asongroup

Exhibition Draft

Prepared for
Gap Bluff Hospitality Pty Ltd

# Traffic Impact Assessment Report

## Proposed Alterations & Additions
## Gap Bluff and South Head, Camp Cove & Green Point Precincts

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# 1 Introduction

Ason Group has been engaged by Gap Bluff Hospitality Pty Ltd to prepare a Traffic Impact Assessment (TIA) report to support a Review of Environmental Factors (REF) relating to alterations and additions to six existing buildings currently owned by the National Parks and Wildlife (NPW). The overall site consists of two precincts: the Gap Bluff Precinct and the South Head, Camp Cove and Green Point Precinct located within the South Head sector of Sydney Harbour National Park, Watsons Bay. **Table 1** summarises the proposed development.

**Table 1: Description of Development**

| PRECINCT | PROPOSED DEVELOPMENT |
|---|---|
| **Gap Bluff Precinct** | **Officer's Mess**<br>• Continued use as a function/reception centre.<br>• Refurbishment, internal alterations, replacement of roof and external landscaping.<br>• Including reception areas, kitchen, office and store, chapel, bridal rooms and amenities and a lift.<br>• Capacity for 115 for banquet-type functions, or 140 for cocktail functions.<br>**Armoury**<br>• Continued use as a function/reception centre.<br>• Refurbishment, internal alterations, addition of a second storey and side wing, and external landscaping.<br>• Including reception areas, bar, external lounge and terrace, kitchen, storage, amenities and a lift.<br>• Capacity for 140 persons for banquet-type functions, or 160 for cocktail functions on the Ground Floor and 110 persons for banquet-type functions, or 120 for cocktail functions on the First Floor.<br>**Gap Bluff Cottage**<br>• New use as short stay accommodation.<br>• Refurbishment, minor alterations and reconfiguration, and external landscaping. |
| **South Head, Camp Cove and Green Point Precinct** | **Constable's Cottage**<br>• New use as a café/restaurant.<br>• Refurbishment, internal alterations addition of an external dining area and rear extension, and external landscaping.<br>• Including dining areas, reception and bar, kitchen and amenities.<br>• Capacity for 72 diners, including 37 internal and 35 external seats.<br>**33 Cliff Street**<br>• New use as short stay accommodation.<br>• Refurbishment, minor alterations and reconfiguration, including excavation for a new garage, and external landscaping.<br>**Green Point Cottage**<br>• Continued use as short stay accommodation.<br>• Refurbishment, minor alterations and reconfiguration, and external landscaping. |

This report addresses the relevant parking, traffic and access implications of the redevelopment including compliance with relevant State and Local Government controls and impacts on the local Watsons Bay Precinct. A location plan is presented in **Figure 1** which provides an appreciation of the site and its location.

The remainder of this report is structured as follows:

- Section 2 describes the sites and their locations, summarises relevant existing parking and traffic conditions and public transport accessibility.
- Section 3 provides a summary of the proposed redevelopment.
- Section 4 provides an assessment of the parking demands and provision of the proposal.
- Section 5 provides an assessment of the traffic demands the proposal.
- Section 6 outlines the proposed operational measures to manage services such as waste and kitchen services.
- Section 7 provides a summary of the key conclusions.

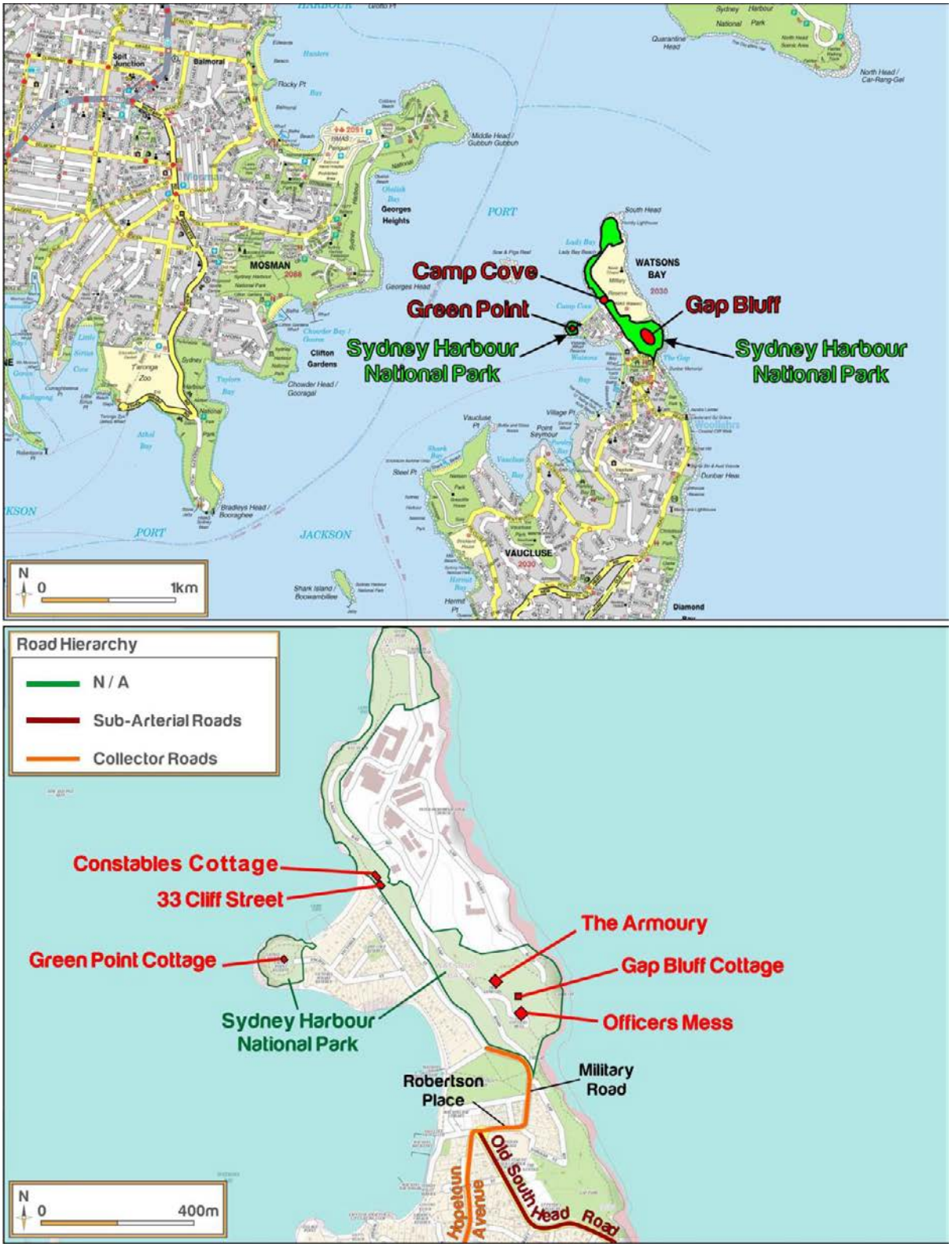


**Figure 1: Location Plan**

# 2 Existing Conditions

## 2.1 Site Location

The overall development site consists of 2 precincts, the Gap Bluff Precinct and the South Head, Camp Cove and Green Point Precinct located within the South Head sector of Sydney Harbour National Park. Both precincts are located within the Watsons Bay Precinct (WBP) in the Woollahra Council Local Government Area, approximately 6.5 kilometres north of Bondi Junction and 7.5 kilometres east of Sydney CBD.

In a more local context, the Gap Bluff precinct is approximately 250 metres northeast of the Watsons Bay wharf. To the immediate north of the precinct is the HMAS Watson naval base. The subject buildings within the South Head, Camp Cove and Green Point precinct are generally located in two areas, towards the northern end of Camp Cove (for the Constable's Cottage and 33 Cliff Road) and at Green Point (for the Green Point Cottage). Both areas are approximately 500 metres to the northwest of the Watsons Bay wharf. Site Plans for the Gap Bluff precinct and the South Head, Camp Cove and Green Point precinct are presented in **Figure 2** and **Figure 3** respectively.

## 2.2 Existing Road Network

Figure 1 shows the road hierarchy in the vicinity of the site. The key local roads influenced by the proposal include:

- Military Road: a local collector road that runs from the main retail strip in the WBP to Watsons Bay Wharf; it is the primary access road connecting all six sites to the wider road network.
- Cliff Street: a local road that runs along the south-western boundary of the Sydney Harbour National Park site. It currently operates as a two-way street between Military Road and the roundabout junction with Short Street and a one-way southbound street between Victoria Street and Short Street. The local residential roads in the area form a network of one-way streets and as a result, all traffic that enters the residential area via Short Street and the roundabout must also exit the area via Cliff Street and the roundabout. Cliff Street provides direct access to the Constable's Cottage and No. 33 Cliff Street.
- Pacific Street: is a local road that runs one-way westbound in a west-east direction between Cove Street and Victoria Street and continues westwards past Victoria Street, as a two-way street leading into a cul-de-sac. Direct access to the Green Point Cottage site is provided at the cul-de-sac.


**Figure 2: Site Plan – Gap Bluff Precinct**


**Figure 3: Site Plan – South Head, Camp Cove and Green Point Precinct**

- Victoria Street: a local road that runs one-way northbound in a southwest-northeast direction between Pacific Street and Cliff Street. All traffic from Pacific Street and Cove Street must enter Victoria Street to exit the local road network.
- Cove Street: a local road that runs one-way northbound in a southeast-northwest direction between Short Street and Victoria Street. It runs parallel to Cliff Street and provides the most direct route the Constable's Cottage and No. 33 Cliff Street properties.

## 2.3 Existing On-Street Parking Availability

Due to heritage and topographical site constraints, the proposed restaurant / café at the Constable's Cottage is unable to provide off-street car parking. Accordingly, the development will most likely generate some demand on on-street parking surrounding the site.

In order to determine the impacts of this demand, on-street parking surveys were conducted between:

- 4.00 – 9.00PM on Thursday 9 April 2015, and
- 12.00 – 8.00PM on Saturday 11 April 2015.

