence and exercise levels. It has also been shown that travel behaviour patterns are instilled in childhood with children commonly mirroring the choices of their parents in adulthood. Using sustainable modes with children will encourage them to use these modes as they travel independently and have an ongoing positive benefit.

8.85 A number of approaches have been taken to working with school students to effect a reduction in car use for the trip to and from school. It is clear approaches have to be tailored to the school and their students, recognising differences in age groups, socio-economic profiles and the distances travelled by students. The Victorian TravelSMART program has taken an innovative and very successful approach to working with primary level schools in Melbourne. While the overall methodology adopted has been used in each school, the delivery recognises the individual characteristics of the school and its students. The action plan recommends that Council take specialist advice on the development and delivery of a similar program in the Shire.

8.86 A TravelSMART type program could be linked to infrastructure improvements in the vicinity of schools, making cycling and walking safer and more viable options.

Community initiatives

8.87 Community based TDM initiatives, like workplace based schemes, offer the opportunity to combine general and specific information tailored to the local community and individual households. Community based programs are well developed in Australia through projects in Perth, South Australia, the ACT and Victoria. These projects, delivered under the TravelSMART banner, have been successful in reducing car use – projects in Perth reduced VKT by up to 14% and programs elsewhere have shown similar levels of success. As yet the State Government in NSW has not developed a TravelSMART program although some NSW councils are developing small scale pilot projects.

8.88 With the development of Shire wide information materials to support a community based initiative, local action could be taken relatively easily, focusing on delivery and the provision of personalised travel information and taking into account the individual community and their available options. Personalised trip information can be provided for the journeys made by members of individual households. Typically around 30-40% of households would agree to participate in such a program, although supporting advertising can boost this take up rate. Those members of the community who do not choose to become involved may already have a high use of sustainable modes or may not be receptive to change at the time, although this may change in the future.

8.89 Households in the target community could register an interest in involvement in the program or a more proactive approach can be taken to encourage participation

through phone calls and/or personal visits. Experience shows that if more effort is put into this type of program the results are greater.

8.90 Delivery that engages the household in the program and the principles of reduced car use is most successful. Ideally information would be hand delivered with a detailed explanation of the information pack contents and information. Other options include delivery by post with a back-up phone call. Council may also be able to instigate a volunteer program to distribute and explain the information.

8.91 Community events can raise the profile of a delivery program and provide an additional means of promotion and delivery.

8.92 In terms of personalised information, assistance is likely to be available from the 131 500 service, which is well placed to provide the level of personalised trip information required.

8.93 Within the context of the ILUTS a TravelSMART type program could be implemented in conjunction with local improvements to the transit system, publicising an increase in service frequency on a bus route, for example. This will support local bus operators and increase publicity and utilisation of the service as the improvement occurred.

8.94 This will focus attention on an improving public transport system, raising its profile locally among actual and potential users. It will also focus resources on those areas where public transport alternatives are available, recognising that large areas of the Shire do not enjoy good public transport services at present.

8.95 Any community program should be monitored to assess success in terms of effecting a travel behaviour change and general community take up. It will also be important to evaluate the information, incentives and other items to ensure they are being used and valued by the target communities.

Framework Analysis

8.96 To ensure the principles of TDM are recognised in all aspects of the implementation of the ILUTS, it is recommended that a framework approach is adopted by Council. Council should use the framework to evaluate all ILUTS projects and look to extend the analysis to other Council programs and projects.

8.97 A framework has been drafted and is attached with a completed example.

Resources

8.98 Council will need to commit resources to the development and staffing of the TDM program. The program will require dedicated staff time to manage it and maintain momentum. The Council GTP will only be successful with a high level of management endorsement and support and the success of the workplace program is largely dependent on adoption of Council's GTP.

8.99 The information resources can be developed in manageable portions if necessary, focusing on areas of the Shire rather than the whole areas. Council can seek sponsorship and advertising to assist in funding information development and artwork. It is possible that local operators and State Government will contribute to the development of local transport information and other activities identified within this action plan.

8.100 Council can also apply to the Australian Greenhouse Office (AGO) for funding for travel behaviour change programs. The AGO, through the Greenhouse Gas Abatement Program (GGAP) makes funds available to community, workplace and school related programs and has already committed to supporting projects in Victoria, Queensland, South Australia and the ACT.

8.101 The success of this action plan, possibly more than any other, is reliant on the commitment of Council to the ILUTS and strong and coordinated administration. Travel demand management is central to the aims and objectives of the ILUTS.

ILUTS Linkages

8.102 Council will take the lead in the implementation of this action plan. This action plan links to the following action plans:

- Administration action plan;
- Car parking management action plan;
- Public transport action plan; and,
- Pedestrian and cycle action plan.

8.103 Stakeholder involvement will also be necessary to the successful implementation of this action plan, in particular:

- State Government;
- Transport operators; and,
- Bicycle NSW and Bike North.

Travel Demand Management Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Develop brand/image	short	low	HSC		Important first step – employ local graphic designer to develop logo and visual image to guide overall program style – lots of ideas and examples to draw from.
Information					
PT information	short	low	HSC	PT operators and State Government	Information will form the basis of the program. Stakeholders will be able to assist. Lots of ideas from other similar programs. Mock up all information with ideas for illustrations before handing to graphic designer to keep costs down. Keep information simple.
Why car use should be reduced	short	low	HSC		
How to reduce car use	short	low	HSC		
Cycle/pedestrian route map	short	medium	HSC	BNSW, Bike North, RTA	
Delivery					
Workplaces					
HSC GTP	short	medium	HSC		HSC must lead by example – the GTP fits well with the Management Plan.
Company GTP program	medium	low-medium	HSC	Local businesses	HSC can take lead in encouraging participation. Explore option of coordinating periodic 'peer group' meetings to exchange ideas and experiences. Evaluate outcomes.
Small workplace initiative	short - medium	low	HSC		
Schools					
Victorian TravelSMART style approach	short - medium	medium	HSC	schools	Employ specialist consultants to advise on way forward. Link to infrastructure projects. Evaluate outcomes.
Community					
TravelSMART approach	medium	medium	HSC	Community groups / organisations, PT operators	Link to infrastructure projects and service improvements. Consider variety of approaches. Evaluate outcomes.
Framework project analysis	short - ongoing	low	HSC		Framework completed – should be applied to all ILUTS projects implemented and potentially more widely within Council.

Framework Project Analysis

Project: *Hornsby Shire Council GTP*

	Y/N	Scale of Impact across Shire? Low/Med/High	Time of Impact?			Type of Trips Affected?		
			Weekday Peak	Weekday off-peak	Weekend	Work/School	Leisure/recreational	other
Will this project reduce car use?	Y	M	✓✓	✓	×	✓	×	?
Will this project reduce distances travelled by car?	Y	M	✓✓	✓	×	✓	×	?
Will this project increase public transport use?	Y	L	✓✓	✓	×	✓	×	?
Will this project increase walking?	Y	L	✓✓	✓	×	✓	×	?
Will this project increase bike use?	Y	L	✓✓	✓	×	✓	×	?
Will this project increase car sharing	Y	L	✓✓	✓	×	✓	×	?
Overall, will this project reduce VKT?	Y	L	✓✓	✓	×	✓	×	?

Notes:

- Scale of impact will increase as GTP becomes example for other businesses to follow.
- Weekday off-peak impacts contributed to by part-time workers and business travel.
- Weekend impacts may accrue as staff become more aware of transport options and reduce car use at weekends.

Travel Behaviour Change – Web Resources

Organisation	Website	Resources
TravelSMART Australia	www.travelsmart.gov.au www.travelsmart.vic.gov.au www.transport.qld.gov.au/travelsmart www.dpi.gov.au/travelsmart	'Employers Toolkit' explaining how to start a workplace travel plan, initiatives to promote sustainable transport and case studies. 'Training TravelSMART Officers' is a series of three guides including workplaces, schools and communities.
Environment Victoria	www.envict.org.au	Urban Tripper interactive computer program which promotes sustainable transport to school children
Department of Environment and Heritage, Australia	www.deh.gov.au	'Corporate Sustainable – an Investor Perspective: The Mays Report' discusses the benefits to business of adopting a sustainable approach 'The State of Public Environmental Reporting in Corporate Australia' 'Triple Bottom Line Reporting in Australia – A Guide to Reporting Against Environmental Indicators'
RTA and SEDA, Australia	www.rta.nsw.gov.au www.energysmart.com.au	'Producing and using Transport Access Guides' helps organisations develop site specific transport information.
Transport Energy, UK	www.transportenergy.org.uk/bestpractice/	'A Travel Plan Resource Pack for Employers' is a very comprehensive guide providing the detail of how to develop a successful travel plan. 'Making travel plans work: Lessons from UK case studies' 'Good Practice Guide 314: A guide on how to set up and run travel plan networks' 'General Information Report 84: Travel plans a guide for developers'
European Platform on Mobility Management	www.epomm.org	'Mobility Management Toolbox' recommends solutions and practical advice for specific workplace transport issues.
Alliance for new transportation charter, USA	www.antc.net	'Commuter Choice Incentives: The new business math. A guide for action' explains the benefits employers can provide for staff.
Smart Growth America	www.smartgrowth.org	'Getting to smart growth: 100 policies for implementation' assists communities in establishing sustainable transport and land use practices.

Action Plan – Public Transport

Introduction

8.104 The action plan revisits the identified objectives, issues, opportunities and constraints and then sets out a series of actions by which to achieve the objectives, tackling the issues and maximising the opportunities while recognising the constraints.

Objectives

- To improve the quality of all public transport facilities and infrastructure, providing the best bus stops, interchanges and stations possible.
- To raise the profile of all existing public transport services in the Shire and promote any future improvements.
- To maximise opportunities to interchange between services and between modes.
- Increase priority for public transport relative to private motor vehicles.
- To effect improvements to bus and rail services in the Shire.
- To develop alternatives to conventional public transport to serve rural communities and the National Park.

Issues

- Existing rail services on the North Shore Line between Berowra and Hornsby and Sydney CBD via North Sydney are already crowded during peak hours. Some small increases in capacity may be possible through the introduction of services on the Parramatta Rail Link and by operating 8-car trains on all services, however, services are likely to remain crowded on this line in the future.
- Services operating on the Northern Line between Hornsby and Sydney via Strathfield are operating within capacity and there may be some scope to increase patronage on this line, however, it is recognised that peak hour 'limited stop' trains are more popular than 'all stops' trains and anecdotal evidence suggests these tend to be overcrowded.
- The current system of giving different subsidies to private and State owned bus operators places limitations on the provision of services in the Shire that do not exist in STA contract areas.
- Should the SSTS be reduced, through the introduction of a means test or similar measure, it is likely that a relatively high proportion of students attending schools in Hornsby would be affected, given the prevalence of private schools. This may have the impact of increasing the number of pupils being driven to school by parents, thus exacerbating morning peak hour traffic and increasing congestion around schools.
- Young people and the elderly rely on public transport services for independent travel. Inadequate public transport services can have social consequences.
- Rural areas of the Shire lack sufficient population density to create demand for conventional public transport services.

- Many of the bus stops within the Shire lack even basic infrastructure. This is particularly noticeable away from the activity centres and stations. Investment by operators in vehicles and service improvements is currently not matched by corresponding investment in infrastructure at bus stops and along corresponding access links.

- The provision of public transport to National Park areas will remain challenging. It is difficult to provide public transport to dispersed locations to meet the needs of people making recreational trips.

- There is a lack of bus priority in the Shire.

- Analysis of the census data for journey to work modal split and vehicle ownership, tends to indicate a correlation between these factors and public transport accessibility. Higher public transport use and lower car ownership tend to be focused in the areas served by the rail stations and to some extent the bus network. The conclusion is that public transport availability does impact on car use and that increased public transport accessibility does have the potential to reduce car use. Given this it is likely that those areas of the Shire with relatively poor public transport will remain essentially car dependent unless public transport is improved.

- The current mix of State Government and privately managed public transport operations within Hornsby Shire presents a number of issues for the better integration of services. Issues such as fully integrated ticketing, coordination of timetables, reduced ticket prices for multiple purchase, periodical or multi-modal tickets, provision of infrastructure and information need to be addressed to achieve the ideal of 'seamless' journeys.

- Bus services are critical to extending the rail catchment within the Shire, particularly in lower density areas of the Shire.

Opportunities

- Hornsby Shire benefits from good rail links to Sydney CBD, Strathfield and the Central Coast. These services also link activity centres within the Shire.

- SRA may be able to increase capacity on existing rail lines through the operation of 8 car trains on all services. The Parramatta Rail Link will bring additional rail improvements and may relieve overcrowding on the existing lines. In the longer term the NWRL will bring similar improvements.

- Local bus operators are proactive and willing to trial new services.

- There are identifiable opportunities at the local level to enhance interchanges – including provision of information, improving access to stations, improving the cleanliness and comfort of trains and enhancing station environments

- Epping will become a major interchange with the introduction of the PRL and eventually the NWRL.

- The Parking Space Levy provides considerable funds for public transport interchange improvements.

- The integrated ticketing scheme to be implemented in 2004/5 may bring opportunities to combine ticketing on private and publicly provided public transport services.

- The 131 500 information service provides information on all public transport services.
- There is plenty of off-peak capacity on the public transport networks serving the Shire.
- Bus shelters can be provided and maintained through an agreement between Council and a private company (such as Adshel or JC Decaux).
- Council can take a lead in improving bus stop facilities and infrastructure.
- Council can draw on Australian and overseas experience in providing non-conventional public transport services to in rural and low demand areas.

Constraints

- There is a lack of capacity on the rail network in peak hours – which could lead to a mode shift away from rail.
- Existing system for allocating subsidies to State owned and private bus operators is inequitable and may constrain the expansion of local bus services.
- A number of agencies will necessarily be involved in effecting improvements to the public transport network.
- There is no existing formal role for Hornsby Council in the provision of public transport services.
- Supply led public transport provision can be expensive in the initial phases of operation.

Approach

8.105 This action plan seeks to develop a range of related projects to support and promote public transport services within the Shire. Council will need to work closely with the public transport operators and State Government in implementing this action plan, recognising that a partnership is required to effect improvements.

8.106 Due to the organisation of public transport infrastructure and service provision, this action plan takes a broad approach based on:

- Definition of public transport service criteria;
- Public transport facilities audit;
- Lobbying and liaison;
- Corridor based projects;
- Service based projects; and,
- 'Spot' improvements.

Public Transport Service Criteria

8.107 In improving the public transport services within the Shire, a number of key criteria should be considered. These criteria will assist in assessing services and identifying and prioritising actions.

- Service frequency – bus services that operate with a 10 minute frequency of less encourage passengers to turn up at the stop without the need to consult a timetable – passengers know they will not have to wait more than 10 minutes and on average the wait will be less. The more frequently a service runs the more attractive it will be to potential passengers. Reduced evening frequencies are particularly unattractive as waiting environments typically become less inviting when dark, so as frequencies reduce so does the maximum time passengers are willing to wait for the service.

- Distance to a bus stop or station – typically people will walk for about 5 minutes to a bus stop and 10 minutes to a train station, reflecting the perceived higher level of service of the train. Bus stops with a very high level of service will attract people from a greater distance. A five minute walk equates to about 400m, although topography and barriers, such as roads, can reduce this distance, sometimes considerably.

- Waiting environment – ideally all bus stops and train stations should afford some shelter, seating, information and be well lit. It may be appropriate to define a stop hierarchy to prioritise stop improvements.

- Vehicles – low floor buses make access and egress much easier for all passengers, not just those with mobility difficulties. Parents with children in strollers and people carrying heavy or bulky goods will benefit. Increasingly comfortable private vehicles raise expectations of buses and trains.

Bus Stops

8.108 HSC should take steps to establish guidelines for public transport infrastructure and facilities. Guidelines for bus stops have already been set out by State Transit Authority in the Bus Stop Style Guide. The Style Guide sets out the stop hierarchy based on operational and locational determinants and links these factors with the facilities that should be provided. The Guide includes a classification of bus stops with requirements for facilities in a tabular checklist.

8.109 Transport NSW has also developed Best Practice Guidelines for NSW Public Transport Signage and Information Systems. These guidelines offer plenty of advice and design information on bus stops, stop information provision and directional signage. The use of a standardised 'family' of stops throughout the Shire will help passengers recognise a bus stop and ensure the appropriate signage is provided based on the level of use and location of the stop.

Public Transport Facilities Audit

8.110 Following the development of guidelines to determine a stop hierarchy HSC can undertake an audit of al the public transport facilities in the Shire. Much of this information will be available from the detailed area audits undertaken in Stage 1 of the ILUTS preparation and reported in Annex 1 to the Stage 1 report.

8.111 The audit will help identify a priority list of works to improve public transport facilities and will ensure a consistent approach throughout the Shire. The audit will facilitate the ad hoc improvement of facilities if Council identifies funding from either its own or other budgets. Section 94 funding could potentially be used. The audit will provide an important input into corridor and service based projects.

Lobbying and Liaison

8.112 HSC does not have a direct role in the provision of public transport services, however, Council is ideally placed to work with operators and State Government agencies to promote improved services. Council can facilitate communication

between private bus operators, State Transit Authority (STA) and State Rail Authority (SRA) to improve service coordination, making passenger interchange easier.

8.113 Council can set up a group comprising all Shire public transport providers to meet regularly to discuss ongoing issues and improvements to the network. It is likely such a group will need assistance in direction to focus on issues and their resolution and this can usefully be provided by Council.

8.114 Key improvements include:

- Increasing the use of 8 car trains on the North Shore Line;
- Extending hours of bus services into the evenings;
- Increased coordination between service timetables to facilitate interchange;
- Extended use of low floor vehicles;
- Changing the subsidy regime to 'level the playing field' between private and public sector operators; and,
- Retain the SSTS for all public and private school children.

Corridor Based Projects

8.115 Bus corridors, in particular, offer a focus for coordinated service and infrastructure improvements. Council can take a role in working with operators to holistically effect corridor improvements through programs based on 'Quality Bus Corridors'. Within a Quality Bus Corridor (QBC) the operator undertakes to improve the service levels and vehicles while Council improves infrastructure and provides bus priority where possible. In this way the entire route is treated and upgraded in a holistic manner. As operators in the area have proactively undertaken to improve their services there are already opportunities for Council to match operator input with improved infrastructure.

8.116 Actions that Council can take to support an operator along a corridor include:

- Implementation of high quality bus stops, ideally including –
    - Lighting,
    - Shelter, either provided by Council or through a contract with Adshell of JC Decaux,
    - Seating,
    - Bus stop post and flag with timetable information;
- Footpaths linking to the bus stop;
- Crossing points close to the stop; and,
- Bus platform treatment to ensure low floor buses can pull up flush with the kerb, facilitating step free access.

8.117 Corridors that would benefit from this treatment include:

- City Link Express bus routes;
- Routes linking to interchange points, in particular stations which have known parking problems; and,

- Routes linking to key destinations such as Epping and Hornsby town centres, Hornsby and Ku-ring-gai Hospital and the TAFE campus in Hornsby.

8.118 The steps in developing a QBC include:

- Route identification, based on,
    - Existing operator commitment,
    - Passenger numbers,
    - Perceived importance of the route in terms of linkages;
- Agreement with operator to develop a partnership based approach to improving infrastructure and services;
- Agreement on actions and timescale for both the operator and Council;
- Identification of infrastructure actions, based on –
    - Audit of all bus stops (link to facilities audit),
    - Audit of major intersections and other locations where congestion impacts on bus journey times and/or reliability,
    - Analysis of boarding and alighting patterns to identify key stops,
    - Analysis of land uses and interchange pints along the bus route.

8.119 QBCs are relatively easy for Council to initiate. Council already has a good relationship with local bus operators and has commenced the discussion on how improvements can be effected through the ILUTS process. If resources are not available to undertake improvements along a whole route, an incremental approach can be pursued based on a sector or neighbourhood approach.

Service Based Projects

8.120 It has already been noted that low population densities in some parts of the Shire will restrict the operation of conventional public transport services. Demand responsive transit (DRT) systems are designed to provide public transport to those living in rural areas where population densities cannot support conventional public transport. These services have been implemented with considerable success in the UK and have, in some cases, developed demand to a level where conventional services have been reintroduced. DRT services are ideally suited to meeting transport needs in rural areas.

Demand Responsive Transit

8.121 DRT is an innovative form of public transport that utilises recent developments in information technology and telematics to deliver flexible, user orientated bus services. The key elements of the system include the ability to accept advance booking of journey requests by telephone and the internet as well as conventional bus stop pick-up combined with the ability to update timetables, routes and schedules to accommodate these requests. Typically, DRT allows flexible routeing of small vehicles in order to cover a wide geographical area.

8.122 Potential customers book their journey through a dedicated call centre. Using specialist technology this information is then passed on so that the vehicle can pick the customer up at their chosen location, allowing them greater flexibility in travel choice.

8.123 DRT is often seen as a means of addressing social exclusion and usually serves remoter areas where demand is low and diffuse. It can be used to replace expensive conventional bus services or to enhance accessibility where such services are physically impossible to operate. In urban areas, services can be focused on one or two suburban housing estates or a transport hub such as a hospital or interchange. Increasingly, DRT is being used to encourage modal shift from the private car to more sustainable transport, for example, to convey commuters to a rural railway station. For new land/housing developments DRT can provide an attractive alternative to conventional bus services by providing a link to existing or improved public transport routes. It thus optimises travel choice for residents, curbing car use and providing greater use of public transport across the local network.

8.124 DRT can be a valuable tool in the integration of public transport, providing interchange with trunk core services at major bus interchanges or rail stations. This opens up new journey opportunities for residents of both rural and urban areas by maximising travel options.

8.125 There are three distinct elements to the operation of DRT systems.

- The first element of the DRT system is specialised software. This software must be able to process user trip booking requests, schedule vehicles to efficiently meet these requests and update schedules dynamically to accommodate real time travel demand. The software will include vehicle, operations and fares management systems, communications links to vehicles and interface with automatic vehicle location technology using global positioning satellites (GPS). Depending on specification, it can also hold a database of registered system users.

- The second element consists of a travel despatch centre to handle booking requests and enquiries by telephone, email and (if required) the Internet. This can be based locally or remotely and can be combined with other call centre operations to minimise costs.

- The final element is the operation of the vehicle(s) to deliver the service on the ground. Small, accessible vehicles are used in order to allow ease of access by the elderly and mobility-impaired and also to permit access along relatively narrow rural or residential roads. Vehicles must be in constant communication with the travel despatch centre in order to ensure dynamic scheduling whilst in service.

8.126 The intended outcome from the implementation of DRT is greater accessibility for its users, particularly those without access to a private car. Secondary to this is the development of modal shift away from private transport onto more sustainable modes through lower car use and increased public transport ridership. DRT is ideal for this purpose as it can cover a wider geographical area and time period than conventional public transport services.

8.127 The carefully matched use of DRT brings a number of benefits. In terms of economics, journeys are only made when necessary, saving on time and fuel costs. The number of passengers carried per mile is higher as services do not run empty for long distances, and there can be improved fleet optimisation through multiple use of the vehicle (e.g. for schools, special needs and hospital transport). There is a wider range of destinations for the traveller and a greatly increased travel choice compared to the conventional bus. Vehicle optimisation can also be achieved; matching the vehicle design to the young, elderly and mobility-impaired for maximum accessibility.

8.128 Within the context of Hornsby Shire Council, DRT offers a public transport solution for the rural parts of the Shire, including River Settlements. Council should look to take

forward such a project in partnership with a local operator and State Government as a pilot within the Hornsby LGA would be of considerable benefit to the entire State.

Extension of Existing Services

8.129 Council can work with operators to incrementally extend existing services, in terms of coverage and hours of operation. Extension of services into the evenings will be beneficial in meeting the needs of homeward bound commuters and younger people in the Shire. Focus can be placed on routes servicing stations and tertiary educational establishments, such as the TAFE.

Spot Improvements

8.130 Throughout the Shire there is the opportunity to identify 'spot' improvements, that is, works that are not route or service based but which have considerable merit. Examples of this type of improvement already undertaken include the bus interchange facilities at Hornsby Station, which benefit a number of services and promote interchange between bus and rail services. The interchange also serves to promote the role of public transport within the town centre.

8.131 Typical spot improvements will include:

- Bus priority, potentially in combination with traffic management measures;
- Interchange facilities, with stations and co-located bus stops being a principle focus; and,
- Other localised improvements that can be effected relatively easily, for example, as part of a traffic management or urban enhancement scheme.

Resources

8.132 Council will need to commit resources to the realisation of the public transport action plan objectives. Many of the actions can be integrated into existing Council activities and while the action plan will require some dedicated staff time it can be input on an ad hoc basis. A bus stop audit, for example, could ideally be undertaken by students during a vacation.

8.133 The improvement of facilities will need financing. Council may be able to source funds from State Government, specifically through the interchange program funded through the Parking Space Levy and also from the private sector (section 94 contributions and developer agreements).

8.134 As some of the identified projects are relatively innovative it is possible Council could look towards State Government for partnership funding to develop the project as a pilot within the metropolitan area.

8.135 The availability of resources is likely to dictate the implementation of improvements, however, it is important to maintain momentum, particularly given the involvement of others in the realisation of the objectives.

ILUTS Linkages

8.136 Council will take the lead on the implementation of this action plan, although, some of the identified projects will necessarily be led by wither public transport operators of State Government agencies.

8.137 This action plan links to the following action plans:

- Administration action plan;
- Travel demand management action plan;

- Car parking management action plan;
- Pedestrian and cycle action plan; and,
- Access to national parks and open space.

8.138 As has been mentioned, Stakeholder involvement will be particularly necessary to the realisation of the action plan, with input from:

- State Government; and,
- Transport operators.

Public Transport Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Service Criteria					
Confirmation	short	low	HSC	State Government, PT Operators	JC Decaux or Adshell may be able to provide assistance
Develop bus stop/station hierarchy guidelines	short	low	HSC	State Government, PT Operators	
Facility Audit	short	low	HSC		Could be undertaken by students during vacation
Lobbying and Liaison	short	low	HSC		Ongoing exercise – should aim at building positive collaborative relationships
Corridor Based Projects	medium	potentially high	HSC	PT Operators	Could be undertaken on incremental basis, State Government may be able to assist funding
Service Based Projects					
Demand Responsive Transit	medium - long	high	HSC	State Government, PT Operators	Could be progressed as a pilot for the metropolitan area
Extension of Existing Services	short - medium	low	PT Operators	HSC	Improvement should be self financing through fares. HSC can support through provision of local information.
Spot Improvements	short - long	medium	HSC	State Government (incl RTA)	Can be undertaken on incremental basis and as part of road improvement projects.

Action Plan – Arterial Roads

Introduction

8.139 The action plan revisits the identified objectives, issues, opportunities and constraints and then sets out a series of actions by which to achieve the objectives, tackling the issues and maximising the opportunities while recognising the constraints.

Objectives

- To reduce the impact of arterial roads on activity centres and residential areas.
- To reduce the barrier effect of arterial routes.
- To effect a reduction in the number of accidents occurring on arterial routes and improve overall safety for all road users.
- Increase bus priority along arterial routes with consequent positive benefits on bus travel times and reliability.

