

4.0 TRAFFIC & TRANSPORT

4.1 TRANSPORT OBJECTIVES

A key objective of this Master Plan is to stimulate development and activity to support Sydney Olympic Park as a unique centre within metropolitan Sydney with high public transport service and patronage and within acceptable levels of traffic generation. Ensuing transport objectives are to:

- optimise use of the available Sydney Olympic Park infrastructure - both public transport and road based;
- generate lower than average traffic levels without compromising the commercial and competitive viability and attractiveness of the site;
- target a journey to work public transport, cycling and walking mode share of 30 - 35%;
- encourage higher than usual car occupancy ratios;
- be effectively integrated with public transport planning for surrounding areas, including the Carter Street precinct; and
- encourage and support increased commuter cyclist access as a sustainable mode of transport.

Public transport is pivotal to Sydney Olympic Park's development potential.

4.2 CONTEXT

This section considers the public transport and road infrastructure implications of this Master Plan proposal to add approximately 214,000m² GFA of development (comprising 110,000m² commercial, 35,000m² cultural, 24,000m² hotel and 45,000m² leisure/entertainment and retail) to Sydney Olympic Park, plus approximately 1,300 residential dwelling units over the next 10-15 years.

Significant investigations on transport planning have already been undertaken as part of the preparation of this Master Plan. However, it is recognised that what happens in Sydney Olympic Park needs to be effectively integrated with transport planning for the wider area. Therefore, a joint Transport Management and Accessibility Plan (TMAP) is currently being prepared on behalf of PlanningNSW and the Authority for an area covering Sydney Olympic Park and the Carter Street precinct. The TMAP is expected to be completed in mid 2002.

The purpose of the TMAP is to provide the framework for the transport planning response to the proposed development of both Sydney Olympic Park and the Carter Street precinct. The TMAP will investigate the impacts of the development scenarios being considered for each area and recommend a package of measures that need to be implemented in order to achieve the mode share target of this Master Plan.



The transport planning and traffic analysis reported in this section is based on the proposed Sydney Olympic Park development outlined in Section 3.2 and also takes into consideration the following nearby development proposals:

- redevelopment of Bay West for commercial/industrial space by 2006;
- completion of the Newington Village comprising residential, business park and retail/leisure uses; and
- redevelopment of the Carter Street precinct to a higher density.

Planning for the Carter Street Precinct is currently underway with a range of development scenarios being considered for adoption. A projected floor space of 80,000m² of commercial office use has been used for the purposes of this Master Plan, although various scenarios are now being tested in the Development Framework/TMAP process and the eventual outcome is likely to be greater than this.

The overall development potential of the Greater Homebush area including Sydney Olympic Park, Bay West, the Carter Street precinct and Newington Village is summarised below in *Table 1*.

	Commercial (m ²)	Entertainment/ Leisure/Retail (m ²)	Cultural (m ²)	Hotel (m ²)	Residential (units)
Sydney Olympic Park	110,000	45,000	35,000	24,000	1,300
Bay West	60,000				4,700
Newington Village	50,000	3,700			2,074
Carter Street precinct	80,000				
TOTAL	300,000	48,700	35,000	24,000	8,074

Table 1 Summary of Development Assumptions for the Greater Homebush area

The underlying traffic assumptions are:

- sufficient transport system capacity will be retained for major and regular sporting and recreation/entertainment events;
- background traffic will continue to grow on the surrounding arterial road systems; and
- opportunities exist to develop transport solutions which meet the needs of Sydney Olympic Park, the Carter Street precinct and other areas within Homebush Bay.



4.3 PUBLIC TRANSPORT

Public transport will play a critical role in the future day-to-day access to existing and new development at Sydney Olympic Park and its viability.

The existing passenger rail system will continue to provide services on a regular basis as well as its major event operations. Capacity and/or service frequencies will need to be increased to meet the needs of more intensive site activities as they occur.

It will also be necessary to create an access to Olympic Park station at its eastern end to meet the needs of future residents and workers.

Ferry services will continue to bring residents, workers and visitors to the precinct .

Transport NSW and the Roads and Traffic Authority (RTA) are investigating the potential for a 'Rapid Bus Only Transitway' between Parramatta and Strathfield. If implemented, this system has the potential to optimise access and patronage for a number of Greater Homebush development areas, including Newington, Sydney Olympic Park, the Carter Street precinct and various sites along Parramatta Road. Transitways present the opportunity to provide a high level of public transport service to areas such as Greater Homebush which are characterised by development sites dispersed over a large area. A transitway bus network combines trunk services operating on the actual Transitway alignment with express services that feed into the Transitway from sites off the Transitway route.

