Q Station, Manly

Site Travel and Access Plan

Prepared for: North Head Sydney Pty Ltd

Ref: 300305408 | Date: 06 June 2024

Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

CONTENTS

SITE TRAVEL AND ACCESS PLAN

Q Station, Manly

Executive Summary

The current planning approval for the operation of the Q Station site for cultural tourism, accommodation, conferences and functions lapses on 23 December 2024 and Q Station is seeking renewal by way of the Review of Environmental Factors (REF) planning pathway, with updated Conditions of Planning Approval (CoPA) provided accordingly.

On 25 May 2018, approval was granted for Q Station to increase the maximum visitation capacity to 600 people for up to 20 events per year. As part of this approval, a new condition was added to the (CoPA) which required a Site Travel and Access Plan (STAP) to be prepared prior to any larger events taking place, which was subsequently prepared by Stantec on 6 September 2018. The STAP was required to identify a range of management measures which would be implemented for at least five event sizes.

To accompany the REF for the continued use of the Q Station site, Stantec has prepared an updated STAP which assesses the current and future transport operations and addresses any recurrent traffic and transport concerns with the site. The STAP also confirms that the proposed amendments to the CoPA are considered acceptable.

Access to the site is from North Head Scenic Drive where visitors can either use the on-site upper car park near reception or use public transport/ Quarantine shuttle bus. Access via walking or cycling is also an option, especially for day visitors. A secondary access is available from Q Station Wharf, however this is understood to be currently limited to approved vessels (refer to Condition 140 of existing approval).

Existing access to Q Station is primarily by private vehicle, with the STAP identifying specific travel mode share targets aimed at increasing non-car travel, including water-based modes of travel.

Table E1 summarises the recommended general and event-specific management measures (for five different event types/ sizes). Many of these are existing management measures adopted following the 2018 STAP, with select additional measures recommended to improve travel demand management.

An implementation and monitoring strategy has also been detailed, and is led by the Q Station on-site manager.

On the basis of this STAP, it is expected that the Q Station site can continue to operate satisfactorily from a traffic and transport perspective beyond 23 December 2024.

Table E1: General and event specific management measures

Event	Anticipated no. of people on-site	Recommended event-specific management measures	Recommended general management measures
Open day (weekend)	600	• Attendants at reception to escort overnight guests with cars to lower car park. • Encourage other modes of transport including the 161 bus route and future ferry services. The ferry could be subsidised by Q Station for people who book accommodation. • Increase frequency of shuttle bus services.	• Booking system to require overnight guests to specify if they require a car parking space, allowing Q Station to reserve spaces for guests and identify how many spaces are available for visitors. • Additional signage indicating a full car park to be positioned at the Q Station welcome sign on North Head Scenic Drive roundabout once the upper car park is full, with monitoring by attendants. Any unplanned overnight guests with cars would be able to work with reception to organise parking in the lower car park if available or along the Entrance Road past the existing boom gates. • Encourage staff for large events to car-pool, use public transport and/ or ride share when feasible and safe to do so. • Ensure access provision for persons with disabilities, non-English speaking visitors, services/ contractors and emergency vehicles are maintained and/or improved. • Install boom gates and a paid parking scheme to be implemented at the upper car
Large weddings or one-off events (typically weekend)	550	• Attendants at reception to escort overnight guests with cars to lower car park. • Encourage other modes of transport including the 161 bus route, water taxis and future ferry services. Water taxis/ future ferry services could be subsidised by Q Station for people who book accommodation. • Event organisers would be encouraged to arrange mass transport options for their guests such as shuttle buses and/ or coaches from a key transport hub. • Increase frequency of shuttle bus services.	
Corporate events (weekday)	375	• Event organisers would be encouraged to arrange mass transport options for their guests such as shuttle buses and/ or coaches from a key transport hub, use of water taxis/ chartered ferries, or fund taxis/ rideshare services for staff.	

Event	Anticipated no. of people on-site	Recommended event-specific management measures	Recommended general management measures
Yearly Celebrations (weekday or weekend)	325	• No specific measures are proposed, however on-site shuttle bus drivers would be able to assist in escorting any overflow vehicles down to lower car park if required.	park to reduce parking demand to guests and visitors of Q Station only. • Recommence ferry access to the Q Station wharf. This would encourage reduction in private vehicle mode share.
Normal day-to-day activity (weekday or weekend)	200	• No specific measures are proposed, however on-site shuttle bus drivers would be able to assist in escorting any overflow vehicles down to lower car park if required.	

1. Introduction

1.1 Background

Mawland Group engaged Stantec (formerly GTA Consultants) in mid-2017 to complete a transport assessment to assess the impact of increasing the maximum visitation capacity of the Q Station site to 600 people from the then-approved level of 450 people (including staff) for 20 events per year.

The increase in maximum capacity of the site was approved on 25 May 2018, however a new consent condition was added to the Conditions of Planning Approval (CoPA) which detailed that a Site Travel and Access Plan (STAP) was required to accompany the application to increase site patronage. The STAP was required to identify management measures which would be implemented to manage travel and access to the site for at least five event sizes. The STAP was subsequently prepared by Stantec (dated 6 September 2018) with approval received 14 September 2018.

Development approval for the operation of the site for cultural tourism, accommodation, conferences and functions lapses on 23 December 2024, and the proponents for Q Station are seeking its renewal by way of the Review of Environmental Factors (REF) planning pathway with updated CoPA provided accordingly. As such, North Head Sydney Pty Ltd (NHS) has engaged Stantec to update the STAP to address any recurrent traffic and transport concerns with the site as well as assess proposed changes to the CoPA.

1.2 References

In preparing this report, reference has been made to the following:

- an inspection of the site and its surrounds on Saturday 27 May 2017 and Thursday 14 June 2018
- a review of the *Q Station Transport Impact Assessment* prepared by Stantec (formerly GTA Consultants), dated 22 August 2017, as well as the *Q Station, Manly Travel and Access Plan* prepared by Stantec (formerly GTA Consultants), dated 6 September 2018
- car parking and mode share surveys by R.O.A.R. Data Pty Ltd completed on Saturday 27 May 2017
- other documents and data as referenced in this report.

1.3 Scope of this Assessment

This report is prepared to assess the current traffic and transport operations of the Q Station site and identify measures to assist and/or improve operations beyond the current approval, being 23 December 2024. The report also assesses the proposed changes to the CoPA.

This report is based on the previous STAP prepared by Stantec (formerly GTA Consultants). It is noted that no changes are proposed to the target mode shares, with the exception of water-based access mode share.

The proposed updated CoPA is referenced in Table 1-1, as relevant to traffic and transport.

Table 1-1: Conditions of Planning Approval (CoPA) for REF

CoPA	Sub-conditions	Relevant Report Section
119. Access Strategy The co-proponents shall prepare and submit a final Access Strategy for the site to the DEC and DIPNR for approval within 6 months of the commencement date. The strategy shall be prepared in consultation with the Heritage Council, Manly Council and the State Transit Authority. Once approved, the co-proponents shall implement the Access Strategy. The final Access Strategy must address but not be limited to:	a. all available means of access to the site, including details of the ferry service and shuttle bus operation (including operating times, pick up/set down points, etc)	• Existing means of access to the site detailed in Section 2. • Future operations detailed in Section 4.
	b. access provisions within the site, including constraints and management strategies, details of service vehicles, bus and taxi access. Specific consideration shall also be given to access arrangements for the Second Cemetery	• Management strategies for private vehicles provided in Section 4.4. • Access arrangement for Second Cemetery provided in Section 4.4.
	c. access provisions to the wharf, including the arrival and departure routes for the ferry	• Future operations detailed in Section 4.6.
	d. measures to promote public transport and reduce private vehicle access to the site	• General management measures provided in Section 4.

CoPA	Sub-conditions	Relevant Report Section
		• Event-specific management measures provided in Sections 5.5, 6.5, 7.5, 8.5, and 9.5.
	e. measures to be implemented to prevent additional visitors entering the site once visitor capacities, (as specified in condition 120), have been reached	• Section 4.4
	f. measures to ensure that a reasonable proportion of visitors in any one day include day visitors that arrived without pre-booking a tour or other activity	• Section 4.2
	g. measures to provide for disabled, concession and non-English speaking access to the site and to enable participation in site activities	• Sections 4.8 and 4.9
	h. the provision of disabled access to every precinct. This component of the Access Strategy shall be prepared in accordance with the requirements of the Disability Discrimination Act and any guidelines or standards established under the Act	• Section 4.8
	i. visitor monitoring program	• Section 10
120. Site Visitor Capacity Visitation to the site and site visitor numbers must be in accordance with the following:	a. the optimum visitor capacity of the site is 315 people (including staff) at any one time. The co-proponents shall take all reasonable steps to ensure that the optimum visitor capacity (or less) is met for a majority of the time during which the site is publicly accessible;	• Normal day to day capacities detailed in Section 9
	b. the maximum visitor capacity may be increased to 600 people (including staff) for up to 6 hours on up to 20 occasions per calendar year. Arrival and departure from these events must be distributed throughout the day period and these events must be held in accordance with the requirements of term 128 b) of the approval;	• Event-specific management measures are provided in Sections 5.3 and 5.5 for events up to 600 people
120A. Site Travel and Access Plan A Site Travel and Access Plan must be prepared by a suitably qualified consultant, to the satisfaction of the Secretary, that details management measures to be implemented, at a minimum, for at least 5 event sizes, including those presented in Term 120, and is to include detail of the following:	a. Mode share targets and measures of how these will be implemented, monitored and achieved including details of the financial and human resources required to implement the targets.	• Sections 5.2, 6.2, 7.2, 8.2 and 9.2
	b. Anticipated number and types of vehicles arriving at the site and car parking provisions for both staff and visitors.	• Number and types of trips detailed in Sections 5.3, 6.3, 7.3, 8.3 and 9.3. • Car parking provisions detailed in Sections 5.4, 6.4, 7.4, 8.4 and 9.4.
	c. The management of the site car park (i.e. car park wardens/ traffic controllers) and management measures to ensure site visitors do not impact upon the parking provisions of North Head.	• General management measures provided in Section 4. • Event-specific management measures provided in Sections 5.5, 6.5, 7.5, 8.5, and 9.5.
	d. Detail of arrival and departure times and detail of how impacts of this upon existing traffic flows at North Head will be mitigated.	• Arrival and departure times detailed in Sections 5.3, 6.3, 7.3, 8.3, and 9.3. • General management measures provided in Section 4. • Event-specific management measures provided in Sections 5.5, 6.5, 7.5, 8.5, and 9.5.