Issues

8.140 Pennant Hills Road carries large volumes of traffic as it forms part of the main north-south route between the F5 and the F3 freeways. It also provides the most direct connection between the F3 freeway and the M2 motorway. These high levels of through traffic, including a large number of goods vehicles, restricts access, compromises safety and impacts local amenity. Traffic volumes on the eastern part of Pennant Hills Road have increased dramatically since the opening of the M2. The ongoing DOTARS study into an alternative link has stalled due to the complexity of the project and a completion date is not available. Regardless of the study timeframe it will take a number of years for any recommendations to become a reality. A number of identified issues specifically associated with Pennant Hills Road are:

- There is a significant road safety problem associated with Pennant Hills Road;
- Traffic flows on Pennant Hills Road are forecast to increase with an increasing proportion of heavy and very heavy vehicles;
- The completion of the Sydney Western Orbital in 2004 is expected to increase traffic on Pennant Hills Road between the M2 and F3; and,
- Reducing traffic volumes on Pennant Hills Road as a result of the proposed F3-M2 link will allow road space to be reallocated and priority for buses, cyclists and pedestrians to be provided.

Other issues include:

- The Shire Roads Hierarchy provides the basis for determining the most appropriate function of roads within the Shire.
- The Pacific Highway and George Street, passing through Hornsby town centre, remains the unofficial ‘bypass’ of the F3 at times of severe congestion or closure. Traffic volumes on the F3 are forecast to increase and it is recognised that even following the upgrading and widening, the level of service will remain below acceptable levels. In the longer term, the increased levels of congestion on the F3 and the inevitable rise in incidents will have the

affect of increasing traffic volumes further on the Pacific Highway, impacting on Hornsby town centre and settlements to the north.

- Many commercial and retail areas throughout the Shire are located on heavily trafficked arterial roads, which affects access within, to and from the centres and is detrimental to the local economy.
- A high proportion of road accidents within the Shire occur on arterial routes with many having a high level of accident severity.
- Arterial routes act as a barrier to pedestrians, cyclists and local traffic, impeding local activity.
- Bus services in the Shire tend to operate along arterial routes and are subject to congestion which can impact on journey times and reliability. Bus stops along arterial routes can be difficult to access from local residential areas and do not present pleasant and safe waiting environments.
- The relatively high proportion of heavy traffic on arterial routes exaggerates the impact of the road on the community and the environment. Detrimental impacts include, noise, vibration, particulate emissions and road accidents.

Opportunities

- The DOTARS study is investigating an alternative F3 – M2 Link, which would lead to reduced traffic volumes on Pennant Hills Road and allow available road space to provide priority for buses, cyclists and pedestrians.
- The ILUTS seeks to promote public transport and a mode shift reducing the growth in car travel, making the most effective use of existing arterial roads without the need for new/wider roads.
- The Shire Roads Hierarchy is already available and will form the foundation when determining the appropriate function of roads.

Constraints

- Council has limited or no control of arterial routes and a number of agencies will necessarily be involved in planning and implementing solutions.
- Potential solutions are likely to be limited by the existing urban structure.

Approach

8.141 The objectives of this action plan will be difficult for Council to realise and it is dependent on the input and cooperation of the RTA.

8.142 The DOTARS study into the new F3 – M2 link is yet to report and while a general eastern alignment has been identified as preferred, the four options for a detailed alignment vary greatly in terms of their impact on traffic volumes on Pennant Hills Road with between 20,000 and 40,000 vehicles a day being removed depending on the option. A traffic reduction on Pennant Hills Road would allow capacity to be reduced and road space could be reallocated to other modes, particularly buses and cyclists, with additional crossing opportunities for pedestrians. The extent of the traffic reduction will dictate the level of reallocation possible.

8.143 Reductions in traffic volumes along arterial roads will also allow Council to revisit land uses and potentially seek to increase densities along corridors well served by bus and rail services.

8.144 In the interim period, Council should commence a dialogue with the RTA with the view to achieving improvements, including the implementation of bus priority measures, increased crossing opportunities, including the provision of new pedestrian crossings, and measures to reduce the incident of accidents, particularly those involving vulnerable road users.

8.145 This action plan focuses on the lobbying role of Council in securing a better outcome for local residents and reducing the impact of traffic on the arterial road system on the local environment.

8.146 The ILUTS study provides Council with a set of guiding principles that can form the basis of discussions with the RTA, making Council's position clear and consistent. To further assist Council should agree on arterial road priorities based on level of impact. This will focus discussions between Council and the RTA. At this stage it is suggested that a focus be placed on Pennant Hills Road and Hornsby Town Centre (George Street / Pacific Highway) given the findings of the accident analysis at Stage 1 of the ILUTS study.

8.147 In summary:

- Agree Shire wide priorities;
- Lobby RTA, State Government agencies and Commonwealth Government regarding the outcome of the DOTARS study;
- Instigate regular liaison meetings with RTA representatives to progress improvements.

Resources

8.148 This action plan requires a low resource commitment from Council with lobbying and liaison tasks generally falling within existing staff responsibilities.

ILUTS Linkages

8.149 Council will take the lead on the implementation of this action plan, which will focus on developing relationships with the RTA and other State Government agencies.

8.150 This action plan links to the following action plans:

- Administration action plan;
- Land use and development action plan;
- Travel demand management action plan;
- Pedestrian and cycle action plan; and,
- Public transport action plan.

8.151 As has been mentioned, Stakeholder involvement will be particularly necessary to the realisation of the action plan, with input from:

- RTA;
- State Government agencies; and,
- Commonwealth Government.

Arterial Roads Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Agree Priorities	short	low	HSC		Consider information in ILUTS Paper 1
Lobbying	short - ongoing	low	HSC	RTA, State Government	Ongoing exercise – based on securing better outcome for community based on agreed objectives – likely to focus on F3 – M2 Link
Regular Liaison	short - ongoing	low	HSC	RTA, State Government	Ongoing exercise – based on securing better outcome for community based on agreed objectives

Action Plan – Local Street Management

Introduction

8.152 The action plan revisits the identified objectives, issues, opportunities and constraints and then sets out a series of actions by which to achieve the objectives, tackling the issues and maximising the opportunities while recognising the constraints.

Objectives

- To reduce the number of vehicles using local streets that do not have business there, such as rat running and commuter parking.
- To reduce vehicle speeds and the intrusion of traffic into residential areas.
- To improve opportunities for public transport, walking and cycling in residential areas of the Shire.

Issues

8.153 A number of issues have been identified that specifically relate to local street management. The management of local streets will assist in the creation of vibrant interactive neighbourhoods where people are encouraged to walk, cycle and socialise in streets through the provision of a safe, comfortable and attractive local environment.

8.154 The issues identified include:

- 'Rat running' occurs through some residential areas due to heavy traffic elsewhere and this can be exacerbated by congestion on the arterial road network.
- There is a high level of commuter parking in some residential streets, particularly those close to stations and activity centres, which detracts from local safety and amenity and can reduce parking for residents and their visitors.
- High vehicle speeds are experienced on some local streets compromising road safety and amenity.
- Existing street patterns are not designed to encourage walking, cycling or buses. The topography creates cul-de-sac suburbs unsuitable for penetration by bus services and making walk and cycle routes indirect and lengthy.
- There is a commonly held perception that local streets are not safe for children to use due to 'stranger danger' and traffic hazards.
- Each precinct suffers different problems and therefore solutions need to be tailored to individual needs.

Opportunities

- There are an increasing number of examples of good practice in local street management and design from around the Sydney metropolitan area, other parts of Australia and overseas that Council can draw on.
- On-street parking controls using time restrictions will benefit local streets and remove non local traffic.

- The Shire Roads Hierarchy is already available and will assist in determining the appropriate function of roads.

Constraints

- There is a need to retain access for residents, visitors and service vehicles in any scheme developed.
- Some businesses may not welcome reduced access to local areas if they perceive their trade will be affected.
- The existing street patterns may not be conducive to achieving the stated objectives due to layout and topography.

Approach

8.155 This action plan seeks to increase the liveability of local residential neighbourhoods, reducing the negative impacts of traffic and creating areas that are conducive to walking and cycling.

8.156 The general principles of the action plan are considered to be:

- Reduce road widths in residential areas;
- Revisit street design to reduce traffic speeds and dominance;
- Provide for improved access on foot and by bicycle;
- Create community areas (pocket parks, playgrounds); and,
- Reinforce community characteristics through urban design features.

8.157 The suggested approach includes the following steps:

- Identify neighbourhood areas -
    - Utilise road hierarchy (revisit if necessary),
    - Assess residential neighbourhoods,
    - Identify contiguous communities;
- Identify local community, transport and access issues -
    - Survey (traffic) data,
    - Accident data,
    - Community consultation;
- Establish and confirm problems;
- Develop solutions and detailed design proposals to address problems; and,
- Implementation, monitoring and review.

Identify Neighbourhood Areas

8.158 Before progressing with the implementation of this action plan it will be necessary to identify the neighbourhood areas that would benefit from the proposed approach and outline measures. It is likely selection will be informed through examination of the road hierarchy and through an assessment of local communities bounded by collector

roads. A focus could be placed on communities that are experiencing traffic problems, particularly rat running.

8.159 Due to the resources required to design and implement measures there will be a need to prioritise areas and Council will have to establish criteria by which to do this. Criteria may include:

- Pedestrian accidents;
- Local residential amenity; and,
- Traffic volumes, traffic behaviour and the incidence of rat running.

Identify Local Community, Transport and Access Issues

8.160 Consultation with the local community will be a key task in the development of street management proposals. The people living in the area will be able to highlight key issues and through their involvement take ownership of the project which will assist in community development objectives. In Europe this type of initiative has had considerable success in community development through involvement throughout the design process. This has led to the inclusion of locally designed features, such as paving insets and the resolution of ongoing maintenance needs.

8.161 At this stage the consultation should be broad based, including the land use mix, as a narrow focus may miss some of the issues. For example, the establishment of refurbishment of a local play area may encourage parents to let their children play locally, removing unnecessary car trips from the local roads and establishing a focus on local facilities.

8.162 The focus on community development and the use of local facilities will assist in supporting local businesses, particularly small shops that may be concerned about long term viability, particularly if local car access is in any way reduced.

8.163 In consultation with the community and through data analysis and collection local issues can be identified clearly and communicated back to the community.

Establish and Confirm Problems

8.164 Following community consultation and data analysis the problems to be addressed locally can be confirmed, prior to moving on with the design work. Given the inherent difficulty in resolving all problems it may also be necessary to prioritise issues.

8.165 At this point in the project aims and objectives should be clearly identified, including targets for individual streets. This will provide a clear understanding on which to base the design works and then monitor the scheme following implementation.

Develop Solutions and Detailed Design Proposals

8.166 The community can again be involved in the design process. Open design sessions provide the opportunity for local people to see how designs are developed and how solutions identified can address the issues they have raised. It also provides an understanding of the difficulties involved in developing solutions that address all issues and the need for compromise.

8.167 Some possible design options include:

- Narrowing roads and introducing defined parking bays to visually alter the appearance of the road and encourage slower speeds.
- Kerb outstands and central refuge islands to reduce crossing distances for pedestrians and also encourage slower vehicle speeds.

- Street paving that introduces a visual and textual difference to the road surface, encouraging drivers to recognise the residential nature of the street.
- The implementation of formal and informal play and garden areas where space allows to encourage community interaction and social activity.
- The implementation of footpaths and cycle lanes to provide pedestrian and cycle only links between roads to increase the level of local accessibility by both these modes and encourage walking and cycling by all age groups.

8.168 Through the involvement of the community the design should look to introduce community specific features to the design. This might include paving stones designed by local children or street artwork by a local artist.

Implementation, Monitoring and Review

8.169 Following agreement of the proposed design the scheme will need to be implemented. Given that any area wide scheme is likely to include a range of measures, some more difficult and costly to implement than others, it may be necessary to stage implementation over a period of time.

8.170 Following implementation, the scheme should be monitored and reviewed on a regular basis to ensure it is achieving the stated aims and objectives. It may be necessary to review aspects of the scheme on the basis of the monitoring outcomes.

Resources

8.171 Council will necessarily take the lead in the implementation of this action plan and the principle stakeholders will be community groups and organisations. The early stages of the action plan implementation – the identification of neighbourhood areas – will be relatively low cost, however, design and implementation of measures will require a greater level of resources. Through the development of proposals, Council will develop a 'toolbox' of design solutions, reducing the resources required in future design processes.

8.172 There is considerable best practice available from Europe, including the UK, and Australia. In particular Council can draw on UK guidance on 'Home Zones' and adapt some of the design concepts for local use.

ILUTS Linkages

8.173 Council will take the lead on the implementation of this action plan, with input from local communities.

8.174 This action plan links to the following action plans:

- Administration action plan;
- Travel demand management action plan;
- Car parking management action plan;
- Public transport action plan; and,
- Pedestrian and cycle action plan.

8.175 As has been mentioned, Stakeholder involvement will be particularly necessary to the realisation of the action plan, with input from:

- Community groups; and,

- Local residents.

Local Street Management Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Identify neighbourhood areas	short	low	HSC		Can be done by Council. Review of accident data and road hierarchy will assist.
Identify local community, transport & access issues	short - medium	medium	HSC	Community	
Consultation	short - medium	medium	HSC	Community	This is a key activity in the development of individual schemes.
Data collection & analysis	short - medium	medium	HSC		Likely to include vehicle speed and volume data.
Establish & confirm problems	short - medium	low	HSC	Community	
Agree aims & objectives	short - medium	low	HSC	Community	Required to define project and for monitoring.
Develop solutions / detailed design	medium	medium		Community	It is likely that HSC will require consultancy assistance to develop designs. Community representatives could sit on a Steering Group. Include community specific design details.
Implementation, monitoring & review	medium - long	high	HSC	Community	Advantages of single implementation phase will have to be balanced against availability of funding.

Action Plan – Car Parking Management

8.176 The car parking management action plan was completed as a separate document early in the study, responding to Council's requirement for policy direction in this area at an early stage. This action plan is a lengthy document and as such it is included in **Appendix B**. The conclusions are included below.

Action Plan – Walking and Cycling

Introduction

8.177 The action plan revisits the identified objectives, issues, opportunities and constraints and then sets out a series of actions by which to achieve the objectives, tackling the issues and maximising the opportunities while recognising the constraints.

Objectives

- To widely promote the benefits of walking and cycling within the Shire.
- To create streets and roads that are safe and conducive to walking and cycling.
- Increase the priority for pedestrians and cyclists relative to vehicular traffic.
- To ensure the recommendations of the Hornsby Shire Bike Plan and PAMPs are taken forward to implementation, reviewed periodically and revised.
- To develop a formal pedestrian planning strategy for the whole Shire.

Issues

- It is noted that in some locations within the Shire the opportunities for walking and cycling are limited by topography, existing street layout, barriers such as the rail lines and heavily trafficked streets.
- The Hornsby Bike Plan proposes a number of routes to provide a safe and convenient network for cyclists within the Shire, however, implementation has evidently been ad hoc leading to a fragmented network offering little continuity for cyclists.
- There are high levels of accidents involving pedestrians, particularly in Hornsby Town Centre and on Pennant Hills Road close to Thornleigh and Pennant Hills stations.
- The general walking environment in residential areas of the Shire can be poor with missing footpaths and a lack of safe crossing points.
- Hornsby Shire Council is currently progressing Pedestrian Access and Mobility Plans (PAMPs) in Pennant Hills and Cherrybrook. These studies will raise issues and make recommendations for improving the pedestrian environment in these areas. Some of these recommendations may be transferable to other areas. The ILUTS should be informed of the outcomes of the PAMPs.
- There is currently no formal Council strategy for pedestrian planning, although Council undertakes a number of projects to promote and enhance the walking environment.

Opportunities

- Current PAMPs for Pennant Hills and Cherrybrook provide the opportunity to improve facilities.
- Extensive range of ‘side benefits’ to increased walking – improved health, low cost, increased social interaction and environmental benefits.

- RTA 50:50 funding is available for PAMPs and their recommendations and is also available for regional bike routes described in Hornsby's Bike Plan. The RTA will fund all schemes in Action for Bikes 2010.
- Council can link the provision of infrastructure to travel demand management programs such as Green Travel Plans and personalised marketing.
- The Parking Space Levy creates a fund for improving interchanges – including the provision of cycle racks / lockers.
- A large proportion of households own bikes (although only a small number use them for making regular trips).
- Hornsby Shire Council already has a comprehensive Bike Plan for the municipality which forms the basis for a cycling network within the Shire.
- The development planning system offers a means of providing facilities for cyclists within new buildings.
- A local bicycle user group is already active in the Shire and will provide invaluable support in developing cycling initiatives and promotional campaigns.
- The ILUTS offers a coordinated approach to improve the local environment to assist in encouraging more trips on foot and by cycle.

Constraints

- Local topography, arterial roads with high traffic volumes and speeds and rail lines act as barriers to pedestrians and cyclists.
- The propensity to walk and cycle will always be affected by the weather and seasonal impacts such as dark nights.
- The existing low profile of walking and cycling as modes of travel does not publicise them locally.

Approach

8.178 To achieve the identified objectives, the suggested approach looks to five principal areas of implementation:

- Develop formal strategy;
- Publicity and promotion;
- Education;
- Integrating pedestrian and cycling planning priorities into all Council activities;
- Links and connections between existing facilities; and,
- Provision of new facilities.

Develop Formal Strategy

8.179 Walking and cycling are key modes in the achievement of the aims and objectives of the ILUTS. Council has developed PAMPs and a Bike Plan for the Shire and there is a need to bring these together in a coordinated document that can be communicated across Council departments, forming the basis of this action plan. The development of a cohesive strategy will require some Council attention but given the work done to

date should not be an onerous task. The strategy should not be a long document, ensuring it is easy to disseminate through Council.

Publicity and Promotion

8.180 Walking and cycling should be encouraged as both modes of transport and forms of exercise. As self propelled modes, both are environmentally sustainable and do not contribute to air pollution and harmful emissions. Over short distances and with good quality routes and facilities, walking and cycling can compete with the car, particularly when parking time is taken into account.

8.181 Walking and cycling are also excellent forms of exercise that can be incorporated into daily activities. The Heart Foundation of Australia recommends 30 minutes of exercise a day to improve cardio-vascular health and guard against a range of health problems, including mental problems and excess weight and obesity. A lack of time prevents many people from taking enough exercise and this can be overcome to some extent by increasing the use of active transport and the incorporation of exercise into daily activities.

8.182 Walking and cycling are particularly important modes for those without access to a car including those not old enough to drive and those who are unable to drive for any reason or do not have access to a car. Children aged between 12 and 17 years are old enough to undertake independent travel and walking and cycling offer a means to do so without being reliant on public transport routes and service times.

8.183 Given the importance of walking and cycling to younger age groups, publicity and promotion through schools, linked to the travel demand management action plan, is recommended.

8.184 Walking and cycling can be promoted through a range of media, incorporating practical information on routes and safe riding or walking to addressing motivational factors such as care for the environment and improved health and fitness.

Education

8.185 Both children and adults will generally benefit from specialist education, particularly related to cycling. Courses for beginners and 'lapsed cyclists' can provide the necessary road skills and improve confidence. Courses can be publicised and supported by Council, possibly in conjunction with other community and school activities.

8.186 It is likely that local groups already organise social rides and this is a good opportunity for cyclists to gain confidence within the security of a group. Council can assist in disseminating information about local social rides and provide support to these groups. Walking groups are also popular and again can make walking fun and attractive.

8.187 Local bicycle user groups (BUGs) often offer cycle 'buddy' assistance. Buddies can assist cyclists in identifying safe routes, for example, between home and work, and accompanying the new cyclist a few times to give confidence. Council can promote and support this type of scheme.

8.188 Cycle and walk maps are particularly useful to local people as they look to make trips by these modes. This task is covered in the travel demand management action plan.

Integrating Pedestrian and Cycle Planning into other Council Activities

8.189 Planning for pedestrians and cyclists should not be undertaken a discreet section within Council in isolation from other Council activities. A holistic approach should be adopted that permeates all aspects of Council's work, the first stage of which is the development of a strategy as described above. For example:

- Planning controls should be put in place to ensure all new commercial developments have cycle parking and shower and change facilities and all new residential developments have convenient and secure cycle parking available for the use of residents.

- Any intersection works should incorporate additional provision for pedestrians and cyclists, including extending the pedestrian crossing time and increasing crossing opportunities and facilitating safe cycle use through such measures as advance stop lines.

- Shire and community events should incorporate cycle access and parking facilities and routes for cyclists and pedestrians should be published in advance with other access information.

8.190 This level of integrated planning is relatively difficult to achieve, however, given that virtually all Council services involve walking, either in delivery of the service or in the way the service is taken advantage of by the community, it is linked to all Council tasks.

Links and Connections

8.191 A considerable effort has already been made by Council to implement pedestrian and cycle facilities throughout the Shire, including dedicated paths, however, the network lacks connectivity and facilities are frequently isolated. These existing facilities could be made of much greater relevance through a focus on providing links and connections between existing infrastructure. Additional connections and linkages should be identified through the Hornsby Shire Bike Plan and completed PAMPs and prioritised. The network can then be publicised through maps and community information.

Provision of New Facilities

8.192 New facilities will be required and these will largely be identified within the Hornsby Shire Bike Plan and the PAMPs, particularly those recently completed for Pennant Hills and Cherrybrook. Additional PAMPs for other areas may need to be completed and all PAMPs and the Bicycle Plan will require regular review.

- New facilities will include:

- On and off road paths and trails;

- Crossing facilities, signalised and unsignalised;

- Cycle parking facilities; and,

- Signage.

8.193 To assist implementation the full list of facilities will need to be assessed and priorities in line with available budget resources set out clearly. This will require the recommendations of various plans to be brought together into a single implementation framework, with coordinated spending priorities.

Resources

8.194 This action plan will require potentially significant resources to realise, however, the more costly items will have already been identified within other documents, in particular, the Hornsby Shire Bike Plan and the PAMPs. This action plan principally requires Council resources to revisit and coordinate priorities established within the Bike Plan and PAMPS and to review Council's policies and approaches to ensure a fully integrated and holistic approach to the provision of facilities to support walking

and cycling. Council should look to bring together the Bicycle Plan and PAMPs to create a single list of proposed works and then prioritise these listed actions. PAMPs for those areas without plans should be completed.

8.195 The publicity and promotion of walking and cycling will require some resource allocation but this can, and should, be done in conjunction with the travel demand management action plan. In this way materials will be integrated and the messages will be consistent throughout the material.

8.196 Education of child and adult cyclists may also require some additional resources but it is likely that this can largely be self funded and Council should look to develop partnerships with the Police, schools, Bike North, BNSW and specialist educational organisations.

ILUTS Linkages

8.197 Council will take the lead on the implementation of this action plan. It is likely Council will look to BikeNorth, BNSW, RTA and State Government for assistance and advice in implementing this action plan.

8.198 This action plan is central to the ILUTS and links to all other action plans:

- Administration;
- Land use and development;
- Travel demand management;
- Car parking management;
- Public transport;
- Arterial roads;
- Local street management; and,
- Access to national parks and open space.

8.199 As has been mentioned, Stakeholder involvement will be particularly necessary to the realisation of the action plan, with input from:

- State Government;
- RTA;
- Bicycle NSW; and,
- BikeNorth.

Walking and Cycling Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Develop formal strategy	short	low	HSC	BUGs, Bicycle NSW	
Publicity and promotion	short - medium	medium	HSC	BUGs, Bicycle NSW	Will largely be undertaken within the travel demand management action plan.
Education	short - medium	low	HSC	BUGs, Bicycle NSW	Should include schools and colleges in the HSC area.
Integration into Council activities	short	low	HSC		Will require coordination across all HSC departments and responsibilities.
Provision of links and connections	short – medium - long	high	HSC	BUGs, Bicycle NSW	Will possibly include input from NPWS to provide linkages into National Parks and open space.
New facilities	long	high	HSC	BUGs, Bicycle NSW, RTA	Will possibly include input from NPWS to provide linkages into National Parks and open space.
Coordinated implementation framework	short - medium	low	HSC		All existing documents should be reviewed to provide single implementation plan.

Key Principles for Pedestrian and Cycle Planning

General

- **Permeability** – pedestrians and cyclists should be able to move conveniently through neighbourhoods and within and between centres – ensuring that all key origins and destinations are well connected. Roads, rail lines, developments and buildings should not present unacceptable barriers to movement.
- **Priority** – high priority should be given pedestrian and cycle movements on key routes – such as short wait times at signalised crossing points close to the train stations, location of bus stops and entry points to major trip attractors.
- **Continuous** – pedestrian and cycle routes should form continuous and obvious paths of travel – with connected foot/cycle paths, crossing facilities and entry points to trip attractors.
- **High quality** – pedestrian and cycle facilities should at least meet design standards – footpaths should include provision for people with disabilities.
- **Integration** – walking and cycling should be integrated with other modes (particularly bus and train services) through the provision of obvious, safe and convenient pedestrian/cycle access paths to interchange areas.
- **Legibility** – the local environment should be easy for pedestrians and cyclists to 'read' so that they can easily find their way – street names should be clearly visible and clear signage should be provided including key destinations, distances and approximate walk/cycle times.
- **Capacity** – pedestrian and cycle paths and areas should be designed to provide ample space for both travelling and waiting pedestrians and cyclists. This is particularly important close to rail stations and in retail areas.
- **Convivial** – streetscapes should be designed to high urban design standards that provide interesting pedestrian and cycle routes, free of litter and fear of crime. Appropriate lighting should be provided on all pedestrian and cycle routes.
- **Hierarchy of modes** – implement a hierarchy of modes within 50/100m of train stations and other key developments. The hierarchy should be used to assist in the allocation of public space and relative priorities within the immediate vicinity of major trip generators. The following hierarchy is proposed:
    - Pedestrians
    - Cyclists
    - Buses
    - Taxis
    - Delivery vehicles
    - Private cars with a local origin / destination
    - Through vehicles

Pedestrians

- **Comfortable** – pedestrian paths should be comfortable to walk on – walking surfaces should be free of obstructions (including parked cars and vegetation) and provide a smooth surface (with no broken paving).
- **Crossing facilities** – appropriate at-grade pedestrian crossing facilities on desire lines should be provided – consideration should be given to reducing the road width at these locations. Grade separated crossing facilities should be avoided where possible although they are recognised as necessary in certain locations, for example, in crossing rail lines and major arterial roads.
- **Facilities** – appropriate facilities should be provided within the footpath area, including regular seating, rubbish bins (which are emptied regularly) and maps – design of facilities should be coordinated with the overall urban design theme and care should be taken when placing facilities to ensure that footpaths are not obstructed.
- **Access to car parks** – pedestrian access between car parks and local attractions should be considered to ensure that safe, convenient and obvious routes are provided – including pedestrian routes within car parks.

Cyclists

- **Segregated facilities** – cyclists should generally be provided with segregated on-road facilities – with clear cycle lanes, advance stop lines and other priority treatments.
- **Storage facilities** – appropriate storage facilities should be provided at all key destinations (including train stations, major bus stops and large trip attractors). Storage facilities should provide for both long and short term storage of cycles and related equipment. Design should be such that storage is not only secure and provides weather protection but also conveys a sense of high priority for the treatment of cycles and cyclists.
- **Intersection treatments** – appropriate facilities should be provided for cyclists at intersections and at locations where cyclists have to move between on and off-street paths and vice versa to ensure safe and convenient access. These locations are typically the most difficult and confusing areas of the network for both cyclists and other road users.

