April 2025

Taronga Zoo Sky Safari

Appendix R
Transport and Accessibility Impact Assessment
RTS Revision 2

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TARONGA CONSERVATION SOCIETY AUSTRALIA

For the Wild

Taronga Zoo Sky Safari

Transport Impact Assessment

Prepared for:

Taronga Conservation Society Australia

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1 Introduction

1.1 Background

This transport impact assessment report has been prepared to accompany an SSDA for the redevelopment of the Sky Safari at Taronga Zoo, which is legally described as Lot 22 on Deposited Plan 843294.

Taronga Conservation Society Australia is a statutory body representing the Crown. The Minister for Planning and Public Spaces, or their delegate, is the consent authority for the SSDA and this application is lodged with the NSW Department of Planning, Housing and Infrastructure (DPHI) for assessment as the works are located within the Taronga Zoo site and have an estimated development cost that exceeds the $10 million threshold pursuant to Clause 2(h) of Schedule 2 of the State Environmental Planning Policy (Planning Systems) 2021.

The SSDA was placed on public exhibition for 28 days between 24 September to 22 October 2024. Since lodgement, the project team have refined the proposal to address comments from public agencies and the public as well as ongoing design development. The proposed refinements include updates to the Top and Lower Stations to improve queuing and visitor experience and the pylon design to reflect inputs from the cable car contractor.

1.2 Site description

Taronga Zoo is located at Bradleys Head Road, Mosman and is situated in the Mosman Local Government area (LGA) and on Cammeraygal Country. The site is bounded by Bradleys Head Road to the east, Athol Wharf Road and Sydney Harbour to the south, Little Sirius Cove to the west and Whiting Beach Road to the north. Taronga Zoo is legally described as Lot 22 on DP843294 and is Crown Land managed by the TCSA (the Zoological Park Board). Taronga Zoo has been subject to numerous upgrades and redevelopment schemes over time, to stay compliant with contemporary regulations, meet contemporary animal welfare and contemporary visitor experience expectations.

Taronga Zoo has evolved over time from a Zoo that simply provides the traditional visitor experience of viewing animals in exhibits, to a Zoo that focusses on wildlife conservation, animal welfare and providing a range of visitor learning experiences. Taronga Zoo is one of Australia's most popular attractions, and together with Taronga Western Plains Zoo hosts more than 1.8 million visitors annually.

Figure 1 Site context

1.3 Proposal description

Taronga Zoo is one of Australia's most popular attractions, and together with Taronga Western Plains Zoo hosts more than 1.8 million visitors annually. The Zoo has evolved over time from a Zoo that simply provides the traditional visitor experience of viewing animals in exhibits, to a Zoo that focusses on wildlife conservation, animal welfare and providing a range of visitor learning experiences.

Within Taronga Zoo, the Sky Safari is one of Taronga's most loved experiences and has transported more than 20 million passengers since it was first installed in 1987 and upgraded in 2000. The former Sky Safari was an ageing asset and was formally retired in January 2023. The redevelopment of the existing Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which provide improved amenities, ease increased demand and assist the public in moving around the Zoo.

Development consent is specifically sought for:

- Site establishment works including removal of the existing Sky Safari;
- Installation of a new 916m Sky Safari cable car system including:
    - Construction of six (6) new pylons and associated infrastructure within pylon zones within the Zoo ranging in height between 5.9m (P1) to 36.5m (P5)

  - Construction of two new stations at both the upper and lower entrances within the Zoo grounds.
  - Public facilities including accessible queueing areas, ticket booths and public amenities.
  - Associated mechanical plant, servicing and storage areas for ongoing maintenance.
- Landscaping works, including new accessible pathways, planting, shade structures and seating areas and wayfinding signage. Taronga has implemented a tree replacement ratio of 2:1 for all trees removed as part of this development.
- Excavation, site preparation works and tree removal/pruning to allow the works to occur.
- Increased hours of operation

Overall, the revitalised Sky Safari will:

- Feature additional, larger cable cars that are more accessible, dramatically improving the guest experience journey for all visitors.
- Connect to recent upgrades underway to the Taronga Zoo Wharf under the NSW Government's Transport Access Program.
- Increase the Sky Safari's former capacity, allowing for a more seamless flow of guests around the Zoo, while also enhancing opportunities for educating guests on Taronga's conservation efforts.
- Encourage guests off the roads and onto public transport as they explore the harbour on route to the Zoo.
- Provide unique, affordable, family-focused sightseeing tourism infrastructure that provides comfortable all-season experiences to support year-round growth in visitation to the Zoo. This will assist in securing the financial future of the Zoo to ensure that it can continue to undertake a range of conservation and education projects.
- Consider the heritage significance of local heritage items within the Zoo grounds and the strong historical presence of Taronga.
- Enhance opportunities for educating the community on TCSA's conservation efforts

A new station is proposed at each end of the new cable car route allowing for visitors to enter and exit at both the top and bottom of the Zoo site.

Top Station is proposed to replace the existing storage facility adjacent to the Main Entrance Plaza. The new station will provide Zoo guests with direct access to the Sky Safari via the existing Main Entrance plaza. The station provides covered

queuing within the heritage building and associated landscaping and shading provided in the plaza space.

Lower Station is proposed to replace the existing lower station near the Taronga Ferry Wharf. The station aims to improve existing queuing on site by incorporating fully equitable queuing areas with shade and amenity in order to enhance the visitor's arrival experience. The Lower Station will have improved accessibility through the new ramping system up to the station which will make the station easily accessible for those in wheelchairs and with prams. In addition, level access into the station when re-queuing to use the cable car to go back to the Top Station, removing the existing stairs. A lift will also be provided to access the platform if required by guests. The station will also be supplemented with toilet amenities and a ticketing booth.

There are six pylons, one located at each station (top and lower) and four within zoo. There are no pylons outside of the Zoo grounds.

- Pylon 1 (5.9 m)– located in close proximity to the existing and proposed Lower station;
- Pylon 2 (10.12 m) – located by existing Pylon 2;
- Pylon 3 (26.2m) – located by the Food Court;
- Pylon 4 (35.70 m) – in front of the Savannah toilet facilities;
- Pylon 5 (36.5 m) – located to the north of the Helmore lawns; and
- Pylon 6 (6.5m)– located in close proximity to the existing and proposed Top station.

1.4 Report purpose

This report has been prepared in response to the Secretary's Environmental Assessment Requirements (SEARs) for SSD- 46807958 relevant to traffic and transport as summarised in Table 1 below.

Table 1 SEARs requirements

Item	Description of Requirement - SSD-46807958	Relevant Section of Report
10. Traffic, Transport and Accessibility	*Provide a transport and accessibility impact assessment that includes the following:*	This report
	• *an analysis of the existing transport network, including the road hierarchy and any pedestrian, bicycle or public transport infrastructure, current daily and peak hour vehicle movements, and existing performance levels of nearby intersections.*	Section 2
	• *details of the proposed development, including pedestrian and vehicular access arrangements (including swept path analysis of the largest vehicle and height clearances), parking arrangements and rates (including bicycle and end-of-trip facilities), drop-off/pick-upzone(s) and bus bays (if applicable), and provisions for servicing and loading/unloading.*	Section 3
	• *analysis of the impacts of the proposed development during construction and operation (including justification for the methodology used), including predicted modal split, a forecast of additional daily and peak hour multimodal network flows as a result of the development (using industry standard modelling), identification of potential traffic impacts on road capacity, intersection performance and road safety (including pedestrian and cyclist conflict) and any cumulative impact from surrounding approved developments*	3.1, 3.5
	• *measures to mitigate any traffic impacts, including details of any new or upgraded infrastructure to achieve acceptable performance and safety, and the timing, viability and mechanisms of delivery (including proposed arrangements with local councils or government agencies) of any infrastructure improvements in accordance with relevant standards.*	3.6, 3.8

Item	Description of Requirement - SSD-46807958	Relevant Section of Report
10. Traffic, Transport and Accessibility	• *proposals to promote sustainable travel choices for employees, residents, guests and visitors, such as connections into existing walking and cycling networks, minimising car parking provision, encouraging car share and public transport, providing adequate bicycle parking and high quality end-of-trip facilities, and implementing a Green Travel Plan.*	Appendix A
	Provide a Construction Traffic Management Plan detailing predicted construction vehicle movements, routes, access and parking arrangements, coordination with other construction occurring in the area, and how impacts on existing traffic, pedestrian and bicycle networks would be managed and mitigated.	Section 4

2 Site Transport Conditions

2.1 Current travel behaviours

2.1.1 Staff travel behaviours

Journey to Work census data has been used to estimate the current travel behaviour of staff travelling to Taronga Zoo. Census data for the destination zone[1] encompassing the site indicates that some 68% of staff typically travel by private vehicle to Taronga Zoo. Public transport accounts for approximately 18% of travel, with train and ferry the preferred mode. Despite a number of bus routes servicing Taronga Zoo, only 4% of employees noted that they use this mode of transport to access the site.

The current travel patterns of staff are illustrated in Figure 2 below.

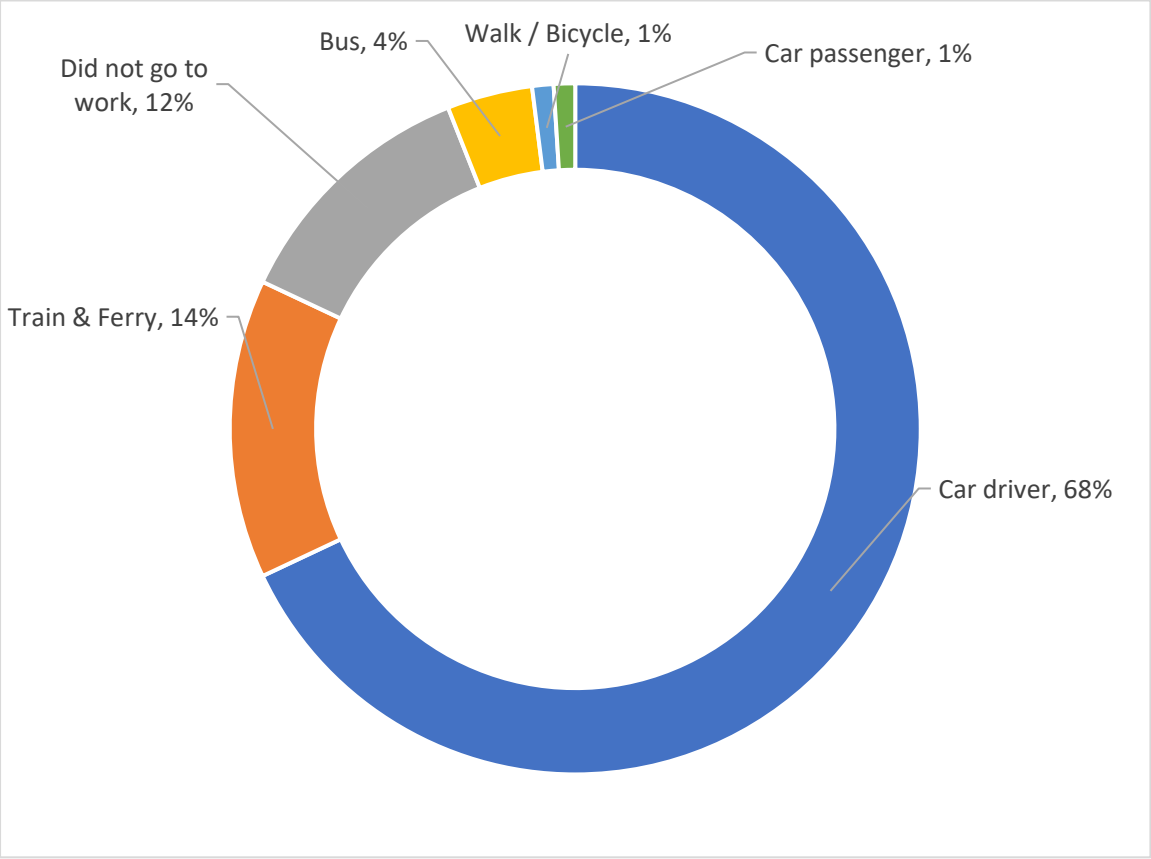

Figure 2 Current transport mode share of Taronga Zoo staff

[1] DZ 114153393

A separate staff travel survey was undertaken in 2022. The results of the survey largely reflect the overall staff mode share as indicated in the Journey to Work data, with just under 70% of all trips made by private vehicle. The results of the travel survey are presented in Table 2 below.

Table 2 Mode share of existing Taronga Zoo staff

Transport Mode	Proportion of Trips
Car	68%
Walk	9%
Bicycle	9%
Car pool	5%
Public transport	5%
Motorbike/moped	5%
Total	**100%**

It is noted that a number of environmental factors, outside of the direct control of Taronga Zoo, influence the travel behaviours of staff, including:

- Home residence and distance required to travel to the workplace
- Availability of bicycle routes external to the site
- Availability of nearby public transport from workers' home residences.

Tarango Zoo now also implements hybrid working arrangements for some staff which provides greater flexibility in the way they travel to and from the site.

2.1.2 Visitor travel behaviours

A survey of visitors to Taronga Zoo was undertaken in July 2023 to understand current travel behaviours both for a weekday and weekend. It is important to note that the survey was undertaken following the decommissioning of the Sky Safari (cable car) and therefore travel via ferry and public transport in general would have been reduced when compared to normal operating conditions. The outcomes of the survey are illustrated in Figure 3 and demonstrate that more than half of visitors use public transport to access Taronga Zoo on a weekend. Following the opening of the upgraded Sky Safari it is expected that this share of public transport use will only increase compared to those figures reported from July 2023.