CoPA	Sub-conditions	Relevant Report Section
	e. A map clearly delineating site access and parking provisions for various sized events of up to 600 people.	• Sections 5.4, 6.4, 7.4, 8.4 and 9.4.
138. Water-Based Access The ferry service between Manly and the Quarantine Station site shall:	a. commence within 6 months of the commencement date or, if this cannot be achieved due to circumstances beyond the reasonable control of the co proponents, within such other time as the DEC may approve;	• Section 4.6
	b. generally arrive and depart between the hours of 9:00 am and 11:00 pm respectively;	• Section 4.6
	c. be limited to a maximum of one movement per hour, after sunset, between July and February inclusive, to reduce the potential for impacts on the Little Penguin population. A maximum of 20 movements in one day may occur at other times to encourage water-based access to the site; and	• Section 4.6
	d. with the exception of extreme weather events and maintenance periods, be provided on an hourly basis during the peak periods of visitor activity.	• Section 4.6
139. Water-Based Access The co-proponents shall undertake all practicable measures to ensure that:	a. within 3 years of the commencement date, the proportion of visitors accessing the site by the ferry is 40% or greater; and	• Sections 5.2, 6.2, 7.2, 8.2 and 9.2
	b. within 5 years of the commencement date, the proportion of visitors accessing the site by ferry is between 40% - 50% and stays at this level, or greater, for the life of the project.	
140. Water-Based Access The wharf facility shall be used in accordance with the following provisions:	a. the wharf shall only to be used for the casual berthing of the vessel "The Jenner", or an appropriate vessel of similar dimensions and loadings. Assistance must be provided to persons with mobility limitations;	• Section 4.6
	b. the ferry must always dock at the head of the head of the wharf (ie. The north-western end) until such time as any future alterations to the wharf have been assessed and approved by the relevant authorities;	
	c. the ferry shall not moor at the wharf when not in active use (ie. overnight);	
	d. the ferry shall not moor at the wharf during unsuitable weather events (eg. storms, strong winds, large swells);	
	e. the co-proponents shall ensure that there is no access to the wharf as part of the activity by recreational or commercial vessels until such time as any proposed access arrangements for these vessels have been assessed and approved by the relevant authorities. The wharf shall include signage to indicate that access is prohibited unless authorised by the Waterways Authority and DEC; and.	
	f. There shall be no vessel access on the south-western side of the wharf, parallel to Cannae Point	
141. Water-Based Access	-	• Section 4.6

CoPA	Sub-conditions	Relevant Report Section
Minor variations to the provisions of condition 140), a), b) and c) above may be approved by the Waterways Authority and the DEC, upon receipt of an application from the co-proponents. The application shall address, but not be limited to, safe berthing/mooring arrangements, disabled visitor access, potential impacts on seagrasses (eg. from overshadowing and propeller wash) and Little Penguins. Any significant variations to these conditions, and any variations to condition 140) e), shall (if necessary) require a separate application and approval under Part 5 of the Environmental Planning and Assessment Act 1979 and other relevant legislation. The Waterways Authority and DEC shall consult with NSW Fisheries before any variations are approved.		
142. Water-Based Access When the ferry is not available for use (due to extreme weather events or maintenance) the co-proponents shall provide a shuttle bus or some other means of public transport between the site and Manly.	-	• Section 4.7
143. Road-Based Access Private vehicle targets	a. The co-proponents shall undertake all practicable measures to ensure that within 5 years of the commencement date, the proportion of visitors accessing the site by private vehicle does not exceed 50% and stays at this level, or less, for the life of the project.	• Sections 5.2, 6.2, 7.2, 8.2 and 9.2
144. Management of Vehicle Access A 15 km/h speed limit for all vehicles within the site shall be imposed within 3 months of the commencement date.	-	• The site currently has a posted speed limit of 15km/h and proposes to retain this limit.
145. Management of Vehicle Access As a priority measure, traffic calming devices shall be provided within 6 months of the commencement date along the following roads:	a. from A26 to CP5; b. From S12 to S5; and c. From A26 to A23 (no traffic calming devices are required between S15 and P13).	• The site has implemented these management measures and proposes to retain these as part of this submission.
146. Management of Vehicle Access The devices shall be in accordance with the endorsed design standards [condition 106) c)], spaced at appropriate distances apart and sign-posted with the speed limit (15 km/h) and Long-nosed Bandicoot warning/awareness signs.	-	
147. Management of Vehicle Access Vehicle access to the site is to be managed by an entrance boom gate that only opens when triggered by staff or contractors.	-	
148. Management of Vehicle Access	-	

CoPA	Sub-conditions	Relevant Report Section
Barriers delineating the extent of vehicle access with the site are to be provided within 6 months of the commencement date in accordance with Figure 2.1 of the PAS. In accordance with condition 151) c) within 10 years of the commencement date, the barriers on the road below S2, between S2 and A23 and adjacent to A1 must be replaced with a barrier adjacent to A18 (or at a suitable location east of A18).		
149. Management of Vehicle Access There shall be no vehicle access beyond the barriers (delineating the extent of vehicle access) except for	a. vehicles transporting disabled visitors;	• Section 4.8
	b. vehicles driven by representatives of the co-proponents, service providers and contractors;	• Section 4.10
	c. visitors and guests being transported by shuttle-bus, people-mover or some other form of low-scale public transport (not large buses or coaches); and	• Section 4.7
	d. emergency vehicles.	• Section 4.11
150. Management of Vehicle Access Bus and coach access to the site shall be as follows (see also condition 65(b) and 151):	a. coaches shall not enter the site beyond CP1;	• All works relating to CP1 has been completed hence condition is no longer relevant.
	b. until CP1 is completed buses may enter the site and use the lop road from A26 to S12 to S5 and to the temporary bus parking area adjoining A26; and	
	c. after CP1 is completed, buses shall also not enter the site beyond CP1	
151. Vehicle Parking On-site car parking shall occur as follows:	a. CP1 – may provide up to 120 vehicle spaces, constructed in two stages as proposed in the PAS, to be used by day visitors, overnight guests and staff (if necessary)	• Section 4.1
	b. CP5 – may provide up to 56 vehicle spaces, constructed in two stages as proposed in the PAS, to be used by staff and overnight guests but no day visitors (including conference or function participants).	• Section 4.1
	c. existing administration car park (opposite S1) – may provide short-stay parking for accommodation check-in on the following basis: accommodation guest use of this parking area shall be gradually decreased between 5 and 10 years of the commencement date, so that within 7.5 years of the commencement date such usage has decreased by 50% (this excludes taxis, delivery and operations vehicles); use of this parking area by accommodation guests shall be completely phased out within 10 years of the commencement date, to comply with the long-term carefree boundaries of the DACMP; and during the above periods the co-proponents shall examine and test alternative check-in parking arrangements, including the option of using the area shown as "Potential Drop Off and Parking" in Illustration 20 of the DACMP;	• Section 5 to 9 demonstrates that accommodation guest parking can be accommodated within the subject site with the implementation of the proposed management measures.

CoPA	Sub-conditions	Relevant Report Section
	d. bus and coach parking – the following arrangements shall apply: until CP1 is completed buses may only park in the bus parking area adjoining A26, as shown in Figure 2.1 of the PAS; until CP1 is completed coaches may only drop-off visitors at the entrance to the site and park at an off-site location (if necessary); once CP1 is completed, buses and coaches may drop off visitors at CP1 and either park in CP1 or outside the site (if necessary); and once CP1 is completed, there shall be no bus or coach parking elsewhere on the site.	• All works relating to CP1 has been completed hence condition is no longer relevant.
152. Vehicle Parking Overflow parking may be provided: Total overflow parking at any one time shall be limited to up to 50 vehicles and shall be entirely restricted to formed road surfaces (i.e. not grassed areas) between building S14 and the first road junction immediately south-west of the upper reservoir.	a. As part of up to 6 approved special events per year (condition 125)	• Section 4.1
153. Vehicle Parking There shall be no vehicle parking outside of the CP1, CP5, administration area car park, or overflow parking, except for short-term parking for service providers, contractors and the like.	-	• Section 4.1
155. Shuttle Bus The co-proponents shall provide a shuttle bus service to transport visitors between the Manly Town Centre and the site (see also condition 65). The shuttle bus shall: Full details of the shuttle bus operation shall be included in the Access Strategy (condition 118).	a. have a minimum capacity of 12 persons per trip; b. be operational within 6 months of the commencement date; c. provide a minimum of 3 trips to and from the site (total 6 trips) per day on weekends and public holidays during peak periods of visitor activity or as approved by the DEC. Preference is also to be given to operation of the shuttle bus service during periods of peak night visitation and activity for the Long-nosed Bandicoot.	• Section 4.7
156. Visitor Monitoring A visitor monitoring program is to be established in accord with Policy AIP 3.2 in the DACMP and submitted for approval as part of the final Access Strategy (condition 118). In addition to the matters specified in AIP 3.2, the program must also make specific provision for the monitoring of:	a. mode of access to the site; b. measures taken, or proposed to be undertaken, to minimise private vehicle access. This should include the progress or outcomes of any negotiations with other North Head land managers regarding off-site car parking.	• The site proposes to implement a visitor monitoring program in accordance with this condition.

2. Existing Conditions

2.1 Site Overview

Q Station is located off North Head Scenic Drive, Manly and covers an area of approximately 27.5 hectares. Access to the site is from North Head Scenic Drive where visitors can either use the on-site upper car park near reception or use public transport/ Quarantine shuttle bus for access. Access via walking or cycling is also an option, especially for day visitors. A secondary access is available from Q Station Wharf, however this is understood to be currently limited to approved vessels (refer to Condition 140 of existing approval).

It is noted that private vehicle usage is not currently approved on-site under Condition 149. This application is seeking to gain approval for this to occur under specific circumstances (and with appropriate measures in place to allow safe vehicle movement and parking within the site). The current operation of the site includes the provision of on-site car parking for visitors to the cottages, and it is proposed that this operation would be retained and approved for the future use of the site (whilst acknowledging that it is not currently permitted).

No other independent driving is permitted on-site by visitors to increase safety and protect wildlife, and as such, a shuttle bus is available at reception to transport visitors (inclusive of mobility-impaired guests/ visitors) to various locations within the Q Station Precinct.

Q Station and its surrounding environs is illustrated in Figure 2-1.

Figure 2-1: Site location and its surrounding environs

Base image source: https://www.street-directory.com.au/, accessed 5 March 2024

2.2 Road Network

North Head Scenic Drive is a local road and acts as a connection between Manly Beach, Manly Suburb and Manly Cove to the north and North Head to the south. It is a two-way road with one lane in each direction set within an approximately nine-metre wide carriageway. No stopping is permitted on either side of the road, with the exception of bus services. There is a footpath along the eastern side of North Head Scenic Drive between Parkhill gate and the access to the Barracks Precinct. Otherwise, there are no formal footpaths provided along either side of the road, however tourists frequently walk along the road shoulders/ verges to access surrounding destinations such as the lookouts at North Head.