A number of route alignments for the Parramatta to Strathfield Transitway have been investigated. *Figure 4.3.1* illustrates the preferred alignment of the transitway route through Sydney Olympic Park as well as possible feeder bus routes that service Homebush Bay Wharf, Bay West and Newington Village. The services described in *Figure 4.3.1* will provide access for:

- Sydney Olympic Park workers and residents to Strathfield station, Homebush Bay Wharf and Parramatta;
- Newington and Bay West workers and residents to Homebush Bay Wharf, Sydney Olympic Park, Strathfield station and Parramatta; and
- Carter Street precinct workers to Sydney Olympic Park Town Centre.

The final alignment of the Transitway and its feeder services is due to be resolved in mid-2002.

During major events at Sydney Olympic Park such as the Royal Easter Show and fixtures at Stadium Australia, the Transitway bus services will interact with major event cross regional services operating to existing bus terminals within Olympic Boulevard.

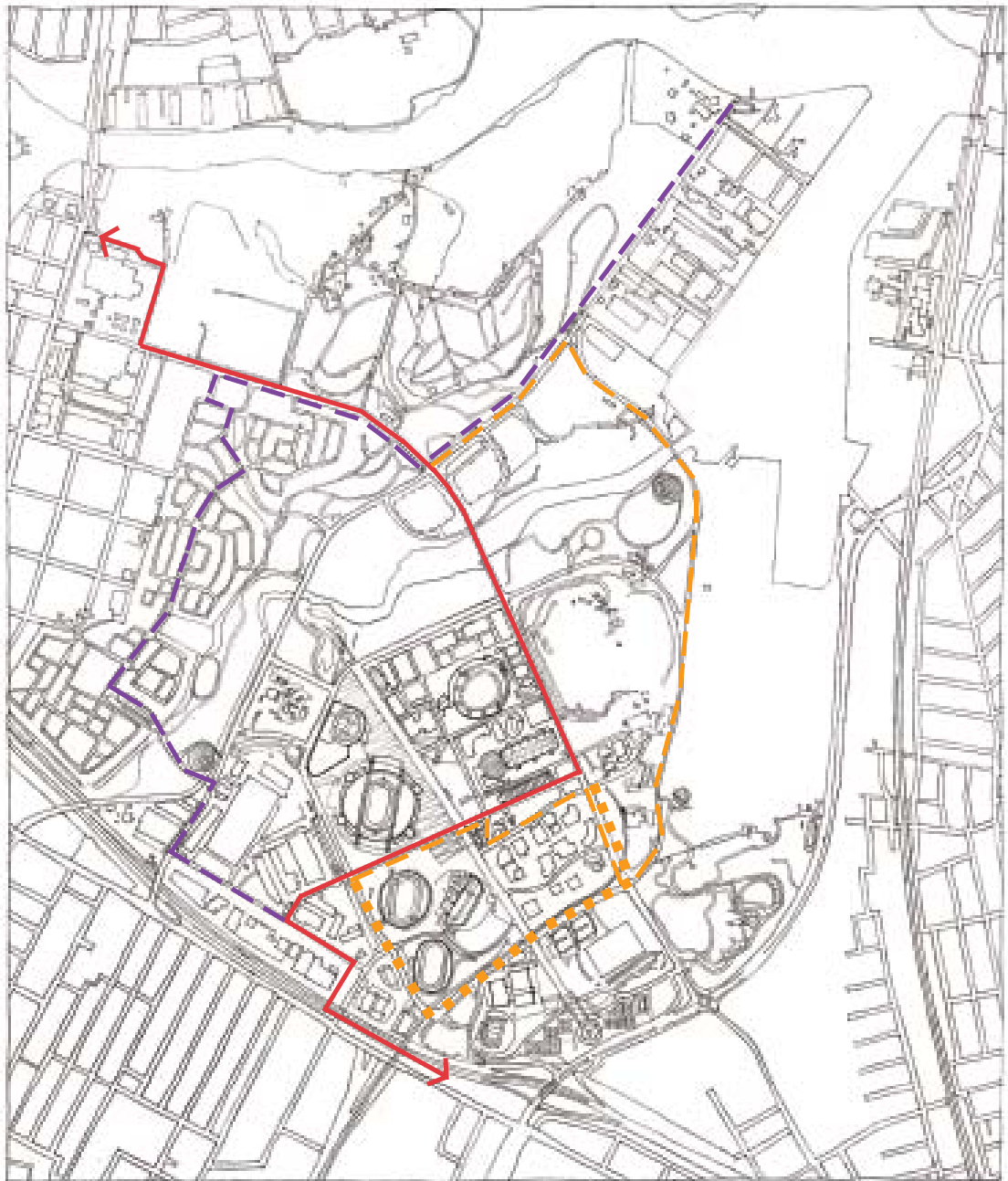






Fig 4.3.1

PREFERRED OPTION RAPID BUS TRANSITWAY ROUTE AND FEEDER SERVICE

-  TRANSITWAY
-  FEEDER
-  TRANSITWAY DIVERSION: MAJOR STADIUM EVENT
-  TRANSITWAY DIVERSION: ROYAL EASTER SHOW





It is proposed that the major event cross regional bus services will be modified to operate as regular scheduled services when on-site activities are expanded. A detailed feasibility study is in progress and being considered by the Government. It has involved extensive review of the latest initiatives in cross regional service development in Sydney and other Australian and overseas cities. Route options have been studied in order to identify services that link several significant activity centres, such as major regional shopping centres, hospital and medical centres and tertiary education facilities, as well as Sydney Olympic Park. Other objectives of the cross regional bus routes in the study include improved traffic flows by attracting car users, improved public transport into Parramatta, integration of the services with the City Rail network at several places across Sydney and the creation of a lasting Olympic legacy for public transport based on the unprecedented community awareness and support generated during the Sydney 2000 Olympic Games.

The commitment to, and level of service of cross regional services will be pivotal to the ultimate realisation of the development potential outlined in the Master Plan and to the targeted mode split to public transport of 30 - 35%.

4.4 MODAL SPLIT