The full extent of the survey area – which covers 311 on-street parking spaces – is shown on **Figure 4**, which has been divided into three zones:

- Zone 1: 125 spaces within reasonable walking distance (about 250 metres) of the Constable's Cottage (including 18 spaces that are restricted to residential permit use only at all times),
- Zone 2: 111 spaces within close proximity of Watsons Bay Wharf, and
- Zone 3: 75 spaces in other areas within the local network.

The results of the parking survey for the entire area (All Zones) are shown graphically on **Figure 5** and **Figure 6** for the Thursday and Saturday surveys respectively. As can be seen, there was significant surveyed parking availability in the area throughout the full 5-hours of the Thursday survey. However on the Saturday, surveyed parking availability was significantly reduced, with parking occupancy peaking around 2.30 – 4.00PM.

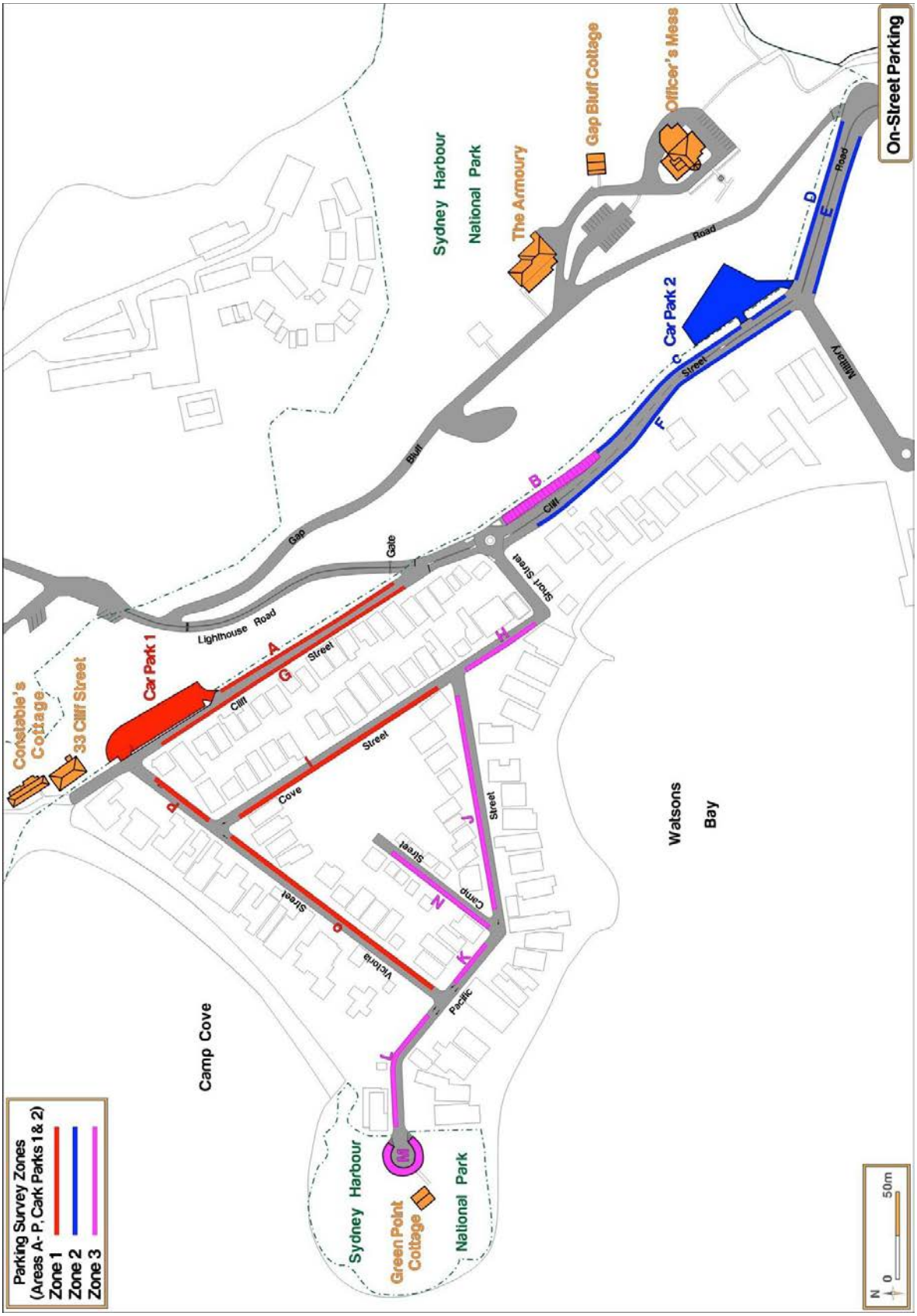


**Figure 4: On-Street Parking Survey Area**

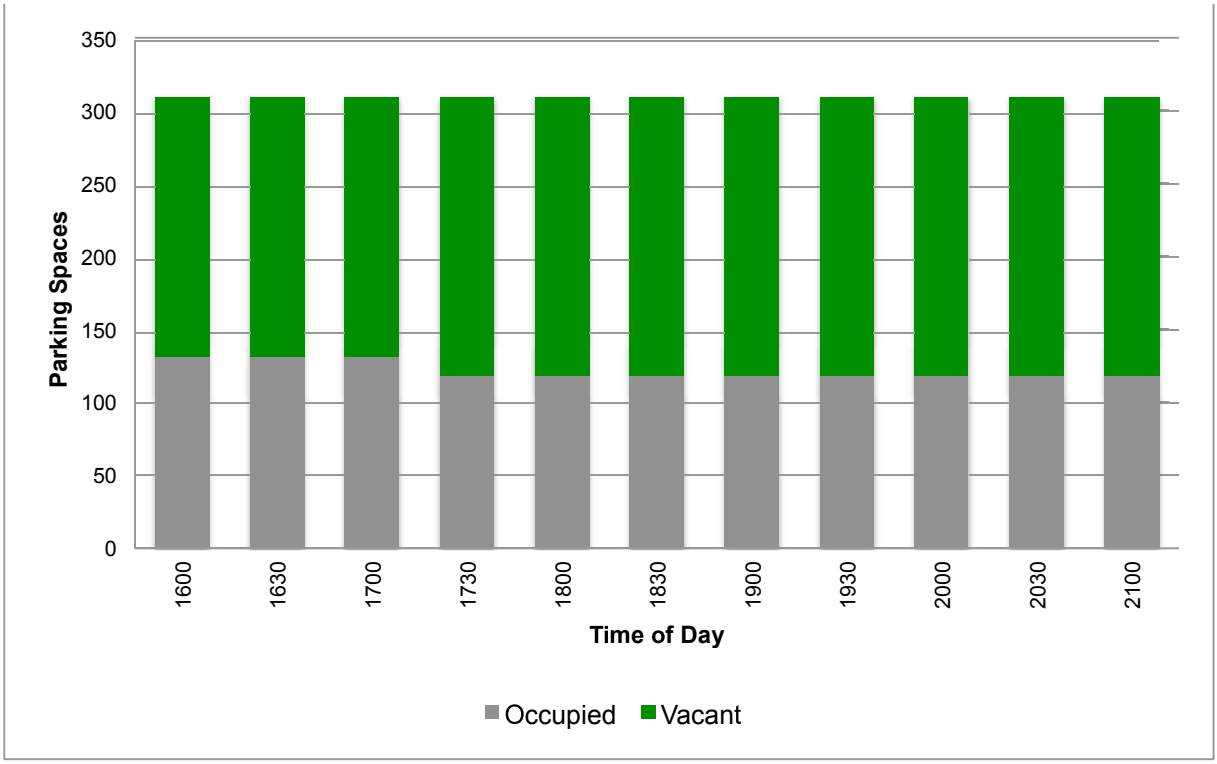


**Figure 5: Thursday On-Street Parking Survey Availability**

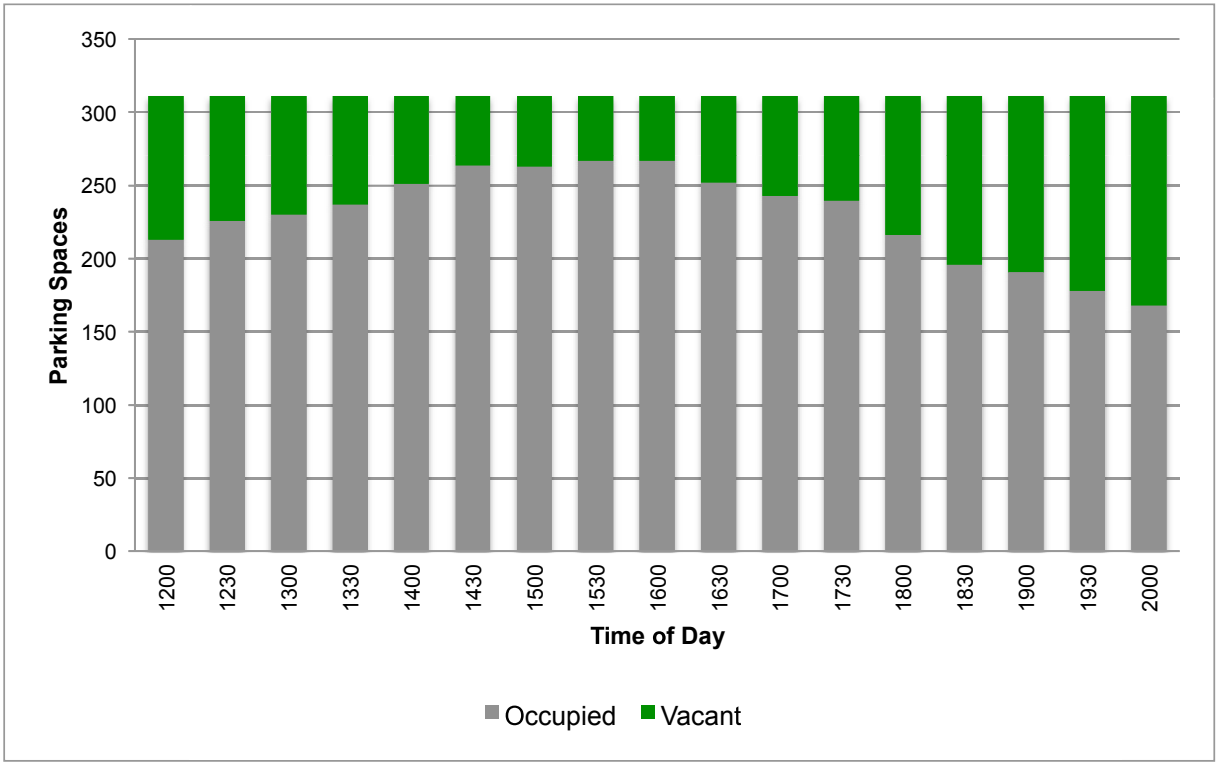


**Figure 6: Saturday On-Street Parking Survey Availability**

Detailed results of peak parking and average parking availability are provided in **Table 2** for the entire survey area and for the individual zones.