Shared Routes

- In general Council should aim to provide separately for pedestrians and cyclists, taking into account the different needs of these two groups – and in particular vulnerable pedestrians such as those with impaired hearing, sight or walking difficulties, however given the rural nature of much of the Shire and the potentially low numbers of walkers and cyclists shared facilities should also be considered.
- Where opportunities for shared off-road routes are identified, paths should be carefully planned with wide consultation at an early stage to ensure suitability of the route and the proposed facilities. Once implemented, use of the route should be monitored and changes made if problems arise.

Action Plan – Access to National Parks and Other Areas of Open Space

Introduction

8.200 The action plan revisits the identified objective, issues, opportunities and constraints and then sets out a series of actions by which to achieve the objective, tackling the issues and maximising the opportunities while recognising the constraints.

Objectives

- Develop sustainable options for accessing National Park [and other areas of open space] destinations.

Issues

- The dependency on the private vehicle as a means of accessing the National Park and other areas of open space in the Shire is detrimental to the environment and conflicts with the aims of conservation and preservation.
- It will always be difficult to provide attractive public transport services for recreational visitors to the Shire given the dispersed travel patterns.
- Communities living within the National Park and other designated areas of bushland are dispersed and as such it is unlikely they can be served effectively with conventional public transport services, as planning policies based on sound development principles preclude the ability to increase density in these areas.

Opportunities

- The Northern Rail line provides significant opportunities for non-car access to Ku-ring-gai Chase National Park, given its proximity to the park boundary and the existence of walking tracks leading from stations into the National Park.
- Council can draw on national and international experience in dealing with similar problems of access to environmentally sensitive areas.

Constraints

- It will always be difficult for public transport to compete effectively with the private car for recreational trips.

Approach

8.201 The suggested approach focuses on short, medium and long term actions:

- Short term – increase awareness of existing public transport routes and opportunities for visiting national parks and areas of open space using existing paths and trails;
- Medium term – develop public transport links to support existing facilities or develop facilities that can be accessed through existing public transport services;
- Long term – jointly develop public transport routes and facilities.

8.202 The actions focus on the following National Parks and areas of open space within Hornsby Shire:

- Ku-ring-gai Chase National Park;
- Marramarra National Park;
- Berowra Valley Regional Park;
- Muogamarra Nature Reserve;
- Long Island Nature Reserve; and,
- Pennant Hills Park and links to the Lane Cove National Park.

8.203 While there are numerous smaller areas of parkland and open space they mostly serve a local function. The areas identified are destinations in their own right, attracting visitors from across the metropolitan region. Some of the smaller areas may benefit from similar approaches with a local focus.

8.204 The Great North Walk deserves special mention. This 250km trail from Sydney Cove to Newcastle passes through Hornsby Shire, traversing Pennant Hills Park, Berowra Valley Regional Park and Ku-ring-gai Chase National Park.

8.205 In developing the action plan it is recognised that the car will always provide an important mode of access to the national parks and other areas of open space. The picnic area at Bobbin Head attracts family groups from across the metropolitan area and it is unlikely that these people could or would use public transport, however, the popularity of the Palm Beach Wharf ferry in accessing some areas of Ku-ring-gai Chase National Park demonstrates the potential of alternatives.

8.206 Linkages between this action plan and the Public Transport Action Plan are important and the development of demand responsive public transport (DRT) services will potentially benefit rural communities within or close to the national parks and areas of open space and visitors to these places.

Short Term Actions

8.207 The identified short term actions focus on existing public transport services and facilities, seeking to maximise linkages already available through improved publicity and signage. These actions are likely to focus on Ku-ring-gai Chase National Park, Berowra Valley Regional Park, Muogamarra Nature Reserve, Long Island Nature Reserve and Pennant Hills Park and seek to maximise existing public transport access.

8.208 An initial step on the realisation of this action plan is the formation of a working group to bring together key stakeholders, principally the National Parks and Wildlife Service and State Rail Authority. Given the nature of the action plan it can only be realised through an integrated approach and the joint development of projects.

8.209 Rail stations to the north of Hornsby provide access to Ku-ring-gai Chase National Park to the east and Berowra Valley Regional Park and Muogamarra Nature Reserve to the west. Long Island Nature Reserve can be accessed from Hawkesbury River station. Pennant Hills park can be accessed from Pennant Hills, Thornleigh and Cheltenham stations. A number of stations are directly linked to areas of open space by established walking trails and walkers can follow routes between stations, negating the need to 'double back'. Rail services provide an important opportunity for people without cars to access park land and to facilitate 'station to station' walks.

8.210 Ferry services and local buses also provide significant opportunities to access otherwise remote areas of open space.

8.211 Ku-ring-gai Chase National Park is quite accessible by public transport, including rail, bus and ferry services. Walking routes complement public transport access points

with trails linking Hawkesbury River and Cowan stations and Berowra, Mount Ku-ring-gai and Mount Colah stations. A Shorelink bus service provides access along Bobbin Head Road and hourly ferry services from Palm Beach Wharf provide access to The Basin and Great Mackerel Beach which cannot be reached by car. A longer distance ferry service connects Palm Beach Wharf with Bobbin Head via Patonga, travelling once a day in each direction. The ferry services from Palm Beach Wharf to The Basin and Great Mackerel Beach are particularly popular routes.

8.212 Pennant Hills Park provides access to Lane Cove National Park and can be easily accessed by rail and local bus services

8.213 In the short term there is a need to improve information on public transport access opportunities, bringing together transport route and timetable information with details on walking routes and facilities, emphasising the opportunities provided by public transport access. Interchange information should be provided, for example covering the rail –bus interchange at Turramurra station and the bus – ferry interchange at Palm Beach Wharf. Suggested itineraries can be provided, bringing together transport timetables, walk routes and times, lunch stops and the return journey.

8.214 The information can be based entirely on existing public transport routes and park and reserve facilities.

8.215 To ensure the published information is easy to follow local area audits should be completed to ensure signage at rail stations, bus stops and ferry terminals is complete and user friendly. Local research, particularly focus groups, may assist in the development of appropriate, informative and attractive information that appeals to the target market.

8.216 In summary the following short term actions are identified:

- Form working group with representatives of Council, NPWS and SRA. Initial focus will be on rail stations and information can be passed to bus operators through the public transport action plan development. The ferry operator should be informed of the action plan and involved as required.
- Undertake background research on identifying and reaching the target market.
- Audit stations, trails and facilities to check available information and that signage is complete and accurate.
- Produce detailed information with comprehensive information in a number of formats.
- Distribution and developing awareness of the availability of the information, ensuring it can be accessed from a wide variety of sources, including Council, NPWS, SRA, tourist information and other outlets.

Medium Term Actions

8.217 These actions look to maximise the potential of existing opportunities through the improvement of public transport services or the provision of park and reserve facilities. Likely actions will include:

- The extension of bus routes;
- Additional weekend and holiday services;
- Additions to existing trails, signage and interpretative information to fully integrate public transport accessible routes into parks and reserves.

8.218 It is likely that the full list of actions can only be identified, and realised, through discussions with the National Parks and Wildlife Service, State Rail Authority, local bus operators and the ferry operator.

Long Term Actions

8.219 In the long term it will be necessary to identify new public transport routes and associated facilities to develop the overall access to national park and reserve lands. In particular routes will need to be developed to provide access to Marramarra National Park which is currently poorly served by public transport. The specific projects will need to be identified in consultation with National Parks and Wildlife Service, State Rail Authority, local bus operators and the ferry operator.

8.220 All actions undertaken in the medium and long term should be accompanied by information and publicity material as developed through the short term actions.

Resources

8.221 This action plan can be initiated with relatively limited resources but will require greater resources to realise the medium and long term opportunities. This action plan should be funded in partnership with Stakeholders, particularly NPWS and the transport operators. It is likely Council will have to take a lead in realising the action plan through the organisation of meetings, development of proposals and conduct of local research.

ILUTS Linkages

8.222 Council will take the lead on the implementation of this action plan, although, some of the identified projects will necessarily be led by wither public transport operators of State Government agencies.

8.223 This action plan links to the following action plans:

- Administration action plan;
- Travel demand management action plan; and,
- Public transport action plan.

8.224 As has been mentioned, Stakeholder involvement will be essential to the realisation of the action plan, with input from:

- State Rail Authority;
- National Parks and Wildlife Service;
- Palm Beach Wharf ferry operator; and,
- Local bus operators.

Access to National Parks and Other Areas of Open Space Action Plan

[Timeframe: short = 0 – 18 months medium = 18 months – 3 years long = 3+ years]

[Cost: low = $0 - $20,000 medium = $20,000 - $100,000 high = $100,000+]

Action	Timeframe	Cost	Responsibility	Stakeholders	Notes
Short Term					
Form Working Group	short	low	HSC	NPWS, SRA	Make bus and ferry operator(s) aware.
Undertake Background Research	short	low	HSC	NPWS. SRA	Stakeholders should contribute.
Audit Stations, Trails and Facilities	short	low	NPWS, SRA	HSC	Can be easily done by SRA and NPWS staff.
Produce Information	short	low - medium	HSC	NPWS. SRA	One stakeholder should lead – it is likely that SRA or NPWS would be more appropriate than HSC.
Distribute Information	short	low	HSC, NPWS, SRA		Distribution strategy will need to be clearly identified by working group.
Medium Term	medium	medium	HSC	NPWS, SRA, PT operators	Should be progressed through working group in collaboration with all stakeholders. Identified projects will be run by an identified stakeholder.
Long Term	long	potentially high	HSC	NPWS, SRA, PT operators	Should be progressed through working group in collaboration with all stakeholders. Identified projects will be run by an identified stakeholder.

9.0 Transport Model

Introduction

9.1 A multi-modal transport computer model has been developed based on road and public transport networks in the Hornsby Shire and adjoining regions by Masson Wilson Twiney. The model has been specifically tailored to quantify travel responses to a range of strategic land use/transport initiatives that Hornsby Council may wish to explore. These include;

- To conduct strategic tests of alternative macro land use / transport strategies covering:
  - low, medium and high density residential development zonings
  - concentrated or dispersed development
  - bus service enhancements such as increased frequencies
  - commuter parking demand satisfaction or parking demand constraint,
- To test the broad effects of different or completely new bus routes on patronage levels,
- To test the broad effects of bus and rail fare changes,
- To test the effects of railway station or commercial centre parking policies, and
- To model morning peak period traffic on the arterial, sub-arterial and collector road systems.

Model Purpose

9.2 The model is intended to be a tool to assist Council in;

- Developing sustainable land use planning and zoning control,
- Assessing the effects of changing existing zoning controls at a neighbourhood or centre level,
- Formulating parking policy for both commuter and commercial centres,
- Providing quantitative data to support S94 Plans that require developer contributions towards improved road and public transport services,
- Providing supportive data to Council submissions to State Government seeking improved transport infrastructure,
- Providing strategic data to more detailed local area models that Council may wish to use for further investigations.

9.3 The model is ***not*** intended to;

- Examine individual developments,
- Conduct road and transport capacity assessments at the local level (intersections or short lengths of roads),

- Assess the adequacy or block location of car parks.

Model Development and Coverage

9.4 The multi-modal model covers the entire local government are of Hornsby and includes areas outside, albeit at a reduced level of detail. This is because travel patterns in Hornsby are heavily influenced by activity in the rest of the Sydney metropolitan area.

9.5 The principal source material for modelling of transport in Sydney derives from the *Sydney Landuse Model (SLM)* and the *Sydney Travel Model (STM)*, both of which are maintained and operated by the Department of Infrastructure Planning and Natural Resources' (DIPNR) Transport Population and Data Centre (TPDC). This divides the metropolitan area into about 900 travel zones. Based on land use information, the STM predicts for various periods of the day;

- Zonal trip generation,
- Trip distribution (origin and destination),
- Mode of travel,
- Which roads or public transport service would be used for the trip.

9.6 This approach has been used for strategic level transport planning in the Sydney area since the Sydney Area Transport Study in 1973.

9.7 Because the STM covers such a large area it is coarse. While it provides a good indication of corridor travel trends, it does not provide the level of resolution needed to plan travel on individual routes.

9.8 To accurately model road and public transport usage it is necessary to employ a much finer trip generation zoning system than for the STM. For public transport travel choices, this is particularly important as such trips are heavily influenced by the ease of access to a public transport stop (as well as by the quality of service offered). Thus small trip generation zones are needed to be able to appropriately allocate representative public transport access distances.

9.9 The model developed for Hornsby is based on a fine coded mode split demand model prepared by Masson Wilson Twiney for the Western Sydney Transitway projects. The model disaggregates each of the STM model travel zones in Hornsby into between two and six public transport trip generation zones. Relationships developed for the Transitway models were adapted to suit Hornsby based on actual bus and rail patronage at the principal stations and commercial centres in Hornsby. Layered on this is a road network model using the original STM zones.

9.10 It is noted that data exchange between models is possible to explore effects of traffic relief due to increased public transport usage. The two model format is appropriate because it allows a more accurate zoning system for the public transport model while allowing the traffic model to fully take into account metropolitan wide traffic influences.

9.11 Prior to any application, it will be necessary to consult with Council planners on the extent and distribution of the latest future population and employment growth for 2011 and 2021 throughout the shire.

The Mode Choice Sub-Model

9.12 To estimate the likely impacts of possible alternative transport strategies and zoning controls in Hornsby Shire, it is necessary and feasible to use procedures which estimate travellers' choice of travel mode.

9.13 Previous research has indicated that mode choices are influenced by a number of factors, in particular the:

- Time to reach the main mode of travel (eg., walk to the train station or bus stop);
- Time waiting for the main mode (eg., waiting at the train station or bus stop)
- Time spent in the main mode(s);
- Direct cost of travel (eg., fares, parking); and
- Time from the main mode to the final destination (eg. walk from the train).

9.14 The research has also shown that the influence of these factors varies across traveller segments and travel purposes, in particular:

- home-to-work (ie., the journey from home to work, or the return) or education;
- on business (ie., travelling on business); and
- 'other' (ie., travelling on personal business, recreation).

9.15 Through its previous research experience, the team developed survey and procedures to enable careful targeting of surveys and thus develop the mode choice model applicable for Hornsby. The structure of the survey was thus:

- Target segment. Travellers who are making 'other' purpose trips (eg., shopping, personal business, recreation) and currently use car or train as the main mode.
- Traveller sample. A sample of 120 persons who currently use car or train for the 'other' trips will be selected from locations in or near to the Hornsby town centre.
- Interview and modelling procedures. The sampled persons who agree to be interviewed will be interviewed using phone-based procedures and statistical procedures used to estimate the 'choice model' from the resulting data.
- Application of the choice models. The choice models will be integrated into the for Hornsby, and enable rigorous assessment of possible public transport alternatives.

Surveys Underpinning the Model

9.16 For the purposes of calibrating and validating the model for Hornsby as described above, the following surveys were undertaken:

- Stated preference and revealed preference surveys to calibrate the choice model – involved direct interviews and telephone surveys.

- Parking Accumulation/Turnover Surveys around stations as previously proposed (suggest detailed surveys only at the following stations, spot accumulation surveys at the others:
    - Hornsby
    - Waitara
    - Pennant Hills
    - Beecroft
    - Epping
- Bus Boarding/Alighting Surveys over the periods 7.00-9.00am and 4.00-6.00pm at the above stations.
- Mailback Questionnaire Survey handed out at the above station barriers during 6.30-9.30am to determine:
    - access mode (parked car, dropped off, bus, walk, etc.)
    - home address (street and post code)
    - work/school address (street and post code)
    - reason for journey

Model Platform

9.17 The model has been constructed within standard computer transport planning software, namely;

- EMME/2
- NETANAL

9.18 The Choice Model has been constructed within a specialised software environment known as MaxMan which ties into the two abovementioned software packages.

9.19 The suite of programs runs seamless on a Personal Computer configured with a fast processor and extended memory. Running of the model requires high level of transport modelling expertise.

10.0 Consultation

10.1 The success of the ILUTS depends to a large part on the support of key stakeholders, including the wider community. Consultation with these groups is therefore a key part of the development of the ILUTS.

10.2 A number of consultation activities have been undertaken to date, including the formation of a Government and Operator Stakeholder Reference Group and community transport surveys.

10.3 These initial consultation activities have focused on gathering information and identifying issues with the current land use and transport systems to feed into this review of the existing State of Play.

Government and Operator Stakeholder Group

10.4 The Government and Operator Stakeholder Reference Group will perform a number of roles in the development of the ILUTS, including information sharing, identifying issues and developing relevant projects and initiatives.

10.5 Council recognises that, in the majority of cases, projects and initiatives that they may wish to implement as part of the ILUTS will require either support, funding, action or direction from State Government agencies and/or the private bus operators. The inclusion of these stakeholders in the development of the ILUTS is therefore very important to ensure that all issues are considered and that recommended solutions are practical and have the required support of those responsible for funding and implementing them.

10.6 The Government and Operators Stakeholder Group includes the following members:

Organisation	***Representatives***
Hornsby Shire Council	Garry Kennedy
	Laurence Nagy
	James Farrington
	Adam Davis
DIPNR	Ana Temporini
	John Brockhoff
SRA	Tom Playford
RTA	Charles Wiafe
Rail Infrastructure Corporation	Bruce Simpson / Renee Zaia
Parramatta Rail Link	Peter Whelan
Sydney Buses	Wendy Adam
Harris Park	Nadine Thorburn
Glenorie	Keith Todd Jnr
Shorelink	Michael Manty / Greg Miers

10.7 A first meeting of the group was held on 28 August 2002, which raised a number of issues and also highlighted a number of possible opportunities for projects to be

considered in the ILUTS. A copy of the minutes of the meeting is included as **Appendix D.** Issues raised at this meeting are included in **Section 5**.

10.8 Further meetings with stakeholders have taken place to discuss the draft Action Plans with:

- National Parks and Wildlife Service
- Public transport operators and related stakeholders
- Pedestrian and cycling groups, including Council officers and the RTA

10.9 Notes from each of these meetings are also included in **Appendix D**.

Council Officers Workshop

10.10 Throughout the development of the ILUTS meetings and workshops have been held with representatives of a range of Council Departments. These have ensured the full range of issues has been taken into account by the ILUTS, particularly those pertaining to specific groups of the community, such as the aged, youth and those with disabilities. Through these meetings Council officers not directly involved in the study have been given the opportunity to have an input.

Community Transport Survey

10.11 A short self-completion questionnaire was appended to rates notices sent to all households in the Shire in April 2002. The questionnaire with results is contained in **Appendix E**. It covered issues such as household size and composition, vehicle ownership, parking and usual travel patterns. In total 345 questionnaires were returned. While the responses to the questionnaire provide some useful data the following should be noted:

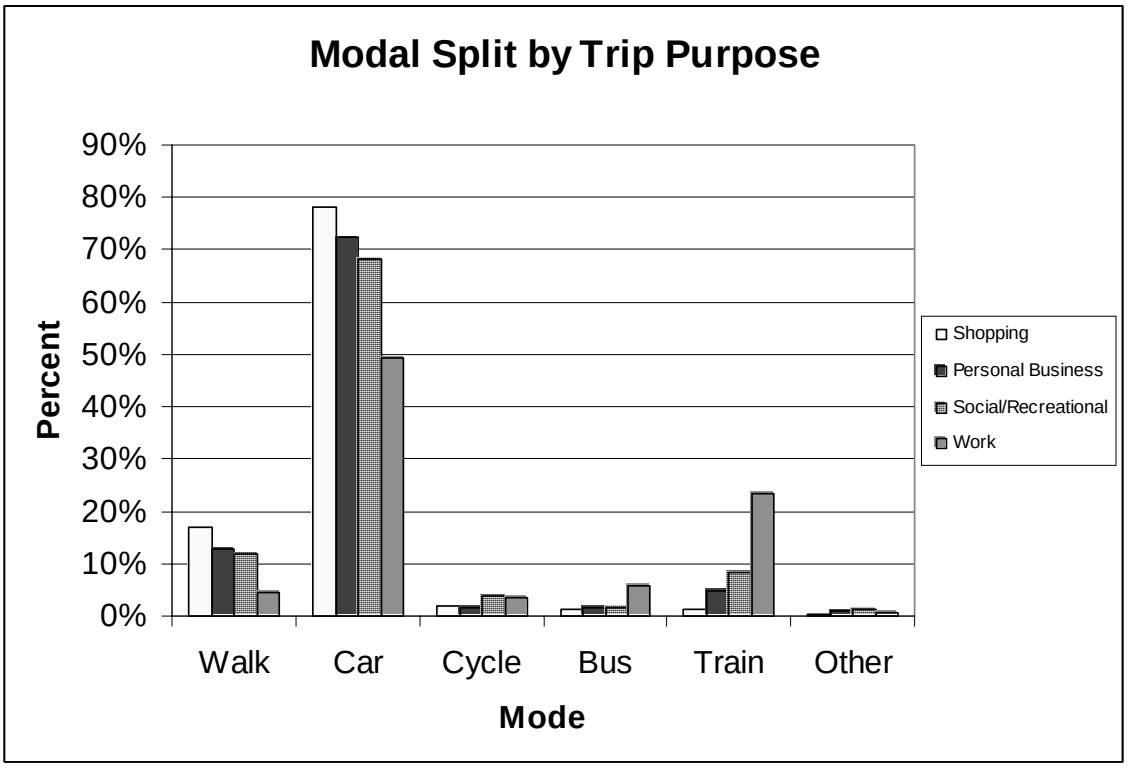
- The questionnaire was appended to rates notices and therefore received by the ratepayer, occupiers of rented properties are automatically excluded;
- A survey of environmental issues was included with the same rates notice – the inclusion of two surveys may have impacted on the response to both; and,
- Free entry into a prize draw was offered as an incentive to respond.

10.12 The questionnaire analysis was primarily used to inform the development of the multi-modal transport model, however, it also provided useful background on issues such as car ownership, modal split by trip purpose and favoured destinations.

10.13 Car ownership amongst respondents is high with only 3% saying they did not have a car available to the household. The car was the most popular mode of transport across all trip types with 78% respondents indicating they used a car on their most recent shopping trip while just 49% used a car on their most recent trip to work. These results are shown in **Figure 10.1**.

10.14 It can also be seen that walking was a popular choice of mode for shopping trips, indicating the local nature of many of these trips. Nearly 30% of work trips were made by public transport, although bus and train services were not generally popular options for other types of trip. The proportion of cycle trips was consistent across the four trips types.

Figure 10-1Modal Split by Trip Purpose



Community Consultation

10.15 In addition to the community questionnaire, a newsletter was distributed to every household in the Shire providing information on the study and asking residents to identify issues of importance. The responses are summarised below.

10.16 It is proposed to undertake a formal consultation process on the ILUTS and its proposals.

Newsletter 1

10.17 Newsletters were sent out to households in Hornsby Shire with rates notices in 2003. Around 50,000 households received a newsletter. The newsletter was intended as a news item informing local residents about the ILUTS. It also asked for comments and input into the issue identification stage of the study.

10.18 In total 20 responses were received and are discussed under topic headings below.

General

10.19 Respondents tended to focus on their local area and not Shire-wide issues except where they impacted on the immediate area, for example, the F3 / M2 link and traffic volumes on Pennant Hills Road.

10.20 The issues raised are summarised below under topic headings.

Land Use and Development

- West side of Hornsby TC should be improved with cafes, outside eating and small shops, creating more personal environment than Westfield.

- Does not support high rise unit development between Manor Road and Quarry Road if planned.
- The urban area of Brooklyn is poor and does not cater for or attract tourists.
- Opportunity to rezone residential blocks to medium/high density around Thornleigh Station, especially adjacent to commercial blocks.
- Should allow sub-divisions of 2,000 – 4,000 m^2 in South Dural.
- Areas of Epping within walking distance of the station should be rezoned to allow higher density development.
- Development within Pennant Hills is leading to increased density and problems of traffic and noise that lead to a deterioration in the local environment.

Public Transport

- Would like bus route along Northumberland Avenue (Mount Colah) to station and on to Hornsby TC.
- Kiss and ride area needed in Langston Place (Epping) for Epping Station to cater for elderly ad disabled.
- Would like a taxi service in Berowra – the nearest one is Hornsby TC.
- Bus stops in Epping are outside the Epping Hotel (Beecroft Road) which can make waiting for buses uncomfortable.
- Frequency of bus services through south Hornsby (around Clarke Road) is too low to be attractive to car drivers.
- Bus services should run into the evenings.
- 'On-demand' bus services should be investigated.
- Citybus Direct services are excellent.
- A rail link between Pennant Hills and Parramatta is required – buses are continually stuck in traffic and journey times are excessive.

Arterial Roads

- Difficult for traffic to enter Pacific Highway from ramps at Church Street intersection.
- Pennant Hills Road is an issue – particularly given the anticipated impact of the WSO.
- Bottlenecks on arterial roads where lanes are reduced – Pacific Highway and Pennant Hills Road.
- Beecroft Road rail bridge in Epping is a major problem and restricts local access.
- Intersection of North Rocks Road and Pennant Hills Road needs attention due to impact on traffic flow along Pennant Hills Road.

Local Street Management

- High speed humps in Mount Ku-ring-gai
- Require pedestrian crossing on Brooklyn Road (in Brooklyn) to assist pedestrians crossing during busy weekend periods.
- The stop sign at the intersection of Orchard Road and Plymton Road (Beecroft) is often ignored due to the proximity to roundabout.
- Concern about impact on local residential access from Comenarra Parkway due to installation of median to restrict turning movements to left in/left out.
- Street trees in Epping block out street lights making footpaths very dark on winter evenings.

Car Parking

- Entrances and exits of Dural Street car park (Hornsby TC) are difficult to negotiate and cars scrape the ground.
- Would like a multi-storey car park at Berowra train station (like at Thornleigh).
- Would like a multi-storey commuter car park at Epping Station.
- Generally parking in Epping is difficult.

Walking and Cycling

- Overhanging branches along footpath between Harwood Avenue and Church Street, Mount Ku-ring-gai.
- Intersection of Pacific Highway and Church Street (Mount Ku-ring-gai) is a difficult environment for pedestrians (ramps).
- Uneven footpaths in Church Street outside the community hall and in Leeming Street outside the school (both Mount Ku-ring-gai.
- Access over the rail line at Brooklyn is difficult due to steep steps.
- New residential development at Westleigh – roads have higher speed limits than they are designed for which compromises pedestrian safety.

