

***TRAFFIC REVIEW OF THE
MASTERPLAN
FOR THE
LONG BAY CORRECTIONAL COMPLEX,

ANZAC PARADE, MALABAR***

Prepared for the

THE NSW DEPARTMENT OF COMMERCE

On behalf of

THE NSW DEPARTMENT OF CORRECTIVE SERVICES

Prepared by

TRAFFIX

TRAFFIC AND TRANSPORT PLANNERS

*Ref: 03 159MPv6
August 2004*

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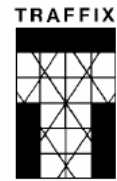
1. INTRODUCTION

In 2003, the Department of Corrective Services (DCS) commissioned the NSW Department of Commerce to prepare a Master Plan for the future development of the Long Bay Correctional Complex (LBCC). This Master Plan will form the context and framework for subsequent development applications and will ensure a coordinated approach to planning. As an input to the Master Plan process, **TR A F F I X** has been commissioned by the NSW Department of Commerce to undertake a traffic review of the existing complex and to provide guidelines for adoption as an integral part of the Master Plan.

In this regard, the LBCC incorporates a range of facilities and these are inter-related and inter-dependent. In a traffic planning context, this is due to the shared staff and visitor parking areas, which are generally regarded as a common resource that serve the entire correctional complex. This range of facilities will be augmented by additional facilities, including the proposed Forensic Hospital.

This report documents the findings of our investigations. The report is structured as follows:

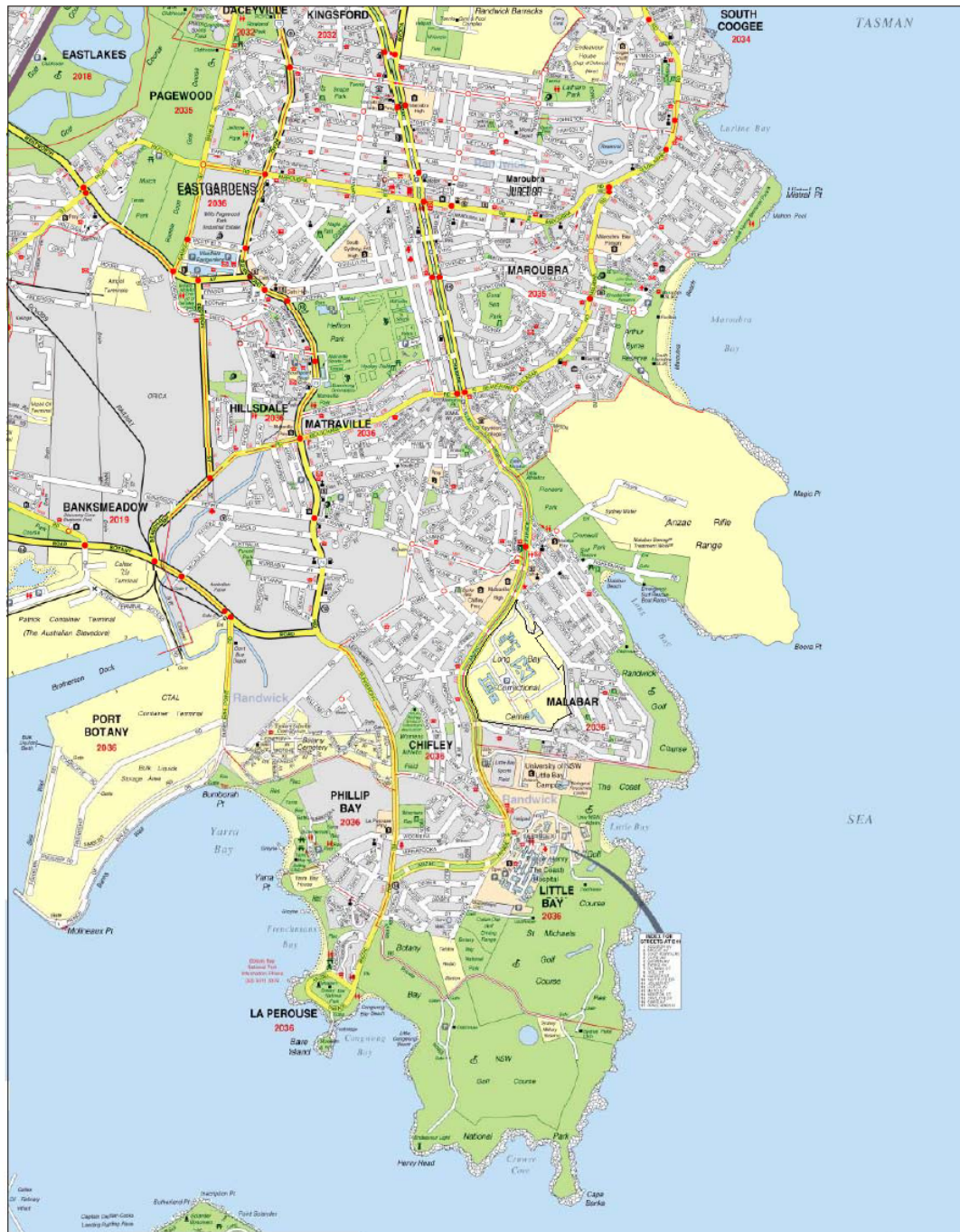
- ☐ Section 2: Describes the site and its location
- ☐ Section 3: Documents existing parking conditions
- ☐ Section 4: Describes the proposed development as envisaged under the Master Plan
- ☐ Section 5: Assesses the parking impacts
- ☐ Section 6: Discusses access and internal design aspects
- ☐ Section 7: Presents the overall study conclusions.