North Head Scenic Drive is shown in Figure 2-2 and Figure 2-3.

Figure 2-2: North Head Scenic Drive (looking north)

Figure 2-3: North Head Scenic Drive (looking south)

2.3 Public Transport

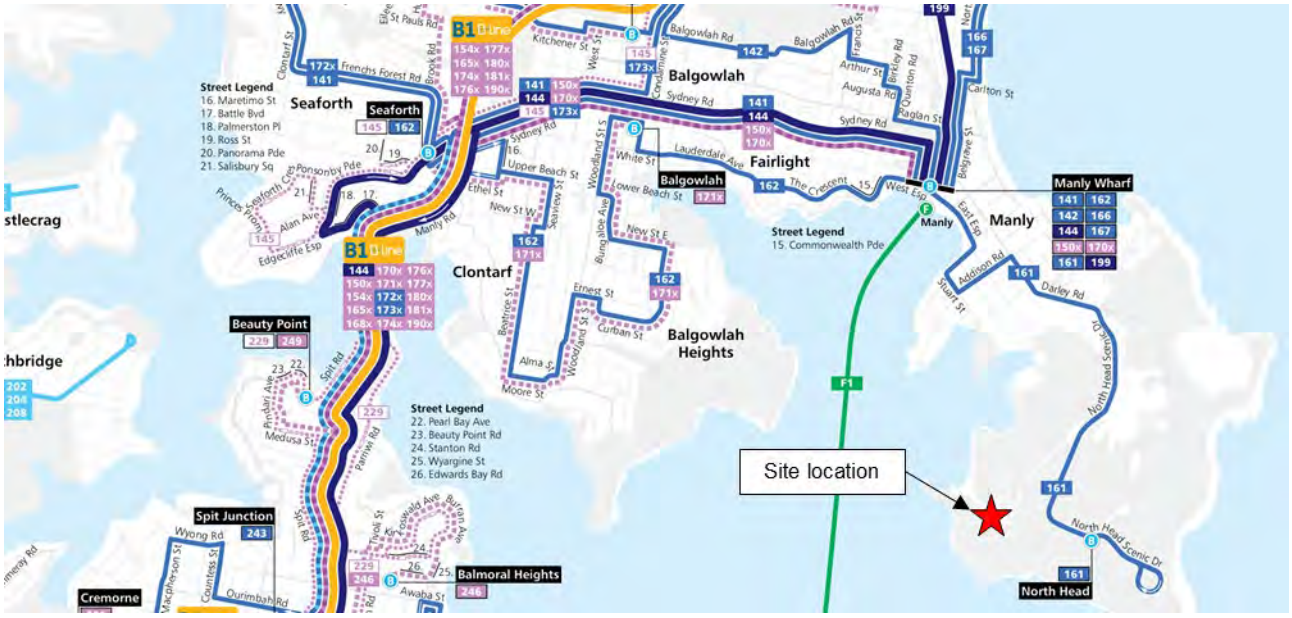
There is an hourly bus service directly servicing the site and connecting to the broader public transport network at Manly Cove. The closest bus stop is located directly north of the North Head Scenic Drive roundabout.

A summary of the public transport services in the area is shown in Table 2-1, while the local bus network is illustrated in Figure 2-4.

Table 2-1: Public transport providing services to Q Station

Type	Route number	Description	Frequency (peak hour/ off-peak/ weekend)
Bus	161	Manly to North Head (loop service)	20 mins/ 60 mins/ 60 mins

Figure 2-4: Manly bus network map



Base image source: https://www.kdnorthernbeaches.com.au/wp-content/uploads/2021/11/Region_8_network_map.pdf, accessed 5 March 2024

The Q Station Wharf is located adjacent to Quarantine Beach which is understood to currently only permit access by approved vessels (refer to Condition 140 of existing approval). Historically, the wharf allowed for the public Sydney Harbour Eco Hopper ferry (presently referred to as the Sydney Harbour Hopper) to stop at the site. During this historical operation, the ferry would operate on a daily basis at a frequency of 70 minutes, stopping at Darling Harbour, Circular Quay, Taronga Zoo, Watsons Bay, Q Station and Manly. However, the service was ceased at the time of the first COVID lockdown due to low demand and the service has not recommenced to date due to several factors.

Q Station also provides a free shuttle bus (loop service) between the site and Manly, with capacity for up to 11 patrons per trip. Five services run per day on Monday-Thursday, six services per day on Friday, and seven services per day on the weekend. It is understood that conference bookings for larger groups can be organised with Q Station, subject to availability.

2.4 Car Parking

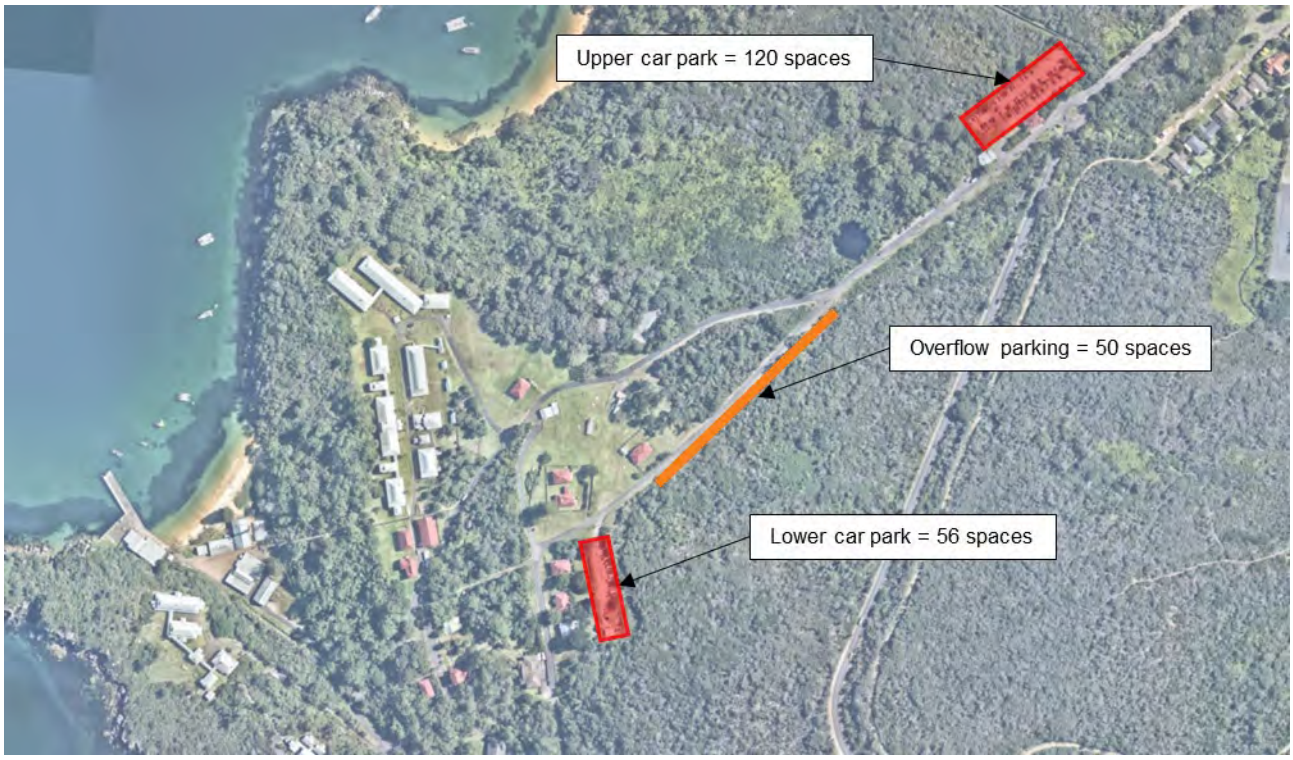
2.4.1 Existing Car Parking Supply

The site currently provides 120 car parking spaces in the upper car park off North Head Scenic Drive, while a smaller internal car park which is usually only available to staff and overnight guests provides 56 car parking spaces. An overflow carparking area with capacity for up to 50 car parking spaces is also available on-road to use for a limited number of approved special events per year in accordance with Condition 152 of the CoPA which states:

> *Overflow parking may be provided:*
>
> *(a) as part of up to 6 approved special events per year (condition125).*
>
> *Total overflow parking at any one time shall be limited to up to 50 vehicles and shall be entirely restricted to formed road surfaces (i.e. not grassed areas) between building S14 and the first road junction immediately south-west of the upper reservoir.*

The car parking supply locations are shown in Figure 2-5.

Figure 2-5: On-site car parking supply



Base image source: Nearmap, dated 5 March 2024

2.4.2 Existing Car Parking Demand

Stantec commissioned car parking demand surveys on Saturday 27 May 2017 for the upper car park between 7am and 7pm. This day coincided with the Taste of Manly festival during which the Manly area experiences an increase in visitors and tourists, leading to Q Station seeing an increase in bookings. The weather was also fine, which typically increases the number of visitors and tourists to outdoor locations/ venues such as Q Station.

The parking demand results are summarised in Table 2-2.

Table 2-2: Summary of parking demand surveys

Time	Demand (No of spaces)	Minimum vacancies
7am	45	65
8am	53	57
9am	52	58
10am	42	68
11am	32	78
12pm	24	86
1pm	27	83
2pm	49	61
3pm	71	39
4pm	85	25
5pm	79	31
6pm	80	30
7pm	90	20

Table 2-2 indicates that the peak parking demand for the upper car park was 90 vehicles (82%), with 20 vacant spaces.

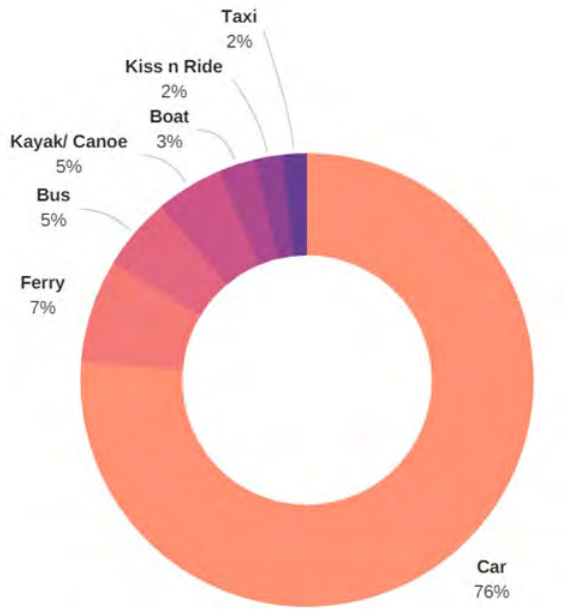
Notwithstanding the spare parking capacity observed on this major event day, it is acknowledged that the ferry was still operational at that time which may have reduced car parking demands. Anecdotally Stantec has been advised that the upper carpark has been observed to reach capacity at certain times in more recent years. It is noted that the existing car park does not currently have boom gates or a paid parking scheme and therefore results in several visitors for neighbouring sites and attractions parking in this car park to avoid paying the parking fees charged in adjoining areas. Mitigation measures (including the introduction of a boom gate for the carpark and paid parking) are discussed in later sections of this report (refer to Section 4 for general traffic management measures and Sections 5 to 9 for event-specific management measures) to seek to ensure that this situation does not occur in the future.