APPENDIX A

Rail Services

Table A1 - Summary of Train Services

To City

	Frequency (minutes)	
Station	**Weekday AM Peak**	**Weekend**
Berowra	10	21
Mt Kuring-gai	24	37
Mt Colah	24	37
Asquith	15	31
Hornsby	4	11
Waitara	9	22
Normanhurst	15	30
Thornleigh	13	30
Pennant Hills	15	30
Beecroft	15	30
Cheltenham	15	30
Epping	7	21

Table A2 - Details of Train Services in Hornsby Shire

To City

	Number of Trains					Frequency (mins)		
Station	**Total**	**AM Peak**	**PM Peak**	**First Train**	**Last Train**	**Total**	**AM Peak**	**PM Peak**
Weekdays								
Berowra	74	12	8	4:26:00 AM	1:28:00 AM	17	10	15
Mt Kuring-gai	43	5	4	5:05:00 AM	12:50:00 AM	28	24	30
Mt Colah	43	5	5	5:08:00 AM	12:53:00 AM	28	24	24
Asquith	50	8	5	5:10:00 AM	1:35:00 AM	25	15	24
Hornsby	229	33	24	4:22:00 AM	1:38:00 AM	6	4	5
Normanhurst	64	8	6	4:27:00 AM	1:11:00 AM	19	15	20
Thornleigh	65	9	6	4:30:00 AM	1:13:00 AM	19	13	20
Pennant Hills	67	8	8	4:31:00 AM	1:15:00 AM	19	15	15
Beecroft	67	8	8	4:34:00 AM	1:18:00 AM	19	15	15
Cheltenham	64	8	6	4:36:00 AM	1:20:00 AM	19	15	20
Epping	103	18	13	4:38:00 AM	1:46:00 AM	12	7	9
Waitara	102	13	12	4:24:00 AM	1:14:00 AM	12	9	10
Weekends								
Berowra	62	7	7	3:46:00 AM	1:28:00 AM	21	17	17
Mt Kuring-gai	40	4	4	12:23:00 AM	12:50:00 AM	37	30	30
Mt Colah	40	4	4	12:26:00 AM	12:53:00 AM	37	30	30
Asquith	42	4	4	3:53:00 AM	1:35:00 AM	31	30	30
Hornsby	116	12	12	3:56:00 AM	1:37:00 AM	11	10	10
Normanhurst	41	4	4	4:44:00 AM	1:11:00 AM	30	30	30
Thornleigh	41	4	4	4:46:00 AM	1:13:00 AM	30	30	30
Pennant Hills	41	4	4	4:48:00 AM	1:15:00 AM	30	30	30
Beecroft	41	4	4	4:50:00 AM	1:17:00 AM	30	30	30
Cheltenham	41	4	4	4:52:00 AM	1:19:00 AM	30	30	30
Epping	61	6	6	4:05:00 AM	1:46:00 AM	21	20	20
Waitara	58	6	6	4:08:00 AM	1:25:00 AM	22	20	20

Table A2 - Details of Train Services in Hornsby Shire

From City

	Number of Trains					Frequency (mins)		
Station	**Total**	**AM Peak**	**PM Peak**	**First Train**	**Last Train**	**Total**	**AM Peak**	**PM Peak**
Weekdays								
Waitara	109	16	12	4:46:00 AM	2:37:00 AM	12	8	10
Epping	106	18	17	4:32:00 AM	3:25:00 AM	13	7	7
Cheltenham	64	10	9	4:34:00 AM	2:31:00 AM	21	12	13
Beecroft	65	9	10	4:37:00 AM	2:33:00 AM	20	13	12
Pennant Hills	66	9	11	4:39:00 AM	2:36:00 AM	20	13	11
Thornleigh	65	8	10	4:41:00 AM	2:37:00 AM	20	15	12
Normanhurst	64	9	10	4:44:00 AM	2:40:00 AM	21	13	12
Hornsby	235	29	34	4:36:00 AM	3:35:00 AM	6	4	4
Asquith	51	7	7	4:38:00 AM	12:32:00 AM	23	17	17
Mt Colah	43	4	5	4:41:00 AM	12:35:00 AM	28	30	24
Mt Kuring-gai	42	4	5	4:44:00 AM	12:38:00 AM	28	30	24
Berowra	72	7	12	4:48:00 AM	3:45:00 AM	19	17	10
Weekends								
Waitara	80	8	10	5:55:00 AM	2:37:00 AM	16	15	12
Epping	62	6	6	5:20:00 AM	2:29:00 AM	20	20	20
Cheltenham	41	4	4	6:01:00 AM	2:31:00 AM	30	30	30
Beecroft	41	4	4	6:03:00 AM	2:33:00 AM	30	30	30
Pennant Hills	41	4	4	6:06:00 AM	2:36:00 AM	30	30	30
Thornleigh	41	4	4	6:07:00 AM	2:37:00 AM	30	30	30
Normanhurst	41	4	4	6:10:00 AM	2:40:00 AM	30	30	30
Hornsby	160	16	18	4:36:00 AM	2:44:00 AM	8	8	7
Asquith	41	4	4	4:38:00 AM	12:32:00 AM	29	30	30
Mt Colah	41	4	4	4:41:00 AM	12:35:00 AM	29	30	30
Mt Kuring-gai	41	4	4	4:44:00 AM	12:38:00 AM	29	30	30
Berowra	64	6	6	4:48:00 AM	2:32:00 AM	20	20	20

Appendix B

Hornsby Parking Strategy (Draft)

Hornsby Shire Council

Integrated Land Use and Transport Strategy

Hornsby Parking Strategy

DRAFT 26/09/02

Document Status					
Rev No.	Author	Reviewer	Approved for Issue		
			Name	Signature	Date
0	S Mack	B Cooper			Sep. 2002

Contents

1. Introduction

This working paper is part of the overall Hornsby Integrated Land Use and Transport Study (ILUTS) currently being undertaken by PBAI Australia with Stepfair, JBA Planning Consultants and Masson Wilson Twiney on behalf of Hornsby Shire Council. The main purpose of the ILUTS is to prepare an integrated strategy which will provide a framework for future land use and transport planning in the Shire, with a prime objective of reducing car use by facilitating and promoting other modes of transport.

In particular the ILUTS will seek to manage the demand for car travel, moving away from the 'predict and provide' approach. The integration of land use and transport services is a key component of the ILUTS. The ILUTS will make extensive recommendations for the improvement of public transport, increasing local accessibility to bus and rail services, and encouraging expanded use of alternatives to the car. In effecting a mode shift away from car use it is proposed that the ILUTS will create sufficient parking capacity within the limits of existing supply to meet future demand.

This working paper provides the background and a framework for developing an overall parking management strategy for Hornsby Shire. This paper will be reviewed and finalised as the ILUTS is completed. At this stage the proposals are necessarily focused on the short term.

Parking is a critical part of an integrated transport system. It has a significant influence on car use in that, if parking is not available at the destination, car use is minimised. The aim of a parking policy is to balance the supply of, and demand for, parking spaces with the objective of minimising additional traffic generation through restraining car use, while ensuring the economic viability of each centre is maintained.

Major parking issues identified during the investigation process include:

- Parking needs of various user groups;
- Provision for commuter parking at railway stations;
- Introduction of pay parking; and
- Impact of future development.

This paper includes a review of the existing parking code, reflecting the management strategies developed for short and long stay parking at each of the centres.

The centres identified and discussed within this paper have been selected as the more significant places of activity within the Shire. They have also been identified by Council as places where parking pressures currently exist or are perceived to exist. These centres include:

- Hornsby town centre,
- Berowra shopping strip,
- Beecroft retail centre,
- Pennant Hills commercial centre,
- Carlingford (Hornsby),

- Epping (Hornsby),
- Thornleigh,
- Cheltenham Station, and
- Waitara Station.

Within each centre three types of parking have been identified:

- On-street parking - controlled and uncontrolled kerb side space, ideally on-street parking close to shops and businesses should be reserved for very short stay parking (up to two hours), providing highly convenient access, while on-street parking further away would be identified for longer stay parking;
- Public off-street parking - parking available for public use, usually associated with retail outlets or provided by Council, public off-street parking would usually be expected to cater for people visiting the centre for between two and four hours;
- Private off-street parking - parking provided for specific user groups, most commonly company employees or customers, private off-street parking is not usually time restricted, permitting all day parking, but is controlled by user group. This category of parking includes parking provided at rail stations for the intended use of rail commuters.

There are three main groups of people who park in each centre:

- Rail travellers, where there is a rail station, who access a station by car, including those travelling during the peak periods to work and in the inter-peak to access part-time work, colleges etc or travel for other purposes;
- Local employees who work in the centre, arrive in the morning peak and park for eight hours or more;
- Visitors, shoppers and part-time employees who drive to the centre to visit local business or shop and require short-stay (up to four hours) parking.

In considering parking, it is necessary to understand planned transport infrastructure that will impact on travel within, to and from Hornsby Shire. The transport infrastructure improvements identified include:

- Transitways, particularly Rouse Hill to Parramatta;
- Parramatta Rail Link;
- North West Rail Link; and,
- Reorganisation and improvement of bus services following transport infrastructure improvements.

2. Existing Parking Conditions

2.1 General

This chapter provides an overview of existing parking conditions at various centres within Hornsby Shire. In the identified centres parking surveys have been undertaken to provide an inventory of on-street, off-street private parking and off-street public parking spaces within 500m of the centre or railway station and give an appreciation of utilisation during a typical weekday.

Further detailed utilisation surveys at a selection of locations will be undertaken at a later stage of the ILUTS in conjunction with the development of a transport model for the Shire.

2.2 Public Off-street Car Parking

An inventory survey of parking spaces at five of the identified centres was undertaken. The five locations selected all have public off-street car parking to serve local retailers. The location of car parks, number of spaces and time restrictions at each car park are shown in *Table 2.1* following.

Almost all public off-street car parks, either provided by Council or private retail premises for public use, are time restricted, providing up to four hours free parking. Westfield Shopping Town car park in Hornsby imposes a fee after four hours free parking. Most Council car parks have a three hour time limit.

Observations were made on a typical weekday to gain an understanding of parking occupancy at the retail centre car parks. Observed occupancy rates are expressed as a percentage of spaces occupied at the time of observation. The observation does not give the peak occupancy but gives an indication of average utilisation of the car parks between 11 am and 3 pm on a typical weekday.

Table 2.1: Public Off Street Parking at Retail Centres

Car Park Location	No of Spaces	Restriction	% Occupancy*	Comments
Hornsby T.C. –				
Westfield	3800	4 hour	85	Major shopping is within Westfield Shopping Town
RSL/Community Car Park	120+90*	3 hour+ Private*	80 + 55	
Council CP behind Farm Market	87	3 hour	70	
Council CP at Dural Street	49	2 hour	60	
Council CP at George/Burdette	69	3 hour	95	
Coronation Street (public parking only in evening)	25	Private		
Total	**4,213**			
Berowra				
Shopping strip on Pacific Hwy	20	4 hour	80	
	20	2 hour	55	
	68	No restriction	100	
Total	**108**			
Beecroft				
Beecroft Arcade	66	2 hour	80	
Angle Parking OS near station	20	2 hour	70	
Council Car Park	15	2 hour	100	
	4	1 hour	75	
Module SC Car Park (Council)	83	3 hour	80	
Beecroft Village Car Park	15	3 hour	80	
(Council)	15	2 hour	85	
Total	**218**			
Pennant Hills				
Pennant Hills Market Place	55+22*	2 hour+Reserved*	95+100	Undercover
	102	2 hour	85	Open
PH Arcade (Council)	140	3 hour	90	
PH Medical Centre [should be defined as private off-street]	12	2 hour	85	For visitors to medical centre only
	36	3 hour	85	
Community Centre	75		50	For patrons only
Liquor Store/Pub [should be defined as private off street]				
Total	**638**			
Carlingford				
Carlingford Court	1445	2 hour	75	Centre car park
Carlingford Commercial	17		90	
Westpac [should be defined as private off-street]	6		50	For Westpac customers only
Total	**1,468**			

*% occupancy ratings were based on observation surveys during the period between 11 am and 3 pm on a Thursday.

2.3 Parking Conditions at Selected Centres

This chapter briefly analyses the parking conditions at the identified centres within 500m of the local railway station or retail centre. Three primary are considered to be central to the discussion. These are:

- Adequate provision of short term parking for retail and business use,
- Rail commuter parking at rail stations, and
- Employee parking at commercial centres.

2.3.1 Hornsby Town Centre

Hornsby town centre has two distinct parts. To the east side of the railway line, the town is dominated by the recent Westfield development and associated retail. There is a cinema complex and numerous cafes and restaurants. Pedestrian areas allow for easy access and al fresco dining.

To the west of the rail line, the town has a very different character. The area comprises numerous older buildings and is economically depressed. The Council office, courthouse, police station and TAFE are all located to the west of the railway along Pacific Highway. One of the strategies currently being considered to promote the western part of the town centre is the development of the night-time economy, focusing on restaurants and related outlets,

Hornsby is well connected by public transport, with rail services on both the Northern and North Shore Lines, a bus station and well served taxi rank.

The development of Hornsby town centre is considerably constrained by the current parking codes. In particular:

- Proposed development of constrained sites cannot proceed until car parking areas are identified where Council can provide space through Section 94 contributions. This places restrictions on the development of Council land, which has been temporarily reserved for car parking. A change to the parking code requirement would reduce the Section 94 burden on both private business and Council.
- There is a desire to develop restaurant businesses along Pacific Highway, however, the parking code currently places onerous requirements with respect to car parking provision on any premises changing to a restaurant use. These requirements have stifled plans, frustrating businesses and Council who are seeking to rejuvenate this area of Hornsby town centre.

Public Off-Street Parking

Hornsby town centre is the main commercial and retail area in the Shire. Public off-street car parking is provided by Council and retailers, notably Westfield Shopping Town.

Public off-street car parks provided by Council are time restricted. These include at ground car parks between Dural Street and William Street, and the car park at the corner of George and Burdette Streets. The Dural - William Street car parks are not fully utilised during the day, with an observed occupancy of 66%. The George Street – Burdette Street car park is often fully

occupied during the day due to its proximity to the railway station and the Westfield Shopping Town.

Private Off-Street Parking

Hornsby station is a major station with services on both the North Shore and Northern Line passing through and terminating. As such the demand for commuter parking is expected to be intensive.

Off-street parking areas provided by CityRail have 396 spaces (340 spaces, north of pedestrian bridge; 56 spaces south of bridge on George Street).

A CityRail car park at the corner of Pacific Highway (railway overpass) and High Street, opposite the RSL Club, provides an additional 48 spaces for rail commuters. All off-street space provided by CityRail for rail commuters is believed to be fully occupied before 9 am.

Within Hornsby town centre, there are few designated employee parking areas that are administered by Council or any other public authority, except the Council offices and the TAFE college. Parking within the TAFE college, located on Pacific Highway, is monetarily controlled. To avoid parking charges, students apparently park on street.

[Need to add text here on private off-street associated with commercial premises]

Some employee parking is provided by the Westfield Shopping Town for centre employees. Observations indicate significant numbers of cars and vans occupying car park spaces before 9 am. These are likely to be either employees or workers associated with the centre services. It is suspected that some employees of other businesses do park at the Westfield car park and move their vehicles once or twice during the day, as a four hour limit is applied to most spaces within the centre.

Anecdotal evidence also suggests that some local employees park at Council car parks with a three hour limit and risk being booked and others park in the CityRail car parks.

On-street Parking

An inventory of on-street parking within 500m of Hornsby Station / commercial centre indicates:

- There are approximately 1224 on-street parking spaces.
- 844, or 69%, of the total on-street parking spaces are unrestricted allowing all day parking.
- The 383 remaining spaces are restricted. Most are 1 hour parking spaces (208 spaces), 127 are 2 hour parking spaces and 48 are either ¼ hour, ½ hour or special spaces such as loading zones.

Most of the unrestricted on-street parking spaces available within easy walking distance to the railway station appear to be fully occupied as early as 8:30 am indicating that these vehicles probably belong to rail commuters or local employees. Very few unrestricted spaces were observed to be available within the 500m radius during the day. Time-restricted on-street spaces are less intensively used, and available spaces were observed during the day.

The general impression of the average occupancy of on-street parking is summarised as follows:

- 92% of the unrestricted spaces were occupied at the time of observation. Most unrestricted spaces, appear to be occupied by all-day parkers.
- Most two hour parking spaces close to commercial premises in the centre are very intensively used, these include those on Florence Street, Hunter Street and Pacific Highway near the Council offices and adjacent to the TAFE college, with few spaces available during the day.
- Restricted spaces serving the retail strip along Pacific Highway are less intensively used and are believed to have a reasonably high turnover indicating that the existing controls are appropriate. This is also reflected by the low utilisation of off-street Council car parks in nearby side streets.
- Streets with industrial activities, such as Leonard Street, Hornsby Street and James Street are fully occupied by all day users, most of which are believed to be either local employees' vehicles or vehicles belonging to auto repair shops.
- A number of vehicles parked on streets where no time restrictions apply are believed to belong to residents of nearby apartments as evident by their presence in the evening. These are mainly on residential streets such as Linda Street and part of Muriel Street.
- There is sufficient on-street parking available in the evening to support restaurants and other night time activities, particularly on the west side of the railway line where day time use appears to be dominated by the Council offices, courthouse, police station and TAFE. On-street parking could be supported by the public off-street car parks in nearby streets that have already been identified as having relatively low occupancy during the day.

Parking control inventory and utilisation conditions are shown in Table 2.2 following:

Table 2.2: Parking Conditions – Hornsby Town Centre

Road/Street	Section	Control	No of Spaces	Observed Occupancy		Comment
				No	%	
East –West Direction						
Bridge Rd	Between Pacific Hwy and Railway Pde	NS	Nil			Just outside 500m from station
Bridge Rd	Between Hunter Street and Albert St	NR	39	26	67%	
Linda St	Between George St and Muriel St	NR	69	62	90%	Mostly residential
May Street	East of Muriel St	NR	36	32	90%	residential street
Burdett St	Between George St and Muriel St.	NS	Nil			
Burdett St	Between Muriel St and Sherbrook Rd.	NR	38	30	80%	Just outside 500m from Station
Florence St	Between Albert Ln and Muriel St.	2 P NR 1/2P 1/4P DP	13 6 10 6 2	35	95%	
Edgeworth David Av	Between pacific Hwy and Romsey St	NP	Nil			Major eastern access to Hornsby town centre
Leonard St	East of Pacific Hwy	NR	55	51	93%	Mostly industrial use
Coronation St	Between Pacific Hwy and Station St	1P	9	7	78%	
Dural St	Between Lisgar Rd and Pacific Hwy	1P	28	24	85%	
William St	Between Federick St and Pacific Hwy	LZ 1P	3 37	3 21	100% 57%	
Ashley St	West of Forbes St	NR	46	43	95%	
Ashley St	Between Forbes St and High St	1/2P NR 2P	5 5 5	3 4 5	60% 80% 100%	
Webb Av	West of Forbes	NR	36	32	90%	
North-South Direction						
Pacific Hwy	Between Bridge Rd and Coronation St	NR 1P 2P	30 8 31	29 4 29	97% 50% 94%	Within Commercial centre
Pacific Hwy	Between Coronation St and William St	LZ 1P	2 23	1 21	50% 91%	
Pacific Hwy	Between Edgeworth David Av and Pretoria St	1P	15	11	74%	East side only
Government Rd/Pound Rd	West of Pacific Hwy	1P	22	22	100%	Construction activities
High St	Between Pacific Hwy and Forbes St	1P 2P	2 5	2 5	100% 100%	
Forbes St	South of Ashley St	NR	33	33	100%	
Jersey St	South of Bridge Rd	NR 1/4P 1P 2P <	80 1 50 27	80 1 34 18	100% 100% 68% 67%	
George St	Between Bridge Rd and Pacific Hwy	NS/NP	0			Pacific Highway By-pass
Hunter Lane	Between George St and Burdett St	1/4P LZ	3 2	3 2	100%	Within mall area
Hunter Lane	North of Burdett St to George	NR	21	21	100%	Industrial use

Road/Street	Section	Control	No of Spaces	Observed Occupancy		Comment
				No	%	
	St	1P	7	7	57%	
Hunter Steet	South of Bridge Rd	NR 1/4P 2P	56 2 46	56 2 36	100% 100% 78%	
Albert Lane	Whole length	NS	0			Narrow access road
Albert Street	Between Bridge Rd and Burdett St	NR	100	80	80%	Most vacant spaces towards Bridge Rd end
Albert Street	Between Florence St and Edgeworth David	LZ 1P	6 7	3 4	50% 57%	
Thomas Street	South of Edgeworth David	NR	45	39	87%	residential street
Muriel Street	Between Edgeworth David and Linda Street	NR 1/4P	92 3	89 2	92% 66%	
Hornsby St.	North of Pacific Hwy	NR	37	37	100%	Mostly occupied by vehicles associated with Industrial/Auto repair shops
James Street	North of Pacific Hwy	NR	20	20	100%	
Total On Street			**1224**	**1037**	**85%**	
Total Un-restricted Spaces			**841**	**770**	**92%**	
Total Restricted Spaces			**383**	**267**	**70%**	

Note: CP = Carpark; NR = No Restriction; TR = Time Restriction; NP = No Parking; 1P = 1 Hour Parking etc; Lz = Loading Zone; DP = Disabled parking; NS = No Standing.

2.3.2 Epping (East)

Epping will be undergoing significant change over the next few years. The Parramatta Rail Link (PRL) will run through Epping and North West Rail Link services will also improve local accessibility. The station is being rebuilt to accommodate the PRL, which will also see a reorganisation of local bus services focused on the station. Increased local accessibility will demand a reassessment of parking availability and mode share.

Public Off-Street parking

There is no public off-street car parking in the Hornsby area of Epping providing general use short stay parking.

Private Off-Street Parking

No commuter car park is provided by CityRail at Epping Station, however, long stay or 'all day' on-street angle parking is provided by Council in Cambridge Street on the south side of the station (81 spaces).

Council is planning some additional all day parking spaces for commuters in Cambridge Street north of the M2 bus underpass.

Commercial premises do provide off-street parking for their employees but it is believed that this does not meet the local demand, with staff parking on-street.

On-Street Parking

Use of on street parking adjacent to the commercial premises is intensive. Streets within the area bounded by the railway line, Pembroke Street, Norfolk Road and Somerset Street are unrestricted allowing all day parking. It has been observed that all unrestricted spaces on Cambridge Street are occupied before 9 am, probably by commuters. A significant proportion of unrestricted on-street spaces are probably also occupied by local employees or visitors associated with nearby commercial premises and schools.

On-site observations indicate that almost all unrestricted spaces, including those angle parking spaces and some parallel spaces on the east side of Cambridge Street are occupied before 9 am, either by commuters or workers in adjacent commercial offices.

By 9:30 am, almost 50% of the two-hour spaces closer to the station entrance on Cambridge Street were observed to be occupied. It is suspected that some of these short term spaces are used by workers in nearby premises.

Evidence of on-street parking intensity suggests that a significant number of employees of local offices park their vehicles on-street. They probably compete for on-street parking spaces with rail commuters, although most rail commuters are believed to arrive in the area much earlier than the local office employees.

Since most commercial premises are within an easy walking distance of the railway station, it is not considered appropriate that any further on-street parking provision for employees be provided with a focus instead on encouraging public transport use particularly in conjunction with improved accessibility following the completion of stage 1 of the PRL. (see comments on review of parking code in Chapter 4).

2.3.3 Cheltenham Station Area

Cheltenham is dominated by low density residential development. The local Cheltenham Girls High School remains a very popular school attracting pupils from a wide area. Given the character of the local area there are relatively few bus services, mainly providing links to the west.

Public Off-Street Car Parks

Cheltenham station is not a commercial centre and therefore has no public off-street car parks associated with retail and commercial activities. All off-street parking facilities are provided for rail patrons.

Private Off-Street Car Parks

Two commuter parking areas, with a total 80 off-street spaces, including 5 spaces for disabled drivers, are provided by CityRail at Cheltenham Station. The car parks are located on the northern and southern sides of the railway line with access in Sutherland Road and The Crescent respectively.

On-Street Car Parking

The demand for commuter parking appears to exceed supply and is evident by the number of parked vehicles on unrestricted streets within 500m of the station.

Site observations indicate that there are few available on-street spaces within 400m of the station after 9 am. These observations suggest that there is a

need to identify parking for those rail travellers who drive to the station after the peak.

2.3.4 Beecroft

Beecroft does have a small commercial centre serving the immediate area and local suburbs, but is otherwise dominated by low density residential development. There are bus service connections to the west (Parramatta and Castle Hill).

Public Off-Street Car Parks

There are a number of off-street car parks in the commercial centre, with a total capacity of approximately 218 spaces, most of which are Council owned and have a time restriction of either two or three hours. As indicated in *Table 2.1,* the average observed occupancy of these off-street car parks during the day is approximately 80%.

Private Off-Street Car Parks

Two commuter parking areas are also provided by CityRail at Beecroft Station, with a total of 170 off-street spaces. The car parks are located on the northern and southern sides of the railway line with access in Sutherland Road and Wongala Crescent respectively.

On-Street Parking

Short term on-street parking spaces are intensively used, particularly those adjacent to the retail areas, although there were always available spaces observed during weekdays along Wongala Crescent.

In addition, 26 unrestricted angle parking spaces are provided by Council on Wongala Crescent, which are believed to be occupied by commuters. On-street parking near the station is intensive. Few available unrestricted spaces were observed after 9 am. Similar to Cheltenham Station, there is a demand for long stay parking (over three hours) by those arriving by car and using the railway system after peak hours.

2.3.5 Pennant Hills

Pennant Hills has a commercial centre located adjacent to the station, providing day to day retail and a range of local services, such as a medical centre and gym. The station and commercial area is well served by bus services, again predominantly serving areas to the west of Pennant Hills. There is some commercial development along the Pennant Hills Road but otherwise the area consists of low density residential development.

Public Off-Street Car Parks

There are approximately 638 public off-street parking spaces provided by local commercial premises and Council, mostly with two or three hour restrictions. Off-street spaces were observed to be intensively occupied, with occupancy above 90% at most car parks. In terms of public off-street parking spaces per unit of commercial floor space, Pennant Hills centre has the lowest parking provision among the five centres surveyed. (see *Table 3.1*)

Private Off-Street Car Parks

There is no parking provided by CityRail at Pennant Hills Station. Some other private off-street parking is provided by local businesses.

On-Street Parking

Railway commuters and local employees appear to park along the streets adjacent to the station and the commercial centre, particularly along Yarrara Road, north of the station, Ramsay Road and other local streets without parking restrictions.

As Thornleigh Station is very close to Pennant Hills Station, it is suspected that there is some interaction between the two, particularly with regard to commuter parking.

On-street short term or time restricted spaces are even more intensively utilised, with an apparent shortage, particularly along Yarrara Road. It appears that there are ample unrestricted spaces within easy walking distance to the centre and station.

2.3.6 Thornleigh

Thornleigh has a small retail centre to the east of the Pennant Hills Road and a large commercial area to the west. The wider area consists largely of low density residential housing. The bus services at Thornleigh tend to focus on Hornsby CBD.

Public Off-Street Car Parks

Although Thornleigh has been classified as a local centre in terms of its retail function, its total commercial floor space of 46,856 m^2 is similar to Epping (east) and its retail floor space of almost 16,000m^2 is larger than Dural centre. Apart from Parkway Plaza, and the industrial complex along Central Avenue, there is no significant provision of off-street parking facilities in Thornleigh.

Private Off-Street Car Parks

A multi deck commuter car park (302 spaces) is provided by CityRail at Thornleigh Station. An unrestricted on-street angle parking area (53 spaces) is provided by Council in Railway Parade south east of the station. All commuter car parks and the all day parking areas close to the station were observed to be fully occupied during business hours, with few or no vacant spaces.

As there is no CityRail car park at nearby Pennant Hills Station, Thornleigh is a believed to be a focal point for commuter parking. This station serves most of the Hills District, to which there is currently no rail link on the CityRail network, and is therefore expected to attract rail commuters arriving by car. The NWRL and Rouse Hill to Parramatta Transitway are expected to reduce demand for parking from people arriving from the Hills District.