If the public transport measures discussed above are implemented and sustained, and appropriate car parking policies are adopted, a journey to work public transport target of 30 - 35% of those travelling to or from Sydney Olympic Park on a regular basis is appropriate. This target represents a high level of public transport usage comparable to existing levels at established employment centres such as Parramatta CBD (40%), Chatswood Town Centre (37%) and Bondi Junction (37%) (1996 Census data) all of which have direct, main line train services.

When due allowance is made for absenteeism or "working from home" of 10%, and "taxi, walk, cycle" accommodates 5% of journeys, some 55 - 60% of journeys to work may be made by car. A public transport mode split of more than 35% is unlikely because a significant part of the metropolitan residential catchment area does not or will not have access to convenient, direct public transport to Sydney Olympic Park. It is likely that 30% would be the highest achievable number for every day trips to and from a small to medium scale redevelopment at Sydney Olympic Park. With the larger scale commercial and residential development currently being contemplated, 35% may be achieved but only if adequate public transport service levels, car parking management regimes and Work Place Travel Plans are implemented. This might ultimately require the provision of direct rail services to the eastern parts of Sydney during peak periods or implementation of regular cross-regional bus services.

Work Place Travel Plans may include initiatives such as:

- encouraging public transport use through provision of information (maps and timetables);
- encouraging cycling - providing safe, secure and covered cycle parking, locker and change facilities within individual developments;
- financial incentives such as discounted travel passes or interest free loans for public transport;
- car sharing and car pooling schemes;
- flexible work practices; and
- car park permit schemes.

4.5 INTERNAL SYSTEMS

Some traffic capacity limitations may arise within the site when redeveloped to the ultimate extent planned.

Intersection priority might need to be given to buses and coaches on the internal bus routes and pick-up/set down and interchange systems although this may have an impact on spare capacity (level of service) at those intersections for private vehicles.

Sydney Olympic Park covers a very large area and will rely heavily on attractive pedestrian and cycle linkages. Commuter and recreational cyclist needs are also of importance in internal circulation, making Sydney Olympic Park more accessible and linking it to surrounding areas as well as reducing reliance on the motor car.

Implementation of an internal transport system (on-site "people mover", for example shuttle buses) will contribute significantly to ease pedestrian movement across the site both day-to-day and in major events. Such a system should provide connection to regular public transport and parking facilities. Possible routes for such a system are shown in *Figure 4.5.1*.