**Table 2: Detailed On-Street Parking Survey Results**

| | Total Spaces | Thursday | | | | Saturday | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Peak Occupancy | | Average Occupancy | | Peak Occupancy | | Average Occupancy | |
| | | Spaces | % | Spaces | % | Spaces | % | Spaces | % |
| **All Zones** | 311 | 133 | 43% | 123 | 40% | 267 | 86% | 230 | 74% |
| **Zone 1** | 125 | 53 | 42% | 47 | 38% | 97 | 78% | 71 | 57% |
| **Zone 2** | 111 | 65 | 59% | 45 | 41% | 109 | 98% | 103 | 93% |
| **Zone 3** | 75 | 35 | 47% | 31 | 41% | 66 | 88% | 55 | 73% |

Recognising that parking availability is the inverse of parking occupancy, it is noteworthy that the results in Table 2 show that on-street parking availability in Zone 1 (within walking distance of the Constable's Cottage) is generally greater than the availability in the other zones and across the full study area. The analysis indicates the perception that parking availability in Watsons Bay is limited on weekends is generally true for the areas within proximity of the ferry wharf, Doyles on the Beach restaurant and the Gap Cliff lookout (Zone 2). However, parking demand reduces significantly in the area to the north that is remote of the main Watsons Bay attractions listed above.

## 2.4 Existing Traffic Volumes

In order to gain an appreciation of existing traffic volumes in the area, a 7-day tube count was undertaken covering Thursday 9 April to Wednesday 15 April. The tube counter was located on the two-way section of Cliff Street to the south of the roundabout junction with Short Street, which is a residential collector street. Accordingly, the counter recorded all movements into and out of the local one-way road network to the north of the roundabout, as well as the traffic to/from the naval base.

**Figure 7** shows graphically the traffic volumes recorded for the average weekday and the average weekend day, based on the results of the survey. It is noteworthy that the graph presents the combined two-way (northbound and southbound) vehicle movements on this collector street section of Cliff Street. In this regard – and not taking into account the naval base traffic – due to its network of one-way streets, the road network to the north of the count location (i.e. north of the roundabout) would generally carry about half the trips shown in Figure 7, as vehicles that arrive via one street have to depart via another. It is noteworthy that opposed to the collector street status of Cliff Street in the location of the tube count, the one-way network of streets to the north are local streets.

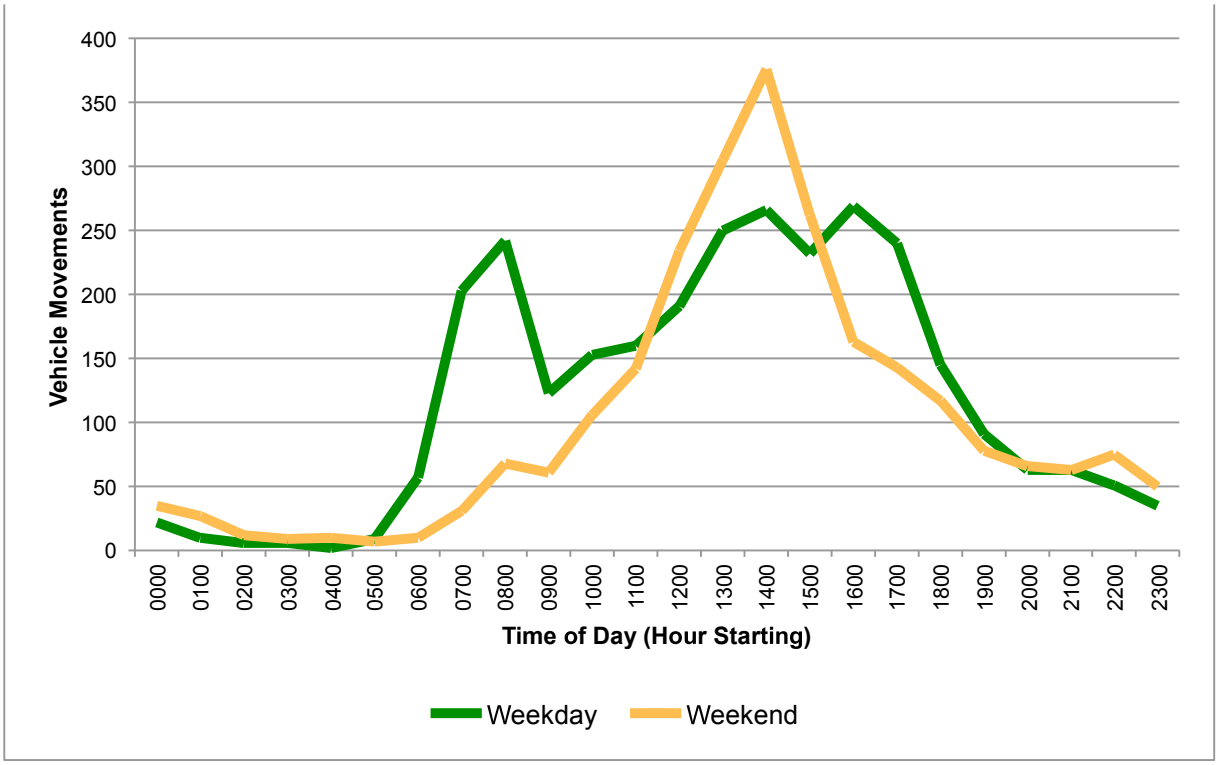


**Figure 7: Traffic Volume Survey Results**

In detail, the results indicate that:

- The weekday morning peak hour occurs between 8.00 – 9.00AM; at this time:
  - 242 two-way movements (on average) were recorded on the Cliff Street two-way collector street at the counter location,
  - It is expected that up to 120 movements (about 50%) would occur on any of the one-way local streets to the north.
- The weekday evening peak hour occurs between 4.00 – 5.00PM; at this time:
  - 269 two-way movements were recorded on the Cliff Street two-way collector street,
  - It is expected that up to 135 movements would occur on any of the one-way local streets.
- The weekend peak hour occurs between 2.00 – 3.00PM; at this time:
  - 376 two-way movements were recorded on Cliff Street two-way collector street,
  - It is expected that up to 185 movements would occur on any of the one-way local streets.
- The 85$^{th}$-percentile speed (i.e. speed at which 85% of vehicles travelled at) was 39 km/h.

With regard to the environmental performance of residential roads, the following is extracted from the RMS *Guide to Traffic Generating Developments* (October 2002):

**Table 4.6**
**Environmental capacity performance standards on residential streets**

| Road class | Road type | Maximum Speed (km/hr) | Maximum peak hour volume (veh/hr) |
|---|---|---|---|
| Local | Access way | 25 | 100 |
| | Street | 40 | 200 environmental goal |
| | | | 300 maximum |
| Collector | Street | 50 | 300 environmental goal |
| | | | 500 maximum |

**Note:** Maximum speed relates to the appropriate design maximum speeds in new residential developments. In existing areas maximum speed relates to 85th percentile speed.

In this regard it is noteworthy that Cliff Street in the location of the tube counter is a residential collector street, whereas the streets to the north are generally local streets. A review of the tube count results against the standards above indicates that:

- On weekdays, all streets operate at levels within their respective environmental goal thresholds.
- On weekends:
    - the one-way street network to the north operates within the environmental goal threshold of 200 peak hour vehicle movements,
    - Cliff Street exceeds the goal threshold of 300 movements; however, it operates well within the maximum threshold of 500 peak hour movements and could accommodate a further 124 movements before exceeding the guide's maximum threshold.

It is noteworthy that the RMS Guide states that the environmental capacity of a street "*can be increased through a reduction in speed*". Therefore, noting that the standards above for a collector street are based on an 85$^{th}$-percentile speed of 50 km/h, the surveyed 85$^{th}$-percentile speed of 39 km/h suggests that the collector street section of Cliff Street would most likely have a maximum threshold traffic volume in excess of the 500 movements stipulated in the RMS Guide.

## 2.5 Public Transport Accessibility

**Figure 8** shows that the site is well located to take advantage of numerous public transport services in the area, in particular ferry services at the Watson Bay wharf and bus services at the Military Road bus terminus.

With regard to ferry services, the Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area (Transport for NSW, December 2013), states that ferry services influence the travel mode choices of areas within 800 metres walk (approximately 10 minutes) of a ferry wharf. It is therefore noteworthy that all the subject sites are located within 800 metres of the Watsons Bay ferry wharf, with the:

- Gap Bluff precinct buildings approximately 500 metres walk via the dedicated pedestrian routes through Robertson Park and the Gap Cliff coastal walk,
- Camp Cove buildings approximately 600 metres walk via the Watsons Bay promenade, and
- Green Point Cottage also approximately 600 metres walk via the Watsons Bay promenade.

With regard to bus travel, the Transport for NSW guideline states that bus services influence the travel mode choices of sites within 400 metres walk (approximately 5 minutes) of a bus stop. With reference to Figure 8, the Gap Bluff precinct buildings are located approximately 300 metres walk from the Military Road bus terminus, via the Gap Cliff coastal walk. The proposed Constable's Cottage restaurant / café is 700 metres (approximately 8 minutes) walk from the terminus. While this is beyond the target distance of 400 metres, it is nevertheless expected that some patrons will use bus services.

In summary, all of the subject sites are favourably located to take advantage of the public transport facilities that serve the Watsons Bay area. It is anticipated that a significant number of patrons of the proposed restaurant and function centres would use public transport to access the site, particularly for inbound (arrival) journeys. Some outbound (departure) journeys would also use public transport; however, it is more likely that patrons will use a combination of inbound public transport travel and outbound taxi travel to access the sites. Importantly, the availability of public transport will be of significance for future staff of the function centres and restaurant.