The parking demands anticipated to arise for a number of different types of event (ranging from open days or large weddings /one-off events to normal day-to-day activities), and the implications with respect to the available parking supply, are also examined in detail in Sections 5 to 9 of this report.

2.5 Existing Mode Share

Stantec also commissioned mode share surveys at Q Station on Saturday 27 May 2017 to understand how people travelled to the site on a regular peak day. The mode share splits recorded for visitors to the site are shown in Figure 2-6.

Figure 2-6: Existing mode share splits for people travelling to Q Station (2017)



As shown in Figure 2-6, private vehicle travel was the dominant mode of transport to the site, while ferry and bus were less popular in comparison, but still frequently used modes of transport. The surveys undertaken in 2017 have been used for this report. However, it is important to note the following factors/ limitations when considering the appropriateness of this data:

- Mode share surveys were undertaken prior to the operation of the Sydney Harbour Hopper route ceasing due to the first COVID lockdown.
- Ferry usage comprised 7 percent of the existing mode share for people travelling to Q Station. As previously mentioned, the ferry operation has ceased and is currently not operational, hence the 7 percent would have redistributed to other modes of transport (assuming that those trips still occur).
- Since 2017, pick up / drop off operations (denoted as Kiss n Ride in Figure 2-6) have seen an increase in popularity due to the introduction of Uber services.
- No additional bus services are being provided when compared to the services provided in 2017.

Given that no additional public transport services are being provided when compared to 2017, it is envisaged that ferry users would have predominantly opted for private vehicle usage in the absence of a ferry service. However, given that the travel and access plan places emphasis on encouragement of alternative modes of transport with a substantial amount of the alternative mode being targeted for water-based access, it is considered appropriate to use the data available for when the ferries were still operational to understand the benchmark and use this data to set realistic targets for the future.

Notwithstanding, it is recommended that an additional travel mode share survey be undertaken to better understand the current travel behaviours associated with Q Station. The recommendation is to undertake the survey within two years from the date of writing this report, with an updated travel and access plan (i.e. this report) to be prepared at that time. This will provide ample opportunity for the implementation of the proposed traffic management measures outlined in this report and the survey can then be used to assess the effectiveness of the implemented measures.

3. Event Details

This STAP has been prepared to set out the transport management measures which are to be implemented for five typical event sizes.

Given the diverse range of activities that occur at Q Station during a typical year, the selected event sizes, as summarised in Table 3-1, are considered representative of typical concurrent activities.

Table 3-1: Anticipated events and associated patronage

Event	Description	Size		
		Guests	Employees	Total
Open day (weekend)	Large numbers of visitors to the site during the day, formal activities run on-site including outdoor cinema and tours, people staying overnight	Accommodation guests: 100 Visitors: 400	100	600
Large weddings or one-off events (typically weekend)	Two weddings each running one after the other with some guest overlap OR Special one-off event, large number of people staying overnight, function rooms and restaurants in use during the day (e.g. Invictus Games)	Event guests: 350 (100 staying overnight) Visitors: 100	100	550
Corporate events (weekday)	Multiple corporate functions on-site, people staying overnight, minimal visitors during the day due to it being a weekday	Corporate guests: 300 (including 100 overnight guests) Visitors: 25	50	375
Yearly Celebrations (weekday or weekend)	People arriving for lunch/ dinner, people staying overnight (e.g. New Year's Eve, Christmas)	Accommodation guests: 100 Visitors: 200	25	325
Normal day-to-day activity (weekday or weekend)	Usual activity involving people staying overnight, restaurant/ café activity, visitors to beach, small corporate functions	Accommodation guests: 75 people Corporate guests: 50 people Visitors: 50 people	25	200

It should be noted that there are already transport management measures in place for large events that currently take place on-site such as large weddings and corporate events. These measures are proposed to be maintained and emphasised as required to ensure that the site continues to operate acceptably when approaching capacity. A number of general traffic management measures are also proposed as discussed in Section 4, which collectively will further mitigate the impacts associated will all types of events.

4. General Transport Management Measures

To adequately manage the arrival and departure of visitors to Q Station, particularly for large events, the implementation of transport management measures is required to minimise the impact of pedestrians, traffic and parking on the surrounding area.

It is noted that barriers have previously been installed and maintained at the following locations to manage visitor access:

- Beach fence with two access gates
- Wooden fence alongside restaurant (A6) terrace
- Access to southern side of wharf/Cannae Point
- Barriers in front of Wharf precinct inscriptions
- Wharf gates to restrict access to the beach and wharf between sunset and sunrise (when the gates are locked).

There are also different types of signage provided around the site to manage pedestrian movements as follows (note - the existing signage from 2008 has been updated and replaced over time using existing frames or replacing posts in existing holes):

- Interpretive
- Wayfinding
- Naming of buildings or roads

This section outlines the general treatments that are recommended to be implemented for different events at Q Station, with recommendations for select additional management measures. Event-specific management measures have further been identified in Sections 5 to 9 relating to the varying levels of attendance expected for each identified event size.

These management measures will ensure that the ongoing operation of the site beyond the current planning approval from a traffic and transport perspective is adequate. It is critical to understand that the proposal simply relates to an extension of the current planning approval which is due to lapse on 23 December 2024. The proposal does not involve any physical works nor any increase to the approved site capacity limits, and subsequently does not result in any changes to vehicular traffic associated with the Q Station site. Therefore, with the proposed management measures and measures to reduce private vehicle usage, the traffic volumes associated with the subject site are envisaged to reduce in the foreseeable future. Therefore, it is considered that with the implementation of these measures, the traffic volumes on Manly town centre and access roads and the cumulative impact of the whole of North Head for traffic and handling capacity will only improve, hence no detailed analysis has been undertaken for the purposes of this STAP.

4.1 Car Parking Supply

Condition 151 of the existing approval permits the upper and lower car parks to provide up to 120 and 56 spaces respectively. In addition to this, Condition 152 of the existing approval permits provision of overflow parking accommodating up to 50 vehicles for up to six approved special events per year with parking only permissible on formed road surfaces (i.e. not grassed areas) between building S14 and the first road junction immediately south-west of the upper reservoir.

In accordance with Condition 153, no vehicle parking outside of CP1, CP5, administration area car park, or overflow parking (except for short term parking for service providers, contractors etc.) is to be permitted within the site.

It is noted that private vehicle usage is not currently approved on-site under Condition 149. This application is seeking to gain approval for this to occur under specific circumstances (and with appropriate measures in place to allow safe vehicle movement and parking within the site). The current operation of the site includes the provision of on-site car parking for visitors to the cottages, and it is proposed that this operation would be retained and approved for the future use of the site (whilst acknowledging that it is not currently permitted).

The following measures are currently in place and will continue to be implemented to ensure safe vehicle movements within the site:

- Upon checking in, guests utilising the cottage car parking facilities/space will be inducted to the site, with an overview of the site protocols including speed limit restrictions explained. A map and directions will also be provided to guests to follow.
- An identification paper/permit will be given to the guests to place on their vehicle dashboard, which is to remain in place until exiting the site.
- Guests are to park their vehicle in the designated spot.

- Guests must not travel beyond the dedicated path outlined.

4.2 Boom Gates and Paid Parking

As discussed in Section 2.4, the upper car park does not currently have any parking restrictions in place to discourage people from parking and walking to surrounding tourist attractions. It is recommended that boom gates be installed on the upper car park and a paid parking scheme implemented to minimise the demand for this car park by visitors to surrounding sites and attractions. The following are indicative rates:

Hourly Rates (8:00am to 5:00pm)

- $4 per hour (Monday to Friday)
- $6 per hour (Weekends & Public Holidays)

Daily Rates (8:00am to 5:00pm)

- $10 per day (Monday to Friday)
- $15 per day (Weekends & Public Holidays)

Under the proposed scheme, drivers would receive a ticket upon entry into the car park which would record their entry time. When drivers wish to leave the car park, they would insert their ticket into the ticket machine at the boom gate which would then calculate the fee owing. The fee could be subsidised for guests that are staying overnight, with guests presenting their parking ticket at reception before they leave to get their parking validated and fee waived. To facilitate pick-up and drop-off movements and any other vehicle turnaround activities, a 15 minute free period would be implemented. An electronic sign would be provided to indicate the number of available spaces at any given time.

It should be noted that the proposed scheme has taken into consideration day visitors that may arrive without pre-booking tours or other activities. The scheme provides an opportunity for these visitors to potentially find parking within the site rather than adopting a reservation scheme for the entirety of the car parking available for the site.

This management measure would not require any human resources. There would be an upfront cost with implementing the boom gate and parking system, however costs could be recovered through collected revenue from paid parking.

4.3 Reserved Guest Parking

It is recommended to implement an option in the accommodation booking process which requires guests to advise if they are driving to the site. The parking booking system would help understand how many guests require parking and over how many days, allowing Q Station to reserve car parking spaces. This could be used to indicate how many spaces are vacant for visitors (linked to the boom gate control system and proposed electronic sign), while still ensuring enough car parking spaces for overnight guests.

It is not expected that this management measure would require any additional human or financial resources. Staff that would already be on duty could mark out reserved parking at the beginning of their shift before visitors start to arrive and guests check-in (as is currently done on an as-needs basis).

4.4 Signage at Roundabout

Once the upper car park is full, it is recommended that a temporary sign be placed at the existing welcome sign at the North Head Scenic Drive roundabout advising drivers accordingly. This would allow drivers to perform a U-Turn to head back towards Manly where they could catch a bus to the site, or to continue further along North Head Scenic Drive to other paid car parks. This is expected to only occur during larger events.

It is recommended that an employee be positioned at the welcome sign to assist with traffic management once the car park reaches capacity. The role of the employee includes the following:

- The employee will redirect the private vehicles whilst counting the number of vehicles being turned away (which will inform the monitoring program discussed at Section 10).
- The employee will continue to allow buses and taxis to access the site.

It is recommended that wayfinding signage be provided further towards the north of the roundabout for efficient operation of the roundabout.

Another temporary sign is recommended to be positioned near reception at the entrance into the upper car park to advise drivers that the car park is full, should they not observe the sign at the roundabout. Drivers would be able to complete a three-point-turn to exit the site and find parking elsewhere. Limited additional parking could be provided along the verge of Entrance Road past the existing boom gates. Only overnight guests would be permitted to park in this

location (and only if the upper and lower carparks are full) and an attendant would be required to escort drivers to an appropriate parking position.