2. LOCATION AND SITE

The Long Bay Correctional Complex (LBCC) is located on the eastern side of Anzac Parade at Malabar, within the land area that is generally known as Long Bay, which extends to the eastern coastline. The LBCC is bounded principally by residential development to the north, south, east and west. Vehicular and pedestrian access to the main correctional complex is only available via the main secure access via Anzac Parade, in the vicinity of the southern site boundary. There are two additional driveway accesses, including one via Calga Avenue and one via Austral Street at the rear of the site. These do not however provide access to the main complex.

A location plan is presented in **Figure 1** with a site plan presented in **Figure 2**. Reference should also be made to the Photographic Record presented in **Appendix, A** which provides an appreciation of the general character of the site.



Source: UBD 2002



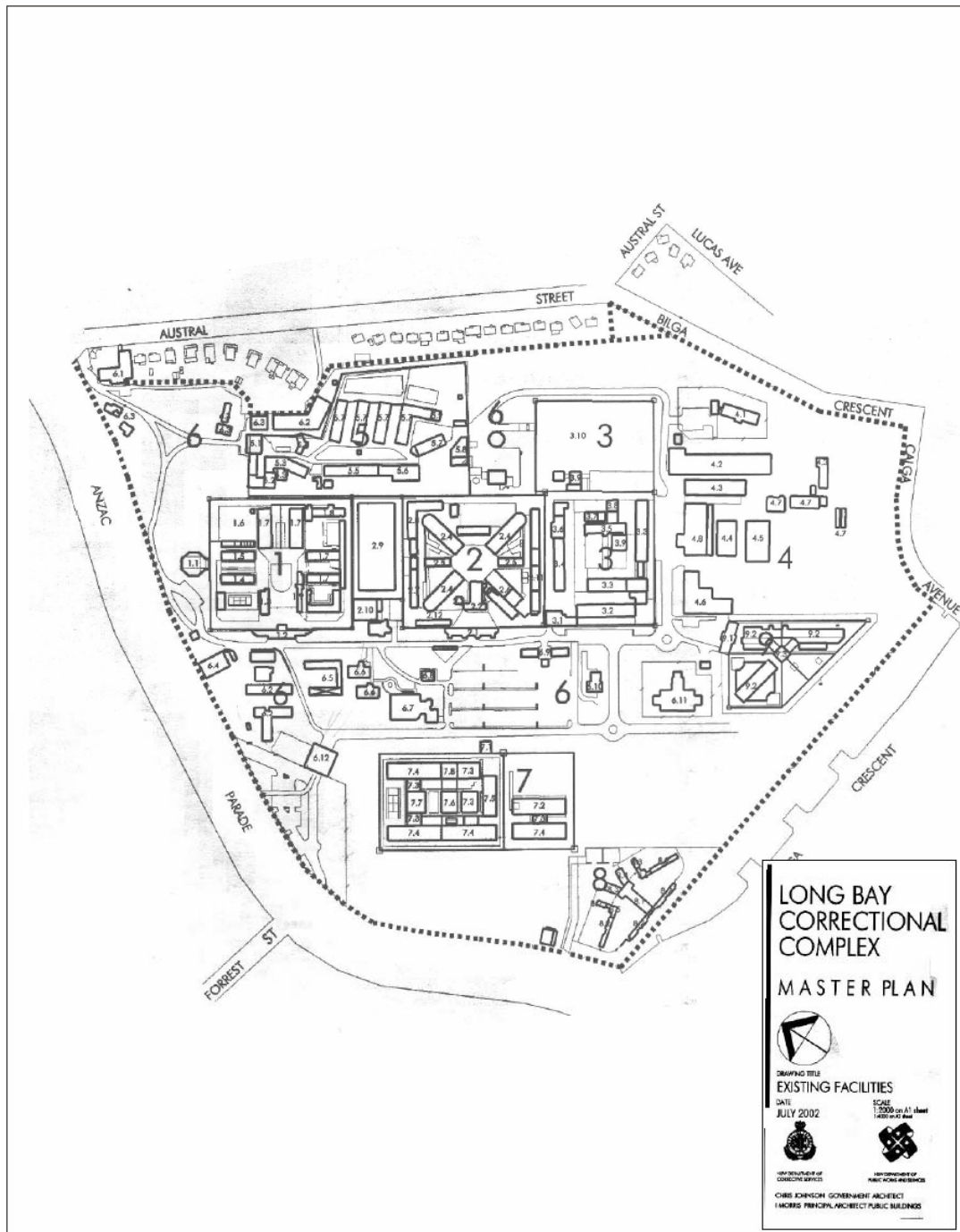
MASTER PLAN FOR LONG BAY CORRECTIONAL CENTRE

Prepared for Department of Commerce

Figure 1

LOCATION

TRAFFIX Traffic & Transport Planners: Level 2, 55 Mountain Street, Broadway, 2007.



MASTER PLAN FOR LONG BAY CORRECTIONAL CENTRE

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Figure 2 **SITE**

TRAFFIX Traffic & Transport Planners: Level 2, 55 Mountain Street, Broadway, 2007.



3. EXISTING 'BASE CASE' TRAFFIC AND PARKING CONDITIONS

3.1 Overview of Traffic Conditions

The road hierarchy in the vicinity of the site is evident from Figure 2. It should be noted that Anzac Parade is a State Road that connects the Sydney CBD in the north with Botany Bay in the south. This road is intersected by numerous east-west arterial road linkages, including Cleveland Street, Alison Road, Todman Avenue, Gardeners Road, Fitzgerald Avenue, and Bunnerong Road. Bunnerong Road in turn provides access to Foreshore Drive. These routes provide excellent regional accessibility. In addition, the majority of these intersections are under traffic signal control, providing a good level of service.

Anzac Parade is constructed with a divided dual carriageway in the vicinity of the site, which incorporates two traffic lanes in each direction, with a wide landscaped median that extends along Anzac Parade over the majority of its length between South Dowling Street and Bunnerong Road.