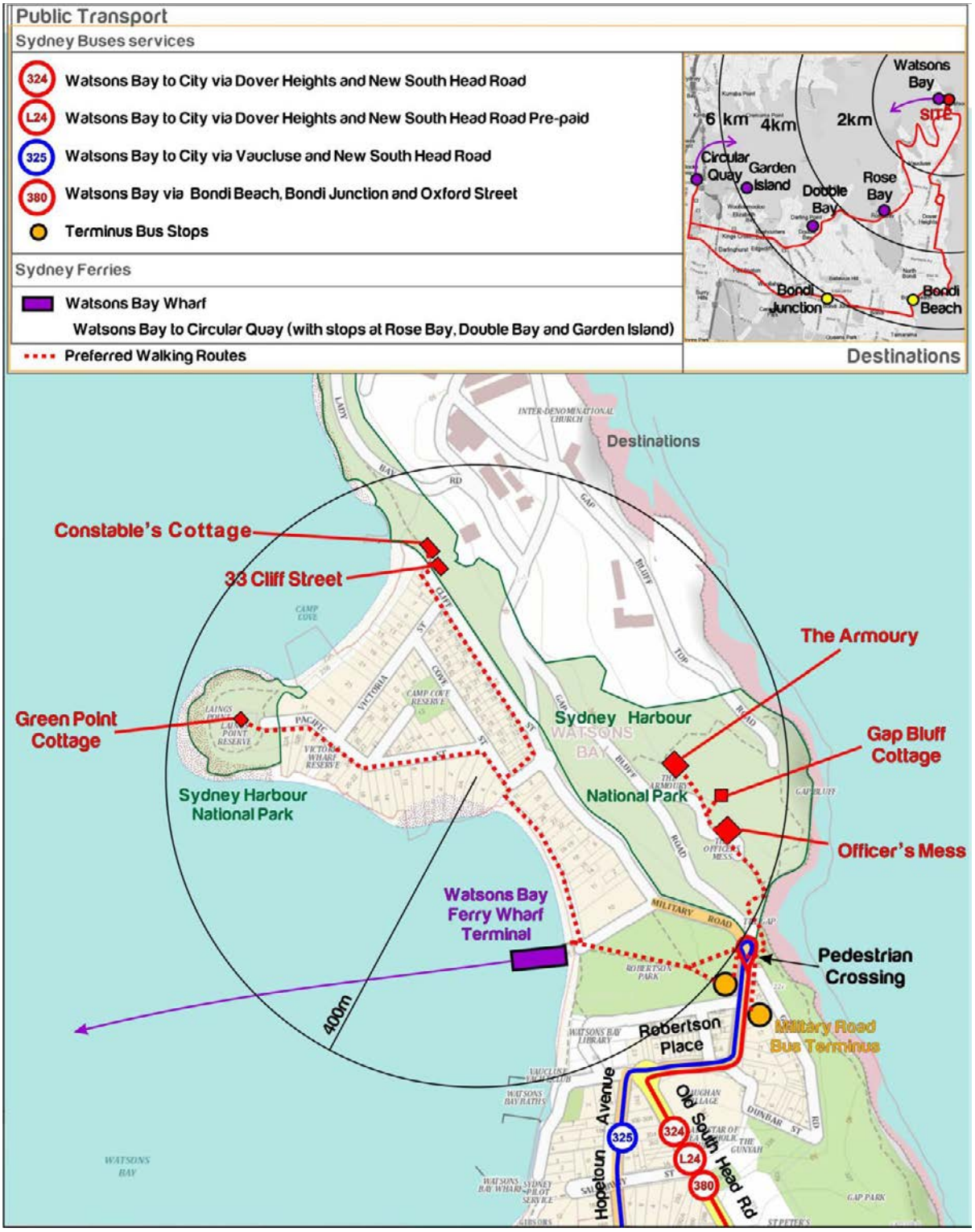


**Figure 8: Public Transport Accessibility**

# 3 Overview of Proposed Development

## 3.1 Development Characteristics

The following summarises the proposed development outcomes that are the objective of the alterations and additions. The details are summarised in terms that have car parking and/or traffic relevance. For the proposed Armoury and Officer's Mess function centres and the Constable's Cottage restaurant / café, these details include forecast patron numbers and floor areas where patrons will be served, as well as staffing levels.

<u>The Armoury Function Centres</u>

- Continued use of the Armoury building as a function / reception centre.
- Refurbishment and internal alterations (including an additional floor level) to provide 2 function centres (Ground Floor and First Floor function centres) with a total of 545 $m^2$ of floor area, including:
    - 447 $m^2$ of dining area, consisting of:
        - 369 $m^2$ of internal dining area, and
        - 78 $m^2$ of external dining area.
- Capacity for up to:
    - 250 guests for a Banquet style function (patrons generally seated, such as weddings), comprising:
        - 140 guests at the Ground Floor function centre,
        - 110 guests at the First Floor function centre.
    - 280 guests for a Cocktail style function (patrons generally standing).
        - 160 guests at the Ground Floor function centre,
        - 120 guests at the First Floor function centre.
- 20 staff, consisting of:
    - 11 Ground Floor function centre staff, and
    - 9 First Floor function centre staff.

Officer's Mess Function Centre

- Continued use of the Officer's Mess building as a function / reception centre.
- Refurbishment and internal alterations to provide a total of 480 $m^2$ of floor area, including:
  - 253 $m^2$ of dining area, consisting of:
    - 156 $m^2$ of ground floor internal dining area,
    - 57 $m^2$ of first floor Private Dining Room (PDR) 1 internal dining area, and
    - 40 $m^2$ of first floor PDR 2 internal dining area.
- Capacity for up to:
  - 115 guests for a banquet style function,
  - 130 guests for a cocktail style function.
- 10 staff, consisting of:
  - 6 floor staff, and
  - 4 kitchen staff.
- Construction of a new 71 $m^2$ kitchen to service the Armoury & Officer's Mess Function Centres and the proposed Constable's Cottage Restaurant.

Constable's Cottage Restaurant

- Conversion to a café / restaurant.
- Refurbishment and internal alterations to provide a total of 289.5 $m^2$ of floor area, including:
  - 196 $m^2$ of dining area, consisting of:
    - 108 $m^2$ of internal dining area, and
    - 88 $m^2$ of external dining area.
- Capacity for up to 80 patrons, consisting of:
  - Internal seating for 37 patrons, and
  - External seating for 35 patrons.
- 8 staff, consisting of:
  - 5 floor staff, and
  - 3 kitchen staff.

33 Cliff Street, Gap Bluff Cottage and Green Point Cottage

- Only minor refurbishment works are proposed, with the intensity of use remaining the same. Parking provision will be unchanged and the properties will continue to have an accommodation function. The minor works include:
    - Gap Bluff Cottage will change from a two-bedroom cottage to a single bedroom cottage.
    - 33 Cliff Street will remain a three-bedroom house, with the provision of an actual garage in place of the existing car-port.
    - Green Point Cottage will continue to have two bedrooms.

With regard to car parking at the function centre and restaurant developments, as previously mentioned, due to heritage and topographical site constraints, the proposed restaurant / café at the Constable's Cottage is unable to provide off-street car parking. Furthermore, one of the objectives of the Gap Bluff Precinct development is to conserve the existing character of the sites and avoid the construction of additional car parking that would potentially degrade the site aesthetically, and in any event would be used infrequently during non-standard peak periods (i.e. separate functions at all 3 function centres operating at full capacity). As a result, the approach adopted for parking at the Gap Bluff is to both:

- Maximise the car parking the site can currently accommodate without any unnecessary works,
- Provide a 'constrained' parking provision that discourages car driving and encourages the use of alternative transport modes. Event organisers will be recommended to offer their guest mini-bus services and promote the public transportation services of Ferry and Bus. Additionally, guest will be recommended to car pool, further promoting designated drivers and taxi services (including private driver services such as Uber). Large Groups will be recommended to utilise larger coach transport. Presently large coach transport enters and exits via the Military Road, although if considered of interest to NPWS, exiting via Lighthouse Road will be investigated pending assessment of gradients and turning circle.

With regard to the 3 accommodation developments, the refurbishments represent very minor works – essentially renovations – that will not change the operation of these buildings in terms of parking and traffic. Accordingly, the following sections focus of the parking and traffic implications arising from the 3 main development proposal.

## 3.2 Operational Plan of Management

As part of the REF, an Operational Plan of Management (OPM) has been prepared for the developments. With regard to the hours of operation for the function centres and the restaurant, the OPM provides the following:

The Armoury and Officer's Mess Function Centres

- The premises will trade 07.00AM to Midnight (12.00AM), Monday to Sunday.
- General Principles are:
    - Last drinks served at 11.30PM.
    - Patrons to vacate the venue by midnight.
    - Service Staff to depart by 12.30AM.

Constable's Cottage Restaurant

- The premises will trade 08.00AM to 11.00PM, Tuesday to Saturday.
- 08.00AM to 3.00PM on Sunday.
- Closed Monday.
- General Principles are:
    - Last drinks served at 10.30PM.
    - Patrons to vacate the venue by 11.00PM.
    - Service Staff to depart by 11.30PM.

# 4 Parking Assessment

## 4.1 Adopted 'Standard-Busy' Operation for Gap Bluff

It is understood that for 85-90% of function days throughout the year (generally Fridays and weekends only), the busiest the Gap Bluff function centres would get would consist of 2 of the 3 function centres in use. During the 2 weeks of heavy Christmas demand (i.e. 10-15% of function days with functions up to 7-days a week during this period), there is potential for all 3 function centres to be in use. On these occasions, special traffic and parking management measures will be implemented, such as overflow parking and private coach/shuttle bus services (refer to Section 6.0).

In addition, whilst all 3 function centres would have the ability to accommodate cocktail style functions, the vast majority of functions would be banquet style seated functions, in particular weddings.

Therefore, in order to assess the parking demands of 'standard-busy' operation at the Gap Bluff function centres, the following operational assumptions have been adopted:

- 255 guests, consisting of:
  - 140 guests for a banquet style function at The Armoury Ground Floor function centres,
  - 115 guests for a banquet style function at the Officer's Mess function centre.
- 21 staff, consisting of:
  - 11 staff at The Armoury Ground Floor function centres,
  - 10 staff at the Officer's Mess function centre.