It is not expected that this management measure would require extensive additional human resources. The financial resources required for a new sign or employee positioned at the welcome sign during capacity scenarios is considered minimal and consistent with existing management measures that are currently in operation at the site.

4.5 Staff Parking

Similar to the existing arrangement, Q Station will encourage staff for large events to car-pool, use public transport and/or ride share when travelling to and from the site. Staff will also be encouraged to use the internal 24/7 site shuttle bus to access other services to/from Manly. However, for events that run late into the night, these modes of transport may not be available and/or feasible. As such, priority car parking spaces in the lower car park will be given to staff that are working late. This car park also has the benefit of personal safety, being located well within the site. Staff would be instructed to park at the southern end of the car park and close together (or stacked) to ensure the potential car park capacity for guests is not reduced.

This management measure would not require any additional human or financial resources.

4.6 Q Station Wharf

The wharf forms an integral part of the site's wharf precinct. The wharf precinct is a unique and iconic entry to the site.

From the commencement of operations of the Quarantine Station until the 1950's the main point of entry to the site, by those coming to Australia and requiring to be quarantined, was by ferry to a wharf. There has been a number of wharfs during that period of time. The existing wharf was upgraded in 2011 / 2012.

A ferry service commenced operation soon after Mawland Quarantine Station Pty Limited became lessee of the site. The service struggled to attract visitors to the site, however continued spasmodically until the first Covid lock down in 2020. It has not recommenced due to a variety of factors, with reluctance of ferry operators to include Q Station in their schedules (as indicated by costs they have proposed for a service connection), and low visitor demand evidenced by past usage patterns being two key aspects.

NHS plans to revitalise visitor activities in the Wharf Precinct in the future. It envisages that the proximity of the Wharf to these proposed interpretative experiences will incentivise visitors to want to access the site by water as part of this experience. This forecast demand would ensure the economic viability of a future ferry service returning to Q Station.

The upgrade of the existing wharf to a standard required by TfNSW will be the subject of a separate REF.

NHS is committed to water-based access to the site.

With reference to Condition 138 (detailed in Table 1-1), it is recommended that any future ferry service shall:

- Commence upon upgrade of the Q Station Wharf. As stated, redevelopment works do not form part of this REF and will be sought via a future separate planning pathway.
- Operate between the hours of 9am and 11pm, subject to consultation with ferry operators.
- Be limited to a maximum of one movement per hour, after sunset, between July and February inclusive, to reduce the potential for impacts on the Little Penguin population. A maximum of 20 movements in one day may occur at other times to encourage water-based access to the site, subject to consultation with ferry operators.
- With the exception of extreme weather events and maintenance periods, be provided on an hourly basis during the peak periods of visitor activity, subject to consultation with ferry operators.

With reference to Condition 140 (detailed in Table 1-1) it is recommended that:

- The wharf shall only be used for the casual berthing of appropriate vessels approved by the relevant authorities. Assistance must be provided to persons with mobility limitations.
- The ferry must always dock at the head of the wharf (i.e. the north-western end) until such time as any future alterations to the wharf have been assessed and approved by the relevant authorities.
- The ferry shall not moor at the wharf when not in active use (i.e. overnight).
- The ferry shall not moor at the wharf during unsuitable weather events (e.g. storms, strong winds, large swells).
- The co-proponents shall ensure that there is no access to the wharf as part of the activity by recreational or commercial vessels until such time as any proposed access arrangements for these vessels have been assessed and approved by the relevant authorities. The wharf shall include signage to indicate that access is prohibited unless authorised by TfNSW and NPWS.

- There shall be no vessel access on the south western side of the wharf, parallel to Cannae Point.

It should be noted that in accordance with Condition 141 (detailed in Table 1-1), any variations to the above will require an application to be lodged to TfNSW and NPWS which addresses but is not limited to, safe berthing / mooring arrangements, disabled visitor access, potential impacts on seagrasses (e.g. from overshadowing and propeller wash) and Little Penguins.

Any significant variations to the conditions above will require a separate application and approval under Part 5 of the Environmental Planning and Assessment Act 1979 and other relevant legislation.

4.7 Shuttle Bus Services

As discussed in Section 2.3, the Q Station operates a free shuttle bus (loop service) between Manly and the site for visitors. A dedicated line marked shuttle bus pick-up zone is provided at Manly located on Belgrave Street between Gilbert Street and West Esplanade, with the on-site stop provided immediately adjacent to the reception. The shuttle bus has a capacity of 12 patrons, operating five times per day on Monday to Thursday, six times per day on Friday and seven times per day on the weekend.

It is recommended that this service operate at higher frequencies during peak periods, particularly events described in Sections 5 to 9 to reduce travel to the site via private vehicle and during times when the future ferry is unavailable for use (due to extreme weather events and/or maintenance). Ability for guest bookings should also be made available to assist Q Station with demand management and scheduling of arrivals. Adjusted shuttle schedules would depend on demand and the event type.

Q Station currently encourages groups to visit the site via private coach or bus. Small buses up to 22 seats with private groups attending a Q Station event or tour are currently permittted to drive into the site, beyond CP1, where the group has limited mobility. These small buses are escorted by a Q Station shuttle into the site. It is acknowledged that this operation is not approved onsite as per Condition 150. This application seeks to formalise this operation, with the following mitigation measures proposed to ensure safe operation for all users within the site:

- The driver will be inducted to the site, with an overview of the site protocols including speed limit restrictions explained. A map and directions will also be provided to the driver with strict rules to only travel via the route illustrated on the map.
- An identification paper/permit will be provided to the driver to place on the bus dashboard, which is to remain in place until exiting the site.
- Buses are to be parked in designated spots.
- Buses must not travel beyond the dedicated path outlined.

4.8 Access for Patrons with Disabilities

The site is currently designed to accommodate visitation by persons with disabilities, with existing operations and measures (including the existing provision of two accessible parking spaces in the upper carpark) to continue. It is recommended that the provision of additional accessible parking be considered including for the lower car park adjacent to the main buildings, with any accessible parking to be designed in accordance with the relevant Australian Standards.

Access provisions for persons with disabilities to/ from the ferry is to be considered as part of the Q Station Wharf upgrade project (with development approval sought via a separate planning pathway as noted in Section 4.6). People with disabilities and their carers would be given priority when boarding with the crew instructed to ensure safe and direct passage toward the designated and secure parking area on the ferry area before departing.

4.9 Access for Non-English Speaking Patrons

Understanding the ethnicities of primary visitor groups to the site is fundamental in developing strategic measures to cater for any non-English speaking guests. It is recommended that the following be implemented:

- Translate key informational documents to languages of other ethnicities that visit the site.
- Hire multilingual staff including tour guides to operate designated tours for these ethnicities. These services should be available to book by non-English speaking visitors. The frequency of these tours would be dependent on visitation and booking numbers.
- Amend directional and landmark signage to communicate visually as this is easier to comprehend for non-English speaking groups.

- Utilise technology such as smartphones or kiosks to offer self-service options in various languages including check-in/ check-out services, payments, and reservation systems.

4.10 Access for Services and Contractors

Access provision for services/ deliveries and contractors is to continue as per existing arrangements. This includes for out of hours emergency repairs, with contractors to undergo a site induction upon arrival to inform them of the site protocols to be adhered to, prior to entering the site. They would then be required to park their emergency repair vehicles at the nearest available appropriate location as directed by staff.

Construction vehicle access would be limited to set times in accordance with construction time periods authorised by the Northern Beaches Council, which are typically between 7am to 5pm (Monday to Friday) and 8am to 3pm (Saturdays). No construction works should be carried out on Sundays or public holidays. Larger construction works should involve preparation of a Construction Traffic Management Plan to mitigate any impacts to visitors and general site operations. Construction workers would be informed of designated work areas prior to works being completed.

Delivery drivers would be briefed in relation to loading policies and site sensitivity prior to arrival on-site. Deliveries would be scheduled as far as possible to occur outside peak periods to minimise potential conflict with visitors.

4.11 Emergency Vehicle Access

Similarly, emergency vehicle access protocols would continue as per existing arrangements and in accordance with the draft *Emergency and Evacuation Plan 2023.*

All incidents should be reported immediately to the on-site manager with the following details provided:

- location of emergency
- description of emergency
- person names, and job title/ operation (if an employee)

The on-site manager would then coordinate emergency access, directing respondents to the location of the incident.

5. Event 1 – Open Day Event

5.1 Overview

The annual Open Day at Q Station is expected to be the busiest day of the year on-site. It is expected to attract large numbers of visitors to the site during the day, with activities running on-site including picnics, an outdoor cinema and tours of the site including ghost tours at night. The restaurant and café adjacent to Quarantine Beach near the ferry wharf are expected to be highly utilised. There is also expected to be a large number of people staying overnight on-site.

A breakdown of the anticipated number of visitors is shown in Table 5-1.

Table 5-1: Event 1 - Anticipated number of visitors on-site

Overnight guests	Visitors	Employees	Total
100	400	100	**600**

It is emphasised that these are typical numbers expected to arise and naturally fluctuations between the users are expected for each event. However, the intent for this section is to demonstrate with the application of appropriate management measures that target the use of alternative modes of transport, as well as the general management measures discussed in Section 4, that it is anticipated that the operation of the car parks will not be compromised.

5.2 Mode Share Targets

It is expected that the restaurant and café adjacent to Quarantine Beach would be a main attractor to the site on open days. Given their proximity to the ferry wharf, it is expected that future ferry services would see an increase in patronage to the site on these days (following recommencement of ferry access to the wharf). People travelling to the site would also be encouraged to make use of the Route 161 bus service to the site from Manly and the shuttle bus service provided by Q Station.

A summary of the mode share targets for an Open Day event is shown in Table 5-2. While it is noted that Condition 139 details a target mode share of 40 to 50 per cent by ferry to the site, this represents a significant and unrealistic mode shift from existing travel behaviours. As such, a lower but still considerable mode share of 25 per cent has been proposed for future travel to/ from the site via water-based modes of travel which includes ferry, boat and kayak/ canoe. Car mode share has been targeted at 50 per cent in accordance with Condition 143.

Table 5-2: Event 1 - Guest/ visitor mode share targets

Mode of travel	Existing typical mode share	Mode share targets
Car	76%	50%
Water-based Access Incl. Ferry, Boat & Kayak / Canoe	15%*	25%
Bus Incl. shuttle bus service	5%	15%
Kiss n Ride	2%	5%
Taxi	2%	5%
Private Coach	0%	0%

*Note: Existing travel mode share survey was undertaken in 2017 when the ferry services were still operational. The service is currently no longer operational hence the existing water-based access mode share will likely be impacted by this change.

Although not included in the above table, a small number of visitors may also choose to walk or cycle to the site.