The access to the correctional complex is via a one-way internal road system that is located at the southern part of the site, via Anzac Parade. This incorporates a main access driveway that connects to Anzac Parade opposite Forrest Street and provides entry and exit movements that are assisted by a median opening within Anzac Parade. This allows unrestricted turns to/from all directions at this location. In addition, a separate entry only driveway is provided further to the north in Anzac Parade, adjacent to the Gate House. This driveway is adjacent to a wide landscaped median strip within Anzac Parade and accordingly, only left turn entries are permitted at this driveway.

Within the correctional complex, the Gatehouse enables secure access to an internal road system that allows convenient access to all parts of the complex. This includes access to several distinct parking areas as discussed further below. In addition, an extensive pedestrian network is provided that allows safe access to all parts of the complex, with minimal conflict with the internal traffic system.

Regular scheduled bus services operate along Anzac Parade, with bus stops located immediately adjacent to the site.

3.2 Overview of Existing Correctional Operations

Before examining future development scenarios for the LBCC as presented in the Master Plan, it is instructive to firstly overview the existing facilities within the overall complex, as surveyed.

- The Long Bay Hospital (LBH) and Metropolitan Medical Transient Centre (MMTC)



- The Metropolitan Special Programs Centre (MSPC);
- The Special Purpose Centre (SPC);
- The DCS Metropolitan Regional Office; and
- Commercial nursery leasehold.

The inmates within the LBCC are managed by a total of 585 custodial staff deployed over 3 shifts (with slightly variable start-finish times to avoid peak overlaps) as follows:

A Shift	6.00am to 2.00pm	234 custodial staff
B Shift	2.00pm to 10.00pm	89 custodial staff
C Shift	10.00pm to 6.00am	40 custodial staff

It will be evident that only 363 custodial staff (the total of the above shifts) is deployed on a typical day. These are drawn from the 585 available staff and these staff levels therefore take account of rostered days off, holidays, sick days etc.

In addition, a total of 180 administrative staff are employed, with about 140 of these deployed on a typical weekday, generally between 9.00am and 5.00pm. This similarly takes due account of rostered days off etc. as above. Finally, a total of about 275 Justice Health (JH) staff are employed (administrative and nursing staff combined), with about 170 of these deployed on any typical weekday.

In summary there is a total of 1,040 staff (585 custodial, 180 administrative and 275 JH), of which 673 staff (363 custodial plus 140 administrative plus 170 JH staff) is deployed on a typical weekday.

3.3 Existing Weekday Traffic Generation

The above non-JH staff levels result in the following traffic volume movements, assuming that 95% of staff drive to work, with an average car occupancy of approximately 1.0 person per car.

Time Period	Vehicles In	Vehicles Out	In + Out
5.30am to 6.30am	222	38	260
8.30am to 9.30am	163	0	163
1.30pm to 2.30pm	85	222	310
4.30pm to 5.30pm	0	163	163
9.30pm to 10.30pm	38	85	120
Totals	508	508	1,016

It can be seen that these staff (custodial, administrative and JH combined) account for about 1,020 vehicle trips per day on an average weekday. In addition, the 170 JH staff would generate an additional 340 vehicle trips per day, based on the same assumptions. Thus, the staff account for an estimated 1,360 vehicle trips per day, for the journey to work. Occasional trips throughout the day would increase this by about 20% to 1,600 vehicle trips per day (800 in, 800 out). In addition to this, the complex generates an average of:

- 60 visitor trips per day to visit inmates (30 in, 30 out);



- 70 professional visitor trips per day (35 in, 35 out); and
- 80 service vehicle trips per day (40 in, 40 out);

In summary, the complex therefore generates a total of about *1,800 vehicle trips per day* on an average weekday (900 in, 900 out).

In terms of conditions during peak periods, it will be noted that a flow of about 163 vehicle entries occur during the morning on street peak (8.30 to 9.30am) and 163 vehicle exits in the evening on street peak (4.30 to 5.30pm). Flows at all other times do not coincide with the on-street peak periods.