Implementation of the Parramatta-Strathfield Transitway will also facilitate improved internal connections by public transport.



Fig 4.5.1

INTERNAL TRANSPORT SYSTEMS

- Public Car Park (existing)
- Railway Station
- Future Public (underground) Parking
- Bus Stop
- Future Stop
- Route
- Possible extension/ future use



4.6 PARKING

The level of on-site car parking provided with Sydney Olympic Park developments needs to be practical in terms of the nature and commercial viability of the development. However, limitations upon car parking rates and/or the extent of commercial development are needed as there are currently practical limits to the extra traffic that can be accommodated, especially at commuter peak hour times. Such limitations should reflect achievable peak period arterial road capacity before substantial upgrade of surrounding arterial intersections is required.

Public parking is the pool of parking spaces provided to support the events and venues. It includes parking for visitors and patrons of venues, and users of the Parklands. A key transport component of the original Master Plan for Homebush Bay involved constraining public parking on the site to no more than 10,000 spaces.

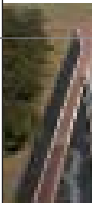
There is a clear opportunity for the existing public parking supply at Sydney Olympic Park to be managed or redistributed to more effectively meet post-Olympic land use. Central to this is the need to provide a convenient level of service for the day-to-day or casual user. This will be achieved by relocating public parking from the P5 car park to a combination of structured public car parks and on-street parking, where feasible. Possible locations of relocated public parking are Development Sites Nos 1, 2, 4, 5, 6, 7 and 8. Preferred sites will be determined through detailed site analysis.

A parking management plan will be developed whereby car parking numbers comprising public parking and private commercial (or tenant) parking in association with the new 110,000m² Town Centre commercial development are limited to 10,000 spaces (see *Figure 2.12.2*). Private parking for the new Town Centre commercial developments will not exceed 2000 private spaces. Parking rates for the Australia Centre are detailed in Section 5.4.

On event days such as during the Royal Easter Show or Stadium and/or SuperDome events, the full 10,000 dedicated patron public parking spaces will be made available.

Pre-existing parking within developments such as the Australia Centre, Novotel Hotel and the venues will not be included in the daily management regime of 10,000 spaces.

Separate parking rates for future hotel developments will be developed with spaces in addition to the existing 10,000 public spaces.



Parking for residential development shall be provided at the following rates:

Dwelling Type	No. of Spaces per dwelling
1 bedroom	1
2 bedroom	1.2
3 bedroom	1.5
4 bedroom	2
Visitor	0.2

For other uses, such as retail and cultural, only very limited private parking spaces (ie ancillary spaces) will be available.

4.7 THE SCALE AND NATURE OF DEVELOPMENT

The rate of development across the Greater Homebush area will be market driven. Studies examining the impact of proposed development within the immediate Sydney Olympic Park area have focussed on the levels of commercial development as it is commercial development that contributes to the bulk of increases in traffic. The following conclusions regarding the impact of commercial development on the road network are made:

- 0 - 190,000m² GFA of commercial office development - localised traffic management including minor intersection works; and
- 190,000 - 300,000m² GFA - major capacity improvement works at key locations.

In aggregate terms, the development activity envisaged and assumed in this report is above this level, however, the timing and precise mix of development will largely be determined by market conditions. Upgrading of arterial roads will, however, be required and should be planned and implemented to coincide with major developments coming on-stream. Beyond 300,000m² GFA, the capacity of the improved network is potentially exceeded and greater use of public transport beyond 30% - 35% level and/or changed vehicular travel patterns will be paramount.

However, it is important to note that this threshold is not likely to be achieved for some years, so there will be ample time to monitor growth in traffic as development proceeds and then determine any further upgrades as they are required. It is also possible that with coordinated and timely implementation of the public transport measures, high levels of public transport use and a spreading of peak travel times will ensure that congestion levels are able to be effectively managed.

Assuming that all reasonable steps are taken to achieve the mode choice and car occupancies described earlier, the additional traffic generated by the level and type of development described is up to 4,300 vehicles per hour in the weekday afternoon peak, with lower numbers in the weekday morning peak.

Coupled with projected development for other major sites in the broader region this is likely to require significant arterial infrastructure upgrade but even more so if buses are afforded some level of priority. Assessment should therefore be made of the realistic potential for each level of development to contribute appropriately to infrastructure improvement (for example, through Section 94 development contributions or developer agreements). This assessment should be made in light of the broader objectives for the Greater Homebush region to substantially enhance its economic and employment base.