## 4.2 DCP Parking Controls

Woollahra Council's DCP 2015 at Chapter E1, Parking and Access, provides no specific parking rate for a function centre. However, it does provide the following parking rate under Retail premises and (specifically) Food and drink premises:

- 7 spaces per 100 $m^2$ of Gross Floor Area (GFA)

  *Note: For restaurants or cafes, the calculation of 'gross floor area' includes any outdoor seating areas, court yards and any other locations where patrons will be served, but excludes footpath dining areas provided the proposal complies with Council's policy for footway restaurants.*

In the following parking analysis, the above rate has been adopted for the function centre and restaurant proposals.

## 4.3 Function Centre, Use Specific Parking Rate

### 4.3.1 Survey of Existing Function Centre

Recognising the varied nature of operations for function centre developments, the Client has provided parking demand information obtained from surveys of the Orso Bayside Reception facility at 79 Parriwi Road, Mosman. The surveys were conducted over three separate reception events and the results are presented in **Table 3**.

**Table 3: Existing Parking Survey, Orso Bayside Reception, Mosman**

| | 27 March 2015 | | 28 March 2015 | | 2 April 2015 | |
|---|---|---|---|---|---|---|
| | **Number of Guests** | **Parked Vehicles** | **Number of Guests** | **Parked Vehicles** | **Number of Guests** | **Parked Vehicles** |
| **Parking** | | | | | | |
| Private Car Pool | 38 | 9 | 76 | 19 | 36 | 9 |
| Private Car Couples | 36 | 18 | 38 | 19 | 24 | 12 |
| **Other Modes** | | | | | | |
| Bridal Car | 9 | - | 13 | - | 10 | - |
| Taxi | 0 | - | 0 | - | 51 | - |
| Water Taxi | 7 | - | 0 | - | 0 | - |
| Total | 92 | 27 | 127 | 38 | 121 | 21 |

The survey data indicates that across the three separate functions:

- The facility entertained a total of 338 guests and had a total parking demand of 86 private cars, which equates to a parking demand of 1 parking space per 4 guests.
- Of these guests, 248 arrived via the 86 private cars, which equates to a car occupancy of 3 guests per car.

In addition, the following mode split of travel choices by patrons can be determined:

! 73% by car, consisting of:

  - Car – As Driver = 25%
  - Car – As Passenger = 48%

- 27% by alternative modes, consisting of:

  - Bridal Cars = 10%

- Taxi (inc. Water Taxi) = 17%
- Public Transport = 0%

### 4.3.2 Forecast Mode Split for The Gap Bluff Precinct

Having consideration for the site's favourable location with regard to public transport – and the adoption of (and active promotion of) a constrained parking provision that will discourage car driving and encourage the use of alternative transport modes – it is anticipated that the Gap Bluff function centres would have a marginally improved mode share by alternative modes of 30%, as opposed to the 27% derived from the surveys of the Orso Bayside function centre. Accordingly, it is anticipated that 70% of guest would arrive by private car (as drivers or passengers), which is marginally lower than the 73% derived from the Orso Bayside surveys.

## 4.4 Parking Requirements

**Table 4** presents the parking requirements based on Council's DCP and – for the function centre uses – based on the use specific car occupancy rate of 3 guest per car and forecast 70% - 30% modal split.

**Table 4: Parking Requirement**

| Facility | DCP PARKING REQUIREMENT | | | USE SPECIFIC PARKING REQUIREMENT | | | |
|---|---|---|---|---|---|---|---|
| | Dining Floor Area ($m^2$) | Parking Rate | Parking Requirement (spaces) | Capacity (Guests) | 70% Guests arriving by Car | Car Occupancy | Parking Requirement (spaces) |
| **Armoury Function Centre** | 447 | 7 spaces per 100 $m^2$ | 31 | 140 | 98 | 3 guests per car | 33 |
| **Officer's Mess Function Centre** | 253 | | 18 | 115 | 81 | | 27 |
| **Constable's Cottage Restaurant** | 196 | | 14 | - | - | - | - |

The analysis presented in Table 4 indicates that under the adopted 'standard-busy' operational conditions, the proposed:

- The Gap Bluff Function Centres require between 49 – 60 parking spaces.
- Constable's Cottage Restaurant requires 14 parking spaces to comply with Council's DCP.

## 4.5 Constable's Cottage Restaurant / Café

### 4.5.1 Zone 1 Parking Availability

The main objective of the proposed restaurant / cafe is to provide a service that is currently absent from the Camp Cove area, which would serve beachgoers (especially during lunch periods) and local residents. Accordingly, the restaurant is anticipated to generate only moderate parking demand as a significant proportion of its customers would already be in the area.

Notwithstanding the above, any parking demands generated by the restaurant would be generally accommodated by the supply of parking within walking distance of the site, which is identified as Zone 1 on Figure 4. In this regard, Zone 1 provides 125 on-street parking spaces; however (as mentioned previously), 18 of these spaces are restricted to residential permit use only at all times. Furthermore, it is noteworthy that 38 of these parking spaces are located in the Camp Cove car park that is owned by the National Parks and Wildlife (NPW), approximately 50 metres south of the proposed restaurant. At present, NPW provides this car park for unrestricted public use by local residents and visitors to the area. Due to its proximity of the proposed restaurant, it is anticipated that the majority of customers that drive to the area would use the NPW car park.

**Figure 9** and **Figure 10** present graphically the parking availability of the 107 unrestricted parking spaces in Zone 1 (i.e. not including the 18 Woollahra Council permit parking only spaces) during the Thursday and Saturday surveys respectively.

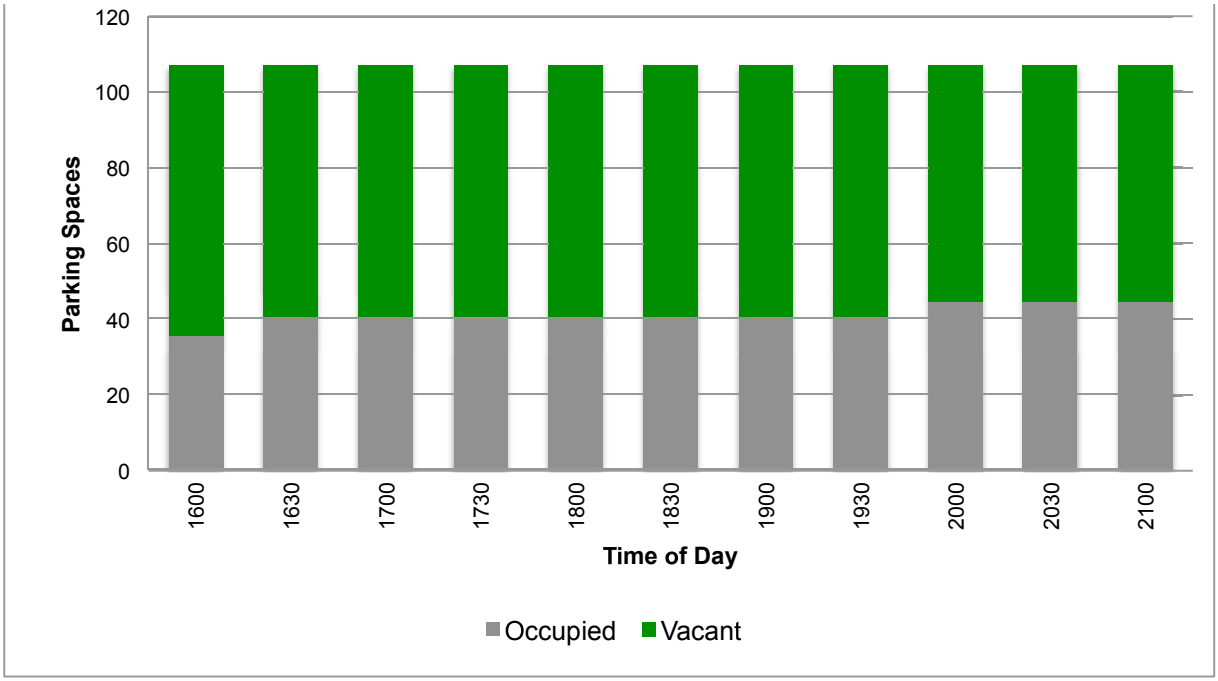


**Figure 9: Zone 1, Thursday On-Street Parking Survey Availability**

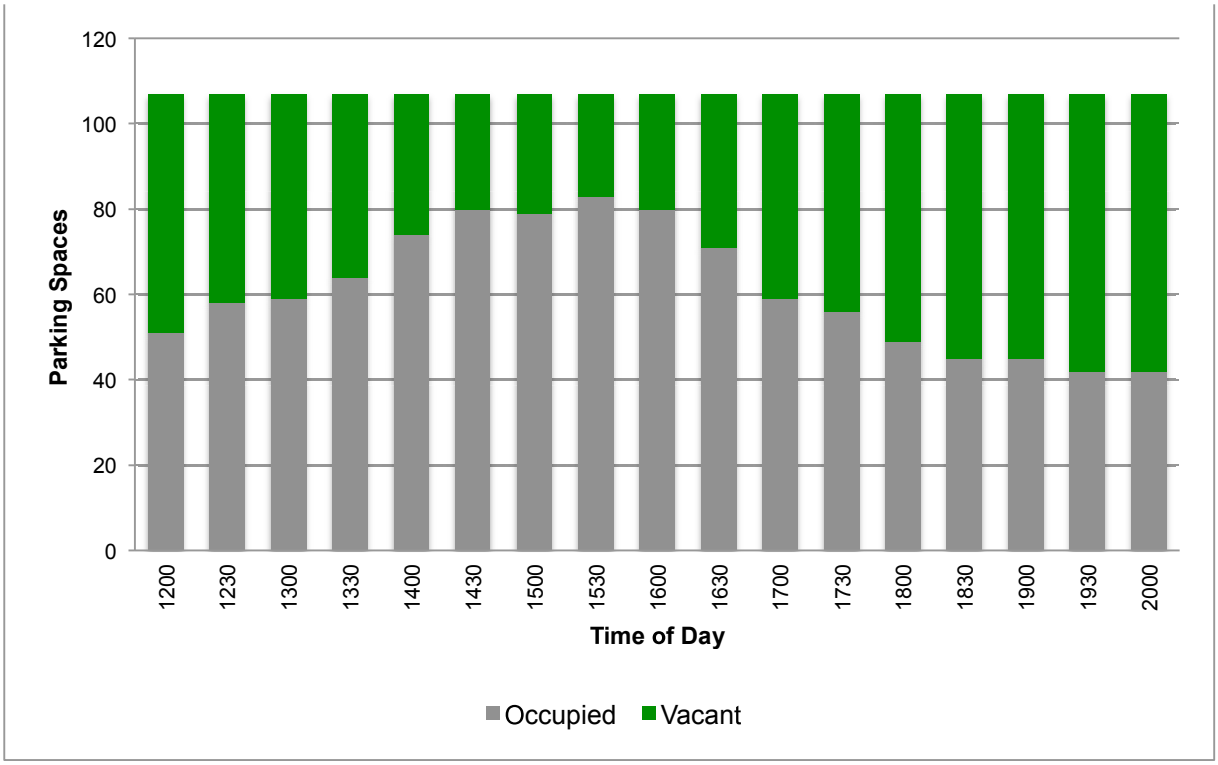


**Figure 10: Zone 1, Saturday On-Street Parking Survey Availability**

The graphs clearly show that there was significant parking availability on Thursday and on Saturday the parking peaked around 2.30 – 4.00PM, which most likely relates to demand generated by Camp Cove beachgoers. In greater detail the results indicate the following:

- On Thursday on-street car parking peaked at 8.00PM; at this time:
  - 45 parking spaces were occupied (42% of the 107 parking spaces in Zone 1),
  - 62 parking spaces were vacant (58% of parking spaces in Zone 1).
- On Saturday on-street car parking peaked at 3.30PM; at this time:
  - 83 parking spaces were occupied (78% of parking spaces in Zone 1),
  - 24 parking spaces were vacant (22% of parking spaces in Zone 1).

### 4.5.2 Zone 1 Forecast Parking Impacts

Under Council's DCP, the proposed restaurant would require 14 car parking spaces, which – it can be assumed – equates to the parking demand that the restaurant would be expected to generate. The following **Figure 11** and **Figure 12** present graphically the impact of the restaurant parking demand on on-street parking in Zone 1.

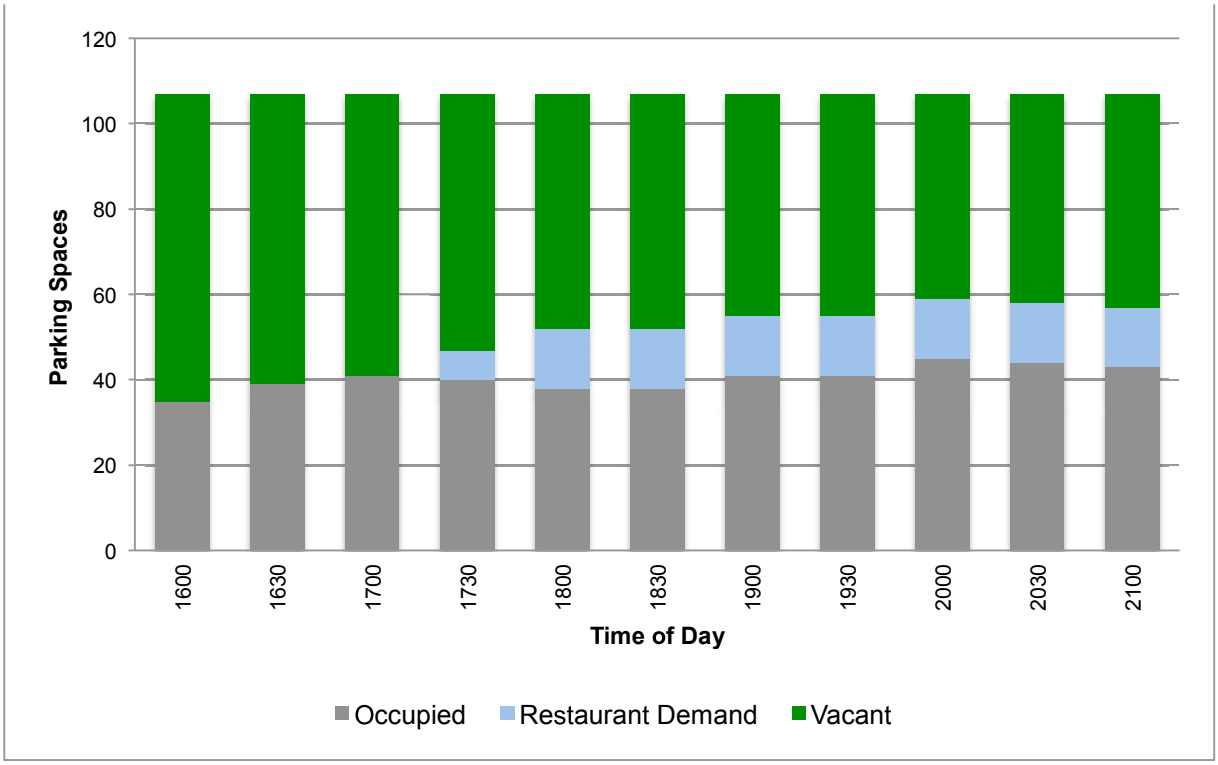


**Figure 11: Zone 1, Forecast Thursday On-Street Parking Availability**

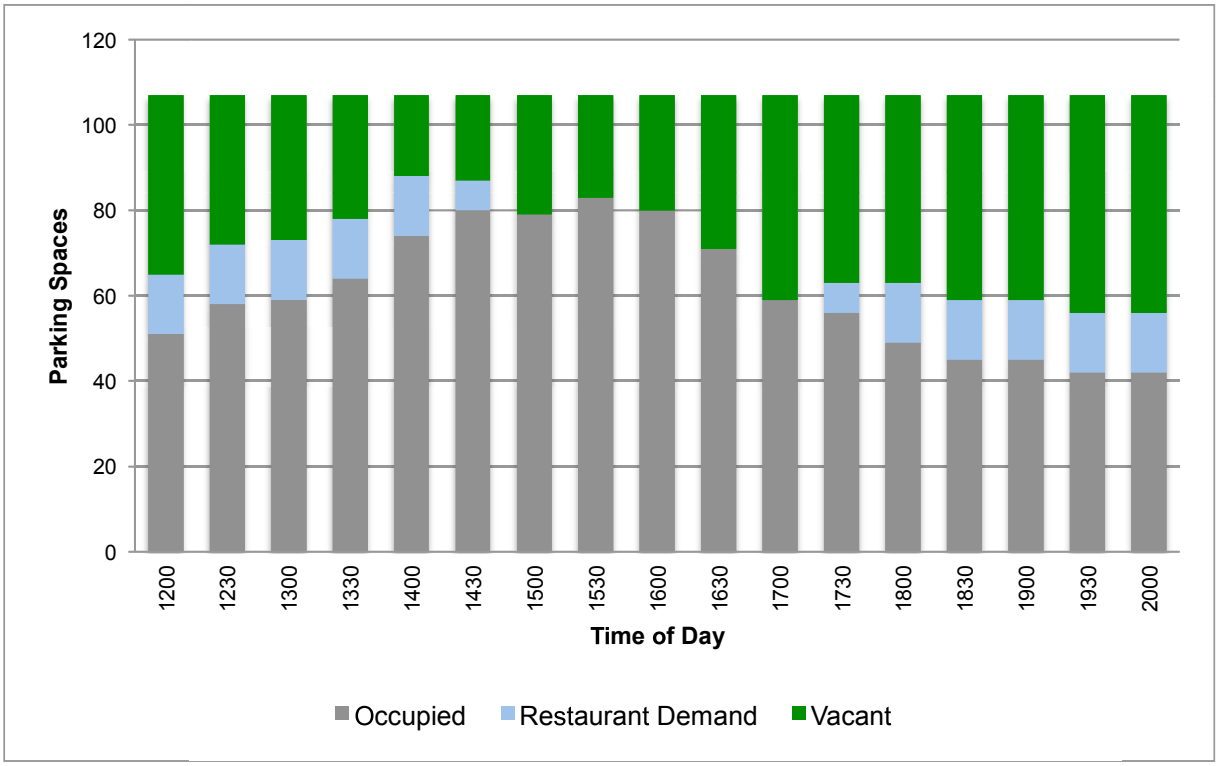


**Figure 12: Zone 1, Forecast Saturday On-Street Parking Availability**

The analysis assumes that the peak parking demand of 14 spaces is generated from 6.00PM in the evenings and between 12.00 – 2.00PM on the Saturday, with 50% of the peak demand (7 spaces) occurring during the 30 minutes prior to, or following, these peak periods.

The graphs clearly show that there would still be significant parking availability on Thursdays, which would be consistent with the expectation on all weekdays. With regard to Saturdays (weekends) the analysis indicates that the proposed restaurant would generate its peak parking demands prior to and after the surveyed peak period of 2.30 – 4.00PM. In greater detail the analysis indicates the following:

- On Thursdays (weekdays) on-street car parking would still peak at 8.00PM; at this time it is forecast that:
    - 59 spaces (including 14 restaurant cars) would be occupied (55% of the spaces in Zone 1),
    - 48 parking spaces would still be vacant (45% of parking spaces in Zone 1).
- At midday on Saturdays (weekends) on-street car parking would peak at 2.00PM; at this time it is forecast that:
    - 88 spaces (including 14 restaurant cars) would be occupied (82% of the spaces in Zone 1),
    - The 88 parking spaces are just 5 spaces more than the current 83 space peak at 3.30PM,
    - 19 parking spaces would still be vacant (18% of parking spaces in Zone 1).
- In the evening on Saturdays (consistent with Friday & Saturday evenings) on-street car parking would peak at 6.00PM; at this time it is forecast that:
    - 63 spaces (including 14 restaurant cars) would be occupied (59% of the spaces in Zone 1),
    - The 63 parking spaces are 20 spaces fewer than the current 83 space peak at 3.30PM,
    - 44 parking spaces would still be vacant (41% of parking spaces in Zone 1).