Similar to existing peak events that occur on-site, staff would be encouraged to either catch public transport to the site or travel to Manly town centre where a shuttle bus can pick them up. Employee private vehicle travel to the site on open days is targeted to be 10 per cent.

5.3 Anticipated Generated Trips

Based on the mode share targets, the anticipated number of people travelling by each mode of transport is shown in Table 5-3.

Table 5-3: Event 1 – Number of people per mode travelling to Q Station

User	Mode of travel	Mode share targets	Number of People
Guests/ visitors	Car	50%	250
	Water-based Access Incl. Ferry, Boat & Kayak / Canoe	25%	125
	Bus	15%	75
	Kiss n Ride	5%	25
	Taxi	5%	25
	Private Coach	0%	0
	Sub-total		*500*
Employees	Car	10%	10
	Other	90%	90
	Sub-total		*100*
Total			**600**

Based on the average surveyed occupancy per vehicle travelling to the site (2.3 people per vehicle), the 250 guests/ visitors that are expected to travel to the site by private vehicle are expected to result in 109 parked cars. The 100 people that are expected to stay overnight would make up approximately 44 (40 per cent) of these vehicles.

Assuming an occupancy rate of one person per vehicle for employees travelling to the site by private vehicle, the mode share targets for employees would result in 10 parked cars.

Arrivals and departures would be spread throughout the day, however the number of people on-site is expected to peak around midday, corresponding to lunchtime and utilisation of the restaurants and café. Based on this and guest check-in and check-out times, peak vehicle activity is expected to occur from 10am to 12pm and from 1pm to 3pm.

5.4 Car Parking Allocation

Given the restrictions regarding driving on-site, employees driving to the site would be required to park in the internal lower car park so as to not reduce the capacity of the external upper car park for visitors.

People staying overnight on-site would generally not use their car once on-site. Considering this, overnight guests on open days will be accompanied to park in the lower car park. Once full, remaining overnight guests (if any) will be permitted to park in the upper car park. However, accounting for the 10 employee spaces in the lower car park, all of the 44 overnight guest vehicles estimated above would be able to park in the lower car park, resulting in no overnight guests being required to park in the upper car park.

The anticipated 65 vehicles related to visitors would be required to park in the upper car park. This results in approximately 55 vacant car parking spaces in the upper car park and approximately 2 vacant car parking spaces in the lower car park, which allows for any variation in the mode share (including the number of staff travelling to the site via car and requiring a parking space) and vehicle occupancy.

The car parking allocation is summarised in Figure 5-1. It is emphasised that these numbers are indicative based on the assumptions detailed above and may vary in practice. However, the results of the assessment indicate that there is spare capacity predicted to occur within the site based on the targeted mode shares and with the application of the various management measures proposed (as detailed in Section 4 and further below).

Figure 5-1: Event 1 - Car parking allocation

Base image source: Google Maps

5.5 Event-Specific Management Measures

In order to meet the identified mode share targets the following event-specific management measures have been identified.

5.5.1 Attendants for Lower Car Park

To allow overnight guests to park in the lower car park, attendants would be needed at reception to accompany drivers down to the lower car park.

Attendants outside reception would direct guests that are staying overnight to temporarily park their car adjacent to the existing boom gates at the entrance into Q Station (i.e. so as not to obstruct traffic to the main gate or carpark) before checking in at reception. After checking in, the boom gates would be raised by reception and an attendant would escort the guests down to the lower car park by driving in front of their vehicle. Once the guests have parked adequately, attendants would loop back to reception using Cottage Road and Wharf Road.

It is anticipated that one attendant (already on-site) would be required to accompany up to two cars down to the lower car park at a time. The attendant would only be required up until the lower car park reaches capacity. When guests are ready to leave the lower car park (checking out), they are able to call reception to organise the shuttle bus or another attendant to accompany them out of the site.

A secondary trained and inducted casual staff member would be located at the lower car park to direct guests where to park to ensure the car parking arrangement is optimised (where necessary).

The additional attendants for car park management are currently used for large events and therefore would not result in any further human and/ or financial resources than that of the existing operation.

5.5.2 Encouraging Non-Private Vehicle Modes of Transport

To encourage travel to Q Station by non-private vehicle modes of transport on open days, it is proposed to emphasise travel information for the Route 161 bus services (including frequency and bus stops), provision of the shuttle bus service and any future ferry services (following recommencement of ferry access to the wharf) on the event website, while also mentioning that on-site parking is limited and prioritised for guests, and comprises paid parking for visitors. This should also be included in welcome packs or booking confirmations for guests who book accommodation. It is also proposed to offer tickets for any future ferry services at a discounted price for guests staying overnight.

It is not expected that there would be any additional human or financial resources required for this management measure.

5.5.3 Increasing Shuttle Bus Services

As discussed at Section 4.7, it is recommended to increase the frequency of the free shuttle bus (loop service) that operates between Manly and the site which would further reduce private vehicle trips.

6. Event 2 – Large Weddings or One-Off Events

6.1 Overview

Two weddings occurring one after another with some guest overlap, or one-off events such as the proposed Invictus Games event are expected to result in high visitation, although below the 600-person limit, with many staying overnight. Guests would largely be scattered around the site such as at the restaurants adjacent to Quarantine Beach, around the centre of the site near the accommodation and glasshouse wedding venue, or in the buildings along Isolation Road for larger events. It is expected that these events would occur on a weekend and therefore would occur concurrently with daytime visitors to the café and beach.

A breakdown of the anticipated number of visitors is shown in Table 6-1.

Table 6-1: Event 2 - Anticipated number of visitors on-site

Event Guests	Visitors	Employees	Total
350 (100 overnight guests)	100	100	**550**

It is emphasised that these are typical numbers expected to arise and naturally fluctuations between the users are expected for each event. However, the intent for this section is to demonstrate with the application of appropriate management measures that target the use of alternative modes of transport, as well as the general management measures discussed in Section 4, that it is anticipated that the operation of the car parks will not be compromised.

6.2 Mode Share Targets

It is expected that the restaurant and café adjacent to Quarantine Beach would be one of the main attractors for the site. Given their proximity to the ferry wharf, it is expected that the ferry would see an increase in patronage on these days.

While it is acknowledged that Condition 143 targets a maximum private vehicle mode share of 50 per cent, wedding guests typically travel via car, taxi or uber (Kiss n Ride). As such a slightly higher car mode share of 60 per cent has been targeted with a further 10 per cent via taxi / uber. This represents a realistic target for such events with Q Station implementing measures to cater for higher usage of private vehicles, whilst also encouraging other forms of travel.

Condition 139 details a target mode share of 40 to 50 per cent by ferry to the site, however this also represents a significant and unrealistic mode shift from existing travel behaviours. As such, a lower but still considerable mode shift to 15 per cent has been proposed for future travel to/ from the site via ferry for these events.

It is understood that organisers of weddings would encourage guests to come via water taxis and/or any future ferry services (following recommencement of ferry access to the wharf), as it will restore a connection to Sydney CBD (via interchange at Watsons Bay) and the broader public transport network. Organisers of large weddings at Q Station will also be encouraged to organise travel to the site via modes such as rideshare, shuttle buses and coaches. People travelling to the site would also be encouraged to make use of regular bus route services.

A summary of the mode share targets for large weddings or a one-off event is shown in Table 6-2.

Table 6-2: Event 2 - Guest/ visitor mode share targets

Mode of travel	Existing typical mode share	Mode share targets
Car	76%	60%
Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%*	15%
Bus Incl. shuttle bus service	5%	5%
Kiss n Ride	2%	5%
Taxi	2%	5%
Private Coach	0%	10%

*Note: Existing travel mode share survey was undertaken in 2017 when the ferry services were still operational. The service is currently no longer operational hence the existing water-based access mode share will likely be impacted by this change.

Similar to existing peak events that occur on-site, staff would be encouraged to either catch public transport to the site or travel to Manly town centre where a shuttle bus can pick them up. Employee private vehicle travel to the site for these types of events is targeted to be 10 per cent.

6.3 Anticipated Trips Generated

The anticipated number of people travelling by each mode of transport is shown in Table 6-3.

Table 6-3: Event 2 - Number of people per mode travelling to Q Station

User	Mode of travel	Mode share targets	Number of People
Guests/ visitors	Car	60%	270
	Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%	68
	Bus	5%	23
	Kiss n Ride	5%	22
	Taxi	5%	22
	Private Coach	10%	45
		Sub-total	*~450*
Employees	Car	10%	10
	Other	90%	90
		Sub-total	*100*
		Total	**550**

Based on the average surveyed occupancy per vehicle travelling to the site (2.3 people per vehicle), the 270 guests/ visitors that are expected to travel to the site by car would result in 117 parked cars. The 100 people that are expected to stay overnight would make up approximately 44 (38%) of these vehicles.

Assuming an occupancy rate of one person per vehicle for employees travelling to the site by private vehicle, the mode share targets for employees would result in 10 parked cars.

For two wedding events which involve some guest overlap, say a midday wedding and an afternoon wedding, peak visitation is expected to occur between 2pm and 3pm. It is expected that this would involve guests for the afternoon wedding arriving on-site between 1pm and 2pm, and guests for the midday wedding leaving between 3pm and 4pm.

For a one-off event, the number of people on-site is expected to peak around midday, corresponding to lunchtime and utilisation of the restaurants and café. Based on this and guest check-in and check-out times, peak vehicle activity is expected to occur from 10am to 12pm and from 1pm to 4pm.

6.4 Car Parking Allocation

Given the restrictions regarding driving on-site, employees driving to the site would be required to park in the internal lower car park so as to not reduce the capacity of the external upper car park for visitors.

People staying overnight on-site would generally not use their car once on-site. Considering this, overnight guests attending such events would be directed to park in the lower car park. Once full, remaining overnight guests (if any) would park in the upper car park. However, accounting for the 10 employee spaces in the lower car park, all of the 44 overnight guest vehicles estimated above would be able to park in the lower car park, resulting in no overnight guests being required to park in the upper car park.

The anticipated 73 vehicles related to day visitors would be required to park in the upper car park. This results in approximately 47 vacant car parking spaces in the upper car park and approximately 2 vacant car parking spaces in the lower car park, which allows for any variation in the mode share (including the number of staff travelling to the site via car and requiring a parking space) and vehicle occupancy.

The car parking allocation is summarised in Figure 6-1. It is emphasised that these numbers are indicative based on the assumptions detailed above and may vary in practice. However, the results of the assessment indicate that there is spare capacity predicted to occur within the site based on the targeted mode shares and with the application of the various management measures proposed (as detailed in Section 4 and further below).

Figure 6-1: Event 2 - Car parking allocation

Base image source: Google Maps

6.5 Event-Specific Management Measures

In order to meet the identified mode share targets the following event-specific management measures have been identified.