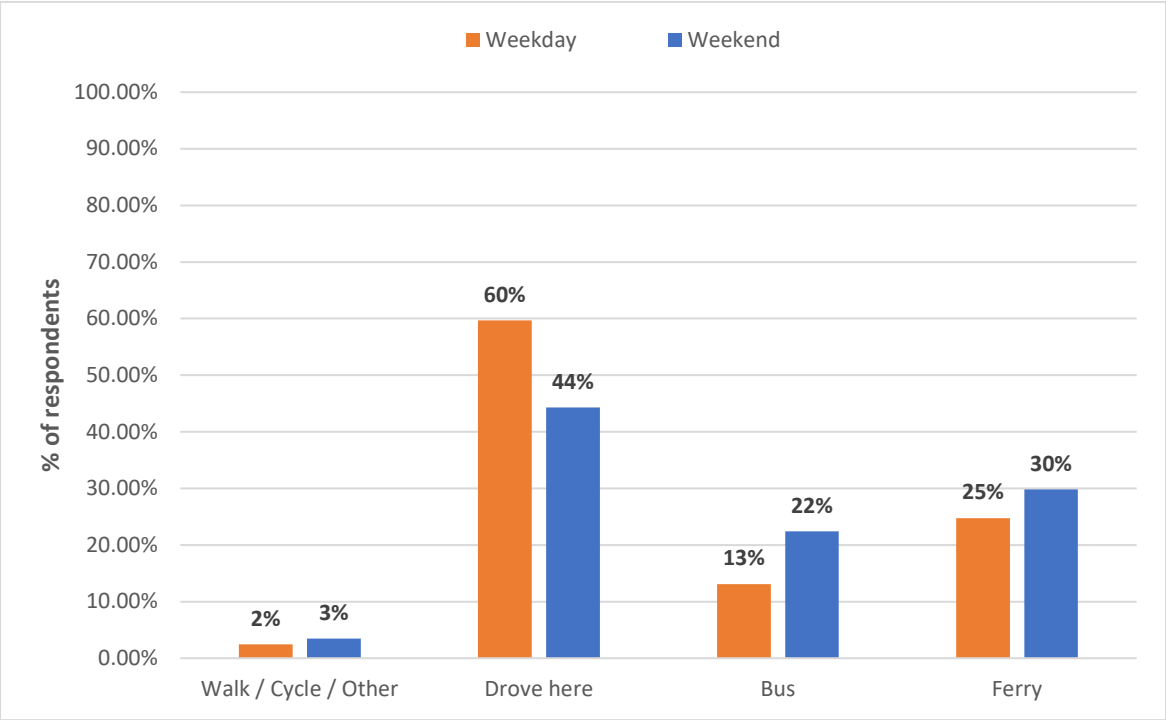

Figure 3 Current travel behaviours – visitors

Vehicle occupancy of visitors to Taronga Zoo was also captured in the travel behaviour survey. The values are based of patrons arriving to the stadium by a private vehicle as a passenger or driver. Results are summarised in Figure 4, with key findings being:

- 97% of vehicles had two or more passengers;
- 47% of vehicles contained four or more passengers;
- On average each vehicle would carry 3.4 passengers

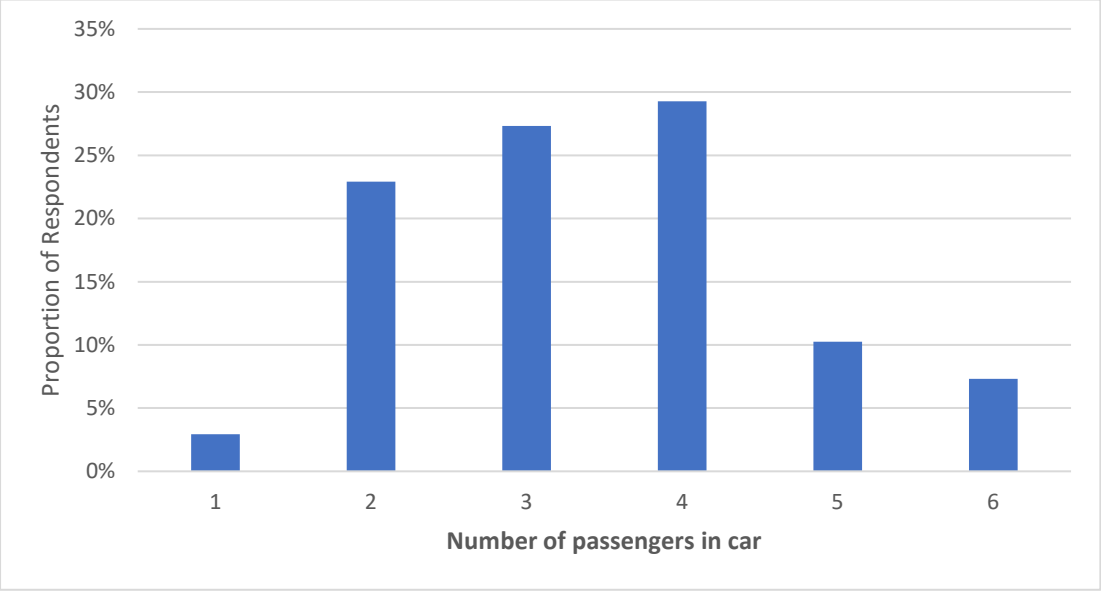

Figure 4 Existing vehicle occupancy

2.2 Public transport

By public transport the site is accessible by bus and ferry, with train also a viable mode of travel through connecting ferry services at Circular Quay. Bus stops are located at the main entrance off Bradleys Head Road (Figure 5) and the ferry wharf is located at southern entrance of the zoo (Figure 6).

Figure 5 Taronga Zoo bus terminal

Figure 6 Taronga Zoo ferry wharf

The extent of public transport routes servicing Taronga Zoo is illustrated in Figure 7 below. This includes the various north shore bus routes as well as ferry services from Circular Quay. Bus services travel along Bradleys Head Road via Spit Junction and directly service the site.

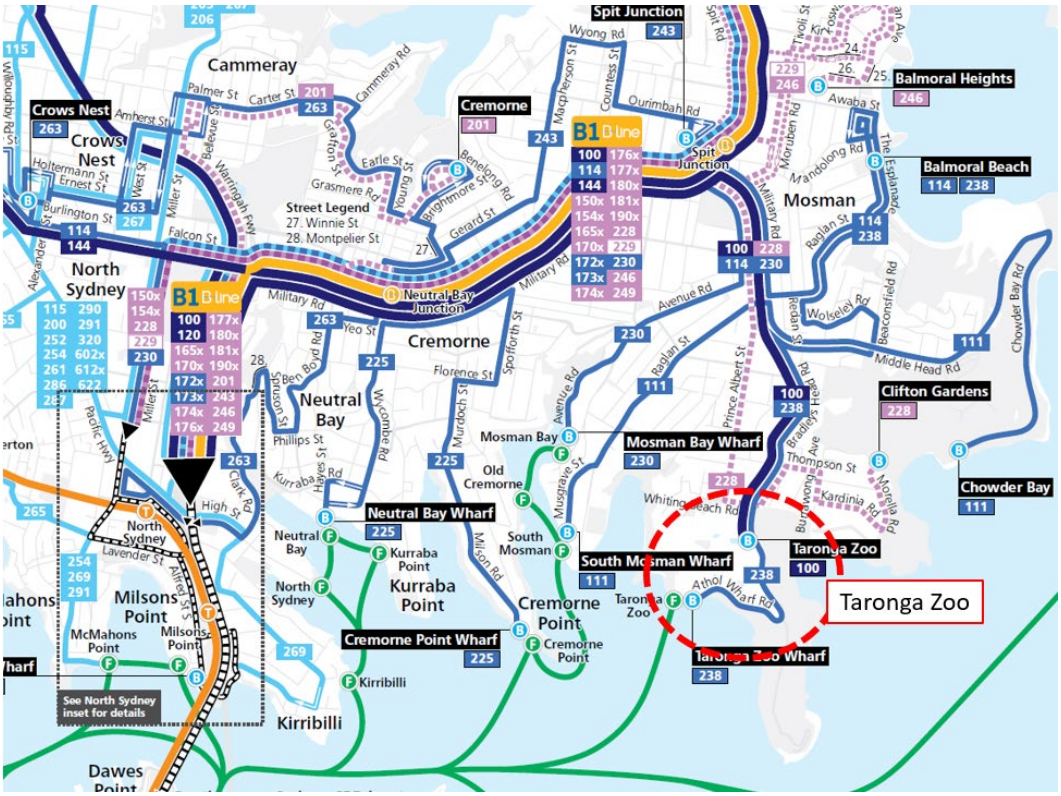

Figure 7 Existing public transport routes servicing Taronga Zoo

A summary of the public transport services and frequencies is presented in Table 3 below.

Table 3 Summary of public transport services

Public Transport mode	Route No.	Route Description	Typical Weekday Frequency	
			Peak Periods	Off-Peak Periods
Ferry	F2	Circular Quay to Taronga Zoo	15 minutes	30 minutes
Bus	100	Taronga Zoo to City QVB (Loop Service)	10 minutes	10 minutes
	228	Milsons Point to Clifton Gardens	30 minutes	30 minutes
	238	Taronga Zoo Wharf to Balmoral	30 minutes	30 minutes

A summary of the public transport services available is shown in Figure 8 below.

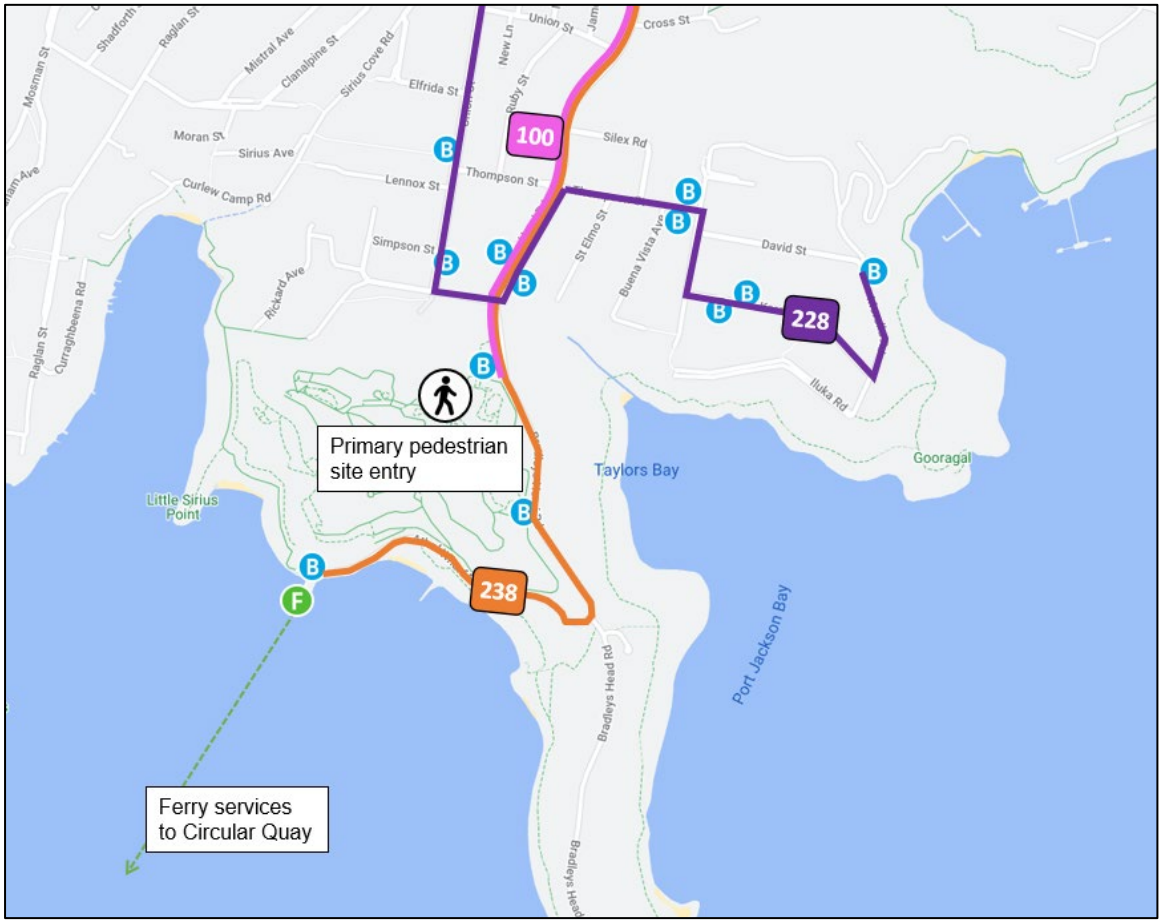

Figure 8 Summary of existing public transport services

The 30 minute public transport catchment from the site, taking into consideration both the ferry wharf at the southern end and bus terminal at the northern end, is shown in Figure 9 below. This indicates that within a 30 minute trip people can access the site from the Sydney CBD and Central Station, as well as from part of the lower North Shore and Northern Beaches areas.

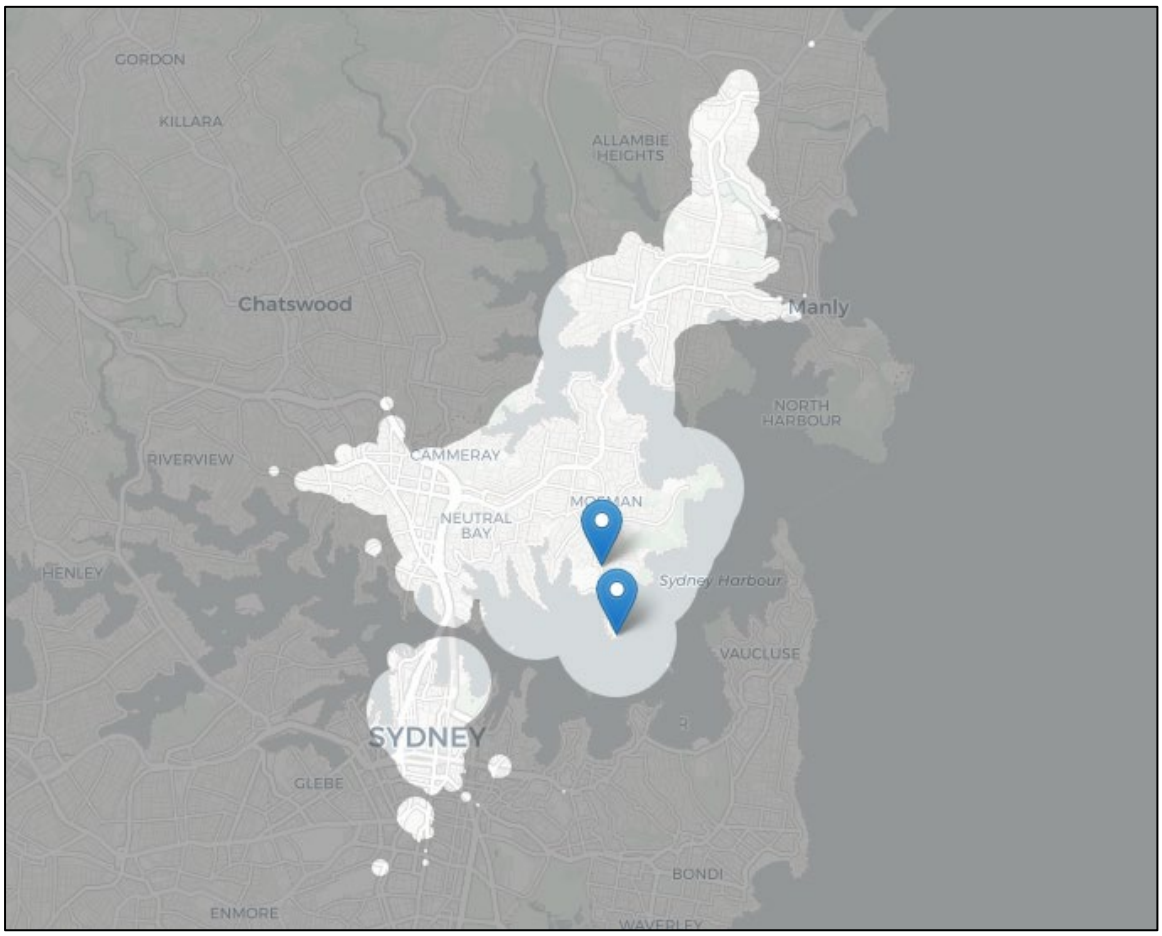

Figure 9 30 minute public transport catchment

2.3 Pedestrian and cycling infrastructure

A safe pedestrian crossing point is provided across the Bradleys Head Road, at the main entrance. Pedestrian footpaths are provided at the following locations:

- Both sides of Bradleys Head Road, north of the main zoo entrance.
- Eastern side of Bradleys Head Road, south of the main zoo entrance for approximately 300 metres.
- Western side of Bradleys Head Road, south of the main zoo entrance for approximately 100 metres.
- Northern side of Whiting Beach Road.

The nearest cycle route in vicinity of the site runs along the Bradleys Head Road-Athol Wharf Road. Although the site is well connected to the surrounding cycling network as indicated in Figure 10 below, access via bicycle is constrained for many staff given the topography of the area – making this mode of transport challenging for less experienced or weaker riders.