3.4 Existing Weekend Traffic Generation

Weekend staff levels are about one third of the above weekday levels. Hence, staff movements account for about 530 vehicle trips per day (265 in, 265 out). In addition, about 250 visitors attend the complex on a typical weekend-day, with an average of 2.4 visitors per group. Hence, a total of 104 groups attend between 9.00am and 3.00pm. It is assumed that 90% of these travel by private car, resulting in a total of 190 vehicle trips per day (95 in, 95 out).

In summary, a total of about 720 vehicle trips are generated on a typical weekend day (360 in, 360 out). These trips are distributed over the entire day. Hence, peak flows are quite moderate and generally less than 100 vehicle trips per hour.

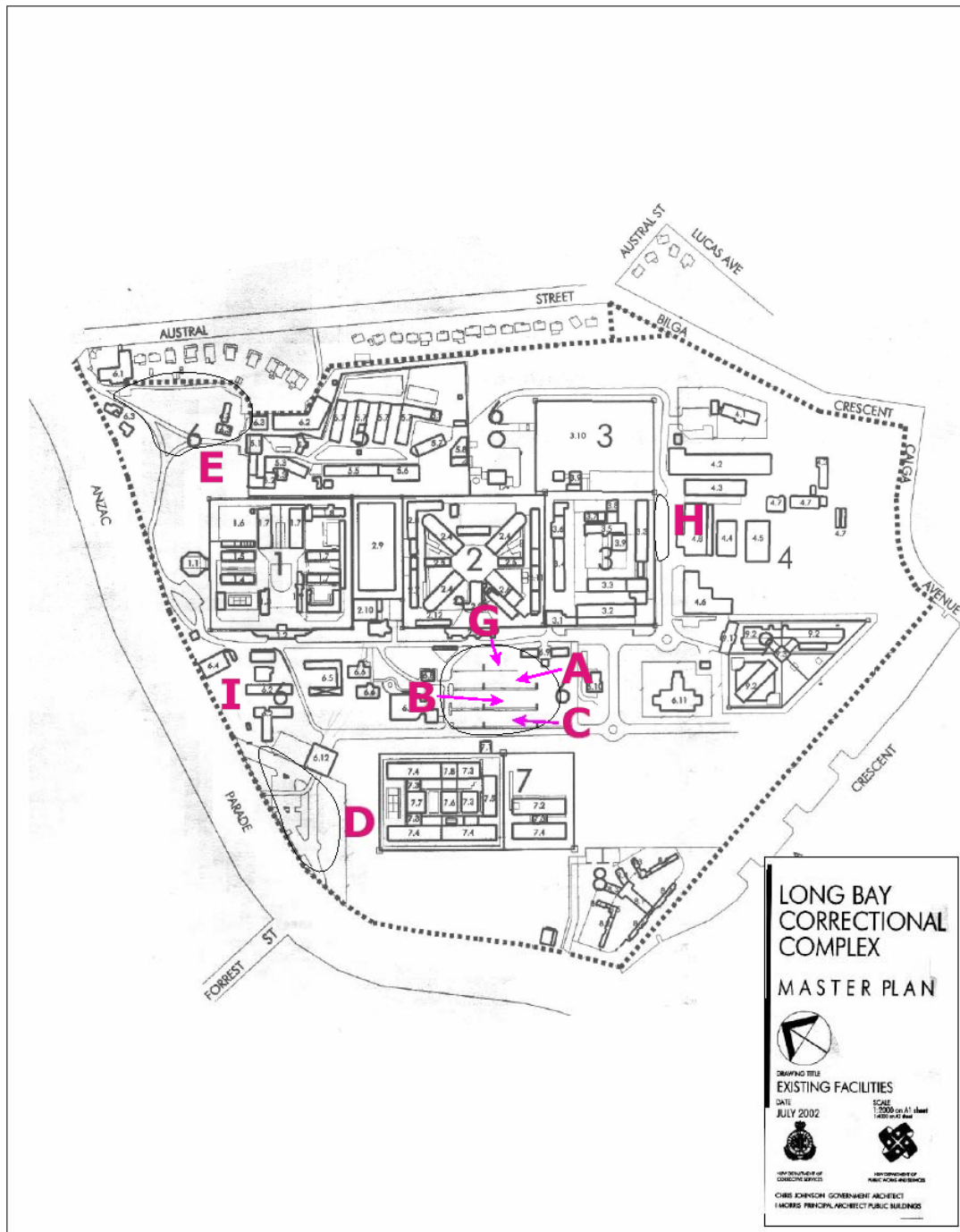
The above traffic flows should be regarded as a 'base case' against which the development as envisaged under the Master Plan (and subsequent development applications) can be assessed.