Some local employees are thought to use the commuter car park provided by CityRail but the number is probably low because of its location on the western side of the railway line.

The policy decision is whether commuter parking is to be encouraged, with additional facilities being provided or discouraged with improvements to bus, walking and cycling facilities.

As Thornleigh industrial centre is within walking distance from the railway station, emphasis could be placed on achieving a mode shift among employees towards rail.

On-Street Parking

On-street parking on Central Avenue is intensive, possibly due to the presence of the RTA Motor Registry and local restaurants, and overflow demand from adjacent industrial premises.

There is some unrestricted parking in Railway Parade which is probably used by local employees and rail commuters.

2.3.7 Waitara

Waitara is very close to Hornsby CBD and within easy walking distance of the Westfield development. A number of high density residential developments have recently been completed in Waitara and further construction is ongoing. Bus connections to Waitara are relatively poor. Waitara Station is on the North Shore Line. There are a significant number of public and private schools in the locality.

Public Off-Street Car Parking

As there are no significant retail activities in Waitara apart from a few commercial premises there are no public off-street car parks and short term parking demand is met by on-street availability.

Private Off-Street Car Parking

There is a commuter car park with 80 spaces provided by CityRail with access from Waitara Avenue south of the station. Waitara Station serves a large catchment area east of the F3 Freeway and is likely to continue attracting commuters accessing the station by car unless local bus services can provide a similar or better service for those accessing the station. There is currently no local bus service to Waitara station apart from those along Pacific Highway. Most local services are focused on Hornsby Station.

On-Street Parking

There are approximately 216 all-day parking spaces provided for rail commuters on Alexandria Parade (60 spaces on the northern side and 156 on the southern side), over 90% of which were observed to be occupied during a site visit. In addition there are about 20 spaces in Pattison Avenue.

On-site observations of on-street parking in the vicinity of Waitara Station on a weekday indicates a very intensive parking demand on most streets. Apart from commuter parking demand, there is a great deal of construction activity on Orara Street and sporting activity in Waitara Park which compound the parking problem in the area. The parking levels in this area during the period of observation on a weekday afternoon (2-3 pm) is illustrated in *Table 2.4* :

Table 2.4: Parking Conditions near Waitara Station

Street/Location	Occupancy	Comment
Alexandria Parade (between Romsey Street and Balmoral Street)	99%	Angle parking mainly occupied by commuters with occasional vacancy in the pm. There are occasional vacant spaces in the two hour parking area.
Alexandria Parade (between Balmoral Street and Myra Street)	70%	Some vacant spaces during observation period.
Romsey Street	80%	
Orara Street	100%	Mainly due to construction activities
Waitara Avenue	100%	Partly commuters and partly due to school activities
Park Avenue	100%	Mainly due to school sports and bowling club activities
Balmoral Street	60%	Mainly close to southern end
Myra Street	50%	Mainly residential

2.3.8 Berowra

Berowra is wholly contained to the west of the railway line and to the east of Berowra Heights and low density residential development dominates. Bus services are relatively poor.

Public Off-Street Car Parking

Berowra is a small retail centre, and there is adequate off-street (with on-street) parking spaces to cater for visitors to the centre.

Private Off-Street Car Parking

An off-street parking area with approximately 148 spaces is provided for commuters by CityRail at Berowra Station. This car park is always observed to be fully occupied on working days. It is believed that rail commuters also park along Pacific Highway and in the streets adjacent to the station. There appears to be significant demand for commuter parking at this station.

A study commissioned by the Department of Transport (now Transport NSW) established that existing rail commuter parking demand exceeds the available off-street spaces by 90 vehicles per day, and there has been an increase of 55-60 vehicles since 1993. The study also identified that 21% of rail commuter vehicles are from the Central Coast area.

This study recommended the provision of an additional 400 off-street spaces to cater for the long term (2011) demand associated with proposed additional rail services.

The proposed provision of additional commuter parking at Berowra Station has the following advantages:

- It relieves the pressure of commuter parking at Hornsby.
- It relieves the congestion on F3 south of the Berowra interchange.

There does, however, appear to be a need to address the use of local parking by Central Coast residents. A more sustainable solution would be to encourage these rail travellers to catch the train from a station closer to home.

On-Street Parking

On-street parking is available along Pacific Highway and in other streets close to the station. There appears to be sufficient parking to serve the overflow from the CityRail car park and the meet the needs of local employees and visitors to the centre.

On-street parking availability reduces the pressure to provide further off-street parking in the short term and there is a clear preference to identify more sustainable solutions through the ILUTS.

2.3.9 Brooklyn

A study by Sinclair Knight Merz in November 1998 provides a comprehensive analysis of the parking conditions in Brooklyn. The findings of this study, which included surveys of parking occupancy at various parking locations in Brooklyn are summarised as follows:

- There is competition for parking spaces in the centre between visitors/tourists to Brooklyn, residents in Brooklyn and the many residents from Hawkesbury River who generally have no parking available and have to park their vehicles in Brooklyn.
- There is intensive demand, during summer and holiday periods for parking by day trippers and longer stay visitors.
- It was estimated that existing parking demand by residents and visitors was approximately 550 spaces in Brooklyn (360 for visitors and 189 for residents) and the available number stood at approximately 546.
- Most of the car parks were fully, or near fully, occupied during the survey period in January 1998 and a number of car parks had vehicles staying for more than 10 hours.
- In 1998, there was no time restriction on any of the parking spaces in Brooklyn nor was there a charge for parking.

A range of recommendations for improved parking provision were made in the report, these include:

- Construction of a new resident parking structure on Council owned land in Dangar Street;
- Provide resident parking bays close to public wharf;
- Provide additional spaces in reclaimed land near river area;
- Increase visitor parking in upper area of McKell Park;
- Improve car park on Parsley Bay;
- Further option for additional parking for visitors on the second storey of the car park in Parsley Bay; and,
- Introduce parking fees for residents and visitors.

Discussions with Council officers indicate that not all of the recommendations have since been implemented. Despite attempts to formalise some of the parking areas, the local parking conditions have not been significantly improved.

3. Floor Space Projections and Impact on Parking

3.1 Commercial and Retail Floor Spaces

An inventory of gross floor area of commercial and retail premises at various centres within Hornsby Shire was provided in a study conducted by Hirst Consulting Services in 1998. The inventory is summarised in Table 3.1 following:

Table 3.1: Commercial Floor Area Inventory

Centre	Type*	Gross Floor Space (m^2)		
		Retail	Office	Total
Hornsby TC	SR	63, 745 (119,180**)	61,664	147,212 (180,844)
Carlingford	D	31,155	3,269	34,566
Pennant Hills	D	12,195	44,644	63,134
Epping (Part)	D	2,362	44.074	46,490
Dural	D	11,354	1,046	14,728
Brooklyn	L	1,207	949	2,683
Berowra Ht	L	3,327	1,889	5,216
Berowra	L	1,774	2,748	5,012
Westleigh	L	3,529	343	4,307
Mt Colah	L	1,703	135	2,303
Asquith	L	6,322	1,138	7,890
Thornleigh	L	15,972	29,269	46,856
Beecroft	L	6,833	2,213	9,102
Cherrybrook	L	6,060	939	7,382
W. Pennant Hills	L	3,908	2,070	6,163

*SR = Sub-regional; D = District; L = Local. **Estimated GFA for retail in 2002.

It is noted that the retail floor area at the Hornsby town centre has since been substantially increased due to expansion of the Westfield Shopping Town. The total retail floor space in Hornsby town centre is now estimated to be approximately 119,180m^2.

3.2 Relationship between Retail Floor Area and Public Off-street Parking

There is an average optimum relationship between retail floor area and public off-street parking provision to ensure economic viability of the centre. This relationship is dependent on maintaining the turnover of the spaces provided.

For Hornsby Shire, the ratio of public off-street parking provision to gross floor area of the commercial centres are shown in Table 3.2 below:

Table 3.2: Floor Space and Public Off-Street Parking Provision

Centre	Gross Floor Area (m^2)	Parking Provision (spaces)	Space per 100m^2 GFA
Hornsby TC	180,844*	4,213	2.33
Carlingford	34,566	1,468	4.25
Pennant Hills	63,134	638	1.01
Beecroft	9,102	218	2.40
Berowra	5,012	108	2.16

*Includes office and retail only.

Based on experience in other commercial centres in Sydney, a provision of 2 to 3 spaces of public off-street parking per 100 m^2 retail and commercial floor space within activity centres is considered adequate to sustain the commercial viability of a centre, given the average provisions of on-street parking and private off-street car parking.

As can be seen in *Table 3.2*, all of the centres, except Pennant Hills, provide more than two public off-street parking spaces per 100 m^2 of commercial / retail floor area, and this is considered adequate provided appropriate parking management measures to maintain turnover rates apply.

The Council's current DCP provision of 1 parking space per 20-22 m^2 gross letable floor area (GLFA) for retail areas and 1 parking space per 40 m^2 GLFA for commercial and office development do not apply to older developments established before the introduction of the DCP. This can be seen that the level of shopping centre provision is usually much higher.

Pennant Hills centre has a low parking space per 100 m^2 GFA ratio due to the high commercial and office component of the centre (44,640 m^2). The public off-street parking spaces recorded above does not include those provided for office use, that is private off-street parking.

Table 3.3, extracted from past studies, shows the levels of public off-street parking provision at various centres, for reference.

Table 3.3: Public Off-Street Parking at Centres outside Hornsby Shire

Centre	Floor Space (x 100m^2) (FS)	Public Off-Street (Time – Restricted) Parking Spaces (POS)	Ratio (POS / FS)
Lane Cove	284.60	574	2.01
Double Bay	480.00	942	1.96
Edgecliff Centre	190.70	515	2.70
Riverwood Centre	165.83	490	2.96
Hurstville	1835.04	4,299	2.34
Wahroonga	94.0	179	1.89
Turramurra	233.0	461	1.97
Gordon *	896.0	1,038	1.16
St Ives	264.9	1,053	3.97

* This centre has a large amount of private off-street parking spaces not included in table.

3.3 Floor Space Projection and Parking Needs

3.3.1 Hornsby Town Centre

Floor space projections were made for various centres within Hornsby Shire in a study conducted by Hirst Consulting Services in 1998[1]. The projection for Hornsby town centre was made prior to the Westfield Shopping Town expansion, and the study's 2006 projected floor space figures did not include the current floor space provided by the Westfield Shopping Town. *Table 3.4* summarises revised retail and commercial floor projections for Hornsby.

Table 3.4: Floor Area Projection in Hornsby Town Centre

	2002	2006	2011	2016
Retail	119,180	119,180	119,180	119,180
Commercial	61,664	72,000	79,000	87,000
Other	21,803	21,803	21,803	21,803
Total	**202,647**	**212,983**	**219,983**	**227,983**

Table 3.4 indicates that there will be minimal increase in total floor space in the Hornsby town centre over the next five years. All the increase will be commercial rather than retail development. Based on observed parking conditions, the existing parking provision within the town centre will be adequate to maintain the viability of the centre, provided sufficient short stay spaces are available to support businesses and retail outlets.

3.3.2 Other Centres

Similar floor space projections provided in the Hirst report for other centres in Hornsby are shown in *Table 3.5* following. Apart from Thornleigh and Dural centre, where some increases of floor space are likely, floor areas are expected to remain at more or less the same level in the foreseeable future.

Comments on whether current levels of parking provision would sustain future development are also made as shown in *Table 3.5.*

Table 3.5: Projected Floor Areas of Other Centres

Centre	2001	Potential	Comment on Parking Provisions
Carlingford	35,510	35,510	Current level adequate.
Pennant Hills	68,479	68,990	Current level inadequate. Need to increase short term parking.
Thornleigh	49,772	61,772	Current parking provision unlikely to be adequate to meet future requirements. Need to increase parking provision or effect modal shift away from the car.
Epping	46,536	47,462	No increase required.
Dural SC	14,728	18,008	Future increase in floorspace may require additional parking. Opportunities to effect a modal shift way from the car should be investigated.

[1] Hirst Consulting Services Pty Ltd "Hornsby Shire Employment Review Draft Report, August 1998"

4. Parking Issues and Policy Implications

4.1 Public and Private Off-Street Parking

Since commercial centres are usually located in densely developed areas, issues relating to parking are a major consideration in most traffic and transport studies due to the impact of parking on access, traffic generation, local amenity, safety and serviceability.

Furthermore, commercial centres are often the areas where competition for parking is most intense, particularly if the centre is adjacent to a public transport node such as a rail station.

Most commercial centres in Australian cities have been designed or have evolved, in a way that favours vehicular access. Parking has often been included as an essential element in the development of a commercial centre and perceived as a fundemental criterion for economic success.

Parking policies within a sustainable land use and transport strategy need to facilitate a gradual decrease in availability of parking spaces corresponding to improvements in non car-based transport, and therefore supporting a mode shift away from car use.

It is recognised that it would be politically and economically infeasible to impose excessive restrictions on parking in the short term, however, while travel behaviour change will be gradual, it must be supported by efforts to control parking provision.

In the short and medium term a well conceived parking management policy is considered fundamental to ensure the efficient utilisation of parking space and reduce traffic congestion within the centre, as well as minimising the need for additional parking.

The ability of local governments to manipulate parking parameters to achieve transport objectives in commercial centres is sometimes limited due to a number of factors, including:

- Difficulty of assessing the real demand for parking without constant monitoring;
- Lack of control over existing parking stock;
- Stakeholder pressure; and,
- The need to provide adequate short stay spaces to support the retail function of the centre.

A parking strategy therefore needs to be based on available resources with regard for local politics, formulated to achieve both short term and long term transport objectives.

A common objective of local governments is to use parking policy to influence commuter (employee) mode split to increase utilisation of public transport.

Such a policy includes reducing parking stock and/or increasing parking charges. The effectiveness of this policy depends on how parking stock and parking charges can be controlled by local governments. As public transport use increases so services improve and become more attractive, thereby reducing parking demand.

A previous study in Brisbane[2] indicated that there was little effect on mode split with up to a 25% real increase in parking charges. A 100% increase is required to reduce car trips to the CBD from 46% to 35%. Thus, unless parking stock can be controlled, pricing policy alone may not have the desired effect of reducing commuter parking in major commercial centres.

When formulating parking policies in commercial/retail centres, the following factors must be taken into consideration:

- An understanding of the nature short term parking demand (e.g. average parking durations for various purposes);
- Consideration of user pays principle as a regulation of utilisation;
- Stakeholder pressure;
- Employee parking provision; and,
- Competition for spaces by commuters.

4.1.1 Employee Parking

Available employee parking at centres is a significant factor in causing peak hour traffic congestion.

An employee who is denied access to easy (inexpensive, conveniently located) parking, can either accept more difficult (more expensive, less conveniently located) parking, or change modes.

Hornsby CBD, Thornleigh and Epping are the major employment centres Hornsby Shire and as such attract relatively high numbers of peak hour commuters.

As a general policy Council should minimise employee parking in commercial centres. Considerations for developing future strategies to limit employee parking could include:

- Limiting the available free on-street parking spaces within a radius of, for example, 500m of the boundary of the commercial / employment centre, either through pay parking schemes or time restrictions, or both.
- Limiting or prohibiting employee parking provision for any development where public transport facilities are available, e.g. near railway stations.
- Incentives to be given to developers in terms of concessions on floor space ratios if a transport or access plan is provided and implemented to limit the use of the private vehicles and achieve a target and sustainable mode split.
- Preferential parking provision for carpools / car sharing and vanpools.

[2] Segal & Maclean "Five Myths of Parking Policy", 1990 (paper presented at ARRB conference)

The best strategy to eliminate long stay on-street parking is to reduce the availability of unrestricted on-street spaces within easy walking distance of the commercial centre. This may not be acceptable in the short term prior to the improvement of public transport services.

Recognising that it may be unacceptable to reduce parking provision in the short term but that any parking provided in the short term may compromise the ability to effect a longer term modal shift, options that allow the removal of parking in the longer term should be investigated. Temporary consents can be given, allowing parking to be provided and then removed when a specified level of accessibility is achieved.

In giving temporary consents, care must be taken to ensure the temporary complement of spaces can be removed or converted to an alternate use when the agreed level of accessibility is attained. Council must also be prepared to monitor and enforce the consents.

Another option may be the trading of parking spaces. Older buildings may have more than sufficient car parking provision for their needs. Council could facilitate a trade in parking spaces where unused spaces in older buildings are either set aside for use by occupiers of a new development or the spaces are removed from the older building, with that number being provided in the new development. This approach may present either a complete or partial solution to deal with parking requirements of developments on constrained sites.

4.2 Rail Commuter Parking

The objectives of the ILUTS do not support the provision of long stay parking facilities at public transport terminals such as railway and bus stations.

Rail commuter parking is considered to be detrimental to local communities because:

- Parking increases traffic flows and congestion in local residential streets, particularly those adjacent to car parks, at peak periods, with associated safety and amenity problems;
- Parking competes with feeder bus services, potentially making them unviable;
- Parking competes with short stay parking needs in commercial/retail centers; and,
- Parking occupies prime real estate land that could be used for residential, retail and commercial developments, maximizing accessibility to nearby transport facilities.

Rail commuter car parks should be considered as an interim measure, to be replaced by feeder bus services in the longer term.

In the context of the Hornsby Shire, the following policy options are recommended for consideration by Council:

1. No additional commuter car parks should be provided by Council.
2. Peak hour improvements to the frequency of bus services connecting to railway stations are strongly recommended. The ILUTS, in seeking to

reduce car use throughout the Shire, will identify policies and measures to encourage the use of local buses to service the railway system and discourage of the use of the private car.

3. If rail commuter car parking is charged for, the revenue received could be used to fund improvements of pedestrian and cyclist access, kiss-and-ride facilities, and most importantly, feeder bus services (e.g. through initial subsidy to operators). If the cost of supporting a high quality and frequent bus services could be off-set by the parking fee, more commuters may be drawn to using the bus.

   This strategy will require co-operation from State Government.

4. The number of all day parking spaces within 500m of railway stations should be gradually reduced and made available only for short stay use. Adequate enforcement must accompany the changes.

5. The ILUTS will seek to identify solutions for those residents of the Shire who are unlikely to be served by feeder bus services due to very low residential densities.

6. The ILUTS will seek to identify measures by which to reduce parking demand at Berowra Station, particularly by people traveling from the Central Coast. If no suitable measures can be identified there may be some merit in increasing parking provision for rail commuters at this location.

4.3 Resident Parking

Resident parking schemes have been implemented by a number of inner city councils to provide allocated on-street parking to residents who do not have access to off-street parking. Resident parking schemes restrict parking by non-residents (i.e. drivers from outside designated residential 'zones') whilst allowing residents within the designated 'zones' to park. Restrictions on non-residents may be full (i.e. no parking for any amount of time) but are usually partial time restrictions (i.e. 1 or 2 hour parking time limits). This prevents all-day parking by, for example, commuters.

Resident parking is now regulated under *Section 91CA* of the *Motor Traffic Regulations Act*, which allows residents with a vehicle permit to park in allocated spaces marked "Authorised Residents Vehicles Excepted". It allows Councils to issue resident parking permits in accordance with the RTA's Implementation Manual, which is currently being reviewed. Current RTA policy is to allow **one** parking permit to each dwelling unit which does not have, or have access to, off-street parking.

It has recently been interpreted by an RTA officer that the new RTA policy is to not allow any parking permits to be issued to residents who already have access to off-street parking provisions, irrespective of their capacity.

Currently there are no resident parking schemes operating in Hornsby Shire. Council has been requested from time to time to introduce resident parking schemes on local roads near railway stations, however, unless households do not have access to off-street parking, it would not be appropriate for Council to consider introducing resident parking.

Council's current policy is not to introduce resident parking in Hornsby Shire and future higher density developments must provide resident and visitor parking spaces in accordance with Council's parking code.

It is recommended that Council should strictly enforce time restrictions for parking along streets within short walking distance of railway stations/commercial centres. Where there is demand for on-street parking it would be appropriate to apply time restrictions in at least some areas to accommodate short term parking needs.

4.4 Section 94 Contributions

Council's current Section 94 Plan does not apply to contributions for car parking. Under the provision of Section 94 of the Environmental Planning and Assessment Act (1979), contributions for car parking may be sought for the provision of public car parking areas, under the control of the Council, towards satisfying the deficiency in provision on a development site of a quantum of parking spaces.

The number of spaces for which contribution may be sought depends on parking strategy adopted by Council, as provided in their parking code or DCP, for each type of development.

The total parking demand to be satisfied by a development is based on accepted parking generation rates or policies adopted aimed at limiting demand based on the overall traffic conditions in the Shire (for example, as a result of the ILUTS currently undertaken).

Council would need to demonstrate that the contributions received can be expended within a reasonable time frame. Locations of relevant parking areas should be identified in a DCP and the costs of, and the program for, the provision of parking spaces determined. It should be noted that existing car parks which within a reasonable walking distance of the new development and are under ultilised can be nominated to meet the parking requirement.

[This needs to be dealt with through an assessment of current levels of private off-street car parking]

4.5 Pay Parking

Many municipalities have recently introduced, or are in the process of introducing, on-street pay parking in local commercial centers. Regional centres such as Chatswood, North Sydney (including Milsons Point and St Leonards), Bondi Junction and Hurstville have already implemented pay parking. Smaller centers, such as Double Bay and Randwick, are being considered for pay parking by the relevant Councils.

The pay parking strategy is considered an ideal measure to control and manage on-street parking. This strategy, while generating revenues for Council to fund other transport facilities, should be regarded as a viable measure to provide equitable use of available parking spaces so that priority can be given to short term use in order to support commercial activity.

The advantage of pay parking is that charges can eliminate other control measures. Progressive charging regimes increase the charge per hour with

length of stay, thereby penalizing long stay parking while still permitting it to occur. Such charging regimes can be very effective in supporting local retailers.

The acceptability of pay parking can be increased if revenues are effectively ring fenced to pay for improvements to public transport and meet the cost of additional walk and cycle facilities.

While it can be argued that pay parking may have a detrimental effect on small businesses which do not provide on-site customer parking, this may be outweighed by the advantages of increased turnover of nearby spaces. With the recent changeover of parking enforcement responsibility from the police to the local government authorities, Council can take the initiative in enforcing parking restrictions.

It is likely that Westfield will introduce pay parking following their recent expansion of the shopping centre in Hornsby CBD (currently the general parking limit is four hours). The normal practice of pay parking in shopping malls is to allow two to three hours of free parking before charges are made. This eliminates long stay users and allows ample time for shopping. Pay parking at Westfield is likely to displace long stay parkers on to local streets.

While long stay parking for commuters and employees at major centres should be discouraged for reasons of environmental sustainability, there is a need for short stay business parking, which may exceed the normal two-hour limit. Introducing pay parking for an extended time to cover this need would be appropriate and would support business sustainability at major centers.

Pay parking controls can include both on-street and off-street parking although an initial trial should be confined to on-street areas only. To select appropriate locations for initial introduction, consideration must be given to the effect of shifting use to locations where charges do not apply.

The suitability of a centre for on-street pay parking control would depend on a number of considerations such as:

- The position of the center within the Shire's retail hierarchy.
- The likelihood of moving the parked vehicles onto adjacent streets – this will eliminate smaller centres where current time restrictions are appropriate and introducing pay-parking will have a significant effect on adjacent streets.
- The impact on streets in adjacent Council areas – this will eliminate Epping unless Parramatta Council will agree to introduce pay parking controls at the same time.
- The impact on business along those streets where charges apply – this will affect most business premises in Hornsby town centre as their major competitor, Westfield Shopping Town provides free parking with a four hour time limit. To reduce the impact on businesses Council could consider pay parking with an initial period (say 1 hour) of free parking.
- Charging for long stay parking only – this will have implications on existing free parking for commuters at CityRail car parks where current State Rail Authority policy does not favour charges. Council may consider a four-hour restriction on some locations and charge the

users of these spaces. This long stay spaces available for those who need to use the railway system outside the commuter peaks.

The mechanism for charging for parking is a prime consideration for Council. A number of factors that need to be considered when assessing the type of pay parking system to be selected:

- Easy for motorist to understand;
- Simple to use;
- Easy to enforce;
- Cost effective;
- Adaptable to small isolated areas; and,
- Simple to administrate.

Currently there are a number of fee collecting devices on the market, apart from conventional parking meters, which are increasingly unpopular. The most popular options include the following:

1. Ticket Parking

   Ticket parking is also known as 'pay and display'. It requires the motorist to purchase a parking ticket from a vending machine for a period up to the maximum allowed. The ticket is then placed on the dashboard for inspection by the enforcement officer. The ticket vending machine should be positioned to serve up to 16 spaces, no more than 50 metres from any space.

   An advantage of this scheme is that it provides greater revenue as unused time does not become available to the next user, as it would with parking meters. Ticket machines can dispense tickets for free parking covering, say, the first two hours, before a charge is applicable and money required. There is a risk that users will return to the machine before the expiration of the free time to obtain a fresh ticket. This practice, of course, is no different to the current practice of moving the vehicle at the end of a permitted paring period. This practice can be eliminated with strict enforcement.

2. Coupon / Voucher Parking

   This form of parking is not widely used in Sydney. It involves the purchase of a coupon from an approved coupon sales outlet near the parking area. The voucher is like a 'scratchy', the date and time of arrival are scratched to validate the voucher and then it is then displayed on the dashboard of the vehicle for inspection. This type of parking could be suited to locations for all-day parking where the majority of users are regulars and are familiar with how the scheme operates. A major advantage is that special parking equipment is not required, however, sales distribution outlets need to be established, and this can be cumbersome to administer. In retail areas sales distribution outlets may be adjacent shops.

   Coupons or vouchers can be pre-purchased and validated at the time of use. Council could allow local businesses a quota of free or reduced price coupons to meet emergency or visitor needs through the year.

3. Boomgate Control

   Similar to those used in un-manned commercial car parks, this device can only be used in an enclosed car park area and can only operate for a flat rate charge with no time variation. It is ideal for enclosed commuter car parks. Collection must be made frequently to avoid vandalism and theft.

4. Manual (and automatic) Collection at Exit Points

   This is popular at major parking stations in major shopping centres. It could be considered for use in future car parks, provided the revenue collected can finance the operating expenses.

Further consultation will be undertaken with Council officers during the ILUTS period before a recommended strategy for pay parking is finalised.

5. Review of Hornsby Car Parking DCP

5.1 Main Issues

Main issues related to the review of the DCP include:

- Setting appropriate parking supply rates for different land uses;
- Locations where parking should be provided or is preferred (e.g., underground, at rear of premises or the front of premises);
- Contribution rates for required parking spaces not provided on site.

While this working paper examines the deficiencies of the existing code and provides comments and recommendations for future parking provision rates for new developments, issues related to parking contribution rates under Section 94 will be dealt with in more detail in the ILUTS.

5.2 Parking Provision Requirement

5.2.1 Dwelling Houses

Current DCP provisions for dwelling houses, whether detached or attached and including multi-unit housing of low, medium and medium/high density, are classified into two categories: those exceeding 100m^2 and those under, which determines whether 1 or 2 off-street spaces per dwelling should be provided.

For high-density housing an average of 1.5 spaces per dwelling is applicable.