In summary, the on-street parking analysis – based upon actual on-street parking survey data of areas within reasonable walking distance of the proposed Constable's Cottage restaurant / café – demonstrates that there is sufficient existing on-street parking availability to accommodate the parking demands anticipated for the proposed restaurant and still retain residual parking availability for other locally generated demands.

### 4.5.3 Peak Summer Demand

It should be noted that the analysis above assumes that the future patrons of the proposed restaurant /café generally fall into 2 categories, as follows:

- Patrons already in the Camp Cove area (residents and beachgoers), who would generate no additional parking demand, and
- Patrons that specifically travel to the Camp Cove area to visit the restaurant / café, who would generate additional parking demand.

With regard to seasonal variations in demand, it is noted that the surveys that informed the above parking analysis were conducted in April, a 'Shoulder' month with regard to the peak summer months of December to February and the off-peak winter months of June to August. It is noteworthy that transport planning 'best-practice' recommends undertaking analysis based on shoulder period demands as these best reflect general – or average – demands throughout the course of a full year; therefore, the conclusions above are considered relevant and in accordance with best-practice.

Notwithstanding the above, it is expected that the parking demand in the area during the summer months, particularly on sunny weekends around noon, would most likely be greater than the demands recorded by the April surveys. However, under such circumstances, the restaurant / café is expected to draw more patrons from the increased population already in the Camp Cove area and it is expected that fewer patrons would travel specifically to the area to visit the restaurant / café, aware that parking availability would be limited.

In summary, during busy summer periods, the restaurant / café would draw its trade almost exclusively from the population (residents and beachgoers) already in the area. Therefore, the parking demands generated solely by the restaurant / café would be limited (if any) during these periods. Accordingly, future parking demands in the area following opening of the proposed Constable's Cottage restaurant / café would remain generally the same as they currently are during these periods.

### 4.5.4 Council Studies

Woollahra Council was contacted to determine whether any parking studies had been conducted in the Camp Cove area. In response, a Council traffic officer advised that Council had undertaken no parking studies.

Publicly available information online was also reviewed; however, no studies specific to Camp Cove were discovered, as would be expected based on the comments of Council's traffic officer. The only document found of potential interest was the Traffic Management Strategy prepared by GTA

Consultants and dated March 2014. Whilst this document covered the whole of the Woollahra LGA including the Watsons Bay area (and therefore Camp Cove), the report was traffic focused and accordingly provides limited parking analysis.

In summary, based on a high level review of available Council data, the lack of any parking studies in the Camp Cove area suggests that Council does not consider there to be a parking issue in the area.

## 4.6 The Gap Bluff Function Centres

The analysis presented in Table 4 indicates that the Gap Bluff Precinct – under 'standard-busy' operating conditions – requires 49 to 60 parking spaces, consisting of:

- 31 – 33 parking spaces for the Armoury function centres.
- 18 – 27 parking spaces for the Officer's Mess function centre.

With reference to the Gap Bluff Precinct Parking Plan at **Figure 13**, the area currently provides a total of 70 parking spaces comprising 60 spaces for guests and 10 spaces reserved for staff, consisting of:

- 18 formally line-marked spaces to the west of the Gap Bluff Cottage,
- 15 kerb side parking spaces adjacent to the lawn to the west of the Armoury building,
- 12 kerb side parking spaces on the ingress and egress to the Officer's Mess building,
- 15 informal parking spaces in the irregular shaped hardstand area to the northwest of the Armoury building, and
- 10 parking formally line-marked spaces to the southeast of the Officer's Mess building (to be reserved for staff).

The analysis above demonstrates that the Gap Bluff site provides 60 parking spaces for the up to 60 private cars that are expected under standard-busy operations; that is, the parking demand that is expected on 85-90% of function days. Furthermore, the site provides 10 parking spaces for staff, which – at approximately 1 space per 2 staff – is more than sufficient to accommodate anticipated staff parking demands.

On the 10-15% of occasions where all 3 functions centres are operating, there would be an additional 110 guests at The Armoury first floor function centre under a banquet style format. Application of the 70% mode split by private car and 3 persons per car occupancy rate, it can be calculated that the during these heavy demand periods, parking demand would increase by 25-26 car spaces.

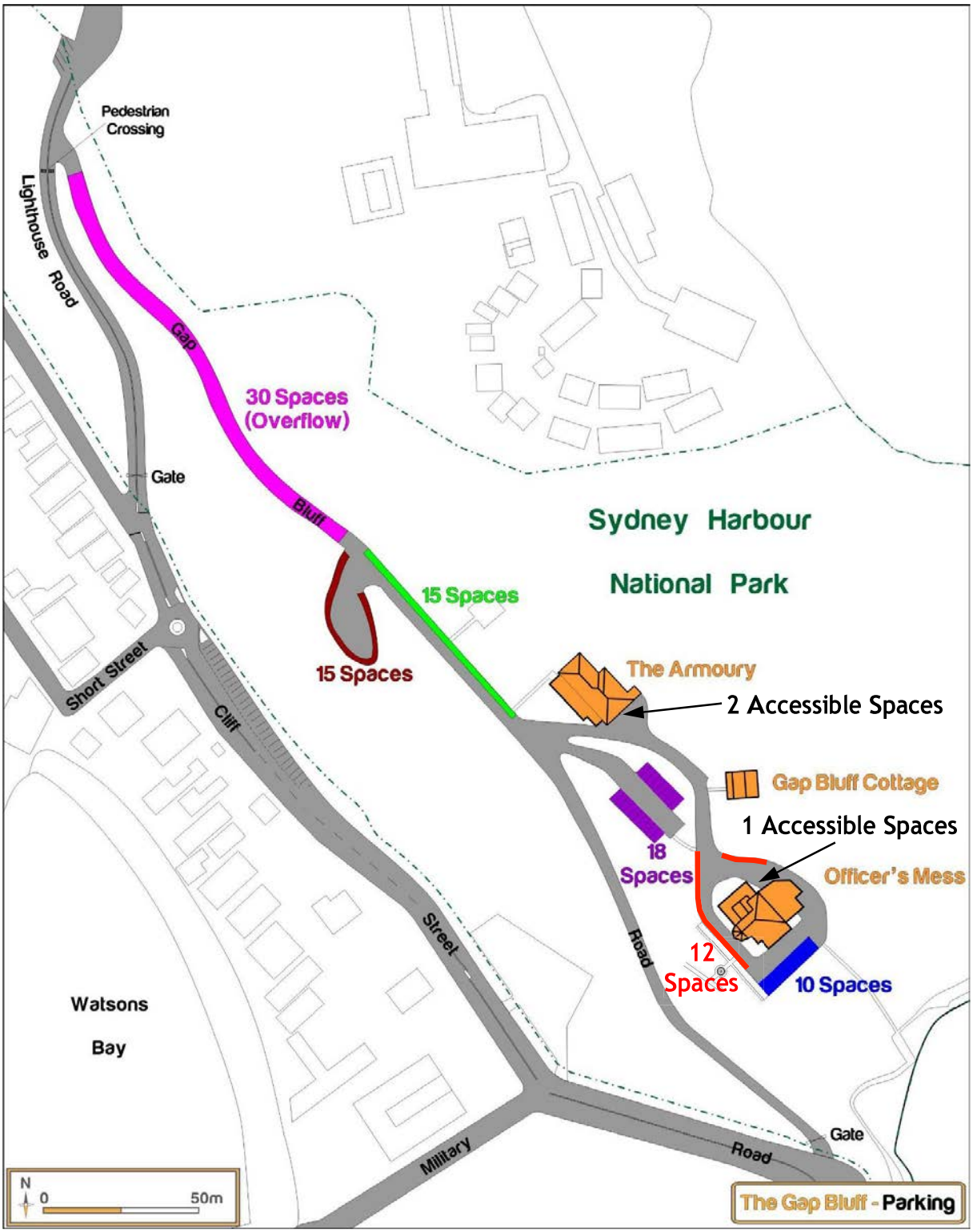


**Figure 13: The Gap Bluff Precinct Parking Plan**

In response, 'overflow' kerb side parking can be provided on the access road to the north of the hardstand area, which heads northwards towards the access road to the naval base. This access road is approximately 190 metres in length, 6.0 metres wide and has a footpath along its western frontage. Therefore, during peak periods of operation, the road could provide overflow parking for about 30 additional cars in an area that is visually shielded from the main function areas.

In summary, the Gap Bluff precinct provides 70 parking spaces that would accommodate the 85-90% of parking demands generated by the site under standard conditions with 2 function centres operating simultaneously. On occasions that generate a higher parking demand, overflow parking for a further 30 cars can be provided on the northern access road, which would meet that additional demand for 25-26 parking spaces with all 3 function centres operating simultaneously. Accordingly, the Gap Bluff precinct provides sufficient parking to accommodate 100% of the anticipated parking demands generated by the 3 function centres, without placing any demand on on-street parking within the wider Watsons Bay area.

## 4.7 Accessible Parking

With reference to Figure 13, the Gap Bluff Precinct provides 3 accessible parking spaces, consisting of:

- 2 spaces adjacent to the southeast face of the Armoury Building, and
- 1 space adjacent to the entrance to the Officer's Mess Building.

These 3 spaces would accommodate that anticipated demand for accessible spaces for the Gap Bluff function centre.

With regard to Constable's Cottage, an accessible space can be provided in the Camp Cove NPW car park.

# 5 Traffic Analysis

## 5.1 Assessment Objective

The objective of the following traffic analysis is to determine the potential residential amenity impacts of the function centre and restaurant developments on the local residential roads in the area, namely:

- The two-way collector street section of Cliff Street south of the roundabout junction with Short Street to its termination at the intersection with Military Road.
- The one-way network of local streets to the north of the Short Street / Cliff Street roundabout.

In this regard – and with reference to the existing traffic volume analysis in Section 2.4 – it is noteworthy that the 'critical' traffic period for the area occurs between 2.00 – 3.00PM on a weekend. At this time, the background traffic volumes on the local road network consist of:

- 376 vehicle movements on the two-way section of Cliff Street, which is 124 movements below the environmental capacity threshold of 500 movements for a residential collector street.
- 185 vehicle movements on the one-way network, which is 115 movements below the environmental capacity threshold of 300 movements for a residential local street.