3.5 Existing Staff Parking Demands

As discussed further below, the most important issue associated with the proposed Master Plan is the parking that will be required to serve the future expansion of the complex as envisaged under the Master Plan.

In order to assess this, and to establish a 'base case' for assessment purposes, parking surveys were undertaken between 9am and 3pm which covers the peak parking accumulation arising from both staff and visitor demands on a weekday. The surveys were undertaken on Tuesday 16 December 2003. In this regard, Tuesdays are understood to be the busiest day of the week when maximum parking demands occur.

The surveys recorded the use of all carpark areas separately, so that local parking conditions could be investigated. These are shown in **Figure 3**. The carpark areas included have parking capacities as shown in Table 1.



MASTER PLAN FOR LONG BAY CORRECTIONAL CENTRE

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Figure 3 PARKING ZONES

TRAFFIX Traffic & Transport Planners: Level 2, 55 Mountain Street, Broadway, 2007.



Table 3: Visitor Carpark Utilisation (Area D)

VISITORS (102 spaces)		
Time	Spaces Used	Spaces Unused
9am	28	74
10am	36	66
11am	56	46
Noon	93	9
1pm	118	- 16
2pm	67	35
3pm	2	100

The peak demand of 118 spaces is higher than occurs under normal conditions and this is due to the proximity of the surveyed date to Christmas. In this regard, the normal visitation rate of 250 visitors per day in an average group of 2.4 equates to a total of 90 car visits per day between 9.00am and 3.00pm. This can be expected to result in a peak parking demand of in the order of 60 to 70 cars. In summary, a peak demand for 95 spaces is considered reasonable for normal peak demands and this equates to 1 space per 12 inmates. This compares with 1 space per 12 inmates as also occurred at the Silverwater Correctional Complex based on previous studies.



4. DESCRIPTION OF THE MASTER PLAN DEVELOPMENT

The Master Plan for the Long Bay Correctional Complex comprises three main elements to the phasing of development as follows:

- The ongoing process of relatively minor development within or near to the existing buildings allowing the facility to adapt and change to the requirements of the DCS for the proper management of inmates;
- The construction of a new Prison Hospital to the east of the existing Metropolitan Medical Transient Centre including the rationalisation and relocation of the industries and maintenance functions currently occupying this area; and
- The construction of a new Forensic Hospital on the site of the existing Long Bay Hospital.

Relevant plans detailing the Master Plan are presented in **Appendix B**. The Master Plan document identifies a works program that includes the following specific elements:

- Construction of a new Forensic Hospital with capacity for 135 beds. This facility will be constructed in two stages, with Stage 1 involving the provision of 80 beds to accommodate existing patients; and with the balance of 55 beds provided in Stage 2. The Forensic Hospital is to be constructed on the existing hospital site to allow separate public access and will be served by a new JH Administration Building;
- Construction of a new Prison Hospital with a capacity for 85 beds, to replace the existing Long Bay Hospital that is located on Anzac Parade, which has a capacity for 119 beds. Thus a net reduction of 34 beds results. This hospital is to be located along the ridge adjacent to the Metropolitan Medical Transient Centre (MMTC) and will be surrounded by a new road;
- Overall, the proposed developments will result in a net increase of 46 beds after Stage 1 (from 119 to 165); and 101 beds after Stage 2 (from 119 to 220 beds);
- The two hospitals will be operated by a total staff of 435 persons;
- Upgrading of the Industries, Maintenance and Stores Facilities involving the relocation of the existing Industries Stores, the re-establishment of the Maintenance Workshop into a disused building and the construction of a new Central Store building; and
- Reduction of the space available for the existing Panama nursery and construction of a small Maintenance Shed.

In summary, the new Forensic and Prison Hospitals will result in an additional 101 beds on the site and an additional JH staff of 160.



5. ASSESSMENT OF FUTURE PARKING NEEDS

5.1 Staff Parking

An increase of 160 staff is expected with the Forensic and Prison Hospitals. No additional staff are planned for the remainder of the LBCC although there might be small changes in this area over the life of the Master Plan subject to management practices. Based on current rosters these will generate parking at a rate of 1 space per 2.8 staff as assessed in Section 3.5. On this basis, a need for an additional 60 parking spaces is indicated.

A total of 477 staff parking spaces are presently provided as discussed in Section 3.5. These are not fully utilised, with some 117 spaces being available at peak times as surveyed. These should not be considered to be 'surplus' spaces however, as the following factors need to be considered:

- The daily fluctuations that can occur, with occasional higher peaks;
- The need to provide a degree of 'comfort and convenience' when accessing parking. Specifically, full utilisation of parking (100% of spaces used) involves traffic circulating extensively within carpark aisles in search of parking. This is inefficient and raises safety concerns, with potential pedestrian conflicts. Effective full utilisation of parking does not achieve a 100% utilisation due to the need to providing a reasonable 'level of service'; and
- The need exists for each separate facility to have a reasonable prospect of finding parking in proximity to that facility, to maintain its own 'identity'. This is notwithstanding the relatively short walking distances within the overall complex.

Having regard for the above factors, it is considered that only 50% of the existing parking 'surplus' of 117 spaces should be taken into account. Hence, the overall complex requires:

360 spaces to serve current demands as surveyed;
60 spaces to provide additional flexibility to take the above factors into account; and
60 spaces for the additional staff as discussed above

480 spaces in Total

The Master Plan needs to accommodate this level of staff parking (480 spaces) with 477 spaces available. The spaces within the LBCC need to be distributed within the complex to achieve a satisfactory level of service to individual facilities. This will need to be addressed progressively in respect of subsequent development applications.

5.2 Visitor Parking

The existing visitor carpark (Area D), with 102 spaces, is presently over-utilised, with up to 118 cars parked within it on weekends, based on the surveys undertaken. However, as discussed, this results from peak demands as occurred prior to Christmas and 'normal' peak demands are generally in the order of up to 95 spaces, based on advice provided by Corrective Services. Nevertheless, to provide flexibility, provision of 120 spaces is



considered satisfactory to meet current demands. This equates to a rate of 1 space per 10 inmates/patients.

The additional 101 beds inmates as proposed in the Master Plan will therefore generate an additional (say) 10 visitor spaces, from 120 to 130 spaces. This demand will occur on weekends. The area set aside under the Master Plan for visitor parking will readily accommodate this demand and this will be the subject of subsequent development application/s.

Figure 11 of the Master Plan indicates the location of staff and visitor parking areas. There is capacity on site for any additional parking required. This can be provided by rationalising the parking areas near the entrance to the facility off Anzac Parade and by the expansion of staff parking areas at the centre of the site. Proposals for parking areas will be provided with subsequent development applications when more accurate estimates of staffing numbers and visitor profiles are known.