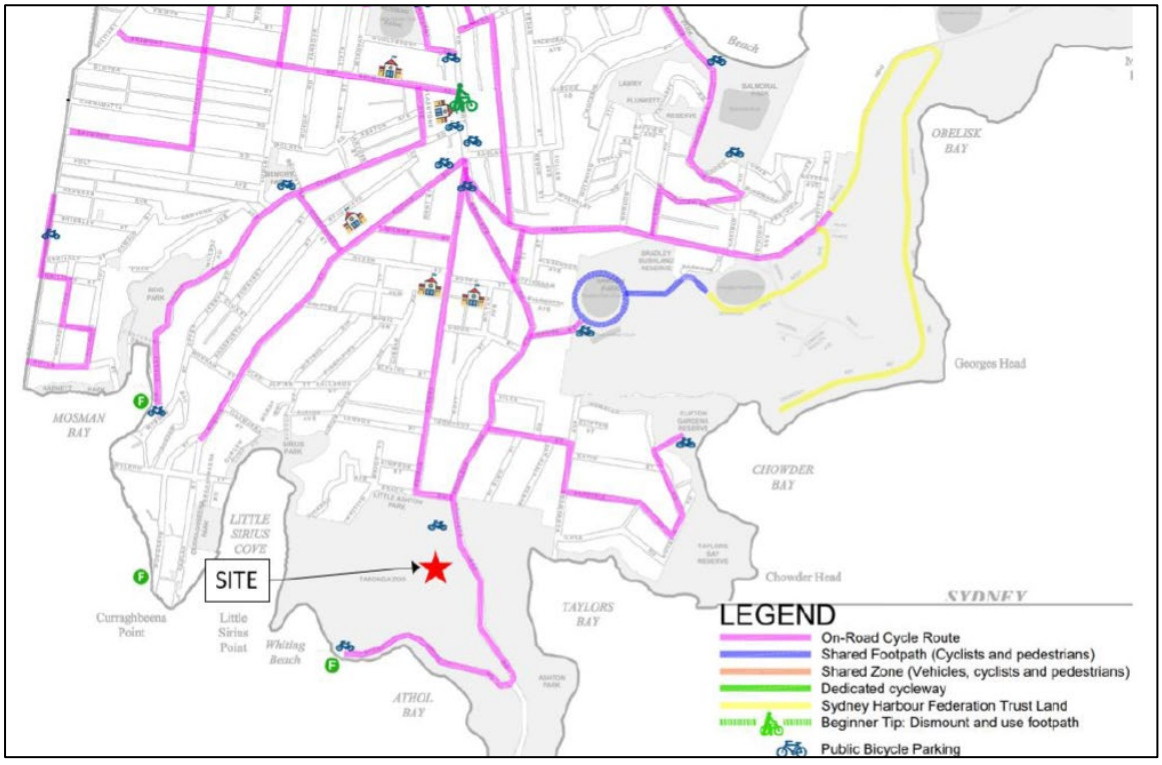

Figure 10 Existing bicycle network

Source: Mosman Council

As shown in Figure 11 bicycle parking is provided outside the front of the site for the use of visitors.

Figure 11 Existing bicycle parking at Taronga Zoo

2.4 Road network

To manage the extensive network of roads for which councils are responsible under the Roads Act 1993, Transport for NSW (TfNSW) in partnership with local government established an administrative framework of *State, Regional,* and *Local Road* categories. State Roads are managed and financed by TfNSW and Regional and Local Roads are managed and financed by councils.

Key State and Regional roads which provide access to the site are illustrated in Figure 12, with Bradleys Head Road fronting the site being a (classified) Regional Road. Bradleys Head Road functions as a local collector road and is aligned in a north-south direction linking the area with Military Road (a State Road) and Spit Junction in the heart of Mosman. At the entrance of the zoo, it is a two-way road configured with a two-lane, nine-metre wide carriageway, including a right turn lane to access the Taronga Zoo multistorey and at-grade car parks.

Whiting Beach Road is a local road and near the site is aligned in an east-west direction. It is a two-way road configured with a two-lane, eight-metre-wide carriageway. Whiting Beach Road provides staff and delivery access to Taronga Zoo car parking and the back-of-house area of the zoo via the northern access point to the site.

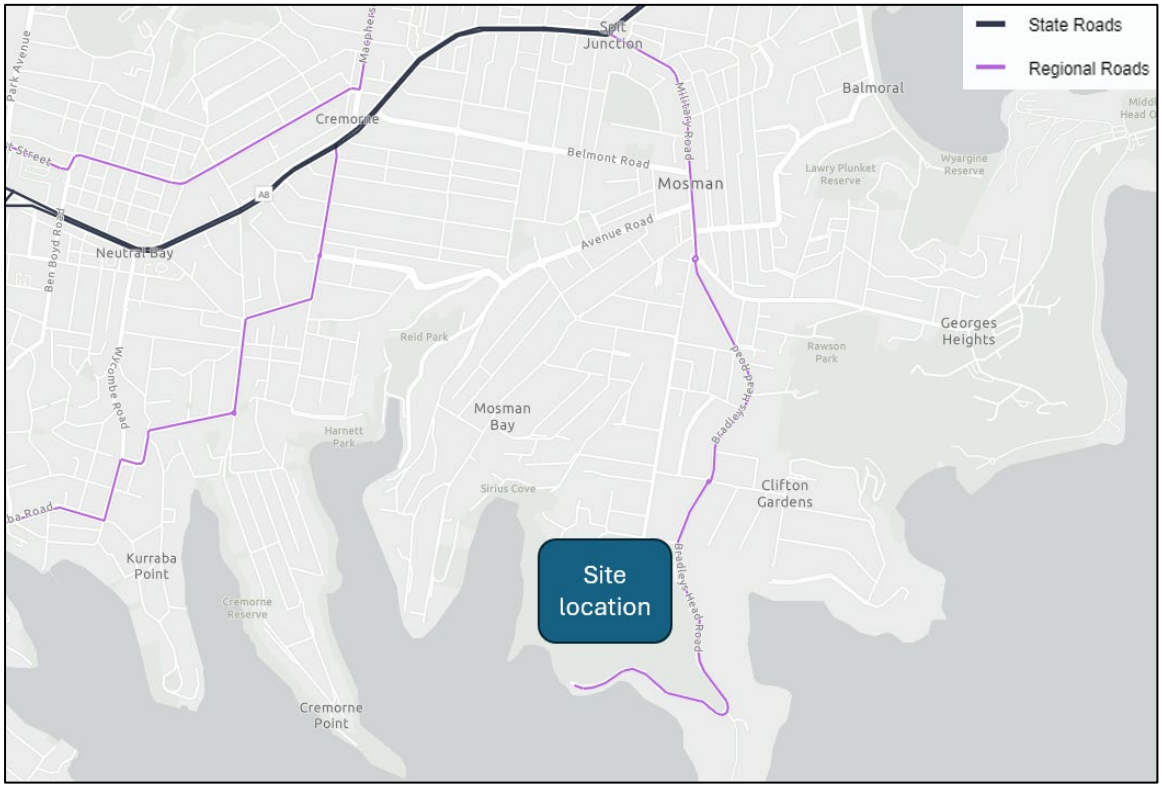

Figure 12 Surrounding road network

Figure 13 Bradleys Head Road

Bradleys Head Road.

Kerbside parking is permitted north of the site entrance and angled parking spaces are marked south of entrance.

2.5 Traffic volumes

Traffic counts were undertaken on Bradleys Head Road adjacent to Taronga Zoo in July 2023, with the findings summarised in Figure 14. This indicates that typical (two-way) traffic flows are approximately 200 vehicles per hour on weekday and approximately 300 vehicles per hour on a weekend – well within the capacity of a typical urban street of up to 750 vehicles per hour per traffic lane. The higher traffic flows on a weekend reflect the greater level of visitation to Taronga Zoo when compared to a weekday.

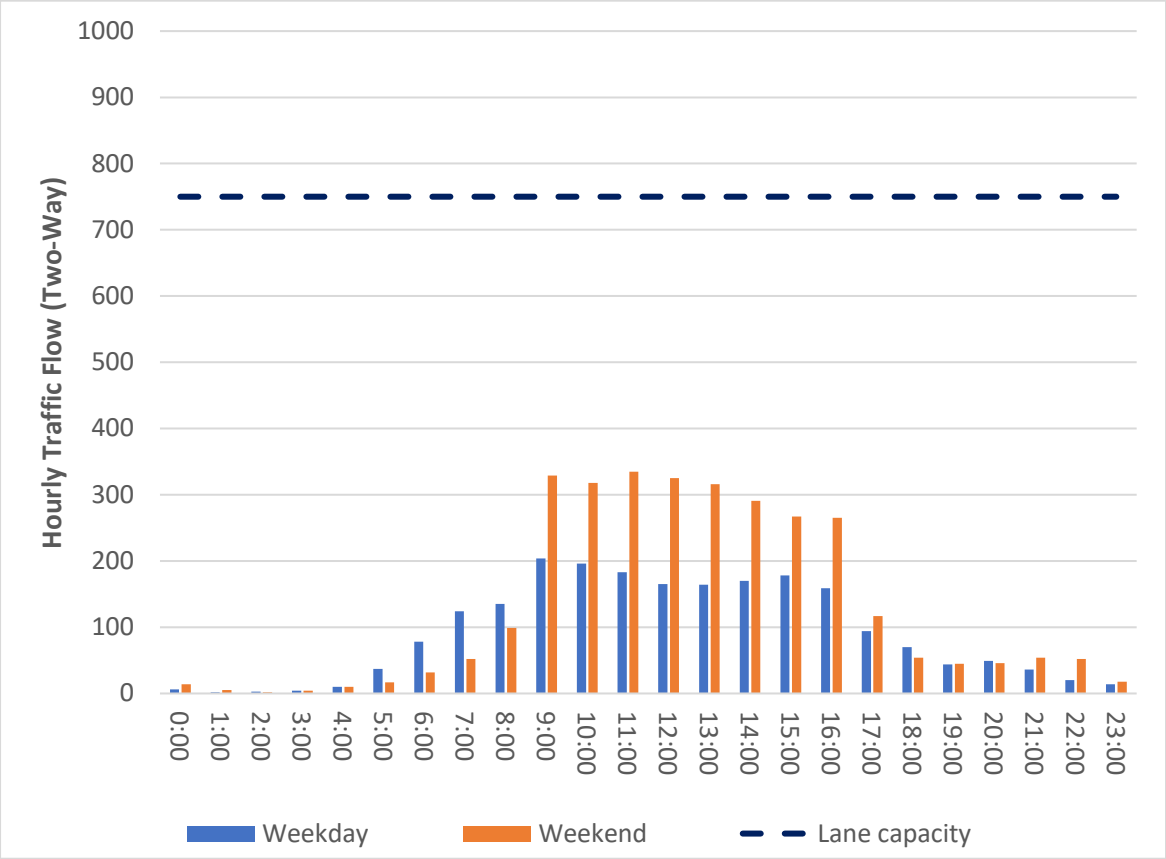

Figure 14 Existing traffic volumes – Bradleys Head Road

2.6 Car parking

Parking is available at Taronga Zoo with entry from Bradleys Head Road. There are approximately 935 parking spaces available on the site, comprised of both staff and visitor parking. The all-day parking rate is $22. For guests entering prior to 4.00pm, the parking is a flat rate of $22 for the whole day, or free if entering and exiting within 90 minutes.

Approximately 650 visitor parking spaces are available within the main multi-storey parking facility accessed via Bradleys Head Road as indicated in Figure 15. An overflow parking area is available which can accommodate approximately 180 further parking spaces and is typically made available once the multi-storey car park approaches its capacity.

A further 103 staff spaces are provided north of the multistorey car park and accessible via Whiting Beach Road. Staff also have access to the multistorey car park via a separate access point from the staff parking area located to the north

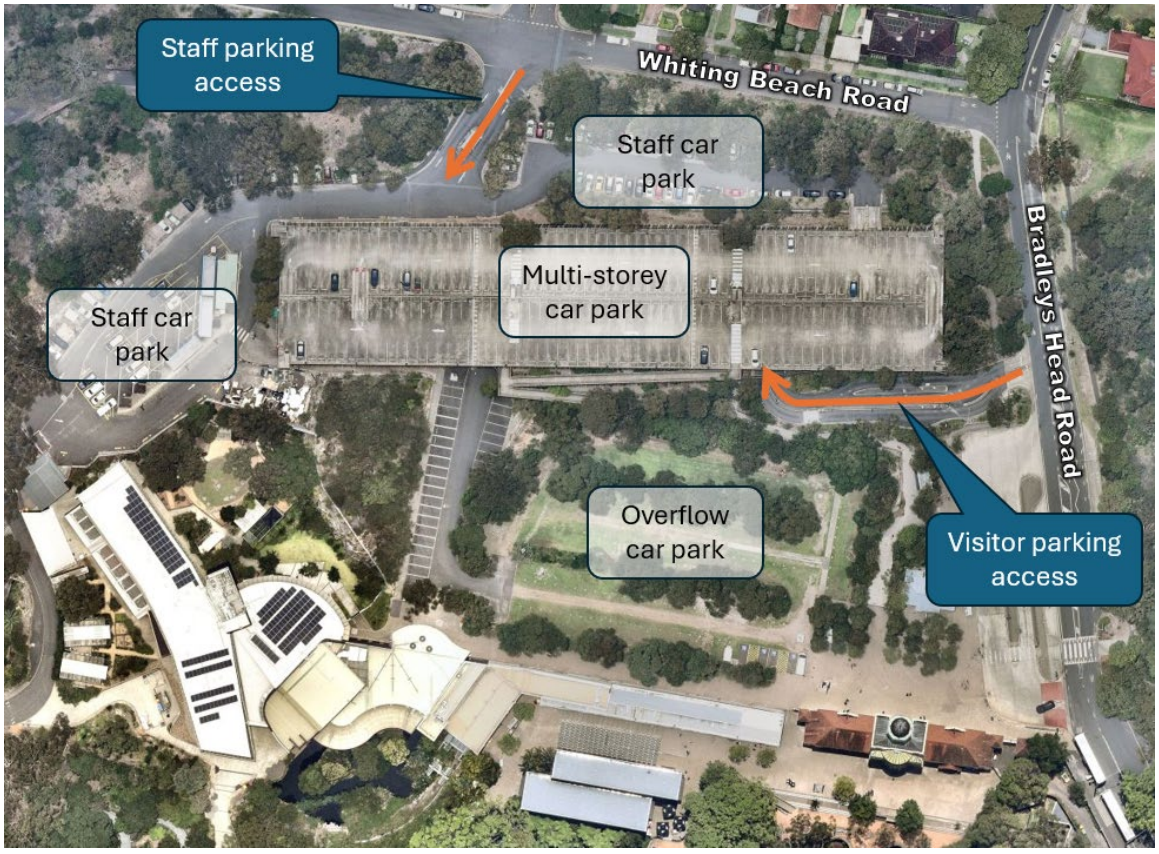

Figure 15 Existing parking arrangements

2.7 Drop off and pick up

A range of drop off and pick up opportunities are available for visitors travelling to Taronga Zoo via Bradleys Head Road, including:

- General drop off and pick up, including for ride-share vehicles such as Uber;
- Buses and coaches through the bus terminal adjacent to the main entrance; and
- A dedicated taxi zone

The various pick up and drop off arrangements are presented in Figure 16 below.