## 5.2 Traffic Generation

### 5.2.1 Constable's Cottage Restaurant

The RMS Guide states the following with regard to the peak hour traffic generation of restaurant:

- 5 trips per 100 $m^2$ of Gross Floor Area (GFA).
- An average 2.1 $m^2$ of GFA per seat.

From the above, a 'per seat' trip rate can be determined of:

- 0.105 peak hour trips per seat.

Application of this RMS derived rate to the proposed 72 seats of the Constable's Cottage restaurant indicates that the development would generate a peak hour traffic volume of about 8 peak hour trips. These trips would be additional to the background trips on the two-way collector street section of Cliff Street and the one-way network of local streets to the north of the roundabout.

### 5.2.2 The Gap Bluff Function Centres

The RMS Guide does not provide trip rate advice for function centres. Accordingly, the following trip generation analysis has been derived on a first principles basis using anticipated guest numbers expected under standard-busy operations of 255 guests.

With reference to the modal split analysis provided earlier, it is anticipated that 70% (179 guests) would arrive via private cars and 30% (76 guests) would arrive via a combination of taxis (or private drop-offs / pick-ups) and 'mass transit', that is public transport (ferries or buses in this instance) or private mass transit (i.e. privately arranged shuttle buses or coaches). Notwithstanding the above, it is assumed that all 76 guests that use alternative transport arrive by taxis or private drop-offs / pick-ups. This assumption provides a worst-case assessment of the traffic impacts under standard busy operations.

Application of the car occupancy rate of 3 guests per car (refer to Section 4.3) indicates that under standard-busy operations with 2 function centres in use at the same time, the Gap Bluff precinct would 'attract' the following number of cars.

- 175 guests in private cars @ 3 guests per car = 60 cars
- 76 guests dropped-off / picked-up @ 3 guests per car = 25 cars

In terms of traffic movements, it is noteworthy that the private cars equate to 1 pre-function vehicle movement (arrival trip) and 1 post-function vehicle movement (departure trip). However, the drop-off / pick-up movements generate 2 pre-function vehicle movements (an arrival and departure trip) and 2 post-function vehicle movements. On this basis, the following pre-function and post-function traffic generation analysis can be determined:

- 110 pre-function trips (85 arrival, 25 departure)
- 110 post-function trips (25 arrival, 85 departure)

In this regard, it is noteworthy that all arrival trips will be via the main access to Military Road, south of the Cliff Street residential collector street. Furthermore, the majority of departure traffic will also exit via the main access avoiding Cliff Street, which would certainly be the case for post-function traffic. However, recognising that pre-function arrival traffic is generally more intense – as the majority of guests tend to arrive just prior to a set time – compared with post-function departure traffic – which tends to depart over a wider time period – then there may be occasions that pre-function traffic is managed to exit via the northern secondary access road to avoid congestion on the main access road. Under a conservatively robust scenario that assumes all pre-function departure traffic exits via the secondary access, then 25 additional vehicle movements would use the two-way collector street section of Cliff Street.

## 5.3 Traffic Impacts

Based on the analysis above, the following table summarises the environmental capacity implications of the potential traffic generation of the main developments during the critical weekend period of 2.00 – 3.00PM.

**Table 5: Residential Amenity Traffic Assessment**

| Subject Road Section | Two-Way Cliff Street | One-Way Network |
|---|---|---|
| ***Classification*** | ***Residential Collector Street*** | ***Residential Local Streets*** |
| ***Environmental Threshold*** | ***500 movements*** | ***300 movements*** |
| Background traffic | 376 movements | 185 movements |
| Constable's Cottage restaurant traffic | (+) 8 movements | (+) 8 movements |
| Function Centres' traffic | (+) 25 movements | n/a |
| Forecast (future) traffic | 409 movements | 193 movements |
| ***Reserve*** | ***91 movements*** | ***107 movements*** |

The analysis shows that:

- The two-way collector street section of Cliff Street could be subject to 33 additional movements from the proposed restaurant and function centres. However, the forecast traffic volume of 409 movements is still 91 movements below the environmental capacity threshold of 500 movements for a residential collector street.
- The one-way network of local streets would be subject to only 8 additional movements associated with the proposed restaurant, which equates to (on average) just 1 additional trip every 7.5 minutes. Traffic volumes of such a low order would have no material impact on the performance of the local road network and as can be seen in Table 5, the forecast traffic volume of 193 movements is well below the environmental capacity threshold of 300 movements for a residential local streets.

It is recognised that the impacts above focus on the 2.00 – 3.00PM period on a weekend, which corresponds to the peak traffic hour for the area. However, local resident concerns often relate to post-function evening traffic. In this regard, it should be noted that the majority (if not all) of the evening traffic would use the main access directly to Military Road, thereby avoiding the sensitive residential streets north of, and including, the collector street section of Cliff Street.

On rare peak occasions that require cars to be parked on (and eventually depart via) the northern access road, then up to 30 cars would use the secondary access. As mentioned above, it is expected that these cars would depart over wide post-function time period and therefore the impacts of these cars on the two-way section of Cliff Street would be negligible.

It should also be noted that the above analysis is based on the total future traffic generation of the site, not the additional (or net) traffic generation. As such, the analysis treats the development traffic to be wholly new traffic on the local road network, despite the fact that the Gap Bluff buildings already have a function centre use and therefore currently generate a permitted level of traffic. The above analysis does not account for this permitted level of traffic and therefore the analysis can be considered conservatively robust in the conclusions it has drawn.

In summary, the traffic analysis demonstrates that the additional development traffic volumes would have only moderate impacts on the surrounding sensitive streets and the future traffic volumes would remain below relevant environmental capacity standards for collector and local residential streets.

# 6 Operational Management Measures

## 6.1 Plan of Management

Having regard for the future land uses and the constrained nature of the sites, the following management measures are proposed to minimise the impacts of the development on the existing amenity of residents and visitors to the Watsons Bay precinct.

## 6.2 Overflow Parking

As mentioned, overflow kerb side parking can be provided on the access road to the north of the Gap Bluff precinct. Due to the 6.0 metre width of this road, on occasions that it is used for overflow parking, it is recommended that the road is managed to be temporarily one-way northbound to optimise traffic flow.

## 6.3 Coach and Bus Access

Access to the Gap Bluff precinct will continue as currently occurs. In this regard, coaches enter via the southern primary access with Military Road, unload passages in front of the Armoury building and turn within the hardstand area adjacent to the Armoury building to exit via the main access. Accordingly, this area needs to remain clear of parked cars, as shown on Figure 13.

The future operator of the function centres will provide a service whereby they would arrange with a coach/bus operator to service a function or event, promoted verbally and via their website and collateral.

## 6.4 Shuttle Bus

Constables Cottage will provide a shuttle bus service during peak periods to transport patrons between the restaurant/function centres and the Watsons Bay car parks, ferry terminal and the Military Road bus terminus. This service would also connect to additional parking opportunities elsewhere, such as the 37 space car park at the intersection of Military Road with Cliff Street.

## 6.5 Servicing

All major deliveries relating to the function centres and the restaurant will occur at the rear loading dock of the Officer's Mess building were items (such as food and drinks) will be stored and transported as necessary to The Armoury and the Constable's Cottage site. This will reduce deliveries to the other venues by individual suppliers and permits the ability to strictly manage delivery times to ensure the minimum movements possible and that trips to the proposed restaurant occur outside of times when the Camp Cove beach is busy and there are high levels of pedestrian traffic.

Centralising storage and preparation at the Officer's Mess will have positive outcomes on delivery transportation and waste collection. As the majority of waste from kitchens is packaging, off cuts and trimmings, which will be consolidated for collection in 1 location as opposed to 3 separate locations. All waste from Constables Cottage will be collected at the time of deliveries and delivered on the return trip to the Officers Mess. A private contractor making use of the existing site access to Military Road will undertake waste collection for the Gap Bluff precinct.

# 7 Conclusions

The key findings of this Traffic Impact Assessment are:

- Ason Group has been engaged by Gap Bluff Hospitality Pty Ltd to prepare a Traffic Impact Assessment report to support a Review of Environmental Factors relating to alterations and additions to six existing buildings currently owned by the National Parks and Wildlife. The overall site consists of two precincts: the Gap Bluff Precinct and the South Head, Camp Cove and Green Point Precinct located within the South Head sector of Sydney Harbour National Park, Watsons Bay.
- On-Street parking surveys indicate that there is on-street car parking availability within walking distance of the Constable's Cottage which is to be converted to a restaurant / café with no parking for patrons.
- Tube count surveys indicate that the current traffic volumes in the local area currently comply with the RMS environmental capacity standards.
- The subject sites are favourably located to take advantage of the public transport facilities that serve the Watsons Bay area. It is anticipated that a significant number of patrons of the proposed restaurant and function centres would use public transport to access the site, potentially in combination with taxi services. Importantly, the availability of public transport will be of significance for future staff of the function centres.
- On-street parking analysis demonstrates that within reasonable walking distance of the proposed Constable's Cottage restaurant / café, there is sufficient existing on-street parking availability to accommodate the 14-space parking demand anticipated for the proposed restaurant and still retain residual parking availability for other locally generated demands.
- The Gap Bluff precinct provides 70 parking spaces that would accommodate the 85-90% of parking demands generated by the site under standard conditions with 2 function centres operating simultaneously. On occasions that generate a higher parking demand, overflow parking for a further 30 cars can be provided on the northern access road, which would meet that additional demand for 25-26 parking spaces with all 3 function centres operating simultaneously. Accordingly, the Gap Bluff precinct provides sufficient parking to accommodate 100% of the anticipated parking demands generated by the 3 function centres, without placing any demand on on-street parking within the wider Watsons Bay area. Accessible parking for the Gap Bluff function centres and the Constable's Cottage restaurant / café are also provided.
- The traffic analysis demonstrates that the additional development traffic volumes would have only moderate impacts on the surrounding sensitive streets and the future traffic volumes would remain below relevant environmental capacity standards for collector and local residential streets.

- With regard to the 3 accommodation developments of 33 Cliff Street, Gap Bluff Cottage and Green Point Cottage, the refurbishments represent very minor works – essentially renovations – that will not change the operation of these buildings in terms of parking and traffic.

The analysis undertaken to inform this report concludes that the developments will operate satisfactorily, will not have any adverse parking, traffic and/or environmental impacts and the developments are therefore supportable on traffic planning grounds.