6.5.1 Attendants for Lower Car Park

To allow overnight guests to park in the lower car park, attendants would be needed at reception to accompany drivers down to the lower car park.

Attendants outside reception would direct guests that are staying overnight to temporarily park their car adjacent to the existing boom gates at the entrance into Q Station (i.e. so as not to obstruct traffic to the main gate or carpark) before checking in at reception. After checking in, the boom gates would be raised by reception and an attendant would escort the guests down to the lower car park by driving in front of their vehicle. Once the guests have parked adequately, attendants would loop back to reception using Cottage Road and Wharf Road.

It is anticipated that one attendant (already on-site) would be required to accompany up to two cars down to the lower car park at a time. The attendant would only be required up until the lower car park reaches capacity. When guests are ready to leave the lower car park (checking out), they are able to call reception to organise the shuttle bus or another attendant to accompany them out of the site.

A secondary trained and inducted casual staff member would be located at the lower car park to direct guests where to park to ensure the car parking arrangement is optimised (where necessary).

The additional attendants for car park management are currently used for large events and therefore would not result in any further human and/ or financial resources than that of the existing operation.

6.5.2 Encourage Event Organiser to Arrange Mass Transport Options

To minimise the number of private vehicles travelling to the site for large weddings or one-off events, Q Station will encourage organisers of large events (through the use of brochures and/or their event website, in which the limited on-site parking will also be emphasised) to arrange mass transport options to the site for their guests. This could include private shuttle buses or coaches which could pick up guests at a key transport hub such as a train station or ferry terminal and transport them to the site. In the future it might also include the use of private ferry or boat services. This not only reduces the number of vehicles parked on-site, but also minimises traffic movements through the North Head area.

The existing bus stop located on the roundabout directly outside the site would allow shuttle buses and coaches to unload passengers without affecting the flow of traffic along North Head Scenic Drive.

It is not expected that there would be any additional human or financial resources required for this management measure as it would be a user-pays system.

6.5.3 Increasing Shuttle Bus Services

As discussed at Section 4.7, it is recommended to increase the frequency of the free shuttle bus (loop service) that operates between Manly and the site which would further reduce private vehicle trips.

7. Event 3 – Corporate Event

7.1 Overview

Corporate events are expected to result in moderate to high visitation to the site, with many staying overnight. Guests would largely be scattered around the site including around the centre of the site near the accommodation and function rooms, in the buildings along Cottage Road and Isolation Road, and in buildings within the Former Hospital Precinct. It is expected that these events would occur on a weekday and therefore would attract low concurrent visitor numbers during the day.

It is envisaged that modes of transport for typical corporate events will primarily be public transport-based including private coaches, shuttle buses and ferries (once operational). However, to ensure that sufficient parking is available for the worst case scenario, a robust assessment has been undertaken with a higher mode share assumed for private car usage.

A breakdown of the anticipated number of visitors is shown in Table 7-1.

Table 7-1: Event 3 - Anticipated number of visitors on-site

Event Guests	Visitors	Employees	Total
300 (including 100 overnight guests)	25	50	**375**

It is emphasised that these are typical numbers expected to arise and naturally fluctuations between the users are expected for each event. However, the intent for this section is to demonstrate with the application of appropriate management measures that target the use of alternative modes of transport, as well as the general management measures discussed in Section 4, that it is anticipated that the operation of the car parks will not be compromised.

7.2 Mode Share Targets

It is expected that many organisers of corporate events would encourage guests to come via the water taxis or chartered ferry services (following recommencement of ferry access to the wharf), as it provides a connection to Sydney CBD and the broader public transport network. Organisers of these events would also be encouraged to look at funding transport alternatives for staff, including shuttle buses and/ or coaches to minimise the impact on the car parking supply. However, although Condition 139 and Condition 143 detail target mode shares for ferry and private vehicles, it is expected that in practice there would be a high percentage of people travelling to the site by private vehicle or taxi/ rideshare given the corporate event nature. People travelling to the site would also be encouraged to make use of regular bus route services.

A summary of the mode share targets used for corporate events is shown in Table 7-2.

Table 7-2: Event 3 - Guest/ visitor mode share targets

Mode of travel	Existing typical mode share	Mode share targets
Car	76%	70%
Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%*	5%
Bus Incl. shuttle bus service	5%	5%
Kiss n Ride	2%	0%
Taxi	2%	10%
Private Coach	0%	10%

*Note: Existing travel mode share survey was undertaken in 2017 when the ferry services were still operational. The service is currently no longer operational hence the existing water-based access mode share will likely be impacted by this change.

Similar to existing peak events that occur on-site, staff would be encouraged to either catch public transport to the site or travel to Manly town centre where a shuttle bus can pick them up. However, this would be less strict in comparison to large events. As such, employee private vehicle travel to the site for these events is targeted to be 80 per cent.

7.3 Anticipated Generated Trips

The anticipated number of people travelling by each mode of transport is shown in Table 7-3.

Table 7-3: Event 3 - Number of people per mode travelling to Q Station

User	Mode of travel	Mode share targets	Number of People
Guests/ visitors	Car	70%	228
	Water-based Access Incl. Ferry, Boat & Kayak / Canoe	5%	16
	Bus	5%	16
	Kiss n Ride	0%	0
	Taxi	10%	33
	Private Coach	10%	33
		Sub-total	*~325*
Employees	Car	80%	40
	Other	20%	10
		Sub-total	*50*
		Total	**375**

Based on the average surveyed occupancy per vehicle travelling to the site (2.3 people per vehicle), the 228 guests/ visitors that are expected travel to the site by car would result in 99 parked cars. The 100 people that are expected to stay overnight would make up approximately 44 (44%) of these vehicles.

Assuming an occupancy rate of one person per vehicle for employees travelling to the site by private vehicle, the mode share targets for employees would result in 40 parked cars.

It is expected that corporate events would largely be centred around normal business hours, corresponding with most guests arriving on-site between 8am and 9am and leaving between 4pm and 5pm.

7.4 Car Parking Allocation

Given the restrictions regarding driving on-site, employees driving to the site would be required to park in the internal lower car park so as to not reduce the capacity of the external upper car park to guests and visitors. As such, accounting for the 40 employee spaces required in the lower car park during corporate events, this would leave 16 spaces for overnight guests.

The upper car park would be required to accommodate the remaining 28 vehicles related to overnight guests, with other corporate guests and day visitors expected to result in a demand for 55 additional car parking spaces.

This results in approximately 37 vacant car spaces in the upper car park, which allows for any variation in the mode share (including the number of staff travelling to the site via car and requiring a parking space) and vehicle occupancy.

The car parking allocation is summarised in Figure 7-1. It is emphasised that these numbers are indicative based on the assumptions detailed above and may vary in practice. However, the results of the assessment indicate that there is spare capacity predicted to occur within the site based on the targeted mode shares and with the application of the various management measures proposed (as detailed in Section 4 and further below).

Figure 7-1: Event 3 - Car parking allocation

Base image source: Google Maps

7.5 Event-Specific Management Measures

In order to meet the identified mode share targets the following event-specific management measures have been identified.

7.5.1 Encourage Event Organiser to Arrange Mass Transport Options

To minimise the number of private vehicles travelling to the site for corporate events, Q Station will encourage organisers (through the use of brochures and/or their event website, in which the limited on-site parking will also be emphasised) to arrange mass transport options to the site for their guests/ staff. This could include private shuttle buses and/or coaches which could pick up guests at a key transport hub such as a train station or ferry terminal and transport them to the site. Event organisers would also be encouraged to fund taxis/ rideshare for staff. These options not only reduce the number of vehicles parked on-site, but also minimise traffic movements through the North Head area.

The existing bus stop located on the roundabout directly outside the site would allow shuttle buses and coaches to unload passengers without affecting the flow of traffic along North Head Scenic Drive.

It is not expected that there would be any additional human or financial resources required for this management measure as it would be a user-pays system.

8. Event 4 – Yearly Celebrations

8.1 Overview

Yearly celebrations such as Christmas and New Year's Eve/ Day are expected to result in moderate visitation to the site. These events are expected to attract people specifically for lunch and dinner at the restaurant and café. There would also be a high number of guests staying overnight.

A breakdown of the anticipated number of visitors is shown in Table 8-1.

Table 8-1: Event 4 - Anticipated number of visitors on-site

Overnight guests	Visitors	Employees	Total
100	200	25	**325**

It is emphasised that these are typical numbers expected to arise and naturally fluctuations between the users are expected for each event. However, the intent for this section is to demonstrate with the application of appropriate management measures that target the use of alternative modes of transport, as well as the general management measures discussed in Section 4, that it is anticipated that the operation of the car parks will not be compromised.

8.2 Mode Share Targets

The restaurant and café are expected to be a major attractor for guests for these yearly events and are located adjacent to Quarantine Beach near the ferry wharf which is expected to result in an increase in users of the ferry. It is expected that car and bus mode splits would remain similar to the existing mode splits.

A summary of the mode share targets for yearly celebration events is shown in Table 8-2.

Table 8-2: Event 4 - Guest/ visitor mode share targets

Mode of travel	Existing typical mode share	Mode share targets
Car	76%	75%
Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%*	15%
Bus Incl. shuttle bus service	5%	5%
Kiss n Ride	2%	3%
Taxi	2%	2%
Private Coach	0%	0%

*Note: Existing travel mode share survey was undertaken in 2017 when the ferry services were still operational. The service is currently no longer operational hence the existing water-based access mode share will likely be impacted by this change.

Staff would be encouraged to catch public transport to the site, however this would be less strict in comparison to larger events and the availability of public transport options may also be limited on public holidays. Employee private vehicle travel to the site during a yearly event is targeted to be 80 per cent.

8.3 Anticipated Generated Trips

The anticipated number of people travelling by each mode of transport is shown in Table 8-3.

Table 8-3: Event 4 - Number of people per mode travelling to Q Station

User	Mode of travel	Mode share targets	Number of People
Guests/ visitors	Car	75%	225
	Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%	45
	Bus	5%	15
	Kiss n Ride	3%	9

	Taxi	2%	6
	Private Coach	0%	0
		Sub-total	*300*
Employees	Car	80%	20
	Other	20%	5
		Sub-total	*25*
		Total	**325**

Based on the average surveyed occupancy per vehicle travelling to the site (2.3 people per vehicle), the 225 guests/ visitors that are expected to travel to the site by car would result in 98 parked cars. The 100 people that are expected to stay overnight would make up approximately 44 (45%) of these vehicles.

Assuming an occupancy rate of one person per vehicle for employees travelling to the site by private vehicle, the mode share targets for employees would result in 20 parked cars.

It is expected that the peak visitation on yearly event days would largely be centred around lunch or dinner times, such as 12pm for Christmas lunches or 7pm-8pm on New Year's Eve. As such, visitors on Christmas Day would likely arrive between 11am and 12pm and depart the site between 2pm and 3pm. On New Year's Eve, arrivals to the site would likely be between 6pm and 7pm, with departures after 12:30am the following day if not staying in accommodation on-site.