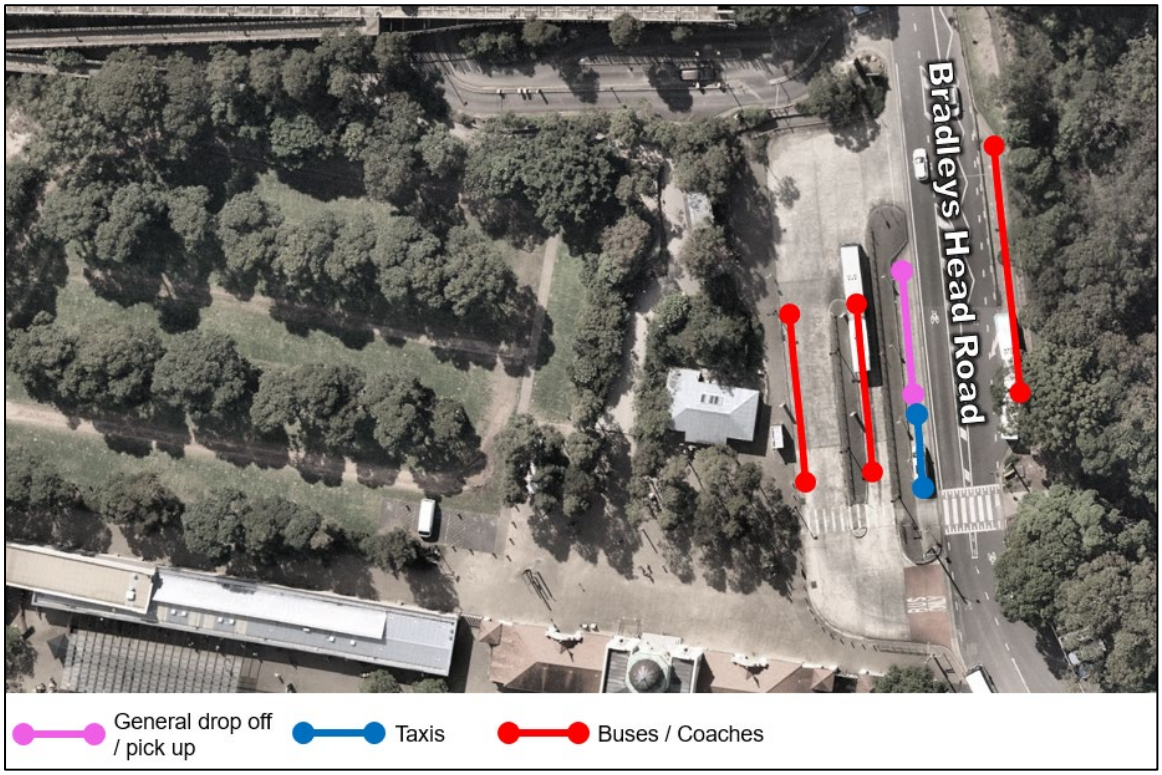

Figure 16 Existing drop off and pick up opportunities

3 Operational Transport Assessment

3.1 Forecast travel demand

Based on the findings of the travel behaviour surveys undertaken for this study (see section 2.1), and taking into consideration current levels of visitation to Taronga Zoo on both a weekday and weekend, the future year mode share and associated travel demands have been estimated. Due to the reinstatement of the Sky Safari which will improve access via public transport (being directly adjacent to the Taronga Zoo ferry wharf) a mode shift of 5% away from private vehicle towards sustainable transport forms has been targeted.

Table 4 Forecast travel demand

Scenario	Typical weekday			Typical weekend		
Daily Visitation	**3,300**			**5,500**		
Travel Mode	**Mode Share**	**No. of people**	**No. of cars**	**Mode Share**	**No. of people**	**No. of cars**
Private vehicles (car driver & passenger)	55%	1815	534	40%	2200	647
Bus	13%	429	-	22%	1210	-
Ferry	30%	990	-	35%	1925	-
Walk / Cycle	2%	66	-	3%	165	-
Total	**100%**	**3300**	**534**	**100%**	**5500**	**647**

It is important to note that the Sky Safari project will provide for an enhanced offering for visitors to Taronga Zoo, particularly those travelling via public transport. The project will promote a modal shift away from private vehicle towards public transport which will ultimately benefit the transport network and improve traffic conditions. Taronga Zoo will heavily promote access to the site via public transport through its various communication channels in keeping with its net zero by 2030 commitment.

The project will not however be the catalyst for an increase in travel demand to Taronga Zoo – particularly during peak visitation hours. Instead the proposal contributes to accommodating the expected natural growth in visitation to Taronga Zoo over the coming years. the Sky Safari may increase visitation outside of core visitation hours, however this will typically be for small groups using the facility outside of peak visitation times.

In the above context the proposal is not expected to increase overall travel demand to Taronga Zoo during peak times and will instead support travel via public transport

– contributing to a reduction in demand for private vehicle travel compared to current conditions.

3.2 Car parking assessment

As noted in Section 3.1 of this document the Sky Safari proposal is not anticipated to increase travel demand to/from Taronga Zoo during peak visitation hours – instead providing an enhanced offering for visitors and supporting travel by public transport. It can be expected that the project will support a mode shift away from private vehicle and therefore reduce overall car parking demands.

Previous parking analysis undertaken in support of the now approved Taronga Zoo Sydney Wildlife Hospital (SSD-33211326) indicated that the historical 85th percentile visitor parking occupancy at Taronga Zoo is 618 spaces – this means that for 85 per cent of the time the parking demand is less than 618 spaces. This parking demand is well below the total supply of approximately 830 visitor spaces as previously detailed in Section 2.6 of this document.

To manage car parking demands during busy periods (e.g. over the Christmas holidays) Taronga Zoo implements a number of management measures including:

- Implementing a free shuttle bus service between the hours of 9.15am and 4.00pm which reduces the volume of cars on the road and benefits staff, volunteers, zoo guests, overnight accommodation guests, restaurant patrons, function /event centre delegates.
- Utilising the overflow car parking area which provides for approximately 180 car parking spaces to accommodate demands during peak periods, as previously detailed in Section 2.6 of this document.
- Promoting the use of public transport as the preferred means of transport to Taronga Zoo during busy periods via the official Taronga Zoo website.

3.3 Loading and servicing

The Sky Safari project will not impact existing loading and servicing arrangements for Taronga Zoo nor trigger additional requirements for additional service vehicle activity. Service vehicles will continue to access the dedicated on-site loading area via the secure access point located via Whiting Beach Road.

Maintenance for the Sky Safari may be required on an infrequent basis however this will typically be minor in terms of vehicle movements and likely occur outside of peak visitation periods.

3.4 Public transport assessment

The Sky Safari proposal will significantly enhance public transport access to Taronga Zoo by providing for a strong level of connectivity to the adjacent ferry wharf and bus stop at the end of Athol Wharf Road – see Figure 17. An accessible path of travel, compliant with the requirements of AS1428.1, will be provided to link the bus stop and ferry wharf to the lower station of the Sky Safari. The previous cable car required visitors to travel up approximately 30 steps to reach the platform and therefore did not provide for universal access.

The project will provide for queueing capacity of up to 250 people, a significant enhancement when compared to the 60 people accommodated by the previous cable car. 80% of this queueing area will be undercover and weather protected, with the previous cable car offering no such level of amenity.

This significantly enhanced offering in terms of accessibility, queuing capacity and amenity will support the use of public transport (particularly ferry) to Taronga Zoo and reduce reliance on private vehicle travel.

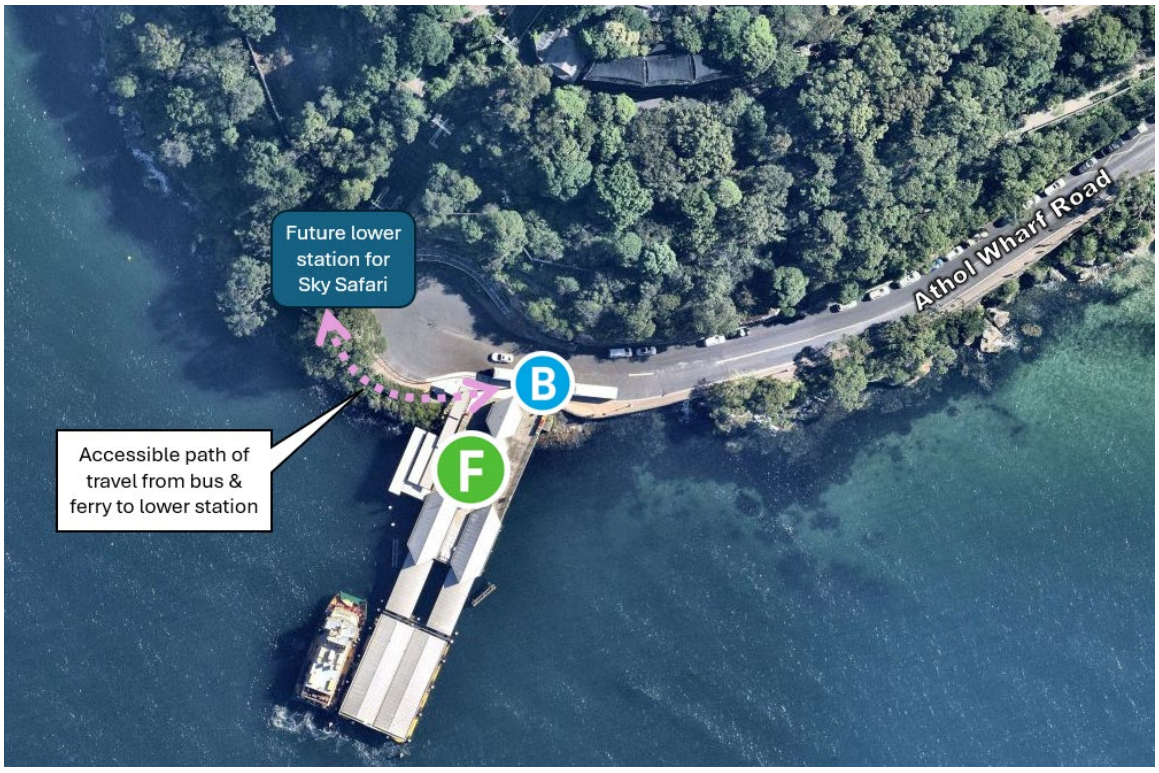

Figure 17 Access to Sky Safari via public transport

3.5 Traffic assessment

As previously noted the Sky Safari will not trigger any additional travel demand or traffic movements compared to current conditions during peak periods. It will instead provide for an enhanced offering for visitors and encourage travel via public transport given its connection to the Taronga Zoo ferry wharf. The project will promote a modal shift away from private vehicle towards public transport which will ultimately benefit the transport network and improve traffic conditions.

To confirm the suitability of the existing road network traffic counts were undertaken on a typical weekend in July 2023. Traffic modelling was then undertaken at the Bradleys Head Road / Whiting Beach Road intersection using the TfNSW approved SIDRA modelling software. The outcomes of the modelling are shown below in Table 5 and indicate a strong level of performance, with the intersection operating at Level of Service A. A sensitivity assessment was also undertaken which considered up to 50% traffic growth through the intersection to reflect peak periods at Taronga Zoo over the Christmas holiday periods, and again the intersection was found to perform at a good level of service with spare capacity.

Table 5 Intersection performance – Bradleys Head Road / Whiting Beach Road

Scenario	Level of Service	Degree of Saturation
Existing weekend peak hour	A	0.09
Existing weekend peak hour + 50% traffic growth (sensitivity assessment)	A	0.14

It is also important to recognise that Bradleys Head Road currently has, and will continue to have, spare capacity to accommodate traffic movements. As indicated in Figure 18 the volume of traffic on Bradleys Head Road in the vicinity of Taronga Zoo is below the typical capacity of an urban road of approximately 750 vehicles per hour per lane.

In this context the traffic impacts of the proposal are considered acceptable with no modifications required to the road network.

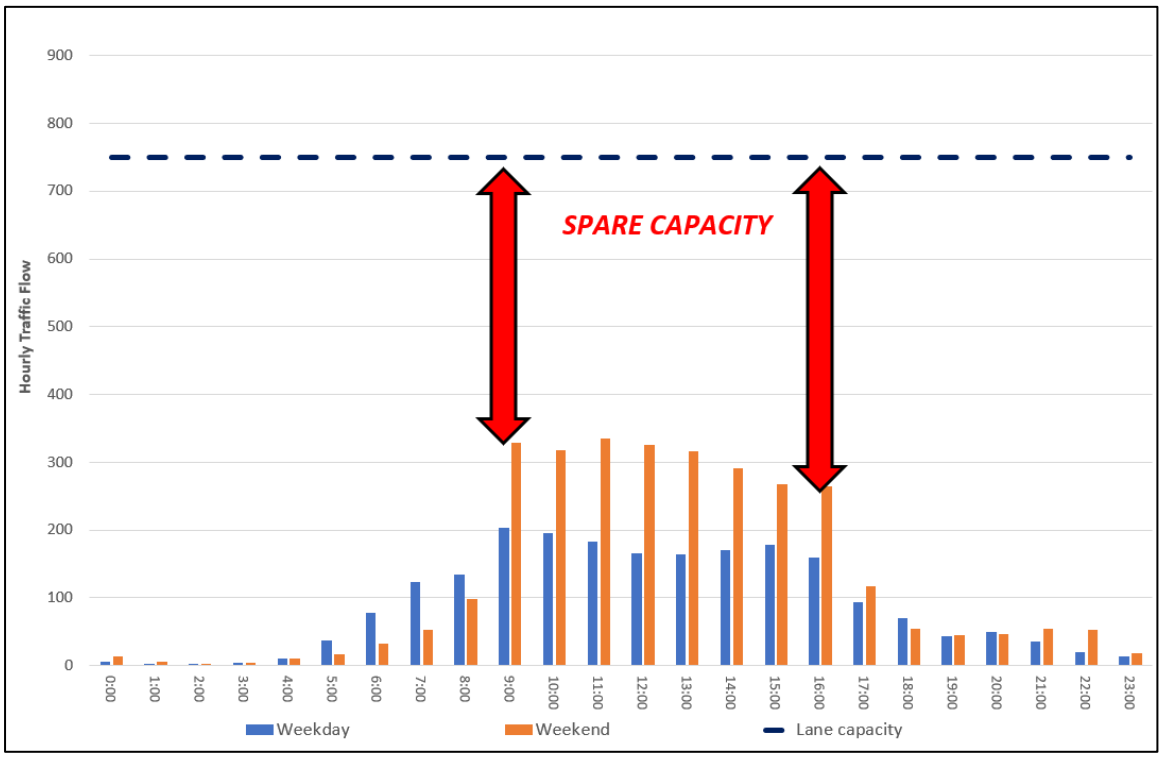

Figure 18 Road capacity analysis – Bradleys Head Road

3.6 Traffic management measures

Over the 2023 Christmas holiday period Taronga Zoo engaged a contractor to facilitate a traffic /logistics management plan to effectively manage the flow of vehicles and improve pedestrian safety. This management plan included the following items:

- A series of VMS (variable message signs) boards and traffic controllers located in prominent positions to direct traffic and to keep in regular contact with Taronga Zoo.
- During the busiest operating hours on selected days, guests that come to Taronga Zoo by car were able to access the car park via Whiting Beach Road. This was in addition to usual entry via Bradleys Head Road and provided for a more distributed arrival outcome and reduced the extent of congestion into the car park.
- Additional staff deployed at the entrance of the car park arrivals area to hand out tickets on approach as well as within the car park precinct to quicken the entry process for drivers.
- Implementing a free shuttle bus service between the hours of 9.15am and 4.00pm which reduces the volume of cars on the road and benefits staff, volunteers, zoo guests, overnight accommodation guests, restaurant patrons, function /event centre delegates.

- Additional staff positioned at the ferry wharf and key entry points to direct visitors effectively into Taronga Zoo or onto public transport or the free shuttle bus service.
- Earlier opening times to spread demand across the day and reduce congestion in and around Taronga Zoo.
- Additional roadside variable message signs placed on Union Street, Thompson Street and Bradley's Head Road.
- All measures currently implemented in peak times such as summer school holidays will continue to be adopted during future peak times, with these measures amended as required to reflect feedback and learnings – providing for an ongoing process for improving traffic management in these busy periods.

3.7 Green travel plan

Appendix A of this document contains a Green Travel Plan (GTP) and Transport Access Guide for Taronga Zoo – prepared in accordance with standard TfNSW guidance.

3.8 Mitigation measures – operation

A number of initiatives will be implemented to support safe and efficient access to the site and minimise impacts to the surrounding environment, including:

- Bicycle parking facilities to be provided for the use of staff and visitors;
- Sky Safari proposal to be well connected to the Taronga Zoo ferry wharf and bus stop on Bradleys Head Road to support travel via public transport and reduce reliance on private vehicle travel;
- Taronga Zoo to continue to promote travel via public transport as the preferred means of access, particularly during busy periods in keeping with its net zero by 2030 commitment;
- Suitable drop off areas to continue to be provided for visitors to the site;
- Taronga Zoo to continue to manage car parking, including the implementation of management measures during busy periods;
- Implementation of a Green Travel Plan and Transport Access Guide for Taronga Zoo; and
- Implementation of various traffic management measures during busy periods to effectively manage the flow of vehicles and improve pedestrian safety;

4 Preliminary Construction Pedestrian Traffic Management Plan

4.1 Overview

A preliminary Construction Pedestrian Traffic Management Plan (CTPMP) has been prepared that outlines the key principles for how construction may be carried out on the site subject to further planning to be undertaken following the appointment of a contractor.