Visitor parking provision is set at 1 space per five dwellings for multi-unit dwellings.

Comments:

- Dwelling categories should be defined;
- Dwelling size should be defined in terms of bedrooms as well as floor areas; and,
- Provision of parking spaces should take into account locations of dwellings to be erected.

Generally past studies have indicated that unless adequate off-street spaces are provided for visitors and occupants, demand for on-street parking will increase with an increase in the density of residential developments.

Unless developments are very close to public transport facilities, and are generally for short term rentals, occupants of multi-unit developments in Hornsby, are expected to own at least one vehicle per dwelling, even though they may not use them for commuting to work or short distance travel. It would be appropriate to provide adequate off-street parking for these developments whether the spaces are integral to individual developments or in communal car parks. Residents vehicles not used for commuting do not contribute to peak hour traffic problems.

With adequate off-street residents parking, Council can impose time restrictions on on-street parking spaces and reserve them for short term use, particularly at locations close to commercial centres.

Recommendations

Detached and attached houses (including dual occupancies) should be classified as medium and large:

- Medium: at least 2 bedrooms not exceeding 125m^2 internal floor area
- Large: at least 3 bedrooms or exceeding 125m^2 internal floor area.

Parking Requirement: Under cover spaces: medium - 1 space; large - 2 spaces

Multi-unit housing (low, medium and high density) should be classified as:

- Small: studios or single bedroom units, not exceeding 80m^2
- Medium: 2 bedroom units, not exceeding 120m^2 internal floor area
- Large: 2/3 - 4 bedroom units with/without study, exceeding 120m^2 internal floor area
- SEPP 5 – see official definition

Recommended off-street parking provision is shown in Table 4.1 following:

Table 4.1: Recommended Provision For Residential Units

Category	Average Parking Provision (Spaces per Unit)		
	Within 200m of RS*	Between 200m & 500m	Over 500m
Small	1.0	1.0	1.0
Medium	1.0	1.0	1.25
Large	1.0	1.0	1.5
Visitor/Services	Min 1 + 1 per 4 units	Min 1 + 1 per 4 units	Min 1 + 1 per 4 units
SEPP 5	0.5	0.5	1.0
Visitor/services	Min 1 + 1 per 4 units	Min 1 + 1 per 4 units	Min 1 + 1 per 4 units

* Railway Station

5.2.2 Retail Developments

Current requirements for retail development are classified into different business zones, industrial zones, car tyre outlets, showrooms and bulky goods. The requirements are shown in *Table 4.2* following:

Table 4.2: Existing Retail Parking Requirement

Retail Business Category	No of Spaces
Business A, B and E zones	1 per 20m^2 GLFA
Business C and D zones	1 per 17m^2 GLFA
Business F and G zones	1 per 22.7m^2 GLFA
Industrial A and B zones	1 per 20m^2 GLFA
Car Tyre Outlets	1 per 35m^2 GLFA + 3 per work bay
Indoor Show Rooms	1 per 50m^2 GLFA
Bulky Goods	1 per 50m^2 GLFA, including provision for cars with trailers

Comments:

- Business zones are not defined in the DCP document, and need to be defined with appropriate maps showing the boundary of business zones.
- No provision is included for minor additions to existing shops or the conversion of existing premises to retail shops.
- No provision is included for retail shops located within 400m radius of a railway station. This should be considered within the definition of business zones.
- No allowances are made for retail development within an existing shopping centre.
- No concessions are made for development over 10,000m^2 GLFA.

Recommendations:

Further discussions with Council officers are required before recommendations for changes to existing provisions can be made.

5.2.3 Commercial Developments

Table 4.3 shows the existing parking provision required for commercial development. These provisions are similar to provisions required by other municipalities in outer Sydney suburban centres. However, the provision for office premises at 1 space per 40 m^2 GLFA is more stringent than the requirement by the neighbouring Ku-ring-gai Council (1 space per 33 m^2 GFA + 1 space for resident manager) since 40 m^2 GLFA is approximately 48 m^2 GFA.

Table 4.3: Existing Parking Requirements for Commercial Premises

Development Type	Required Provision
Office or Business Premises	1 per 40 m^2 GLFA
Motor Show Rooms	1 per 130m^2 GLFA, plus 6 per service work bay
Marinas	0.6 per berth
Motels, Tourist Facilities	1 per unit, plus 1 per 2 employees
Caravan Parks	1 per van, cabin or tent site
Service Stations	6 per work bay
Convenience Stores	1 per 20 m^2 GLFA
Outdoor Display and Sales	1 per 130 m^2 GLFA
Restaurants	1 per 7m^2 GLFA [check]

Comments:

The provisions in the above table are generally similar to requirements by other nearby Councils and require no major change. However, in order to maintain consistency, parking requirements for business offices should also be classified in accordance with their zonal locations, similar to those provided for retail developments.

Recommendations:

The following considerations are recommended

- The existing provision as shown in Table 4.3 should generally remain except provision for offices and business premises.

- Parking provision for offices and business premises should also be classified in accordance with their zonal locations as provisions for retail developments. Parking provision for premises in Hornsby town centre and those adjacent to railway stations should be more stringent than in other locations.
- Convenience stores should be classified under the retail category.
- Most car yards and motor show rooms are located on major arterial roads, adequate off street parking should be provided to minimize on street parking. Based on experience in other studies, a minimum of 6 visitor spaces plus spaces for staff should be provided regardless of site area.
- It should be recognized within the code that restaurants (as distinct from fast-food outlets) do not contribute to the peak parking demand, as they tend to operate outside of normal business hours. At the time of peak restaurant business operation there is usually sufficient on-street parking to accommodate parking demands. The use of on-street parking by restaurant patrons is desirable as it maintains street activity and natural surveillance after hours. The proximity of public transport services and taxi ranks should also be considered. For these reasons restaurants should be treated with considerable flexibility.

5.2.4 Industrial Development

Generally, parking provision for industrial premises is set at 1 space per 100m^2 GLFA, with office component at 1 space per 40 m^2. Vehicle body repair workshops and repair stations are classified under industrial and require a provision of 1 per 100m^2 GLFA plus 1 per employee and 3 vehicles per work bay. This is at odds with the requirement for service stations of 6 spaces per work bay, under the classification of commercial.

Although service stations generally do not include vehicle repair or body work, service stations could require as much parking as repair workshops. Past studies indicate that service stations can generate more short stay demand due to the integral retail component.

5.2.5 Other Developments

Provisions for other land uses are generally compatible with RTA guidelines or similar to those provided by neighbouring Councils.

5.3 Location of Car Parks

The DCP should also specify the locations of car parking facilities for each type of development. In terms of urban design quality it is preferable that all car parking facilities should either be underground or hidden from the front face of any buildings. This requirement should include all commercial and industrial developments as well as multi-unit and/or high rise residential developments.

Should Council wish to give temporary consents, that is, allow a greater amount of parking in the short term to be removed when public transport improvements are achieved, then parking must be designed in such a way that it can be removed or converted to an alternate use. Basement parking is

expensive to construct and cannot be removed or easily converted. The permanent parking component can be located in basement parking while the temporary component should be located in surface areas. The merit of temporary consents for parking will be considered within the ILUTS.

5.4 Other Elements

The DCP document prescribes measures for environmental design of car parks but gives insufficient details of physical design requirements.

Other design elements such as land sensitivity, soil and water management aspect and acoustics are included in the DCP, apparently as later amendments to the original documents.

Section 94 contributions are mentioned in the amendment section of part 1 but no details are given in later chapters of the document.

It is recommended that physical design elements should be included in the DCP, either in sufficient detail for developers to follow or as a reference to other documents such as RTA guidelines or Australian design code.

Section 94 requirements for car parking provision should be detailed in the DCP. Recommendations for Section 94 contribution rates for each of the centres examined will be provided in the ILUTS.

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6. Parking Strategy Recommendations

6.1 General Principles

This section provides strategy recommendations for various centres in Hornsby Shire as a basis for discussion with Council. The recommendations for Hornsby CBD will be tested when the transport model has been developed later in the ILUTS.

In general, the overall parking management strategies, which must be integrated with public transport accessibility, land use and business sustainability of each centre, should be developed with the following general policy principles:

1. There should not be any increase in parking provision in most centres unless it is associated with new development.
2. Rail commuter parking should not be expanded except where demand substantially exceeds off-street supply and on-street parking is detrimental to the safety and environmental amenity of the local community and all other alternatives, that is increasing the accessibility of the station by non-car modes, have been exhausted.
3. Consideration should be given to the parking needs of those who drive to railway stations after the morning peak period.
4. Pay parking could be introduced as a means of managing the use of existing provision and potentially raising revenue to improve public transport.
5. Any reduction of long stay parking spaces must be considered in conjunction with adequate alternative transport access (e.g local bus service improvements, North West Rail Link, bicycle links and storage facilities).
6. Any apparent parking shortage should be reviewed with an objective to increase effective utilisation of existing spaces (e.g. by converting all day parking spaces for short term use).
7. Effective enforcement is a priority (this can now be effectively carried out by Council since the enforcement responsibility has been transferred from the police).
8. Encourage shared use of off-street parking spaces at major centres where night time activities are promoted.
9. Section 94 should apply to all future developments at selected centres, particularly at Hornsby CBD, where existing Council car parks could be effectively expanded for future use. Consideration should be first given to effecting a modal shift away from car use and the potential for Section 94 to contribute to this objective.
10. Where applicable, Council should encourage reduced parking provision for employee parking in major business developments and reduced Section 94 obligations with respect to parking.

6.2 Strategy Recommendations

The general recommendations apply to all centres, however, each individual centre has its parking characteristics and requires a specific management strategy. The following is a summary of recommendations for various centres under discussion.

6.2.1 Hornsby CBD

Preliminary analyses shown in previous chapters indicate that there should not be any new parking provisions in the short term for the Hornsby town centre and that existing controls of short term parking spaces should be reviewed to increase turnover, particularly on the east side of the town.

The following detailed strategies are recommended for consideration by Council:

1. The following existing unrestricted parking spaces should be considered for progressive conversion to four hour parking:
    - Jersey Street,
    - Bridge Road (between Hunter St and Albert St),
    - Hunter Street,
    - May Street,
    - Florence Street,
    - Albert Street,
    - Ashley Street,
    - Webb Street, and
    - Forbes Street.
2. The following existing unrestricted parking spaces should be considered for progressive conversion to three hour parking:
    - Linda Street,
    - Muriel Street, and
    - Thomas Street.
3. The following streets with unrestricted parking are mainly occupied by vehicles associated with auto repair shops and other light industries and should be time restricted, however, Council may use discretion out of consideration for local business. Some form of permit / voucher may be issued to allow continued business use of these spaces.
    - Hunter Lane,
    - Leonard Street,
    - Hornsby Street, and
    - James Street.
4. Introduce pay parking during business hours, initially at the Council car park at the corner of Burdette Street and George Street, allowing for one

hour of free parking. This could be extended to other Council car parks at a later stage.

5. Introduce pay parking for on-street spaces, initially on streets with the highest occupancy rates. Given the disparity between east and west areas of the town centre, Council may wish to introduce pay parking on the east while maintaining free, albeit short stay, parking on the western side. Initially the following streets can be selected for trial:
   - George Street (existing 1 hour spaces),
   - Linda Street (allowing for free period),
   - Hunter Street,
   - Albert Street, and
   - Florence Street.
6. Extend the pay parking scheme to cover all on-street spaces within 400m of the station if initial trials are successful.
7. Future developments within the CBD must provide sufficient off-street parking in accordance with code requirements (including Section 94 contributions). The code is currently being reviewed as the required levels of parking are not in line with the objectives of the ILUTS.
8. Council car parks should be retained for future expansion for the purpose of Section 94 contributions, however, the ILUTS will seek to identify measures to effect a modal shift, negating the need for additional off-street car parking in Hornsby town centre.
9. No new car parking spaces should be provided for rail and local commuters. This will require careful consideration and should be tested with the transport model to be developed as part of the ILUTS.

6.2.2 Pennant Hills

Apparent shortage of parking is mainly due to shortage of convenient short stay parking spaces to serve the retail centre and station. The following management strategies are recommended:

1. Convert all unrestricted spaces along Yarrara Road between Steven Street and Pennant Hills Road into two hour parking.
2. Reduce the current three hour limit to two hours in all Council car parks.
3. Extend parking controls to side streets bounded by Steven Street, Bellamy Street, Boundary Road and Yarrara Road, allowing for some four hour spaces.

Pay parking could be considered as a long term strategy.

6.2.3 Beecroft

There are sufficient short stay spaces for retail parking. No additional provision will be required in the short term. In the long term, the following measures are recommended:

1. Extend parking control to cover all unrestricted spaces on:
   - Wangala Crescent between Copland Road and Chapman Street;

- Chapman Ave between Sutherland Road and York Street;
- Hannah Street between Wongala Crescent and York Street;
- Copeland Road between York Street and Copeland Road East including Copeland Road East; and,
- Malton Road.

2. Introduce pay parking.

6.2.4 Thornleigh

The following short term recommendations apply to Thornleigh centre:

1. All unrestricted spaces along Railway Parade should be converted to four hour parking, allowing parking for railway users arriving by car after the morning peak period.
2. All spaces along Bellevue Street, Station Street and Thornleigh Street west of Paling Street should be restricted to two hour parking.

6.2.5 Epping East

Commuter parking is the main issue in Epping East area. It is recommended that pay parking be introduced to all existing unrestricted spaces of following streets, allowing for free short stay parking:

1. Cambridge Street,
2. Oxford Street,
3. Chester Street,
4. Essex Street north of Pembroke Street,
5. Pembroke Street,
6. Surrey Street between Cambridge and Oxford Streets.

The following streets should be restricted to two hour parking:

1. Forest Grove,
2. Maida Street,
3. Smith Street,
4. Essex Street, south of Pembroke Street.

6.2.6 Waitara Station Area

Rail commuter parking is a major issue. Pay parking is suggested as a control strategy.

The following streets are recommended for long-stay pay parking:

1. Alexandria Parade,
2. Romsey Street,
3. Orara Street.

The following streets are recommended for four hour parking control

1. Waitara Avenue,
2. Park Street,

3. Balmoral Street, south of Park Lane.

In addition the ILUTS will look to make recommendations to improve the accessibility of Waitara Station by alternatives to the car.

Appendix C

Bus Services

TABLE C1 - Summary of Bus Services

				Frequency (minutes)		
				Weekday	Weekend	
Route	Operator	From	To	AM Peak	Saturday	Sunday
140	Sydney Buses	Manly	Epping Station	80	-	-
288	Sydney Buses	Epping	Town Hall	19	21	36
289	Sydney Buses	Epping	Town Hall	12	575	-
290	Sydney Buses	Epping	Town Hall	14	65	57
291	Sydney Buses	Epping	City	27	78	-
294	Sydney Buses	Town Hall	Epping Station	17	-	-
295	Sydney Buses	North Epping	Macquarie	19	60	60
296	Sydney Buses	Epping	Macquarie University	5	-	-
541	Sydney Buses	Epping	Eastwood	41	60	-
575	Shorelink	Hornsby Station	Hornsby Hospital	49	59	-
575	Shorelink	Hornsby Station	Turramurra	57	59	80
587	Shorelink	Westleigh	Hornsby	31	59	101
587	Shorelink	Westleigh	Pennant Hills	21	-	-
588	Shorelink	Normanhurst	Hornsby	26	60	113
589	Shorelink	Hornsby	Pennant Hills	50	-	-
589	Shorelink	Hornsby	Thornleigh	-	140	-
592	Shorelink	Mooney Mooney	Brooklyn	43	-	-
592	Shorelink	Brooklyn	Hornsby	-	-	-
593	Shorelink	Parklands Rd	Hornsby	70	60	-
593	Shorelink	Hornsby	Leighton Industrial Estate	28	-	-
595	Shorelink	Mt Colah Loops	Hornsby	18	60	120
596	Shorelink	Hornsby Heights	Hornsby	18	45	60
597	Shorelink	Berowra Heights	Berowra	16	60	-
597	Shorelink	Berowra Heights	Hornsby	32	60	110
597	Shorelink	Beaumont Rd	Berowra	29	-	-
611	Westbus	Blacktown	Macquarie Centre	33	60	-
620	CityBus Direct	Dural	City	22	-	-
621	CityBus Direct	North Rocks	City	13	-	-
622	CityBus Direct	Carlingford	City	17	-	-
623	Harris Park	Parramatta	Beecroft	19	120	-
624	Harris Park	Parramatta	Epping Station	19	60	57
625	Harris Park	Parramatta	Pennant Hills	26	-	-
626	Harris Park	Pennant Hills	Cherrybrook	20	126	100
626	Harris Park	Cherrybrook	Pennant Hills	28	69	100
626	Harris Park	Pennant Hills	Castle Hill Towers	-	-	-
627	Harris Park	Thomas Wilkinson Rd	Parramatta Station	41	-	-
628	Harris Park	Carlingford	Epping Station	29	-	-
629	Harris Park	North Rocks	Epping Station	22	54	68
630	Red Arrow	Blacktown	Macquarie	38	-	-
631	Glenorie	Castle Hill	Hornsby	40	-	-
631	Glenorie	Castle Hill	Pennant Hills	35	-	-
632	Glenorie	Castle Hill	Hornsby	-	-	-
632	Glenorie	Castle Hill	Pennant Hills	157	58	60
633	Glenorie	Castle Hill	Hornsby	-	-	-
633	Glenorie	Castle Hill	Pennant Hills	22	58	-
634	Glenorie	Castlewood Estate	Pennant Hills	22	63	-
634	Glenorie	Castlewood Estate	Castle Hill	18	-	60
635	Glenorie	Castle Hill	Macquarie	65	-	-
635	Glenorie	Castle Hill	Beecroft	-	61	60
636	Glenorie	Glenhaven	Pennant Hills	32	64	60
636	Glenorie	Glenhaven	Castle Hill	-	-	-
637	Glenorie	Glenorie	Pennant Hills	33	147	200
637	Glenorie	Glenorie	Castle Hill	17	-	-
638	Glenorie	Berrilee & Galston	Pennant Hills	41	120	200
638	Glenorie	Berrilee & Galston	Castle Hill	21	-	-
639	Glenorie	Dural	Pennant Hills	28	146	-
639	Glenorie	Dural	Castle Hill	-	-	-
640	Glenorie	Kenhurst	Pennant Hills	24	135	-
640	Glenorie	Kenhurst	Castle Hill	-	-	-
641	Glenorie	Annangrove	Pennant Hills	23	202	-
641	Glenorie	Annangrove	Castle Hill	-	-	-
642	Hills Bus	Dural	City	25	-	-
650	Hills Bus	West Pennant Hills	City	34	-	-
652	Hills Bus	West Pennant Hills	City	43	-	-
654	Hills Bus	Dural	City	-	-	-
747	Airbus	Bay Village	Sydney Airport	45	-	-
N80	Nightrider	Hornsby	City	60	60	60
N90	Nightrider	Hornsby	City	60	30	30

TABLE C2 - Detail of Bus Services

Route Number	Operator	From	To	Via	Weekday									Weekends						
					To Direction				Return Direction					Saturday				Sunday		
					Number of Services	1st Bus	Last Bus	Freq (mins)	Peak AM Frequency	Number of Services	1st Bus	Last Bus	Freq (mins)	Peak PM Frequency	# Services	1st Bus	Last Bus	Freq (mins)	# Services	1st Bus	Last Bus	Freq (mins)
140	Sydney Buses	Manly	Epping Station	Military Rd & Pacific Hwy	2	7:30:00 AM	8:50:00 AM	80	80	2	4:02:00 PM	5:07:00 PM	65	na	0	na	na	na	0	na	na	na
288	Sydney Buses	Epping	Town Hall	Macquarie University and Gore Hill Fwy	52	6:12:00 AM	11:43:00 PM	21	19	40	7:16:00 AM	12:07:00 AM	26	19	47	7:35:00 AM	###	21	26	7:33	22:33	36
289	Sydney Buses	Epping	Town Hall	Macquarie Centre	5	8:36:00 AM	1:11:00 AM	249	12	3	5:41:00 AM	2:10:00 AM	615	na	3	6:02:00 AM	###	575	1	6:02	6:02	na
290	Sydney Buses	Epping	Town Hall	Macquarie University and Pacific Hwy	31	6:44:00 AM	2:11:00 AM	39	14	30	7:12:00 AM	3:10:00 AM	41	46	18	7:41:00 AM	###	65	18	7:02	23:11	57
291	Sydney Buses	Epping	City	Pacific Hwy	8	5:02:00 AM	8:10:00 AM	27	27	8	4:51:00 AM	6:07:00 PM	114	30	2	5:18:00 AM	###	78	0	na	na	na
294	Sydney Buses	Town Hall	Epping Station	Gore Hill	10	6:10:00 AM	8:40:00 AM	17	17	0	na	na	na	na	0	na	na	na	0	na	na	na
295	Sydney Buses	North Epping	Macquarie	Epping Stn	31	5:56:00 AM	9:19:00 PM	31	19	31	5:41:00 AM	9:02:00 PM	31	35	12	8:38:00 AM	###	60	10	9:08	18:08	60
296	Sydney Buses	Epping	Macquarie University		31	8:20:00 AM	4:52:00 PM	17	5	11	4:00:00 PM	6:08:00 PM	13	21	0	na	na	na	0	na	na	na
541	Sydney Buses	Epping	Eastwood	Chesterfield Rd	16	6:17:00 AM	6:30:00 PM	49	41	16	6:35:00 AM	6:50:00 PM	49	40	10	9:04:00 AM	###	60	0	na	na	na
575	Shorelink Bus Company	Hornsby Station	Hornsby Hospital	Hornsby Hospital	18	6:17:00 AM	9:10:00 PM	53	49	17	6:21:00 AM	9:15:00 PM	56	29	10	8:40:00 AM	###	59	0	na	na	na
575	Shorelink Bus Company	Hornsby Station	Turramurra	Hornsby Hospital - Wahroonga East	12	7:10:00 AM	5:10:00 PM	55	57	16	7:23:00 AM	9:10:00 PM	55	78	9	8:18:00 AM	###	59	7	8:50:00 AM	4:50:00 PM	80
587	Shorelink Bus Company	Westleigh	Hornsby	Normanhurst	20	6:22:00 AM	8:54:00 PM	46	31	23	6:20:00 AM	9:10:00 PM	40	44	9	8:52:00 AM	###	59	6	8:36:00 AM	5:01:00 PM	101
587	Shorelink Bus Company	Westleigh	Pennant Hills	Thornleigh	9	6:05:00 AM	11:25:00 AM	40	21	11	11:50:00 AM	8:44:00 PM	53	41	0	na	na	na	0	na	na	na
588	Shorelink Bus Company	Normanhurst	Hornsby	Normanhurst West	18	6:20:00 AM	5:55:00 PM	41	26	20	6:49:00 AM	9:10:00 PM	45	40	9	8:23:00 AM	###	60	5	8:42:00 AM	4:14:00 PM	113
589	Shorelink Bus Company	Hornsby	Pennant Hills	Normanhurst - Woodlands Estate - Thornleigh	10	7:25:00 AM	5:45:00 PM	69	50	11	7:05:00 AM	5:14:00 PM	61	na	0	na	na	na	0	na	na	na
589	Shorelink Bus Company	Hornsby	Thornleigh	Normanhurst - Woodlands Estate	7	9:25:00 AM	5:25:00 PM	80	na	8	7:58:00 AM	5:55:00 PM	85	na	4	9:26:00 AM	###	140	0	na	na	na
592	Shorelink Bus Company	Mooney Mooney	Brooklyn	Mooney Mooney	10	6:15:00 AM	5:52:00 PM	77	43	11	6:40:00 AM	6:03:00 PM	68	31	1	9:25:00 AM	###	na	0	na	na	na
592	Shorelink Bus Company	Brooklyn	Hornsby	Mooney Mooney	1	9:05:00 AM	9:05:00 AM	na	na	1	2:05:00 PM	2:05:00 PM	na	na	1	9:47:00 AM	###	na	0	na	na	na
593	Shorelink Bus Company	Parklands Rd	Hornsby	Hornsby Station	12	6:24:00 AM	5:00:00 PM	58	70	12	8:27:00 AM	6:17:00 PM	54	54	7	9:14:00 AM	###	60	0	na	na	na
593	Shorelink Bus Company	Hornsby	Leighton Place Industrial Estate	Hornsby Station	5	6:33:00 AM	8:23:00 AM	28	28	0	na	na	na	na	0	na	na	na	0	na	na	na
595	Shorelink Bus Company	Mt Colah Loops	Hornsby	Hornsby North	22	6:04:00 AM	6:21:00 PM	35	18	19	8:04:00 AM	7:57:00 PM	40	25	10	7:50:00 AM	###	60	3	7:56:00 AM	11:56:00 AM	120
596	Shorelink Bus Company	Hornsby Heights	Hornsby		45	5:24:00 AM	9:13:00 PM	22	18	39	6:24:00 AM	8:55:00 PM	23	22	17	7:19:00 AM	###	45	11	8:33:00 AM	6:37:00 PM	60
597	Shorelink Bus Company	Berowra Heights	Berowra		22	5:57:00 AM	7:55:00 PM	40	16	24	5:51:00 AM	8:15:00 PM	38	20	4	8:21:00 AM	###	60	0	na	na	na
597	Shorelink Bus Company	Berowra Heights	Hornsby	Berowra	11	6:37:00 AM	1:59:00 PM	44	32	17	7:46:00 AM	9:15:00 PM	51	63	8	7:44:00 AM	###	60	6	7:32:00 AM	4:41:00 PM	110
597	Shorelink Bus Company	Beaumont Rd	Berowra	Beaumont Rd	8	6:55:00 AM	6:40:00 PM	101	29	5	6:41:00 AM	5:03:00 PM	156	na	0	na	na	na	0	na	na	na
611	Westbus	Blacktown	Macquarie Centre	Epping Station	23	5:55:00 AM	5:30:00 PM	32	33	27	6:46:00 AM	9:10:00 PM	33	42	9	8:30:00 AM	###	60	0	na	na	na
620	CityBus Direct	Dural	City	New Line Rd & M2	10	5:57:00 AM	9:20:00 AM	23	22	10	1:45:00 PM	7:10:00 PM	36	21	0	na	na	na	0	na	na	na
621	CityBus Direct	North Rocks	City	Thonmpsons Corner & M2	4	6:54:00 AM	9:09:00 AM	45	13	4	1:50:00 PM	6:05:00 PM	85	23				na				na
622	CityBus Direct	Carlingford	City	Ray Rd, Epping & M2	8	6:00:00 AM	9:40:00 AM	31	17	8	2:00:00 PM	7:05:00 PM	44	29	0	na	na	na	0	na	na	na
623	Harris Park Transport Group	Parramatta	Beecroft	North Rocks	23	5:52:00 AM	6:30:00 PM	34	19	24	6:29:00 AM	7:09:00 PM	33	22	6	7:52:00 AM	###	120	0	na	na	na
624	Harris Park Transport Group	Parramatta	Epping Station	Pennant Hills - Carlingford	33	5:36:00 AM	9:20:00 PM	30	19	29	6:04:00 AM	8:56:00 PM	32	34	14	6:00:00 AM	###	60	11	8:00:00 AM	5:30:00 PM	57
625	Harris Park Transport Group	Parramatta	Pennant Hills	Carlingford	20	6:00:00 AM	6:34:00 PM	40	26	19	6:35:00 AM	7:12:00 PM	42	42	0	na	na	na	0	na	na	na
626	Harris Park Transport Group	Pennant Hills	Cherrybrook	Boundary Rd	16	6:10:00 AM	7:40:00 PM	265	20	16	7:30:00 AM	8:51:00 PM	54	31	5	9:15:00 AM	###	126	5	8:22:00 AM	3:01:00 PM	100
626	Harris Park Transport Group	Cherrybrook	Pennant Hills	Francis Greenway & Yanderra Rds	16	5:33:00 AM	3:40:00 PM	40	28	20	8:55:00 AM	9:01:00 PM	38	37	9	8:01:00 AM	###	69	5	8:43:00 AM	3:22:00 PM	100
626	Harris Park Transport Group	Pennant Hills	Castle Hill Towers	Cherrybrook	4	8:55:00 AM	2:20:00 PM	108	na	5	10:37:00 AM	2:42:00 PM	61	na	0	na	na	na	0	na	na	na
627	Harris Park Transport Group	Thomas Wilkinson Rd	Parramatta Station	Francis Greenway & Yanderra Rds	5	6:44:00 AM	4:34:00 PM	148	41	2	3:35:00 PM	5:15:00 PM	100	na	0	na	na	na	0	na	na	na
628	Harris Park Transport Group	Carlingford	Epping Station	Westfield North West Rocks - Carlingford Court	26	5:34:00 AM	8:20:00 PM	35	29	29	5:51:00 AM	9:15:00 PM	33	28	0	na	na	na	0	na	na	na
629	Harris Park Transport Group	North Rocks	Epping Station	Rembrandt St - Westfield North West Rocks	25	5:56:00 AM	9:00:00 PM	38	22	24	6:28:00 AM	9:50:00 PM	40	45	14	7:18:00 AM	###	54	10	7:58:00 AM	6:06:00 PM	68
630	Red Arrow	Blacktown	Macquarie	Epping Station	13	5:50:00 AM	4:32:00 PM	54	38	12	6:45:00 AM	5:45:00 PM	60	35	0	na	na	na	0	na	na	na
631	Glenorie Bus Company	Castle Hill	Hornsby	Castle Hill Road	2	6:40	7:20	40	40	3	7:25:00 AM	5:00:00 PM	288	na	0	na	na	na	0	na	na	na
631	Glenorie Bus Company	Castle Hill	Pennant Hills	Castle Hill Road	7	5:35	19:43	141	35	8	6:02:00 AM	5:57:00 PM	102	34	0	na	na	na	0	na	na	na
632	Glenorie Bus Company	Castle Hill	Hornsby	David Road	7	8:28	16:05	76	na	4	10:55:00 AM	1:55:00 PM	60	na	0	na	na	na	0	na	na	na
632	Glenorie Bus Company	Castle Hill	Pennant Hills	David Road	17	5:56	20:31	55	157	22	6:22:00 AM	9:10:00 PM	42	27	13	7:29	###	58	12	7:39:00 AM	6:43:00 PM	60
633	Glenorie Bus Company	Castle Hill	Hornsby	Coonara Avenue	1	16:53	16:53	na	na	1	8:15:00 AM	8:15:00 AM	na	na	0	na	na	na	0	na	na	na
633	Glenorie Bus Company	Castle Hill	Pennant Hills	Coonara Avenue	17	6:30	18:40	46	22	16	7:00:00 AM	6:40:00 PM	47	31	10	7:04	###	58	0	na	na	na
634	Glenorie Bus Company	Castlewood Estate	Pennant Hills	Castle Hill	23	6:22	19:35	36	22	19	6:02:00 AM	7:10:00 PM	44	31	10	8:15	###	63	0	na	na	na
634	Glenorie Bus Company	Castlewood Estate	Castle Hill	Castle Hill	5	7:45	18:05	155	18	3	6:40:00 AM	3:30:00 PM	265	na	0	na	na	na	9	8:47:00 AM	4:47:00 PM	60
635	Glenorie Bus Company	Castle Hill	Macquarie	Beecroft	10	6:30	17:17	72	65	9	10:00:00 AM	6:20:00 PM	63	60	0	na	na	na	0	na	na	na
635	Glenorie Bus Company	Castle Hill	Beecroft	Beecroft	12	9:01	18:22	51	na	14	7:02:00 AM	6:05:00 PM	51	45	11	8:35	###	61	10	9:12:00 AM	6:12:00 PM	60
636	Glenorie Bus Company	Glenhaven	Pennant Hills	Castle Hill	15	6:05	17:39	50	32	15	9:10:00 AM	9:10:00 PM	51	45	10	7:36	###	64	10	8:16:00 AM	5:16:00 PM	60
636	Glenorie Bus Company	Glenhaven	Castle Hill	Castle Hill	1	7:25	7:25	na	na	1	3:20:00 PM	3:20:00 PM	na	na	0	na	na	na	0	na	na	na
637	Glenorie Bus Company	Glenorie	Pennant Hills	Castle Hill	13	5:48:00 AM	7:43:00 PM	70	33	14	6:45:00 AM	9:10:00 PM	67	61	5	7:57:00 AM	###	147	4	7:14:00 AM	5:14:00 PM	200
637	Glenorie Bus Company	Glenorie	Castle Hill	Castle Hill	6	6:45:00 AM	2:55:00 PM	98	17	7	2:15:00 PM	7:15:00 PM	50	40	0	na	na	na	0	na	na	na
638	Glenorie Bus Company	Berrilee & Galston	Pennant Hills	Castle Hill	8	6:05:00 AM	5:15:00 PM	96	41	17	6:45:00 AM	9:10:00 PM	54	61	3	8:50:00 AM	###	120	4	7:19:00 AM	5:19:00 PM	200
638	Glenorie Bus Company	Berrilee & Galston	Castle Hill	Castle Hill	4	6:33:00 AM	7:36:00 AM	21	21	8	7:47:00 AM	7:15:00 PM	98	40	0	na	na	na	0	na	na	na
639	Glenorie Bus Company	Dural	Pennant Hills	Castle Hill	9	6:22:00 AM	5:10:00 PM	81	28	5	11:40:00 AM	6:07:00 PM	97	60	3	8:23:00 AM	###	146	0	na	na	na
639	Glenorie Bus Company	Dural	Castle Hill	Castle Hill	2	6:53:00 AM	9:20:00 PM	867	na	4	3:15:00 PM	6:15:00 PM	60	60	0	na	na	na	0	na	na	na
640	Glenorie Bus Company	Kenhurst	Pennant Hills	Castle Hill	6	6:38:00 AM	4:51:00 PM	123	24	4	11:40:00 AM	6:07:00 PM	129	60	3	8:09:00 AM	###	135	0	na	na	na
640	Glenorie Bus Company	Kenhurst	Castle Hill	Castle Hill	2	6:38:00 AM	9:00:00 AM	142	na	5	3:15:00 PM	6:15:00 PM	45	60	0	na	na	na	0	na	na	na
641	Glenorie Bus Company	Annangrove	Pennant Hills	Dural - Castle Hill	7	6:38:00 AM	4:53:00 PM	103	23	4	10:40:00 AM	6:07:00 PM	149	60	2	8:45:00 AM	###	202	0	na	na	na
641	Glenorie Bus Company	Annangrove	Castle Hill	Dural - Castle Hill	4	6:38:00 AM	4:53:00 PM	205	na	5	3:15:00 PM	6:15:00 PM	45	60	0	na	na	na	0	na	na	na
642	Glenorie Bus Company (Hills Bus)	Dural	City	Castle Hill - West Pennant Hills Valley - Lane Cove	11	6:00:00 AM	5:30:00 PM	69	25	11	7:20:00 AM	7:00:00 PM	70	22	0	na	na	na	0	na	na	na
650	Glenorie Bus Company (Hills Bus)	West Pennant Hills	City	West Pennant Hills Valley - Lane Cove	5	6:10:00 AM	8:25:00 AM	34	34	5	4:15:00 PM	6:45:00 PM	38	38	0	na	na	na	0	na	na	na