Some internal traffic enhancement is also likely to be required to support this level of traffic increase but, relatively speaking, this is expected to be of modest scale. The principal constraints within the site might be:

- Bennelong Road between Hill Road and Australia Avenue;
- Australia Avenue / Bennelong Road intersection;
- Australia Avenue / Figtree Drive intersection;
- Australia Avenue / Herb Elliott Avenue intersection; and
- Edwin Flack Avenue/Uhrig Road/Dawn Fraser intersection.

The initial draft Master Plan described a future development limit of 250,000m² commercial office development for Sydney Olympic Park, the Carter Street Precinct and Bay West with the 50,000m² at Newington treated as pre-existing. In this revised report, the Newington component has been included in future development to bring the overall limit to 300,000m². The traffic impacts under ultimate development are unchanged.

4.8 TRAFFIC CAPACITY ENHANCEMENT WORKS

Most of the problems at critical intersections along Parramatta Road will arise as a result of increases in background traffic rather than as a result of the development scale itself. Notwithstanding the Sydney Olympic Park development, grade separation and/or major upgrade works at a network level on the surrounding arterial roads may ultimately be required. Particularly at intersections such as:

- Parramatta Road/Silverwater Road;
- Parramatta Road/Concord Road;
- Parramatta Road/M4 Motorway; and
- Parramatta Road/Birmie Avenue.

Additional enhancement works closer to the precinct may be required at:

- Australia Avenue/Homebush Bay Drive/Underwood Road;
- Holker Street/Silverwater Road; and
- Parramatta/Hill Road.



The implementation of this Master Plan and development of surrounding areas must coincide with delivery of commensurate infrastructure works. This analysis assumes no displacement of existing development. If this occurred, for example to the extent of 15% of the development proposed herein, it would reduce the traffic generation correspondingly. It may also reduce the road upgrading needs but not necessarily in the same proportion.

4.9 TRANSPORT MANAGEMENT AND ACCESSIBILITY PLAN (TMAP) SOLUTIONS

The transport solutions considered as part of this Master Plan are being integrated into the overall package of measures being developed to address the development impacts associated within the wider Greater Homebush area. The TMAP will recommend a range of infrastructure, transport service and policy measures needed to achieve both a higher level of public transport use and accommodate the likely traffic impacts.

The package of measures will contain infrastructure and transport service measures which will need to be implemented at both the local and regional level, as well as several policy initiatives. While the TMAP has not yet been formally adopted, it is likely that the package will feature the following measures:

Policy measures

- Parking provision and management policies designed to support public transport use;
- A high profile for pedestrian and cycle planning; and
- Requirements for the development and implementation of workplace travel plans.

Regional measures

- Construction of the Parramatta – Strathfield Transitway;
- Potential implementation of regular cross-regional bus services via Olympic Park;
- Potential enhancements to rail infrastructure and services; and
- Upgrades to selected arterial road intersections.

Local measures

- Selected bus priority measures;
- Comprehensive upgrades to pedestrian and cycle facilities, particularly in Carter Street Precinct;
- Localised intersection improvements; and
- Improved signage and information displays for public transport users, pedestrians and cyclists.

4.10 CYCLE ACCESS

Sydney Olympic Park is well located geographically in a broader area of increasing residential and employment densities. The site is relatively flat and has good cycleway connections to other areas.

To encourage cycle access, future commercial and residential developments will be required to make provision for secure bicycle storage and change/shower facilities.

Commuter cycle access, if safe, well maintained and well promoted, has potential to be a sustainable alternative means of transport that reduces car based trips to the site.

4.11 TRAFFIC AND ACCESS SUMMARY

Overall, it is concluded that with public transport improvements, parking restrictions, higher car occupancy ratios and intersection upgrades identified herein, development at Sydney Olympic Park comprising 110,000m² commercial/office development; 45,000m² entertainment/retail/leisure; 35,000m² cultural; 24,000m² hotel and 1,300 residential dwellings may be sustainable.

If the development potentials of other areas within Greater Homebush are fully realised, Sydney Olympic Park development beyond the above levels cannot be addressed by feasible upgrades to the road network alone. Increased usage of public transport and/or amended vehicular travel patterns will be required. It should be noted that the assumed target of 30% to 35% for public transport, cycling and walking trips to work is high and would require commitment to all of the public transport and demand management initiatives described herein.