Prior to the commencement of construction for the Sky Safari, a detailed CPTMP will be prepared. The purpose of the CTPMP is to assess the proposed access and operation of construction traffic associated with the proposed development with respect to safety and capacity. The Contractor will be responsible for preparing the CTPMP, ensuring the following are addressed:

- Proposed construction vehicle routes;
- Indicative construction programme;
- Expected construction vehicle types and volumes;
- Car parking arrangements and site access during construction;
- Safety measures to minimise impacts to pedestrians and cyclists.

The Contractor will also be responsible for monitoring and coordinating all vehicles entering and exiting the site.

4.2 Work hours

Consistent with standard City of Sydney guidelines working hours for the project would likely be as follows:

- Monday to Friday 7.00am and 6.00pm
- Saturday 8:00am and 1:00pm
- Sunday/ public holiday No work

4.3 Construction vehicle access

Construction vehicles will access Taronga Zoo in one of two ways as noted below:

- Via the main forecourt accessed from Bradleys Head Road to enter the works zone for the upper station, envisaged to be located within the overflow parking area (see Figure 19). Deliveries and vehicle movements to this works zone would

be exclusively out of hours so as not to impact pedestrian movements outside the main entry to Tarango Zoo.

- Via Athol Wharf Road for access to a works zone serving the lower station (see Figure 20). Appropriate measures will be in place to maintain ferry operations during the construction project and this works zone is not anticipated to significantly impact the operations of existing ferry services.

Figure 19 Construction vehicle access via Bradleys Head Road

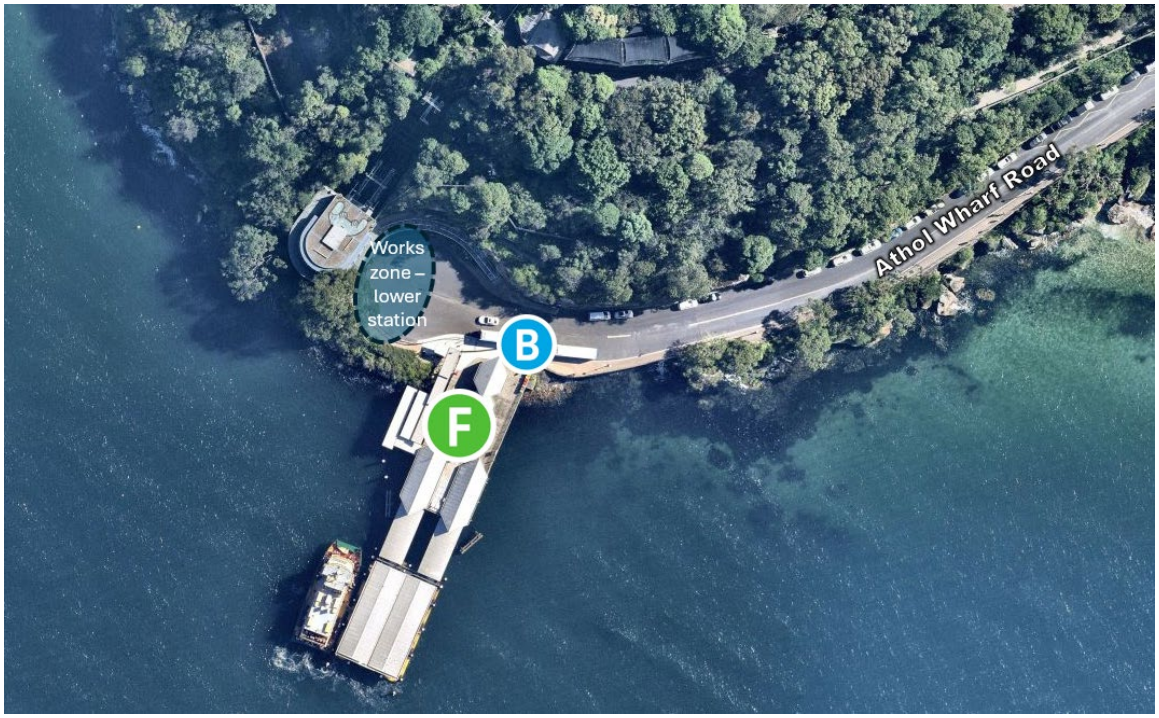

Figure 20 Construction vehicle access via Athol Wharf Road

4.4 Construction vehicle routes

The construction vehicles routes to be utilised for Taronga Zoo Sky Safari project would be selected in order to:

- Restrict vehicle access to the State and Regional road network, and minimise the impact to surrounding residential streets;
- Avoid impacting concurrent construction projects in the vicinity of the site; and
- Minimise impacts to the public transport network

The likely construction vehicle routes are illustrated in Figure 21 and would be via Military Road and Bradleys Head Road.

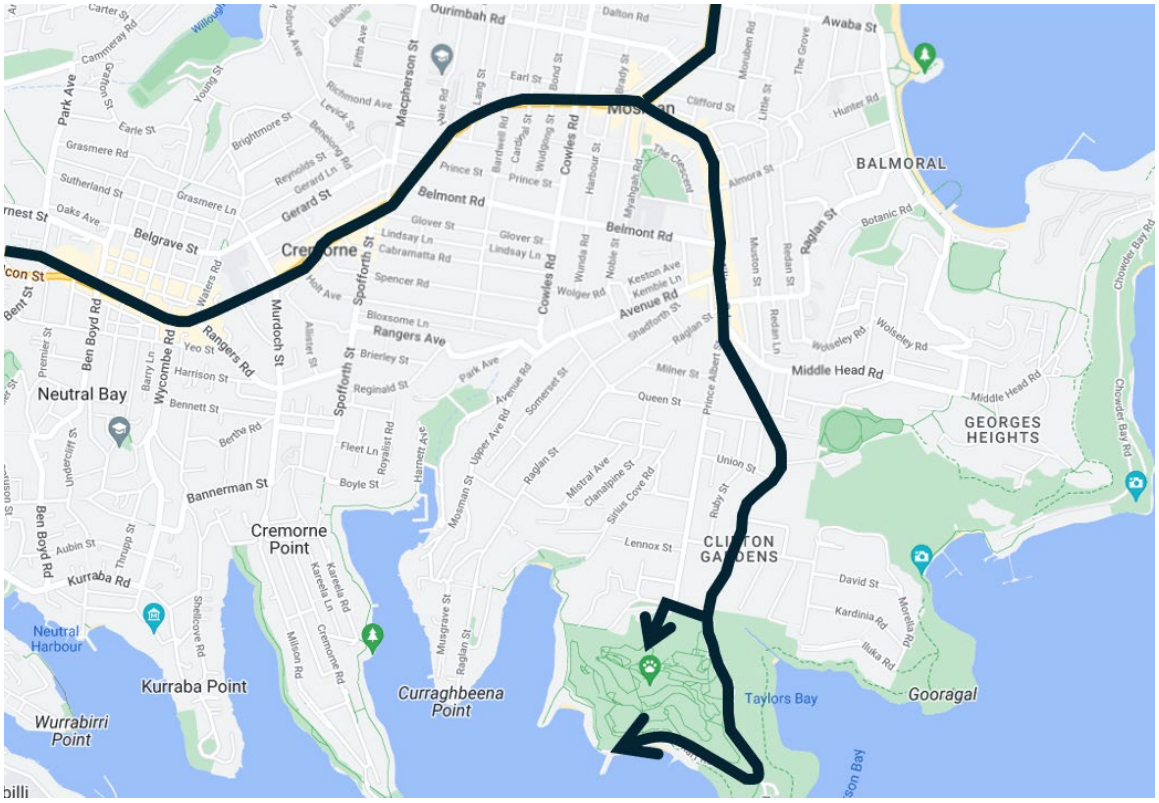

Figure 21 Potential construction vehicle routes

4.5 Construction vehicle volumes

Construction vehicle traffic would mainly be generated by activities associated with the following:

- Delivery of construction materials
- Delivery and removal of construction equipment and machinery.

The number of daily construction vehicle movements will vary depending on the works being conducted on the specific day or timeframe in the construction programme. At this preliminary stage it is forecast that the number of construction

vehicles accessing the site on a typical day may be in the order of 20-30 vehicles. This figure will be confirmed following the appointment of a contractor and will form part of the detailed CPTMP to be prepared prior to the commencement of construction.

4.6 Construction worker parking

The project is not anticipated to generate significant demand for staff car parking, indicatively in the order of 20-30 staff may be on site at one time per construction site (upper and lower stations). This level of car parking demand can be comfortably accommodated within the existing staff parking area, particularly on weekdays when visitation to Taronga Zoo is reduced. This approach is consistent with that taken for other recently approved projects at Taronga Zoo such as the Wildlife Hospital, Upper Australia Precinct and Reptile and Amphibian Conservation Centre.

The appointed contractor will encourage construction workers to carpool and use public transport where possible to minimise impacts to the surrounding environment.

4.7 Public transport impacts

The impacts to public transport will be confirmed at the time of the detailed CPTMP prior to the commencement of works on the site and following the appointment of a contractor. At this stage the following is anticipated:

- Taronga Zoo ferry wharf to maintain operations during the construction works.
- The 238 bus service to maintain a service through to Athol Wharf Road and the ferry wharf. As indicated Figure 22 the works zone on Athol Wharf Road would be configured so as to allow a standard 12.5m long bus to undertake a three point turn to maintain this existing public transport service. This arrangement is indicative only and subject to further discussions with the contractor (once appointed) and TfNSW prior to the commencement of works.

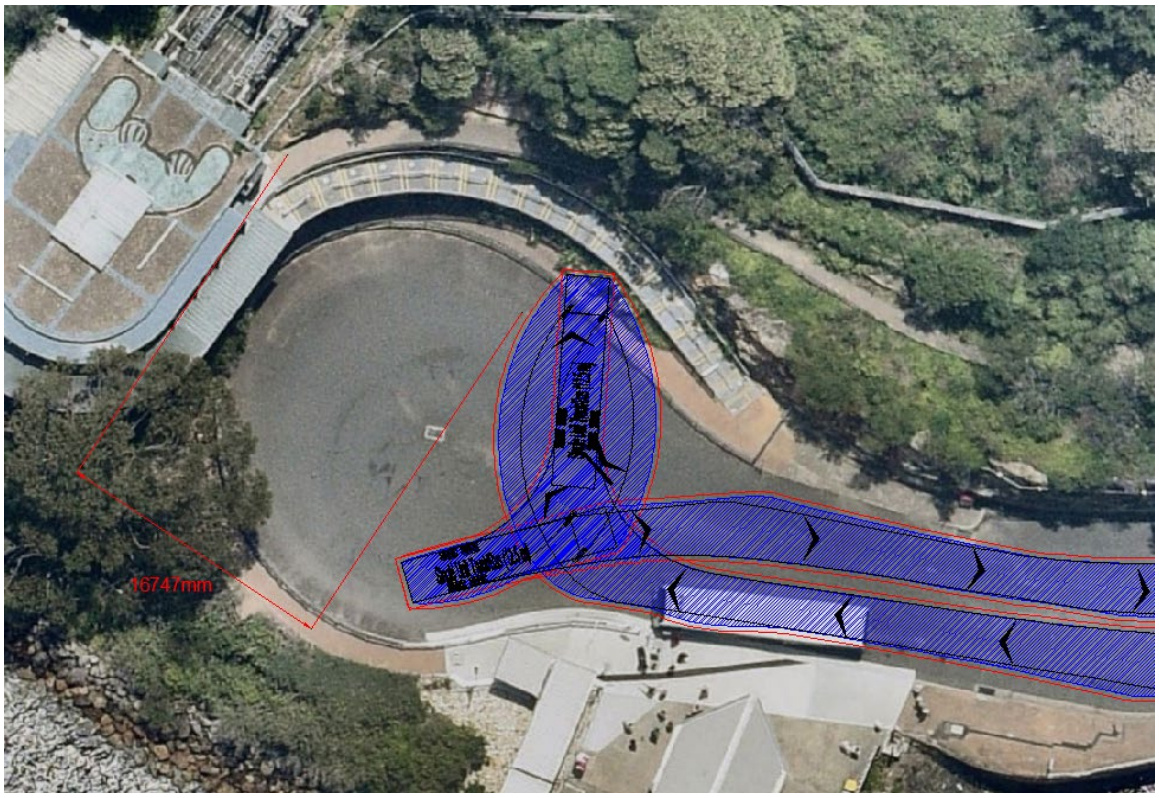

Figure 22 Extent of potential works zone on Athol Wharf Road

In discussions with TfNSW as part of the project the following mitigation measures have been identified in relation to public transport services:

- Reducing number of people travelling to top of the zoo from the ferry wharf to enter at the lower station by providing better signage, direction and information around entering the zoo via the bottom entrance (thereby reducing those queuing and using the bus service)
- Improve signage at upper plaza to ease congestion at bus stops including reviewing signage, segregated queuing, bus stops, information about stops in the city. The aim is to encourage more people to potentially use the 100 bus service to reduce demand on the 238 service in future
- Provide information to visitors about routes 'home' – before arrived or on leaving the zoo

4.8 Construction traffic impacts

The construction is not expected to trigger any impacts of significance in terms of road network performance or user safety given the following:

- The number of construction vehicles is expected to be relatively low at approximately 20-30 vehicles per day. This represents only approximately 1% of the 3,000 daily vehicles travelling along Bradleys Head Road in the vicinity of Taronga Zoo. This level of increase in traffic movements would not adversely affect the performance of surrounding intersections nor trigger any upgrades to road capacity;
- Trips generated by construction staff will typically be outside of the main road network peaks;
- The availability of public transport will encourage workers to minimise private vehicle use which will further reduce the impacts on the local road network;
- A number of mitigation measures (see Section 4.9) are to be implemented to manage road user safety during the construction period, including:
    - Traffic controllers to be present at vehicle site access points so as to manage conflicts with pedestrians
    - Trucks to enter and exit the site in a forward direction
    - Drivers to utilise designated vehicle approach and departure routes

4.9 Mitigation measures - construction

Mitigation measures would be adopted during construction to ensure traffic movements have minimal impact on surrounding land uses and the community in general, and may include the following:

- Trucks to minimise the use of local streets for access to the construction site;
- Trucks to enter and exit the site in a forward direction;
- Trucks to not circulate on the road network to wait to enter the site (unless exceptional circumstances do not permit);
- Construction works to maintain operations for existing public transport services;
- Deliveries to works zone serving the upper station to occur outside of visitation hours so as not to conflict with pedestrians travelling/from the main entrance to Taronga Zoo on Bradleys Head Road;
- Restrict construction vehicle activity to designated routes which do not utilise any local roads;
- Truck drivers will be advised of the designated truck routes to/ from the site;

- Pedestrian movements adjacent the construction site will be managed and controlled by site personnel where required;
- Pedestrian warning signs and construction safety signs/devices to be utilised in the vicinity of the site and to be provided in accordance with WorkCover requirements;
- Construction activity to be carried out in accordance with approved hours of work;
- Truck loads would be covered during transportation off-site;
- Activities related to the construction works would not impede traffic flow along adjacent roads;
- Construction vehicles not to queue on adjacent streets
- During site induction, workers will be informed of the existing public transport routes servicing the site; and
- Development and enforcement of driver charter.

These mitigation measures will be further developed as the project progresses and outlined in detail in the CPTMP to be prepared prior to the commencement of construction.