5.3 Traffic Generation

It is noted that the peak traffic generation at the complex is at a time different to the on street peak. Additional staff and visitor traffic flows will be created by the development envisaged under the master plan. All access points operate at a high level of service currently and it is expected that this will continue following the development. Traffic generation assessments and the implications at critical intersections will be considered in more detail at DA stage.

6. ACCESS & INTERNAL DESIGN ASPECTS

6.1 Access

The vehicular access arrangements to the site from Anzac Parade will provide an improved amenity and are supported. These arrangements are shown in Appendix B (Refer to Figure 11) and essentially retain the existing access arrangements onto Anzac Parade.

Furthermore, no significant change in traffic conditions will arise under the Master Plan. This is due to the moderate increase in inmate and staff levels; and the fact that shift changeovers do not coincide with the on-street peak periods along Anzac Parade. The following matters are noteworthy:

- The main access points to the site is to be retained from Anzac Parade;
- All access points are to be designed in accordance with AS 2890.1 (2004) and AS 2890.2 (2002);
- All loading and unloading activity is to take place totally within the boundary of the site minimising conflicts with pedestrians; and
- Vehicles awaiting loading/unloading are to stand entirely within the site during normal operating conditions.



6.2 Internal Design

The internal layout as proposed under the Master Plan is considered appropriate, subject to detailed design at development application stage for individual buildings. In particular:

- Car parking spaces, dimensions, numbers and materials shall be provided to meet the specific needs of development. The design of access, internal circulation and parking areas for each development will be in accordance with the provisions of the Randwick DCP – Parking as well as AS 2890.1 and 2890.2;
- Development applications for major development are to be accompanied by a traffic and parking study indicating how traffic and parking requirements have been determined and met;
- All vehicles will be parked wholly within the site; and
- Internal access arrangements will need to consider the movements of cars and heavy vehicles and will also need to provide a separate pedestrian network that avoid internal conflicts.



7. CONCLUSIONS

The following conclusions arise from this study:

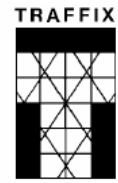
- i. *Randwick City Council has advised that a master plan for the site is required prior to granting consent for this development. This master plan has been prepared for this purpose. It is mainly concerned with the development of two hospitals on the site and also provides for the ongoing process of alterations and additions to existing facilities at the site as required by DCS to meet its operational requirements.*
- ii. *The existing Long Bay Hospital accommodates 119 beds and this will be replaced by the 85 bed capacity Prison Hospital and the new 135 bed Forensic Hospital ie an increase of 101 beds. There will be an increase of 160 JH staff.*
- iii. *The Master Plan needs to accommodate about 480 staff parking spaces with 477 spaces available at LBCC. The use of the existing spaces will need to be considered in the context of achieving satisfactory levels of service to individual facilities. This will need to be addressed progressively in respect of subsequent development applications.*
- iv. *The provision of 130 visitor spaces is indicated. The area set aside under the Master Plan for visitor parking will readily accommodate this demand and this will similarly be the subject of subsequent development application/s.*
- v. *No significant change in traffic conditions will arise under the Master Plan. This is due to the moderate increase in inmate and staff levels; and the fact that shift changeovers do not coincide with the on-street peak periods along Anzac Parade.*



7. CONCLUSIONS

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- ii. *The existing Long Bay Hospital accommodates 119 beds and this will be replaced by the 85 bed capacity Prison Hospital and the new 135 bed Forensic Hospital ie an increase of 101 beds. There will be an increase of 160 JH staff.*
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APPENDIX A:

Photographic Record





View looking north along Anzac Parade towards the exiting entry driveway. Note that only left turn entries are permitted.



Reverse view looking south. Note the bus stop.





View looking north along Anzac Parade towards the exiting entry driveway. Note that only left turn entries are permitted.



Reverse view looking south. Note the bus stop.





View of the existing pedestrian footway connecting to the bus stop.



View of the existing entry driveway from Anzac Parade.





View of existing site entry from Anzac Parade.



View looking west along the internal roadway showing median opening opposite Forest Street.