TABLE C2 - Detail of Bus Services

					Weekday										Weekends							
Route Number	Operator	From	To	Via	To Direction					Return Direction					Saturday				Sunday			
					Number of Services	1st Bus	Last Bus	Freq (mins)	Peak AM Frequency	Number of Services	1st Bus	Last Bus	Freq (mins)	Peak PM Frequency	# Services	1st Bus	Last Bus	Freq (mins)	# Services	1st Bus	Last Bus	Freq (mins)
652	Glenorie Bus Company (Hills Bus)	West Pennant Hills	City	West Pennant Hills Valley - Lane Cove	4	6:30:00 AM	9:03:00 AM	51	43	3	4:35:00 PM	5:50:00 PM	37	35	0	na	na	na	0	na	na	na
654	Glenorie Bus Company (Hills Bus)	Dural	City	Castle Hill - West Pennant Hills Valley - Lane Cove	3	9:30:00 AM	12:45:00 PM	98	na	4	9:45:00 AM	7:30:00 PM	195	na	0	na	na	na	0	na	na	na
747	Airbus	Bay Village	Sydney International Terminal	Pacific Hwy and Macquarie Park	3	5:15:00 AM	11:45:00 AM	195	45	3	9:00:00 AM	4:00:00 PM	210	na	0	na	na	na	0	na	na	na
N80	Shorelink - Nightrider	Hornsby	City	Strathfield	5	12:16:00 AM	4:16:00 AM	60	60	5	12:40:00 AM	4:46:00 AM	62	62	5	12:16:00 AM	###	60	5	12:16:00 AM	4:16:00 AM	60
N90	Shorelink - Nightrider	Hornsby	City	Chatswood	6	11:45:00 PM	4:45:00 AM	60	60	5	12:30:00 AM	4:30:00 AM	60	60	10	12:00:00 AM	###	30	10	12:00:00 AM	4:30:00 AM	30

Appendix D

Minutes of Stakeholder Meetings

Hornsby Integrated Land Use and Transport Strategy (ILUTS)
Government and Operators Stakeholder Meeting

Minutes

2pm, Wednesday 28 August 2002
at
Hornsby Shire Council

Attendees:

Ana Temporini	TransportNSW (TNSW)
John Brockhoff	PlanningNSW (PNSW)
Tom Playford	State Rail Authority (SRA)
Renee Zaia	Rail Infrastructure Corporation (RIC)
Wendy Adam	Sydney Buses
Nadine Thorburn	Harris Park
Michel Manty	TRANSDEV NSW (Shorelink)
Peter Cohen	Glenorie
Garry Kennedy	Hornsby Shire Council
Bernard Choongo	Hornsby Shire Council
James Farrington	Hornsby Shire Council
Adam Davis	Hornsby Shire Council
Bryony Cooper	PBAI Australia
Anna Read	PBAI Australia
Chris Wilson	Masson Wilson Twiney (MWT)
Stan Mack	Stepfair

Apologies:

Charles Wiafe	Roads and Traffic Authority
Peter Whelan	Parramatta Rail Link

Circulation:
all above plus

Vince Berkhout	JBA Urban Planning Consultants

Item **Action**

1 Introduction

PBAI introduced the project and provided details of the project objectives, timeframe, methodology and outcomes. (A copy of the presentation is attached for reference.)

2 State planning and transport policy

PNSW confirmed that the Integrated Land Use and Transport policy package is in place in its final format, although the SEPP is still draft. Consultation with Councils will be necessary in order to assist implementation of the policy package at the local level.

PNSW and TNSW are currently scoping a Metropolitan Parking Strategy. The development of the strategy is in the very early stages, however it is likely to be progressed over the course of the next 9 months and it may be possible for the development of this parking strategy and the ILUTS to inform each other.

TNSW has formed a working group to establish an internal process for assessing requests for allocating funds from the Parking Space Levy. The funds are currently used for interchanges, including Transitways, commuter car parking and cycle parking.

TNSW noted that it would be useful for the ILUTS to consider demand issues as well as transport supply issues – including growth areas, transport generators and future development patterns – this could be done using accessibility mapping. PBAI confirmed that this is a possibility and that the demand side is included in the strategy, however no detailed accessibility mapping will be undertaken as part of the study.

3 Commuter Car Parking

Council explained their resolution to approach TNSW to provide commuter car parking at stations within the Shire. TNSW would require Council to justify the perceived need for the additional parking spaces and, if warranted, would prioritise the schemes within the metropolitan wide program.

SRA owns and manages a number of commuter car parks at stations in the Hornsby Shire. SRA supports the provision of car parking for commuters at some locations and in particular where it promotes increased rail patronage, however they would oppose it where access is or could be provided by bus or where parking would encourage people to drive where they could otherwise catch a train at a station closer to their home.

Usage of SRA car parks is not currently controlled, however SRA is aware that people other than rail passengers are using them and therefore are likely to introduce a higher level of monitoring and management in the future.

SRA would oppose charging for their car parks where this would discourage people from using rail services. However the introduction of integrated ticketing presents a number of opportunities, such as applying a charge for car parking with a refund for those people that catch a train. The issue of pricing needs to support the wider government transport objectives.

4 Buses

There are a number of measures required to facilitate improved bus services, including careful road design, bus lanes and priority at intersections. Some of these measures are already in place, however the bus operators have forwarded a list of further possible bus priority measures to the RTA for consideration. It was noted that a systematic approach to bus priority at intersections, with the focus on getting buses to the stopline and through the intersection would be particularly beneficial to buses.

PBAI to obtain copy of the list

Shorelink is setting up a new service to be run jointly with Forest Buses, which cuts across contract boundaries and runs into the City.

Harris Park runs both local shire services and City services. Harris Park has concerns regarding the inequities between private and government bus operators, particularly the subsidies received by government

operators.

Harris Park has set up two new services from Dural and Cherrybrook to the City (CityBus Direct). The service is running successfully, however it is not likely to make a return on the investment in the long term. Harris Park is hoping that once the service is established it will be able to attract some funding from government to ensure its long term sustainability.

It was noted that the demand for bus services will be influenced by changes to rail infrastructure and services (ie PRL/NWRL), road projects and development patterns. The flexibility of buses allows services to be changed relatively quickly, however longer term planning of services can be difficult given these external factors.

Sydney Buses reports a 30% increase in patronage on key services following the acquisition of private bus operations in the North West area. Both the 295 and 545 services are performing well, although there has been a general downturn in public transport usage across the Sydney Metropolitan area relating to the falling employment levels. The better bus reviews have also resulted in increased patronage.

Bus priority on Epping Road is ineffective in the morning peak due to the large volumes of left turning traffic, which affects services through to the Hornsby Shire.

The Transitways services between Parramatta and Rouse Hill are due to open in 2006, which may relieve some pressure on rail services in the Hornsby area and parking pressures at some stations in the Shire.

The bus operators noted that they had trialled increased frequencies on some off-peak services, however it did not result in increased patronage despite appropriate publicity.

Infrastructure is required to support the introduction of low floor vehicles. Personal security concerns, particularly in terms of the walk from destination stop to home, are key reasons cited for not using public transport. Residents do not like bus shelters located outside their homes - local mixed use zones provide opportunities for infrastructure.

5 Rail

The North Shore Line is operating at or close to capacity into the City in the morning peak period, which may limit opportunities for further large scale residential development in Hornsby that is dependant on employment locations in the City and on the North Shore. The focus should move to creating employment opportunities locally for the Hornsby community and that could also be served by the spare rail capacity to Hornsby in the morning peak period.

The first stage of the PRL from Epping to Chatswood is due to open in 2008. The second stage between Parramatta and Epping will follow, but does not have funding committed yet. The operation of trains on the PRL may relieve congestion on the North Shore Line as trains will run from Hornsby to Epping and Chatswood before heading into the City.

SRA noted that they are keen to reserve a corridor along the Northern Line at Epping to allow for future expansion of the rail network.

The completion of the NWRL is likely to be beyond a 10 year timeframe. The current consultation process is aiming to secure a corridor to Rouse Hill town centre.

SRA is committed to providing Easy Access for disabled people at all their stations, within a priority program for implementation. SRA will forward details of stations in the Hornsby Shire to the project team. — SRA

RIC noted that noise and vibration issues are a major concern, particularly in relation to new residential developments close to rail lines. This can be addressed through good architectural practice, however the issue needs to be raised early in the design process, with relevant development applications referred to State Government for comments.

6 Land Use Planning

Council is concentrating new development around rail stations, particularly at Hornsby and Waitara, and is planning to maintain the existing boundary between urban and rural areas. There are no urban release areas planned in the Shire. The development of commercial and industrial uses will focus on consolidation of existing sites rather than new locations.

Council is pushing for increased commercial development in Hornsby town centre to complement the large scale retail and residential development that has recently occurred. Rezoning is planned to accommodate this commercial development, however there is currently little interest from developers and large employers in the area.

The development of urban release areas in neighbouring Councils is impacting on Hornsby Shire, as people travel from outside of the Shire to rail stations on the Northern Line, increasing car parking pressure around rail stations.

Council requires State Government support to achieve some objectives, for example trying to attract employment to Hornsby town centre. PNSW noted that it may be beneficial to consider the small scale community employment opportunities, Derek Kemp has undertaken research into this area that may be of use. — PBAI team to follow up

7 Integrated transport

It was noted that the introduction of GST and the related tax changes has the effect of increasing the price of public transport travel relative to the price of car travel. These broader issues need to be addressed if we are to achieve a mode shift away from the car.

TNSW has a database of public transport information in electronic format that can be accessed by Hornsby Shire Council. — PBAI to pursue

TNSW are looking for Councils to nominate and push for integrated projects, which could be supported by State Government. Projects should be sustainable with funding identified for construction and ongoing maintenance. — PBAI team to consider

It was agreed that an integrated approach needs to be taken to achieve a modal shift – the availability of a car parking space at the trip

destination, planning controls on parking for new developments, infrastructure to support low floor buses, transit oriented development and improved security at bus stops and interchanges were all seen as important issues in encouraging more public transport usage.

PNSW noted that it is important to consider the transport impacts of new developments, rather than just the vehicular traffic impacts that are considered at present.

PNSW noted that they are working with Kendall Banfield in a number of areas to identify local champions for projects. It may be useful to undertake a similar exercise in Hornsby Shire in order to progress local projects. — PBAI team to consider

It was noted that public transport patronage needs to spread throughout the day to ensure the sustainability of services. Mixed use zones and measures to encourage off-peak use of public transport must be explored.

The Integrated Ticketing project is expected to be implemented by 2004, which may present a number of opportunities for improving travel.

Hornsby Shire Council requires State Government support to achieve integrated land use and transport policy objectives at a local level. PNSW and TNSW acknowledged the different approaches at a local level across the Sydney Metropolitan area make it difficult but see the Hornsby ILUTS as leading the way and informing State Government agencies on the local application of policy objectives.

8 Date of Next Meeting

It is anticipated that the next Government and Operator Stakeholder meeting will be held in December 2000, to coincide with Stage 2 of the study.

Hornsby ILUTS Council Officers Workshop
Issues Raised

11 October 2002, 12:30pm – 2:00pm

Hornsby Shire Council Chambers, Function Room 1

Commuter Parking

- How to manage commuter parking?
- How commuter parking relates to schools and business areas
- Currently managed haphazardly and by responding to community complaints
- The area between Pennant Hills and Cheltenham was described as a "continuous parking lot"
- Council is waiting for the ILUTS report to provide a framework to help in progressing a more formally managed parking strategy
- Comments were made suggesting that education is a key to promoting the cultural shift away from private vehicles and in making other options more attractive
- Disability access and the reliance of young people on parent's private vehicles were seen as major issues

Youth

- Particular issues in areas that are viewed as 'cul-de-sacs', such as Cherrybrook. Young people want to travel out of Cherrybrook, to go out to the city and so forth, but they do not necessarily want services to take them around Cherrybrook
- Parents in areas to the north of Hornsby (particularly Berowra) are concerned about the lack of NightRide services to bring children back home– a NightRide service has been trialled, however this was withdrawn due to lack of patronage.
- For the youth, the greatest issues relating to public transport were identified as:
    - frequency of services
    - cost of services
- The use of skateboards was raised – a current skateboard policy exists, but is aimed at reduction of nuisance skateboarding, and the construction of skateboard parks and other skateboard facilities – not as a transport option.
- Point raised about the public perception and intimidation factor caused by groups of youths on public transport,
- A "Community Bus" for Cherrybrook has been purchased using section 94 funding – community groups can book the bus for use but experience to date shows that the facility has not been well used
- City Bus Direct services run by Harris Park offer some special school holiday services to the City and to Manly beach

Access for people with disabilities

- Work to improve footpath access was performed in relation to the reconstruction around Westfield in the Hornsby CBD
- An access audit has been performed – many problems identified including:

    - Types of kerb ramps used, eg. Ramps facing into intersections on the diagonal do not comply with standards
- Agreement that disability access needs to be considered as part of the Hornsby ILUTS process

Aged Services

- Aged people experience similar issues to the disabled
- A further significant issue raised related to the provision of parking at particular locations, such as senior citizens centres, stations and other community centres.
- Specific locations with high concentrations of elderly include:
    - Brooklyn
    - Hornsby
    - Epping
    - Wiseman's Ferry
    - Mole Village
- Discussion of impacts of SEPP 5
- Specific requests were made for footpath and intersection improvements in Dural and Glenorie
- Some new pedestrian crossing points have been requested by elderly members of the community and turned down by Council.

Pedestrian Refuges

- There is a need to upgrade refuges from the old standard (1.2 metres wide) to the new standard.
- Council noted that there is currently no formal plan/strategy in place for pedestrian refuge improvements, however they feel they have a "fairly good" grasp of which locations require improvement, and the overall state of pedestrian refuges through the Shire. The current approach to pedestrian refuge improvement is to respond to community request.

Community Groups

- Mention that Bike North is a very active group, and has a high profile in community groups.

Environment

- Viewed as a significant issue by residents of the Shire, with a recent survey indicating that residents like to tap into the Shire's bushland, even if they do not live adjacent to bushland themselves.
- Discussion indicated that using the environment "angle" is a good way of marketing and selling the sustainable approach to transport, particularly in relation to the reduction of greenhouse gases, from both industrial and domestic sources.
- The environment is an effective means of tapping into Community spirit (clean up days etc…)

Land Use/Development

- James Farrington reiterated that the overall strategy for development within Hornsby Shire is to:
    - Maintain urban boundaries

    - Rezone to increase densities in areas near public transport nodes (especially Waitara and Hornsby) – in 1998, 8 precincts were rezoned
- A significant difficulty is caused by the lag between providing public transport, and the release of land – examples of Windsor Road and New Line Road upgrade.
- Council plans to identify "black spots" in areas that offer potential increased densities, with subsequent upgrading or downgrading of zoning as required

Possible sources of funding

- Council will be establishing a new plan to develop funding for all areas of Council. Plan will be developed towards the end of 2002.
- Developer contributions
    - Not much potential for raising funds through section 94 contributions, as amount of new development is not very significant
    - The issue of the lag between new development and the provision of transport infrastructure was cited once again as an issue in levying new developments
- Council officers indicated that some money had already been collected for cycleways etc, but not yet used.
- Sponsorship – council is currently in preliminary stage of deciding how to use sponsorship to raise funds.
- Council is currently receiving some funding from Westfield for airspace rights.
- It may be possible to arrange the provision of community related facilities (such as bus stops) at no cost to Council using private companies who sell advertising space on the infrastructure provided. Council though there may be implications for advertising in relation to current planning guidelines that may mean this is not possible.
- Local Agenda 21 – promotion of partnerships and sponsorship (at a more local scale)
- Commonwealth funding available for environmental initiatives, particularly relating to greenhouse gas reduction
- PlanningNSW funding available:
    - "Urban Improvement Program" – Council has applied for UIP funding on many occasions and has consistently been knocked back.
    - Problems with this funding include the fact that Council has to meet the funding $ for $, and often does not have the funding to do this
    - James Farrington raised the point that PlanningNSW wants to see a "cultural" or "business" bent to projects funding through these mechanisms.
- RTA
    - RTA provides $ for $ funding for key pedestrian and cycle infrastructure, however often the council lacks the funds to match it.
    - The council can apply to the RTA for Extractive Industries road improvement funding, however the council must match more than $ for $ and there are not many locations within the Hornsby Shire where this is relevant.
- Parking Charges
    - Attempts to introduce parking charges within Hornsby Shire have met with strong community objection

- Council has always tended to reject requests for parking charges to be introduced
- There is a strong perception amongst Shire residents that Hornsby is a "rural shire", where residents should not be required to pay for parking (and have to put up with similar indignities of city living) – however the point was made that paid parking exists in Gosford, yet Gosford could be considered more rural than Hornsby Shire.
- Even the introduction of paid parking at Hornsby Westfield received strong opposition from the community
- Many people working at Westfield drive and move their cars at lunch time because there is a 4 hour free parking policy in place in the shopping centre car park.
- Parking at community facilities:
    - Residents particularly objected to having to pay for parking at community centres (particularly at places such as sports facilities or child-care, where they are also having to pay for entrance into those facilities) – many residents questioned why parking could not be included in the entrance fee.
    - Example cited that employees of some community facilities occupy parking spaces designed for patrons, and organised "scouting" parties are arranged to look out for parking patrol officers.
    - Commuters take up spaces at community facilities
    - In the past, the council has looked at the option of hiring out parking areas to be managed by private companies – however this has generally not considered an economic option for these private operators given the size of the car parks.
- Current proposals to ease issues:
    - Parking fees in urban centres
    - Timed (restricted) parking and regular patrolling of spaces in the middle of the day
- General feeling was that there is a strong culture in the community that residents should not have to pay for parking.

Rail

- Comment that all Sydney stations would be upgraded as part of the "Easy Access programme" by 2010.
- Question raised as to which stations within Hornsby are next on the list for easy access??
- Discussion focused on the possibility of lobbying for access to Thornleigh station to be improved, particularly given the car park acting as a strong attractor for commuters and disabled drivers to the station.

Buses

- Discussion in relation to disability access at bus stops and the provision of buses that are considered better for people with mobility difficulties.
- Difficulty with low floor buses and kneeling buses:
    - at stops, due to inappropriate kerb heights
    - on routes with obstacles such as traffic calming devices and speed bumps.

- Mention of a trial of low-floor buses in Ku-ring-gai Council being unsuccessful due to proliferation of speed bumps in that council area.
- Popularity of Express Bus Services:
    - The Citybus Direct Services operated by Harris Park (and similar equivalent express bus services offered by other operators, such as Hills Bus) have been very successful.
    - These services offer a quicker (and possibly cheaper) alternative to the train.
    - While most people walk to these bus services, clusters of parked cars can be observed near express bus stops in residential areas, causing parking issues for surrounding residents. A particular example was made of an area around Castle Hill Road
- Mention was made once again that the Nightride bus trial was not successful north of Hornsby, and questions ere raised a to why this was so – the comment was made that this may have been due to it being poorly marketed – this was raised as a particular concern for some residents of Berowra.
- Comments made about the current lack of bus shelters and the inconsistency of information and bus signage, which makes understanding the bus system difficult, particularly for visitors to the area.