5 Summary

JMT Consulting has prepared this transport impact assessment report to accompany an SSDA for the redevelopment of the Sky Safari at Taronga Zoo. The redevelopment of the existing Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which provide improved amenities, ease increased demand and assist the public in moving around the Zoo.

Key findings arising from the transport assessment are as follows:

- The Sky Safari project will provide for an enhanced offering for visitors to Taronga Zoo and promote a modal shift away from private vehicle towards public transport which will ultimately benefit the transport network and improve traffic conditions. The project will not be the catalyst for an increase in travel demand to Taronga Zoo – particularly during peak visitation hours.
- Existing staff and visitor car parking at Taronga Zoo will be maintained under the proposal, with this parking managed by staff on busy days as required. The Sky Safari project will support a mode shift away from private vehicle and therefore reduce overall car parking demands compared to current conditions.
- The Sky Safari proposal will significantly enhance public transport access to Taronga Zoo by providing for a strong level of connectivity to the adjacent ferry wharf and bus stop. The project offers an improvement compared to the previous cable car through the provision of an accessible ramp, weather protection and increased queuing capacity.
- Traffic analysis undertaken for the project has demonstrated that the adjacent road network currently operates with spare capacity at a good level of service. The proposal will not trigger any additional travel demand or traffic movements compared to current conditions during peak periods – instead promoting a modal shift away from private vehicle towards public transport which will ultimately benefit the transport network and improve traffic conditions.
- A Green Travel Plan has been developed to support travel by sustainable forms of transport and minimise the traffic impacts of the proposal.
- Overall, the construction related impacts of the works are considered to be manageable with the provision of appropriate safety and mitigation measures. The Contractor (once appointed) will prepare a more detailed Construction Pedestrian Traffic Management Plan prior to the commencement of works, detailing specific methods of safely managing construction and pedestrian traffic within the surrounding area.

In summary, the traffic and transport impacts arising from the proposal are considered acceptable.

Appendix A: Green Travel Plan

JMT CONSULTING

Taronga Zoo Sky Safari

Green Travel Plan

Prepared for:

Taronga Conservation Society Australia

PROJECT INFORMATION

Project Name:	Taronga Zoo Sky Safari
Client:	Taronga Conservation Society Australia
Project Number:	2321
Prepared By:	JMT Consulting

DOCUMENT HISTORY

Document Title	Revision	Date issued	Author
Taronga Zoo Sky Safari GTP	Issue	31.05.24	JM

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Tables

1 Introduction

1.1 Background

This Green Travel Plan (GTP) has been prepared by JMT Consulting on behalf of the Taronga Conservation Society Australia to support the future Sky Safari at Taronga Zoo.

1.2 Project context

Taronga Zoo is located at Bradleys Head Road, Mosman and is situated in the Mosman Local Government area (LGA). The site is bounded by Bradleys Head Road to the east, Athol Wharf Road and Sydney Harbour to the south, Little Sirius Cove to the west and Whiting Beach Road to the north.

Figure 1 Site context

Within Taronga Zoo, the Sky Safari is one of Taronga's most loved experiences and has transported more than 20 million passengers since it was first installed in 1987 and upgraded in 2000. The former Sky Safari was an ageing asset and was formally retired in January 2023. The redevelopment of the existing Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which provide improved amenities, ease increased demand and assist the public in moving around the Zoo.

Development consent is specifically sought for:

- Site establishment works including removal of the existing Sky Safari;
- Installation of a new 916m Sky Safari cable car system including:
  - Construction of six (6) new pylons and structures within the Zoo ranging in height between 11.2m (P2) to 37.5m (P5)
  - Construction of two new stations at both the upper and lower entrances within the Zoo grounds.
  - Public facilities including accessible queueing areas, ticket booths and public amenities.
  - Associated mechanical plant, servicing and storage areas for ongoing maintenance.
- Landscaping works, including new accessible pathways, planting, shade structures and seating areas
- Excavation, site preparation works and tree removal/pruning to allow the works to occur.
- Increased hours of operation

Overall, the revitalised Sky Safari will:

- Feature additional, larger cable cars that are more accessible, dramatically improving the guest experience journey for all visitors.
- Connect to recent upgrades underway to the Taronga Zoo Wharf under the NSW Government's Transport Access Program.
- Increase the Sky Safari's former capacity, allowing for a more seamless flow of guests around the Zoo, while also enhancing opportunities for educating guests on Taronga's conservation efforts.
- Encourage guests off the roads and onto public transport as they explore the harbour on route to the Zoo.
- Provide unique, affordable, family-focused sightseeing tourism infrastructure that provides comfortable all-season experiences to support year-round growth in visitation to the Zoo. This will assist in securing the financial future of the Zoo to ensure that it can continue to undertake a range of conservation and education projects.
- Consider the heritage significance of local heritage items within the Zoo grounds and the strong historical presence of Taronga.
- Enhance opportunities for educating the community on TCSA's conservation efforts.

1.3 Purpose and objectives of the Green Travel Plan

A GTP is a package of measures aimed at promoting and encouraging sustainable travel and reducing reliance on the private car. The GTP for the Sky Safari will assist in reducing car reliance by promoting alternative, sustainable modes of travel. The GTP aims to encourage and support the broader use of sustainable travel options by staff in carrying out their daily activities. GTPs can provide both:

- Measures which discourage or disincentivises car use;
- Measures which support, encourage or incentivise sustainable travel (including public transport), reduce the need to travel or make travel more efficient.

Sustainable travel options include active transport (including travel by foot, bicycle and other non-motorised vehicles) and public transport.

The GTP focuses on minimising the impact of events on the local and wider transport network and encourages those accessing the site to do so by sustainable modes of transport, thereby reducing car dependency for visitors and staff travelling to the site.

The key objectives of the GTP are to:

- Achieve a high modal share for public transport, cycling and walking journeys for staff of Taronga Zoo;
- Reduce private vehicle dependency as a means of access to Taronga Zoo;
- Ensure adequate facilities are provided at the site to enable users to travel by sustainable transport modes; and
- Raise awareness of, and actively encourage the use of, sustainable transport amongst users.

2 Site Transport Conditions

2.1 Current travel behaviours

2.1.1 Staff travel behaviours

Journey to Work census data has been used to estimate the current travel behaviour of staff travelling to Taronga Zoo. Census data for the destination zone[1] encompassing the site indicates that some 68% of staff typically travel by private vehicle to Taronga Zoo. Public transport accounts for approximately 18% of travel, with train and ferry the preferred mode. Despite a number of bus routes servicing Taronga Zoo, only 4% of employees noted that they use this mode of transport to access the site.

The current travel patterns of staff are illustrated in Figure 2 below.

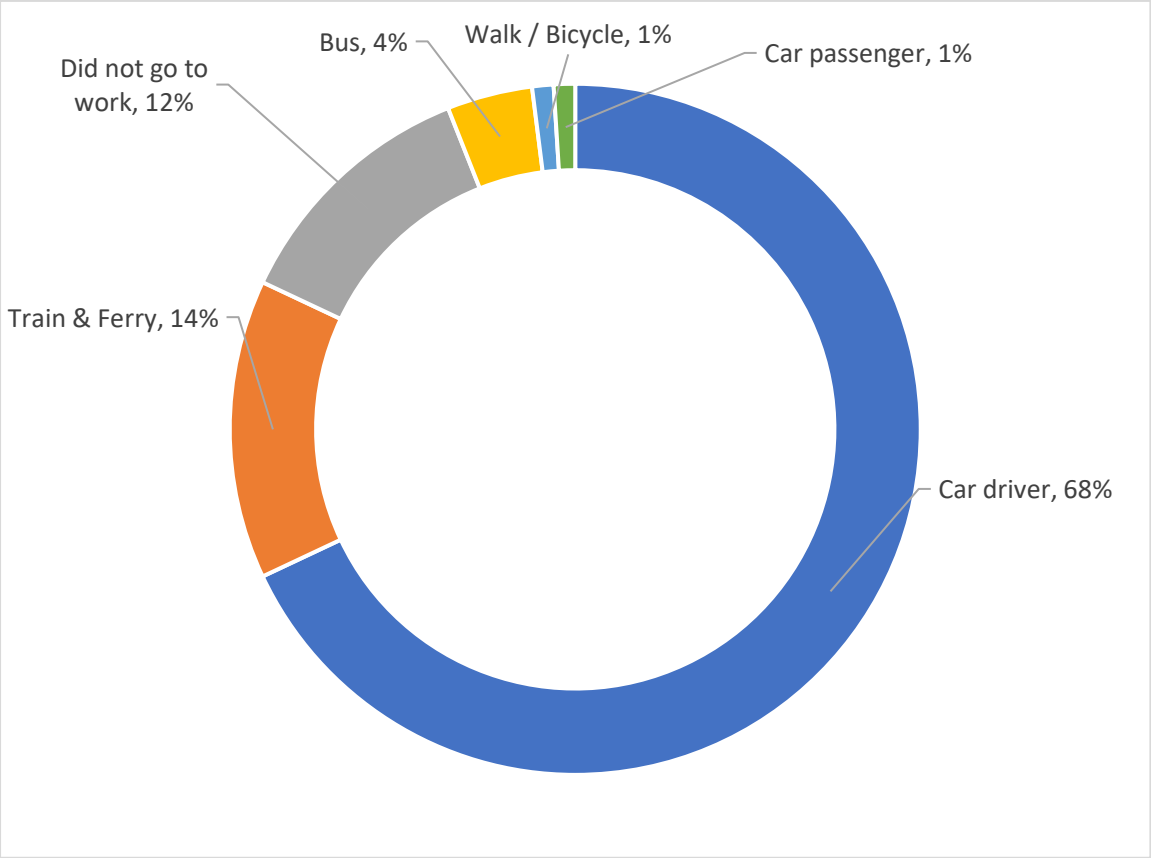


Figure 2 Current transport mode share of Taronga Zoo staff

[1] DZ 114153393

A separate staff travel survey was undertaken in 2022. The results of the survey largely reflect the overall staff mode share as indicated in the Journey to Work data, with just under 70% of all trips made by private vehicle. The results of the travel survey are presented in Table 1 below.

Table 1 Mode share of existing Taronga Zoo staff

Transport Mode	Proportion of Trips
Car	68%
Walk	9%
Bicycle	9%
Car pool	5%
Public transport	5%
Motorbike/moped	5%
Total	**100%**

It is noted that a number of environmental factors, outside of the direct control of Taronga Zoo, influence the travel behaviours of staff, including:

- Home residence and distance required to travel to the workplace
- Availability of bicycle routes external to the site
- Availability of nearby public transport from workers' home residences.

2.1.2 Visitor travel behaviours

A survey of visitors to Taronga Zoo was undertaken in July 2023 to understand current travel behaviours both for a weekday and weekend. It is important to note that the survey was undertaken following the decommissioning of the Sky Safari (cable car) and therefore travel via ferry and public transport in general would have been reduced when compared to normal operating conditions. The outcomes of the survey are illustrated in Figure 3 and demonstrate that more than half of visitors use public transport to access Taronga Zoo on a weekend. Following the opening of the upgraded Sky Safari it is expected that this share of public transport use will only increase compared to those figures reported from July 2023.

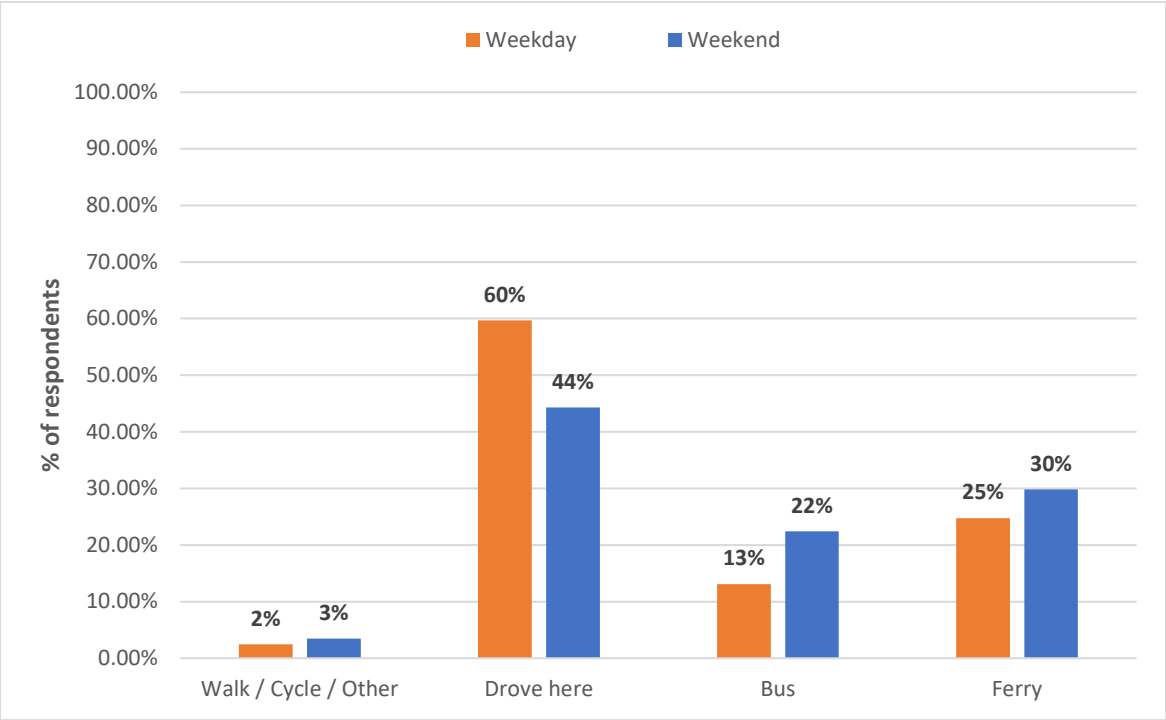


Figure 3 Current travel behaviours – visitors

Vehicle occupancy of visitors to Taronga Zoo was also captured in the travel behaviour survey. The values are based of patrons arriving to the stadium by a private vehicle as a passenger or driver. Results are summarised in Figure 4, with key findings being:

- 97% of vehicles had two or more passengers;
- 47% of vehicles contained four or more passengers;
- On average each vehicle would carry 3.4 passengers

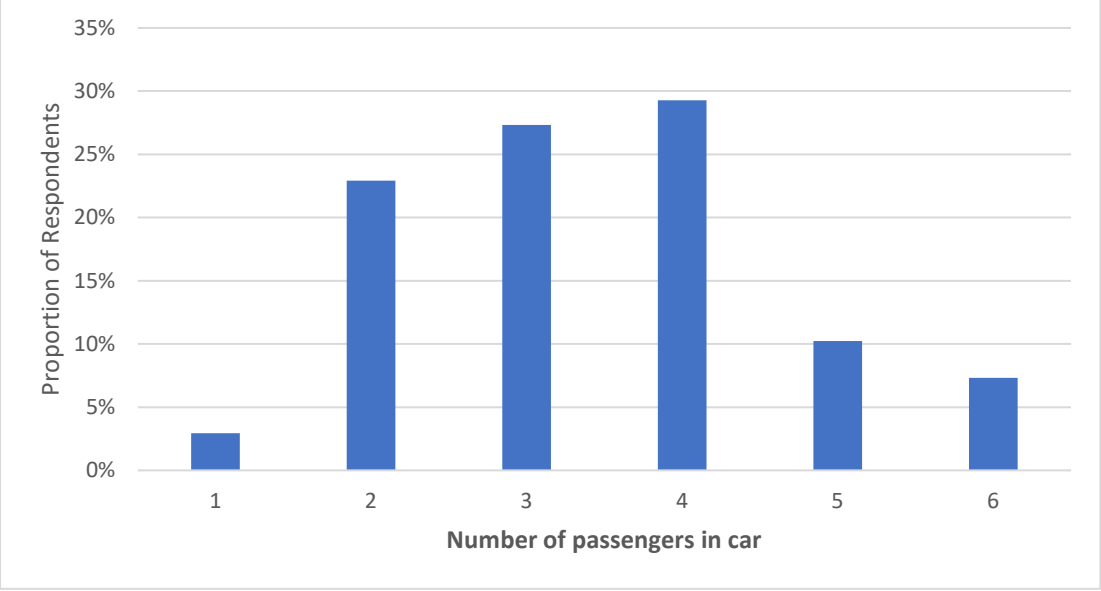


Figure 4 Existing vehicle occupancy

2.2 Public transport

By public transport the site is accessible by bus and ferry, with train also a viable mode of travel through connecting ferry services at Circular Quay. Bus stops are located at the main entrance off Bradleys Head Road (Figure 5) and the ferry wharf is located at southern entrance of the zoo (Figure 6).