8.4 Car Parking Allocation

Given the restrictions regarding driving on-site, employees driving to the site would be required to park in the internal lower car park so as to not reduce the capacity of the external upper car park for guests and visitors. As such, accounting for the 20 employee spaces required in the lower car park during yearly events, this would leave 36 vacant spaces in the lower carpark.

The upper car park would be required to accommodate 44 vehicles related to guests staying overnight, with other visitors expected to result in a demand for 54 additional car parking spaces.

This results in approximately 22 vacant car parking spaces in the upper car park which, together with the lower carpark vacant spaces, allows for any variation in the mode share (including the number of staff travelling to the site via car and requiring a parking space) and vehicle occupancy.

The car parking allocation is summarised in Figure 8-1. It is emphasised that these numbers are indicative based on the assumptions detailed above and may vary in practice. However, the results of the assessment indicate that there is spare capacity predicted to occur within the site based on the targeted mode shares and with the application of the various management measures proposed (as detailed in Section 4 and further below).

Figure 8-1: Event 4 - Car parking allocation

Base image source: Google Maps

8.5 Event-Specific Management Measures

While no event-specific management measures are proposed further to the general management measures specified in Section 4, on-site shuttle bus drivers would be able to assist with escorting any overflow vehicles to the lower car parking if needed.

It is not expected that there would be any additional human or financial resources required for this type of event.

9. Event 5 – Normal Day-to-Day Activity

9.1 Overview

Normal day-to-day events and activity are expected to be similar to the existing operation of Q Station. Typical activities would include a mixture of restaurant and café use, small corporate events, people staying overnight and visitors to the beach.

A breakdown of the anticipated number of visitors is shown in Table 9-1.

Table 9-1: Event 5 - Anticipated number of visitors on-site

Overnight guests	Corporate Guests	Visitors	Employees	Total
75	50	50	25	**200**

It is emphasised that these are typical numbers expected to arise and naturally fluctuations between the users are expected for each event. However, the intent for this section is to demonstrate with the application of appropriate management measures that target the use of alternative modes of transport, as well as the general management measures discussed in Section 4, that it is anticipated that the operation of the car parks will not be compromised.

9.2 Mode Share Targets

Normal events are expected to result in a mode split equivalent to that of the existing site operation.

As such, the existing mode shares, as summarised in Table 9-2, have been targeted to be maintained.

Table 9-2: Event 5 - Guest/ visitor mode share targets

Mode of travel	Existing typical mode share
Car	76%
Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%*
Bus Incl. shuttle bus service	5%
Kiss n Ride	2%
Taxi	2%
Private Coach	0%

Note: Existing travel mode share survey was undertaken in 2017 when the ferry services were still operational. The service is currently no longer operational hence the existing water-based access mode share will likely be impacted by this change.

The majority of employees are expected to drive to site by private vehicle for normal day-to-day activities.

9.3 Anticipated Generated Trips

The anticipated number of people travelling by each mode of transport is shown in Table 9-3.

Table 9-3: Event 5 - Number of people per mode travelling to Q Station

User	Mode of travel	Mode share targets	Number of People
Guests/ visitors	Car	76%	133
	Water-based Access Incl. Ferry, Boat & Kayak/ Canoe	15%	26
	Bus	5%	9
	Kiss n Ride	2%	4
	Taxi	2%	4
	Private Coach	0%	0
		Sub-total	*~175*

Employees	Car	100%	25
		Sub-total	*25*
		Total	**200**

Based on the average surveyed occupancy per vehicle travelling to the site (2.3 people per vehicle), the 133 guests/ visitors that are expected to travel to the site by car would result in 58 parked cars. The 75 people that are expected to stay overnight would make up approximately 33 (57%) of these vehicles.

Assuming an occupancy rate of one person per vehicle for employees travelling to the site by private vehicle, the mode share targets for employees would result in 25 parked cars.

It is expected that the peak visitation for the site would occur at 2pm-3pm, however vehicle arrivals and departures would be scattered throughout the day.

Arrival and departure times for the expected uses are anticipated to occur at the following times:

- Overnight guests:
  - Arrival: 2pm – 3pm
  - Departure: 9am – 10am
- Corporate guests:
  - Arrival: 8am – 9am
  - Departure: 4pm – 5pm
- Visitors:
  - Arrival: 11am – 12pm
  - Departure: 2pm – 3pm
- Employees:
  - Varying depending on shift times.

9.4 Car Parking Allocation

Given the restrictions regarding driving on-site, employees driving to the site would be required to park in the internal lower car park so as to not reduce the capacity of the external upper car park for guests and visitors. As such, it is expected that employees will occupy 25 spaces in the lower car park, leaving 31 vacant spaces in the lower carpark.

The upper car park would be required to accommodate 33 vehicles related to guests staying overnight, with other visitors expected to result in a demand for 25 additional car parking spaces.

This results in approximately 62 vacant car parking spaces in the upper car park which, together with the lower carpark vacant spaces allows for any variation in the mode share (including the number of staff travelling to the site via car and requiring a parking space) and vehicle occupancy.

The car parking allocation is summarised in Figure 9-1. It is emphasised that these numbers are indicative based on the assumptions detailed above and may vary in practice. However, the results of the assessment indicate that there is spare capacity predicted to occur within the site based on the targeted mode shares and with the application of the various management measures proposed (as detailed in Section 4 and further below).

Figure 9-1: Event 5 - Car parking allocation

Base image source: Google Maps

9.5 Event-Specific Management Measures

While no event-specific management measures are proposed in addition to the general management measures specified in Section 4, on-site shuttle bus drivers would be able to assist with escorting any overflow vehicles to the lower car park if needed.

It is not expected that there would be any additional human or financial resources required for this type of event.

10. Implementation and Monitoring

The proposed event management measures will be implemented by the Q Station on-site manager to ensure target mode shares are reached. This will involve management delegating staff to specific tasks on event days, similar to the existing operation.

For large events, emails and messages will be sent to staff prior to their shift requesting they catch public transport or be dropped off to work. Guests will receive a welcome pack with their booking confirmation detailing alternative modes of transport to the site.

In order for the STAP to be effective, data must be collected on all of the events specified in the Plan. This would include boom gate and paid parking data to monitor upper car park occupancy for each type of event. If there are cases where vehicles are being turned away due to the car park being full, the number of cars that are turned away should be recorded to inform future events. Should this frequently occur, this STAP should be reviewed and updated to reflect changing circumstances and local context/ facilities. Data would be reviewed quarterly and would require around a day of the Q Station on-site manager's time.

After the implementation of the STAP it may be that transport deficiencies are identified. Some examples may include:

- the car parks being well under utilised
- more shuttle buses required
- more staff required.

Transport deficiencies would be tracked by the Q Station on-site manager as part of the quarterly monitoring.

A summary of the roles and responsibilities of the on-site manager to deliver this STAP are detailed in Table 10-1.

Table 10-1: Q Station on-site manager roles and responsibilities

Role	Person Responsible	Contact Details	Responsibilities
On-Site Manager	TBC	TBC	• Complete a quarterly review and update the STAP to reflect changes to operations and transportation network. • Identify any issues related to the implemented transport management strategies and determine if alternative measures are necessary. • Collect and collate annual travel mode information. • Provide annual reporting.

11. Conclusion

This Site Travel and Access Plan (STAP) details both general and event-specific management measures (for five different event types/ sizes) which are recommended be implemented at Q Station. These are summarised in Table 11-1.

Many of the measures are existing management measures adopted following the 2018 STAP, with select additional measures recommended to improve travel demand management.

Table 11-1: General and event-specific management measures

Event	Anticipated no. of people on-site	Recommended event-specific management measures	Recommended general management measures
Open day (weekend)	600	• Attendants at reception to escort overnight guests with cars to lower car park. • Encourage other modes of transport including the 161 bus route and future ferry services. The ferry could be subsidised by Q Station for people who book accommodation. • Increase frequency of shuttle bus services.	• Booking system to require overnight guests to specify if they require a car parking space, allowing Q Station to reserve spaces for guests and identify how many spaces are available for visitors. • Additional signage indicating a full car park to be positioned at the Q Station welcome sign on North Head Scenic Drive roundabout once the upper car park is full, with monitoring by attendants. Any unplanned overnight guests with cars would be able to work with reception to organise parking in the lower car park if available or along the Entrance Road past the existing boom gates. • Encourage staff for large events to car-pool, use public transport and/ or ride share when feasible and safe to do so. • Ensure access provision for persons with disabilities, non-English speaking visitors, services/ contractors and emergency vehicles are maintained and/or improved. • Install boom gates and a paid parking scheme to be implemented at the upper car park to reduce parking demand to guests and visitors of Q Station only. • Recommence ferry access to the Q Station wharf. This would encourage reduction in private vehicle mode share.
Large weddings or one-off events (typically weekend)	550	• Attendants at reception to escort overnight guests with cars to lower car park. • Encourage other modes of transport including the 161 bus route, water taxis and future ferry services. Water taxis/ future ferry services could be subsidised by Q Station for people who book accommodation. • Event organisers would be encouraged to arrange mass transport options for their guests such as shuttle buses and/ or coaches from a key transport hub. • Increase frequency of shuttle bus services.	
Corporate events (weekday)	375	• Event organisers would be encouraged to arrange mass transport options for their guests such as shuttle buses and/ or coaches from a key transport hub, use of water taxis/ chartered ferries, or fund taxis/ rideshare services for staff.	
Yearly Celebrations (weekday or weekend)	325	• No specific measures are proposed, however on-site shuttle bus drivers would be able to assist in escorting any overflow vehicles down to lower car park if required.	
Normal day-to-day activity (weekday or weekend)	200	• No specific measures are proposed, however on-site shuttle bus drivers would be able to assist in escorting any overflow vehicles down to lower car park if required.	

Implementation of this plan and associated transport management measures is expected to satisfactorily address the relevant consent conditions and minimise the impact of traffic and parking on the surrounding area.

The plan should be implemented by Q Station management, with boom gate and paid parking data recorded after each specified event, along with the number of vehicles turned away at the entrance (if any) if the car parks are full. Data would be reviewed quarterly, with any issues actioned accordingly and the Site Transport and Access Plan (STAP) updated.

It is also noted that the STAP has been prepared with the assumption that the ferry operations will recommence. Therefore, to assess whether the currently proposed management measures are sufficient for the satisfactory operation of Q Station should the ferry not recommence, it is proposed that the STAP be reviewed every 2 years until recommencement of the ferry operation.

On the basis that the recommended management measures are implemented, it is expected that the site will continue to operate satisfactorily from a traffic and transport perspective beyond 23 December 2024.

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