Schools

- School children are a very effective means by which to educate parents. The success of the “Healthy Heart Week” was given as an example of this.
- Schools currently have a successful energy and waste program that is taught to school children – a transport module may be quite successfully incorporated.
- Walking Bus
    - The walking bus concept was raised, including the potential difficulties encountered with public liability.
    - Question was asked as to how other States had managed to circumvent these public liability issues?
    - It is anticipated that walking buses are not as appealing as other forms of volunteering
- A “safe-routes-to-school” program was initiated by the RTA approx 3-4 years ago:
    - It was not very successful
    - It did not get input from council
    - Schools who participated would have had a “road safety officer” (or equivalent)
    - Council has a list of the schools that were involved
- It was noted that that 10-12% of vehicular traffic in peak hours is school related
- Use of car for transporting children to school:
    - Perception that the car is the safest mode
    - Perception that cars are the most convenient mode
    - Private schools have a larger catchment, particularly in rural areas (such as Dural)
- A play has been developed for primary schools in the area, with sections relating to the environment, and covering other community related issues. It was suggested that a transport section could be incorporated into this play.

Workplace Programs

- Walk-to-work days have generally not been very successful (only 5 people participated in last year's walk to work day for council)
- It was noted that Willoughby council has given train passes to staff as part of their remuneration package
- No comment made to the suggestion of extra leave for those that choose to walk or cycle to get to work

Travel Change Behaviour

- The concept of Travel Behaviour Change did not appear to be well understood
- Comments made about the culture of Hornsby Shire, and the perception of its residents that choose Hornsby Shire as a place to live because of its lifestyle and the fact that it is considered a "rural" area.
- There was a general feeling expressed that this culture would be difficult to change

Pedestrians and Cyclists

- It was noted that the topography of the Shire is not amenable to cycling and walking
- If you live and want to travel along the main ridge between Cheltenham and Hornsby then it's ok, but in other areas the topography is an issue.
- Some specific areas are particularly difficult, such as Cherrybrook, with the ridge running from Westleigh, and other areas to the west, due to significant tracts of bushland and the topography of the Berowra Valley National Park
- Some paths through bushland are not inviting due to low amenity and security concerns – for example the footpath to the Mt Kuring-gai Industrial Area

Maps

- Mobility Map have been produced for some centres but are expensive to produce given the detail required and are out of date quickly.
- A previous Shire wide bus map was very popular – 12 months supply of bus map was used up within 3 months.
- Existing tourist/community maps of the Shire include details of major attractions and are paid for by advertising around the edge of the map – it is possible that transport facilities such as bus routes and stops could be included on these maps.
- Footpath and cycleway maps – interactive website being developed with maps that could incorporate transport related facilities.

Indicators

- New indicators for the ILUTS should complement existing indicators for the LA21 project – PBAI should liaise with Council to ensure this happens.

Hornsby Integrated Land Use and Transport Strategy (ILUTS)
Draft Access to National Parks and Open Space Action Plan

Stakeholder Meeting
15th January 2004

Present

Tegan	NPWS
Glen	NPWS
Bryony Cooper	PBAI Australia
Anna McDonald	PBAI Australia

This meeting seeks to inform the Draft Action Plan.

NPWS has little information on access modes to Ku-ring-gai Chase National Park other than the number of cars that pay on entry (derived through analysis of gate income). This does not take into account vehicles that enter with an annual pass. A survey in 1997 indicated most people visit the park to picnic or walk, but the survey targeted people in the park picnic areas and at the gates so may not be truly representative. It did not catch people on the walking tracks who may have walked into the park.

Ku-ring-gai Chase Park is closed when parking areas become full and this occurs on key holidays through the year, including, Mothers Day, Easter Sunday and Christmas Day.

ShoreLink did operate a bus service into the park (Bobbin Head) but this has now been withdrawn. NPWS was only aware of the service when complaints were received after it was withdrawn. The bus service was very underutilised and it is known that it was difficult to operate the bus along the park roads.

Many walks in Ku-ring-gai Chase are one way walks, necessitating walkers to bring two cars into the park which exacerbates parking problems. The current Plan of Management is looking at options to reduce parking provision and the establishment of alternative parking areas away from the foreshore areas. There will be no expansion of existing parking provision.

There is also an aim to expand the use of the park by existing users, for example, encouraging those who picnic to walk too. There is also a desire to increase use on weekdays and Saturdays, shifting the current visitor focus from Sundays. Uses to be encouraged include walking, canoeing and kayaking.

No visitor information is available for Marramarra Park. NPWS does have some contact with bushwalking groups but others are completely missed in consultation, for example, trail bike users.

Shuttle bus options have been discussed, particularly into the Muogamarra Nature Reserve from Cowan Station. Park fees become an issue for large groups as they have to pay as individuals. For groups of three or more it is cheaper to come to the park by car. NPWS have looked at combined rail and park tickets but this is still more expensive for groups. Fees are set at a State level and it remains cheaper to bring a car in for a family of two adults and two children.

There is also some perceived conflict about encouraging buses into a bush type experience.

Coordination across NPWS can be poor, for example, the management of the Great North Walk is fragmented. Working groups are set up to deal with projects that are relevant across the region. Specific projects such as weed management and fox baiting work well.

While the NPWS has little contact with Hornsby Shire Council, contact on specific projects is good. There is a recognised need for contact at a strategic level. Berowra Valley is jointly managed by NPWS and HSC and funding is provided equally.

Hornsby Integrated Land Use and Transport Strategy (ILUTS)
Draft Public Transport Action Plan

Stakeholder Meeting
Tuesday 3rd February 2004, 1pm

Present

Garry Kennedy	Hornsby Shire Council
Laurence Nagy	Hornsby Shire Council
Clayton Davidson	Shorelink
Tom Longworth	State Transit Authority
Nadine Thorburn	Harris Park Transport
Geoff Judd	Glenorie Bus Company
Bryony Cooper	PBAI Australia
Anna McDonald	PBAI Australia

This meeting responds to the Draft Action Plan content.

Ministry of Transport (MOT) commenced a bus stop standardisation project but funding has now been cut. The project commenced with the numbering of all bus stops enabling bus stop specific timetables to be produced. Bus stops are important opportunities in raising the profile of public transport.

The Parking Space Levy (PSL) is currently being reviewed and there is an opportunity to make submissions to the review, particularly on what the PSL can fund. It could potentially be used to fund bus stop improvements. There is a general lack of awareness of how to apply for funds and also the criteria on which funding decisions are made.

There is a lack of peak hour capacity on the rail services and many bus services, but only in the peak direction. There is a need to consider land use and how decisions could be made that support use of the spare capacity.

Integrated ticketing is now likely to be introduced in early 2005. Given the changes in reimbursing private operators for trips under the SSTS, private operators will adopt the scheme early and are already detailing machine requirements based on fleets etc.

While the 131500 information service is potentially valuable it has many problems and can be inaccurate, particularly when providing 'trip planning' information. All private operators provide timetable information and consider this to be a very important activity. There is difficulty in getting new timetable information loaded on to 131500.

Adshell / JC Decaux are potentially useful providers of bus shelters, however, problems have been experienced in the placement of shelters and a reluctance to place shelters along relatively lightly trafficked roads. Most problems result from a lack of coordination between Council departments and liaison between Council and local public transport operators.

The final Unsworth Report is due to be released soon but some of the recommendations are of concern, particularly to private bus operators.

There is lack of coordination in planning and developing transport interchanges with no single group or body being responsible.

What is the community transport provision in Hornsby Shire? Council has one bus that is administered by the Depot Manager. It tends to be well used particularly by the local Rotary Club

and other similar organisations. It was noted that other NSW Councils operate a number of buses, possibly through sub-contracting out provision to local operators.

There is a lack of State Government vision with respect to public transport and there is an evident fear of policies that may be viewed as detrimental to motorists. Simply, increasing public transport seats available is not considered to be a vote winner amongst the electorate.

Service criteria – while increasing frequency is an excellent aim it will be difficult to achieve in the current framework of provision. Overall frequency is likely to reduce because of a lack of funds although a focus on popular routes may see increases in frequency along some corridors. Increasing the service frequency in the peaks will increase costs to operators as more vehicles and drivers are required. Driver shortages are already a major problem, particularly for operators in relatively affluent areas, and this is likely to be a limiting factor on bus services.

Opportunities include providing pedestrian links over barriers, such as rail lines. A relatively short link can then significantly increase the catchment of public transport services.

There is a need to consider the relationship of parking provision at stations and public transport use. While parking may encourage rail use among people who may otherwise drive to their ultimate destination it is also likely that rail passengers can access the station by other modes including walking, cycling and bus services. Car parking in streets around stations inconveniences residents and impacts on the amenity of local areas.

CityBus Direct is a successful service but does not provide a return on initial investment or cover its marginal costs. Longer routes (and passenger trips) via the M2 do not provide as much fare revenue as routes catering for shorter passenger trips but cost more, particularly due to the M2 tolls. The CityBus Direct service pays in the region of $250,000 in tolls each year. Market research indicates that the service has successfully attracted car drivers, particularly those who were driving to a station, rather than those people using public transport for their whole trip.

The HSC Traffic Committee would provide an ideal forum to take forward corridor based projects, bringing together and working with stakeholders.

State Government is generally responsible for bus priority but its limited funds have already been allocated to projects.

Bus stops on the Warringah Freeway at North Sydney would be a key project, benefiting Hornsby Shire residents. The stops and associated pedestrian infrastructure would allow buses to stop at North Sydney without increasing journey times significantly for those passengers travelling on to the City. This would open up an important destination to express bus services.

Bus operators have largely given up trying to coordinate services with the CityRail timetable as trains are unreliable and frequently late. Connection times are no longer printed on timetables.

There is a role for a public transport forum but it must be focused on projects and actions, taking a strategic position and not getting bogged down in route detail. The involvement of MPs and Councillors, particularly if there is a photo opportunity, would raise the profile of public transport politically.

Demand Responsive Transport (DRT) is an opportunity to fill a gap in the network and also a service gap between taxis and buses. Baxter Buslines runs a small scheme in Holroyd that is very successful. Westbus ran a service which failed. There is interesting experience from the UK (Zip?). DRT also has the potential to generally raise the awareness of public transport.

There is doubt over the Transitway projects, other than the Rouse Hill route due to a lack of funding.

Hornsby Integrated Land Use and Transport Strategy (ILUTS)
Draft Walking and Cycling Action Plan

Stakeholder Meeting
Tuesday 3rd February 2004, 3pm

Present

Garry Kennedy	Hornsby Shire Council
Laurence Nagy	Hornsby Shire Council
Jenai Davies	Hornsby Shire Council
Geoff Higginbotham	RTA
Ken Moon	RTA
Divna Cvetojevic	RTA
Graeme Edwards	Bike North
John McGregor	Bike North
Bryony Cooper	PBAI Australia
Anna McDonald	PBAI Australia

This meeting responds to the Draft Action Plan content.

The RTA is continuing to promote PAMPs as the main tool to promote pedestrian planning and a reference should be included.

HSC did complete a Bike Plan in 1998, however, implementation has been ad hoc due to a lack of funds. Westleigh to Pennant Hills is the main track to have come from the plan. Otherwise the focus has been on less expensive on-road projects. Council is currently looking at alternative and less expensive surface treatments than concrete. An exercise is underway to revisit the Bike Plan and reprioritise the actions.

Council has recently completed two PAMPs – for Cherrybrook and Pennant Hills. The PAMPs will be formally approved by Council and then the RTA will be approached for assistance in funding the implementation of the recommendations.

The RTA will share the funding of PAMP recommendations (50%) on a priority basis. There is a preference for funding items included in PAMPs rather than ad hoc projects as the PAMPs provide a strategy and coordinated approach to the planning of facilities. In terms of a pedestrian strategy for the whole LGA there is a need to focus on activity centres where the numbers of pedestrians are highest and the risk of conflict greatest.

There is a need to increase the visibility of pedestrian and cycle planning throughout Council, integrating it with all other activities.

For cyclists, topography is less of an issue than traffic. For most cyclists a route involving a short, steep hill will be preferable to a heavily trafficked, level route.

Bicycle lockers are provided at Hornsby Station. Lockers on the western side of the station are over subscribed while those on the eastern side are about 60% utilised. There are issues with improving provision on the western side.

Shared paths can be designated throughout the LGA – there are no minimum standards – they are advisory. Along routes such as Pennant Hills Road footpaths could be designated as shared routes although it is noted that Council would have concerns given the incidence of driveways with poor visibility.

Council does promote walking and cycling. There is a forthcoming Walk to School day (6th April 2004) and there is also a desire to put in place regular events.

Walking buses are popular in New Zealand and schemes have been established in Victoria. Hornsby has tried Walking Buses in the past but the established schemes have generally failed.

Bike North run rides each weekend at various levels and abilities. There is an element of teaching and coaching particularly on the easy, low stress routes. Education is seen as an important part of these rides. Rides are advertised on the Bike North website, in the Australia Cyclist magazine and sometimes in the local paper.

It is recognised that cycle facilities and opportunities such as the rides need better publicity. Bike North would welcome these rides being further publicised through the implementation of the ILUTS.

Some rides are child friendly but there are definitely opportunities for training young cyclists.

The RTA cycle maps are very popular and are currently being updated by Bruce Ashley. Bike North is working with Council to develop a local map and it is recognised that Bike North can identify cycle friendly routes in addition to dedicated facilities.

At the current time Council are looking at how to disseminate information. Maps will be distributed at the end of the RTA's Big Cycle Ride. There is also the opportunity to provide information through libraries and other community events.

Ryde City Council has focused on getting information to recreational cyclists to encourage them to extend their cycle use to other trips.

Section 94 funding is limited. While cycle and pedestrian facilities are included only 7% of funding for schemes comes from developers with Council meeting the remainder of the cost. Often requirements placed on developers are not supported by the Land and Environment Court. It is recognised that DIPNR are now looking to provide a basis for the provision of facilities with new developments.

The RTA has completed it's guidance on cycle facilities and it is available on the RTA web site. Guidance on pedestrian facilities will be available in the next few months.

Generally there is a need to focus on links and connections.

Roads to Recovery funding can be used for cycle facilities including shared paths. DIPNR also has funding available for specific projects, including metropolitan Green Space funding for corridor routes through green space.

Could use community indicators developed through the CSIP / LA21 projects to assess and monitor the implementation of the Action Plan. Other indicators could include length of pathway constructed, average path length (to encourage longer continuous paths), money spent and mode share data from the census and household travel survey.

Appendix E

Community Transport Questionnaire

Hornsby Transport Survey

Hornsby Council is conducting a study of travel in the Shire, to gain a better understanding of residents' travel requirements and assess improvements to local transport services.

To assist the study Council requires some information on local travel. We would be grateful if you could answer the following questions and return the form so the study can take account of your travel needs.

Q1 Which street and suburb do you live in? Street.....
Suburb.....

Q2 How many adults and children (16 years and under) are in your household (including yourself)?

Adults ..... Children .....

Q3 How many cars/vehicles does your household own or have use of? .....

Q4 Please fill in the following table thinking about your *most recent* trip for each purpose indicated. If you have not made a recent trip for that purpose, please leave the line blank.

Trip Purpose	Where did the trip **End**?	Which of the following did you use? (tick one or more)	
Q4A Home to shops	Street…… Suburb……..	❑ Walk ❑ Car ❑ Cycle	❑ Bus ❑ Train ❑ Other
Q4B Home to personal business (e.g. bank, doctor)	Street…… Suburb……..	❑ Walk ❑ Car ❑ Cycle	❑ Bus ❑ Train ❑ Other
Q4C Home to social or recreational activity	Street…… Suburb……..	❑ Walk ❑ Car ❑ Cycle	❑ Bus ❑ Train ❑ Other
Q4D Home to work	Street…… Suburb……..	❑ Walk ❑ Car ❑ Cycle	❑ Bus ❑ Train ❑ Other

Q5 If you regularly catch a train to work, which local station do you usually use? .....

Q6 Which local centre do you tend to visit most frequently? Please tick only one box, indicating if you normally visit on a weekday or at the weekend.

	weekdays	weekends		weekdays	weekends
Asquith/Mt Colah	❑	❑	Epping	❑	❑
Beecroft	❑	❑	Hornsby	❑	❑
Berowra	❑	❑	Pennant Hills	❑	❑
Carlingford	❑	❑	Round Corner/Dural	❑	❑
Cherrybrook	❑	❑	Other (specify)	……	

Q7 If you usually drive, do you generally park on a street or in a car park?

On street..... ❑ Car park ..... ❑

Q8 And, do you generally find it difficult to park?

Yes ..... ❑ *(please indicate why by ticking the boxes below)* No..... ❑

Availability of spaces	❑	Cost	❑
Access from the road	❑	Personal security concerns	❑
Access within car park	❑	Vehicle security	❑
Distance from destination	❑	Other (specify)	……

Q9 Could one of our survey personnel contact you by phone to ask several further questions relating to your travel?

If yes, Name..... Phone no. .....

Thank you for taking the time to answer the questions. Please return the questionnaire in the envelope provided.

Hornsby Transport Survey (Results)

Hornsby Council is conducting a study of travel in the Shire, to gain a better understanding of residents' travel requirements and assess improvements to local transport services.

Q1: Which Street and suburb do live in?
Suburb

- 9% Cherrybrook
- 8% Beecroft
- 8% Mt Colah
- 8% Thornleigh
- 7% Epping
- 7% Hornsby
- 6% Berowra
- 6% Pennant Hills
- 6% Hornsby Heights
- 5% Berowra Heights
- 3% Galston
- 3% Normanhurst
- 3% North Epping
- 2% Acadia
- 2% Brooklyn
- 2% Carlingford
- 2% Cheltenham
- 2% Dural
- 2% Mt Kuring-gai
- 2% Wahroonga
- 2% Westleigh
- 1% Asquith
- 1% Castle Hill
- 1% Glenorie
- 1% Waitara
- 1% West Pennant Hills

Q2: How many adults and children (16 years and under) are in your household (including yourself)?

- 1 Adult no children – 8%
- 2 Adults no children – 37%
- More than 2 adults and no children – 15%
- 1 Adult and Children – 2%
- 2 Adults and children – 30%
- More than 2 adults and children – 8%

Q3: How many cars/vehicles does your household own or have use of?

- 0 car/vehicle – 3%
- 1 car/vehicle – 38%
- 2 cars/vehicle – 45%
- 3 cars/vehicle – 11%
- 4 cars/vehicle – 2%
- 5 cars/vehicle – 1%

Q4: Please fill in the following table thinking about your *most recent* trip for each purpose indicated. If you have not made a recent trip for that purpose, please leave the line blank.

Q4A: Home to Shops
What suburb did the trip end?

- 23% Hornsby
- 10% Pennant Hills
- 7% Beecroft
- 6% have not made a recent trip for that purpose
- 6% Cherrybrook
- 5% Asquith
- 4% Castle Hill
- 4% Carlingford
- 4% Berowra
- 3% Westleigh
- 3% Thornleigh
- 3% Galston
- 3% Epping
- 2% North Epping
- 2% West Pennant Hills
- 1% Round Corner
- 1% North Carlingford
- 1% Mt Kuring-gai
- 1% Mt Colah
- 1% Dural
- 1% Chatswood
- 1% Brooklyn

Which of the following did you use? *(tick one or more)*

- 17% walk only
- 78% car
- 2% cycle
- 1% bus
- 1% train
- 0% other

Q4B: Home to personal business (e.g. bank, doctor)
What suburb did the trip end?

- 22% Hornsby
- 13% Pennant Hills
- 11% have not made a recent trip for that purpose
- 5% Epping
- 5% Beecroft
- 4% Cherrybrook
- 3% Wahroonga
- 3% Dural
- 3% Castle Hill
- 3% Carlingford
- 2% Thornleigh
- 2% Sydney
- 2% Eastwood
- 2% Berowra Heights
- 2% Berowra
- 1% Westleigh
- 1% Waitara
- 1% Turramurra
- 1% Round Corner
- 1% North Ryde
- 1% North Epping
- 1% North Carlingford
- 1% Normanhurst
- 1% Lane Cove
- 1% Hornsby Heights
- 1% Gladesville
- 1% Galston
- 1% Chatswood
- 1% Brooklyn
- 1% Asquith
- 1% Arcadia

Which of the following did you use? *(tick one or more)*

- 13% walk only
- 72% car
- 2% cycle
- 1% bus
- 5% train
- 1% other

Q4C: Home to social or recreational activity
What suburb did the trip end?

- 14% have not made a recent trip for that purpose
- 8% Sydney
- 8% Hornsby
- 5% Pennant Hills
- 3% Thornleigh
- 3% Castle Hill
- 3% Berowra
- 3% Beecroft
- 2% Waitara
- 2% Wahroonga
- 2% Mt Colah
- 2% Epping
- 2% Dural
- 2% Cherrybrook
- 2% Carlingford
- 1% Willoughby
- 1% Westleigh
- 1% West Pennant Hills
- 1% Turramurra
- 1% St Ives
- 1% Ryde
- 1% Roseville
- 1% Pymble
- 1% Parramatta
- 1% North Ryde
- 1% North Rocks
- 1% North Epping
- 1% Normanhurst
- 1% Marsfield
- 1% Linfield
- 1% Lane Cove
- 1% Killara
- 1% Kensington
- 1% Hornsby Heights
- 1% Galston
- 1% Eastwood
- 1% Drummoyne
- 1% Cheltenham
- 1% Chatswood
- 1% Cammeray
- 1% Brooklyn
- 1% Bobbin Head
- 1% Berowra Heights
- 1% Asquith
- 1% Arcadia

Which of the following did you use? *(tick one or more)*

- 12% walk only
- 68% car
- 4% cycle
- 2% bus
- 8% train
- 1% other

Q4D: Home to work
What suburb did the trip end?

- 30% have not made a recent trip for that purpose
- 15% Sydney
- 6% Hornsby
- 3% Wahroonga
- 3% North Sydney
- 2% Parramatta
- 2% North Ryde
- 2% Epping
- 1% Artarmon
- 1% Asquith
- 1% Beecroft
- 1% Berowra
- 1% Blacktown
- 1% Camperdown
- 1% Carlingford
- 1% Castle Hill
- 1% Chatswood
- 1% Cheltenham
- 1% Cherrybrook
- 1% Crows Nest
- 1% Dee Why
- 1% Dural
- 1% Glenorie
- 1% Gordon
- 1% Hornsby Heights
- 1% Kensington
- 1% Killara
- 1% Linfield
- 1% Mt Colah
- 1% Normanhurst
- 1% Pennant Hills
- 1% Ryde
- 1% St Leonards
- 1% Thornleigh
- 1% Ultimo
- 1% West Pennant Hills
- 1% West Ryde
- 1% Westmead

Which of the following did you use? *(tick one or more)*

- 4% walk only
- 49% car
- 3% cycle
- 6% bus
- 23% train
- 1% other

Q5: If you regularly catch a train to work, which local station do you usually use?

- 41% answered this question, therefore 59% do not regularly catch a train to work

Of those that responded:

- 20% Hornsby
- 13% Pennant Hills
- 10% Epping
- 9% Berowra
- 8% Thornleigh
- 7% Cheltenham
- 6% Beecroft
- 6% Waitara
- 6% Mt Colah
- 4% Normanhurst
- 3% Asquith
- 2% Hawkesbury River
- 1% Brooklyn
- 1% Cowan
- 1% Mt Kuring-gai
- 1% Wahroonga
- 1% Warrawee

Q6: Which local centre do you tend to visit most frequently? Please tick only one box, indicating if you normally visit on a weekday or at the weekend.

3% did not answer this question

Of those that answered:

	Weekdays	**Weekends**		**Weekdays**	**Weekends**
Asquith/Mt Colah	9%	2%	Epping	4%	0%
Beecroft	8%	2%	Hornsby	21%	4%
Berowra	6%	4%	Pennant Hills	9%	2%
Carlingford	7%	2%	Round Corner/Dural	2%	0%
Cherrybrook	6%	3%	Other (specify)	7%	1%
				Galston West Pennant Hills Castle Hill Thornleigh Westleigh Castle Hill Eastwood Macquarie Centre North Rocks North Ryde North Epping	Mt Kuring-gai Thornleigh North Epping

Q7: If you usually drive, do you generally park on a street or in a car park? .....

- 91% answered this question

Of those that responded:
- 21% park on the street
- 79% park in a car park

Q6 and Q7:
Percentage of drivers who park on the street or in a car park when visiting a local centre

Results exclude those that did not answer questions 6 and 7.

Local Area Visited	On street	Car Park
Asquith	38%	62%
Beecroft	30%	70%
Berowra	13%	87%
Carlingford	16%	84%
Cherrybrook	11%	89%
Epping	27%	73%
Hornsby	16%	84%
Other	42%	58%
Pennant Hills	6%	94%
Round Corner	0%	100%

Q8: And, do you generally find it difficult to park?

- Of the 92% of respondents that answered this question

- 59% said **No** they do not generally find it difficult to park
- 41% said **Yes** they generally find it difficult to park

If you answered yes please indicate why by ticking the boxes provided

Availability of spaces	59%	Cost	5%
Access from the road	6%	Personal security concerns	4%
Access within car park	9%	Vehicle security	6%
Distance from destination	10%	Other (specify)	<1% 2 hour limit

Q 6 and Q8:
Percentage of drivers who find it difficult to park when visiting a local centre

Local Area Visited	Yes - generally find it difficult to park
Asquith	41%
Beecroft	38%
Berowra	27%
Carlingford	36%
Cherrybrook	39%
Epping	45%
Hornsby	39%
Other	39%
Pennant Hills	66%
Round Corner	11%

Q 6 and Q8:
Reasons for difficulty in parking according to local centre visited given by respondents who answered Yes to question 8.

Local Area Visited	Availability of spaces	Access from within car park	Access from road	Distance from destination	Cost	Personal security	Vehicle security
Asquith	45%	7%	10%	17%	7%	7%	7%
Beecroft	75%	13%	6%	0%	0%	6%	0%
Berowra	46%	8%	15%	8%	15%	0%	8%
Carlingford	72%	0%	8%	4%	0%	4%	12%
Cherrybrook	53%	5%	0%	11%	16%	5%	11%
Epping	44%	11%	11%	33%	0%	0%	0%
Hornsby	51%	15%	2%	11%	6%	6%	9%
Other	75%	8%	0%	8%	8%	0%	0%
Pennant Hills	79%	7%	10%	3%	0%	0%	0%
Round Corner	0%	0%	0%	100%	0%	0%	0%

Q 6 and Q8:
Reasons for difficulty in parking according to local centre visited given by respondents who answered Yes to question 8. Difference from Shire Average (Red above, green below)

Local Area Visited	Availability of spaces	Access from within car park	Access from road	Distance from destination	Cost	Personal security	Vehicle security
Asquith	-14%	-2%	4%	7%	2%	3%	1%
Beecroft	16%	4%	0%	-10%	-5%	2%	-6%
Berowra	-13%	-1%	9%	-3%	10%	-4%	1%
Carlingford	13%	-9%	2%	-6%	-5%	0%	6%
Cherrybrook	-7%	-3%	-6%	0%	10%	1%	4%
Epping	-15%	2%	5%	23%	-5%	-4%	-6%
Hornsby	-8%	6%	-4%	1%	0%	2%	3%
Other	16%	0%	-6%	-2%	3%	-4%	-6%
Pennant Hills	20%	-2%	4%	-7%	-5%	-4%	-6%
Round Corner	-59%	-9%	-6%	90%	-5%	-4%	-6%