Figure 5 Taronga Zoo bus terminal

Figure 6 Taronga Zoo ferry wharf

The extent of public transport routes servicing Taronga Zoo is illustrated in Figure 7 below. This includes the various north shore bus routes as well as ferry

services from Circular Quay. Bus services travel along Bradleys Head Road via Spit Junction and directly service the site.

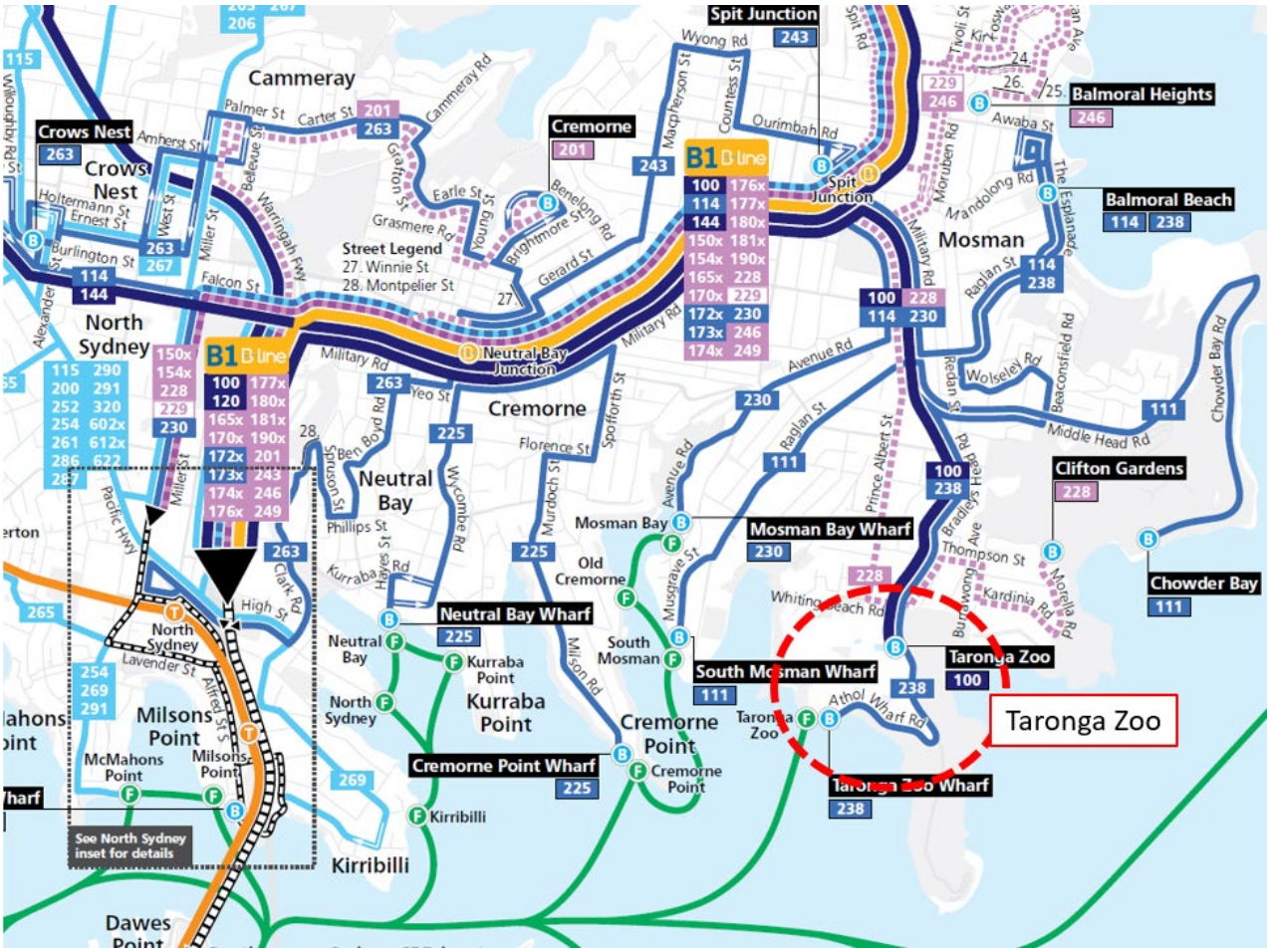


Figure 7 Existing public transport routes servicing Taronga Zoo

A summary of the public transport services and frequencies is presented in Table 2 below.

Table 2 Summary of public transport services

Public Transport mode	Route No.	Route Description	Typical Weekday Frequency	
			Peak Periods	Off-Peak Periods
Ferry	F2	Circular Quay to Taronga Zoo	15 minutes	30 minutes
Bus	100	Taronga Zoo to City QVB (Loop Service)	10 minutes	10 minutes
	228	Milsons Point to Clifton Gardens	30 minutes	30 minutes
	238	Taronga Zoo Wharf to Balmoral	30 minutes	30 minutes

A summary of the public transport services available is shown in Figure 8 below.

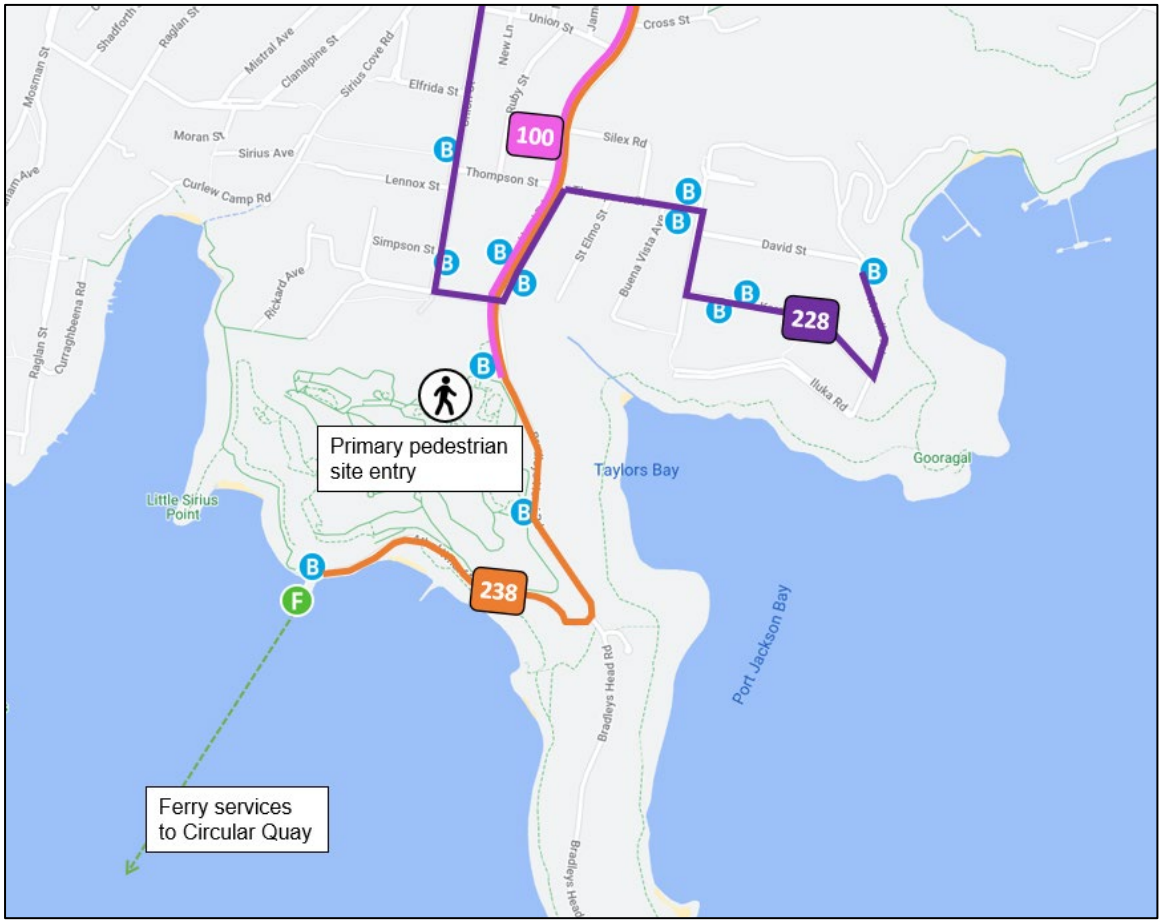


Figure 8 Summary of existing public transport services

The 30 minute public transport catchment from the site, taking into consideration both the ferry wharf at the southern end and bus terminal at the northern end, is shown in Figure 9 below. This indicates that within a 30 minute trip people can access the site from the Sydney CBD and Central Station, as well as from part of the lower North Shore and Northern Beaches areas.

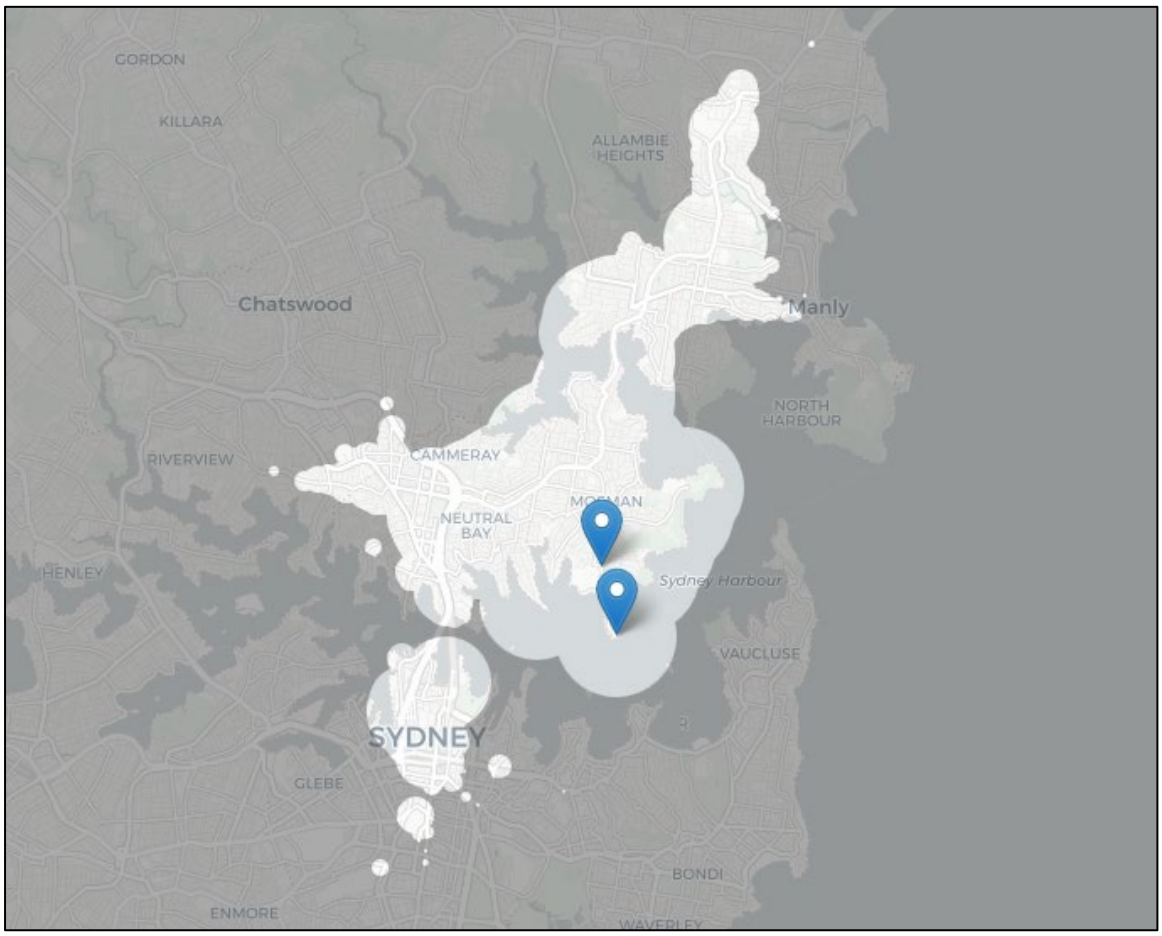


Figure 9 30 minute public transport catchment

2.3 Pedestrian and cycling infrastructure

A safe pedestrian crossing point is provided across the Bradleys Head Road, at the main entrance. Pedestrian footpaths are provided at the following locations:

- Both sides of Bradleys Head Road, north of the main zoo entrance.
- Eastern side of Bradleys Head Road, south of the main zoo entrance for approximately 300 metres.
- Western side of Bradleys Head Road, south of the main zoo entrance for approximately 100 metres.
- Northern side of Whiting Beach Road.

The nearest cycle route in vicinity of the site runs along the Bradleys Head Road-Athol Wharf Road. Although the site is well connected to the surrounding cycling network as indicated in Figure 10 below, access via bicycle is constrained for many staff given the topography of the area – making this mode of transport challenging for less experienced or weaker riders.

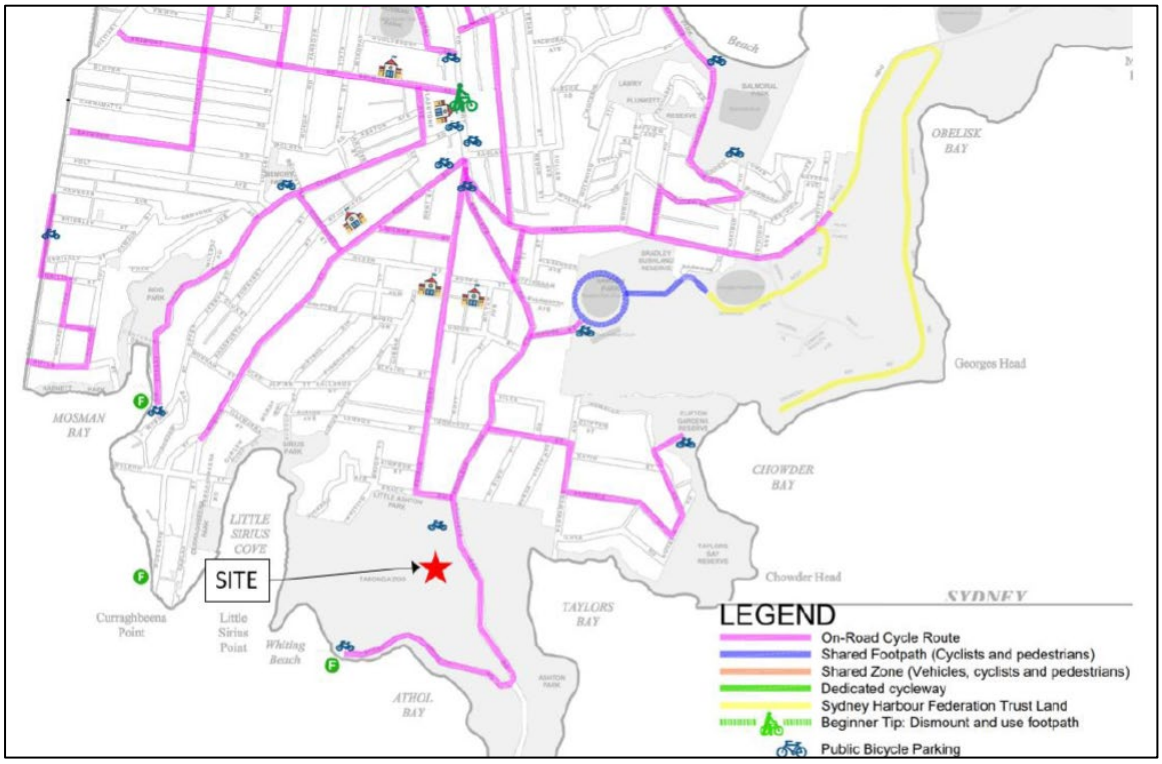


Figure 10 Existing bicycle network

Source: Mosman Council

As shown in Figure 11 bicycle parking is provided outside the front of the site for the use of visitors.

Figure 11 Existing bicycle parking at Taronga Zoo

3 Green Travel Plan Objectives and Targets

3.1 Purpose and objectives of the Employee Transport Plan

A GTP is a package of measures aimed at promoting and encouraging sustainable travel and reducing reliance on the private car. The GTP for the future Sky Safari at Taronga Zoo will assist in promoting sustainable modes of travel and reducing instances of single occupant trips. It focuses on minimising the impact of travel to the site on the local and wider transport network and encourages those accessing the site to do so by sustainable modes of transport, thereby reducing car dependency for future staff of the facility. The key objectives of the GTP are to:

- Achieve a high modal share for public transport, cycling and walking journeys for staff of the site;
- Reduce private vehicle dependency as a means of access to the site;
- Ensure adequate facilities are provided at the site to enable users to travel by sustainable transport modes; and
- Raise awareness of, and actively encourage the use of, sustainable transport amongst users.

The GTP for the Taronga Zoo Sky Safari responds to these objectives by:

- Promoting alternatives to the car and encouraging increased public transport, walking and cycling usage;
- Reducing the environmental impacts associated with vehicle movements by raising travel awareness and encouraging travel by more sustainable transport modes, to reduce private car usage;
- Connecting the site to the surrounding transport network by the strong promotion of walking and cycling and public transport, thus minimising the impact on the adjacent road network; and
- Promoting public transport connections in the area including ferry and bus services.

3.2 Mode share targets

Having regard for existing travel behaviours as previously outlined in Section 2.1, the public transport availability and the measures proposed, mode share targets have been developed for travel to the Taronga Zoo Sky Safari as noted in Table 3 (for staff) and Table 4 (for visitors). These targets are not fixed, instead they provide the operators of the Zoo with a benchmark at which to monitor the success of the GTP as it is implemented and subsequently reviewed.

Table 3 Target mode shares - staff

Mode of Travel	Mode Share		
	Existing	Target (0-2 years)	Target (2-5 years)
Private vehicle (drive in own car)	68%	63%	58%
Private vehicle (passenger)	5%	6%	6%
Public transport	5%	8%	12%
Walking / cycling / other	22%	23%	24%
Total	**100.00%**	**100.00%**	**100.00%**

Table 4 Target mode shares - visitors

Mode of Travel	Mode Share		
	Existing*	Target (0-2 years)	Target (2-5 years)
Private vehicle (drive in own car)	15%	13%	10%
Private vehicle (passenger)**	37%	33%	30%
Public transport	45%	50%	55%
Walking / cycling / other	3%	4%	5%
Total	**100.00%**	**100.00%**	**100.00%**

* Based on a weighted average of responses from the July 2023 weekday and weekend visitor travel surveys

** Based on surveyed car occupancy of 3.43 visitors per car

It is considered feasible that through application of the measures described in this GTP, the site may be able to achieve a mode shift of up to 5% away from private vehicle (single occupant) travel in the short term and a 10% mode shift in the medium term.

It is important to recognise that the Taronga Zoo Sky Safari is not expected to increase trips to Taronga Zoo and will instead support travel via public transport – contributing to a reduction in demand for private vehicle travel compared to current conditions. This aligns with the objectives of the Green Travel Plan.

4 Green Travel Plan Measures

4.1 Secure bicycle parking

Cycling may not be a viable mode of transport for all staff however it has the potential to contribute to reducing traffic and parking demands for staff of Taronga Zoo. As previously noted in Section 2.3 the site is located adjacent to a number of cycleways and this provides a strong opportunity to encourage staff to arrive by bike.

As indicated in Figure 12 below a secure bicycle parking area is provided within Taronga Zoo at the neighbouring Taronga Institute of Science and Learning (TISL) that provide secures storage for Taronga Zoo staff.

Figure 12 Secure bicycle parking area within Taronga Zoo

In addition to this secure bicycle parking, a complementary end of trip facility will be provided within the nearby Wildlife Hospital at Taronga Zoo as indicated in Figure 13. These end of trip facilities will include showers, lockers and changing areas for staff. These facilities will support cycling as a mode of transport to the site and facilitate the targeted mode shift away from private vehicle as previously identified in Section 3.2 of this document.

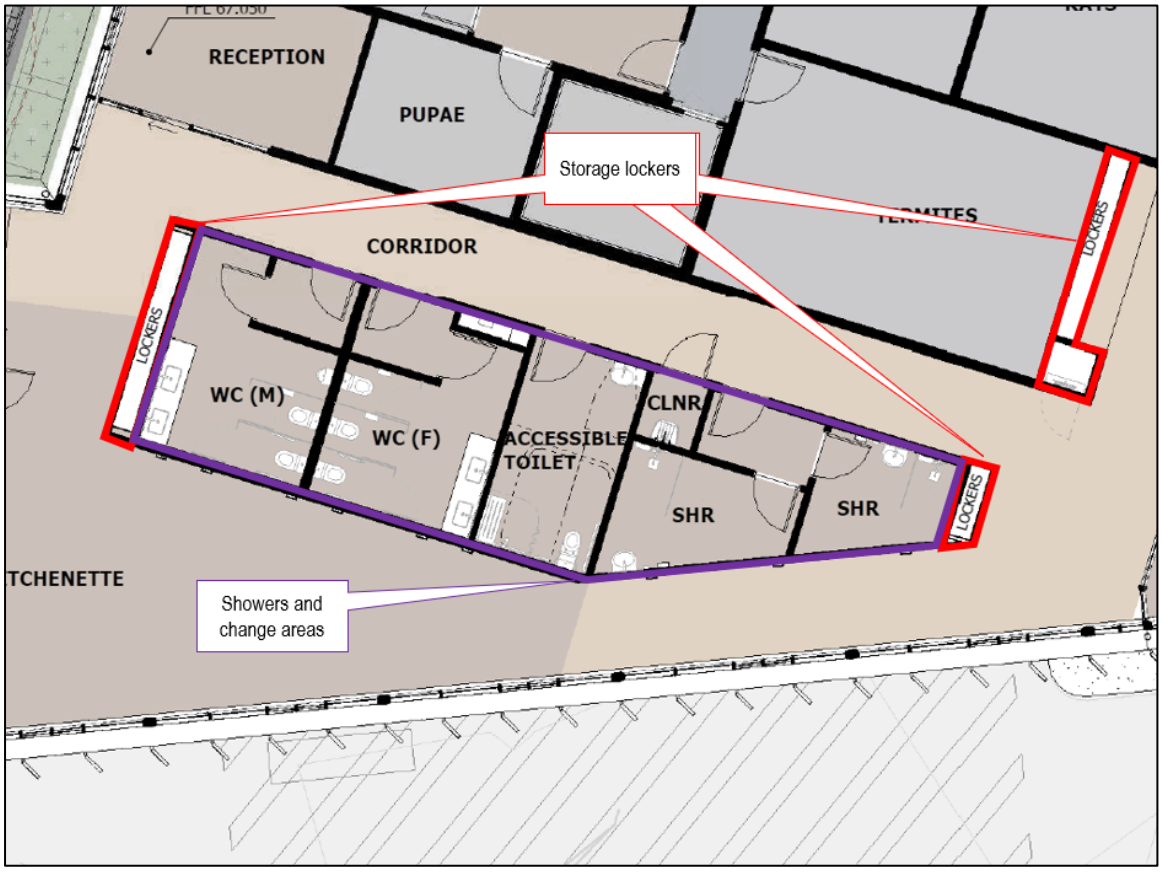


Figure 13 End of trip facility area

Visitor bicycle parking will continue to be available outside the main entrance to Taronga Zoo as previously indicated in Section 2.3 of this document.

4.2 Travel information

During the staff induction process at Taronga Zoo travel information will be incorporated so that new staff members are aware of the travel choices available to them. This would also include a tour of the site to include visit the secure bicycle parking and end of trip facility, as well as distributing a copy of the Transport Access Guide.

4.3 Car pooling

Car pooling is an effective means of reducing travel and parking demand by increasing the number of car journeys containing more than one occupant. Human Resources Team or a member of staff could inform staff of those who drive and the locations they drive in from in order to 'pair up' people based on their home location and travel needs (i.e. start and finish times). Senior Management can help match employees living in the same area to travel together to/from work. It may be acceptable to display a map of the general travel routes which staff use on the way to/from work to encourage carpooling. There are also various car pooling websites (as per the examples) that could be used.

Car pooling has the potential to reduce instances of single occupant trips and therefore reduce the overall impact on the adjacent road network.

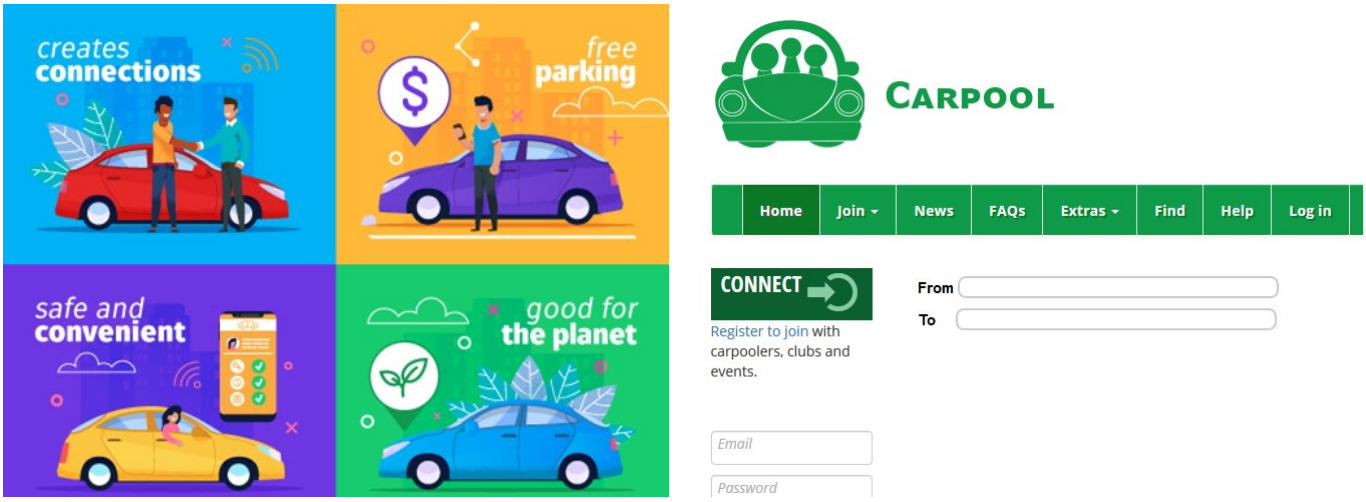


Figure 14 Existing car pooling websites

4.4 Visitor travel

To support travel by visitors to the Sky Safari the following will be available:

- The Transport Access Guide (TAG) will be available for visitors to download via the Taronga Zoo website prior to travelling to the site.
- General visitor travel information to be available on the Taronga Zoo website.

4.5 Car parking

The Taronga Zoo Sky Safari project does not seek to increase the number of on-site car parking spaces for building staff. This policy will assist in reducing traffic related impacts from the proposal and encourage staff to utilise sustainable transport modes.

It is important to note that no additional employees would be generated by the development, therefore the site would not generate any additional parking demands compared to current conditions.

4.6 Travel access guide

The information provided within the GTP will be provided to staff and visitors in the form of a package of easy to understand travel information known as a Transport Access Guide (TAG).

TAGs provide customised travel information for people travelling to and from a particular site using sustainable forms of transport – walking, cycling and public transport. It provides a simple quick visual look at a location making it easy to see the relationship of site to train stations, light rail stations, bus stops and walking and cycling routes. Such TAGs encourage the use of non-vehicle mode transport and can reduce associated greenhouse gas emissions and traffic congestion while improving health through active transport choices.

They can take many forms from a map printed on the back of business cards or brochures. Best practice suggests that the information should be as concise, simple and site centred as possible and where possible provided on a single side/sheet. If instructions are too complex, people are likely to ignore them.

A TAG has been prepared for Taronga Zoo site in the form of a brochure and is provided in Appendix A. The facility will provide copies of the TAG to staff as part of their induction process, as well as potentially making the TAG available on the zoo's website.

5 Implementation Plan

5.1 Management of the GTP

The sustainability manager within Taronga Zoo will be responsible for the implementation and management of the Green Travel Plan, and ensuring interest amongst employees is maintained, including:

- Communicating the travel plan to stakeholders;
- Promote awareness of the plan and associated initiatives;
- Providing travel information for staff and visitors;
- Developing and disseminating appropriate travel plan marketing information;
- To evaluate the benefit of the proposed measures to identify any changes required to the Travel Plan; and
- Overseeing the implementation and effectiveness of the Plan

Taronga Zoo's Sustainability manager's role will include acting as the coordinator of the travel plan to ensure measures are effectively implemented, communicated and monitored.

In order to secure a successful Travel Plan, Taronga Zoo will continue to engage with key transport agencies and stakeholders such as Transport for NSW and Mosman Council. This will assist in designing and operating services which best support the needs of staff and visitors, and therefore promoting high levels of sustainable transport modes.

The Plan is a 'living' document, so measures excluded at this time could be reconsidered or reintroduced at any time in the future. It is recognised that travel needs, and patterns will change, and new measures will become available.

5.2 Measures for implementation

An implementation plan has been developed that includes all of the proposed actions within the GTP and how these will be monitored post occupancy. This implementation plan is summarised on the following page.

GREEN TRAVEL PLAN IMPLEMENTATION PLAN

GTP measure	Description	Outcome	How measure will be monitored	Timing for implementation	Responsibility	Data Collection Frequency (internal process run by Taronga Zoo)
Car parking	No increase in car parking to staff and visitors to be provided as part of the future site development	Limit use of private vehicles as a mode of transport to Taronga Zoo	- Travel surveys of staff	Within 6 months of initial occupation	Sustainability manager	Every two years up to five years post occupancy
Transport Access Guide (TAG)	TAG to be developed and distributed to staff and visitors advising of the various sustainable transport options available. TAG to be updated as needed	Greater use of sustainable transport modes	- Travel surveys of staff - Feedback from staff	Immediately post occupation	Sustainability manager	Every two years up to five years post occupancy
Promotion of GTP to staff	Staff to be advised of GTP (including bike parking and end of trip facilities) as part of their induction process. This will include a physical copy of the Transport Access Guide (TAG).	Greater awareness by staff of travel options available to access Taronga Zoo	- Feedback from staff	Immediately post occupation	Sustainability manager / Human Resources team	Every two years up to five years post occupancy
Bicycle parking	Dedicated secure bicycle parking with complementary end of trip facilities. Bicycle parking area to be promoted to staff through their induction process, visitors via communication prior to arrival as well as through the TAG	Increase in number of staff and visitors cycling to Taronga Zoo	- Observations of bicycle parking area - Staff travel survey	Immediately post occupation	Sustainability manager	Every two years up to five years post occupancy

GTP measure	Description	Outcome	How measure will be monitored	Timing for implementation	Responsibility	Data Collection Frequency (internal process run by Taronga Zoo)
Car pooling	Establish arrangements to facilitate car pooling between employees and provide for priority car parking for staff that car pool.	Reduced instances of single occupant private vehicle trips to Taronga Zoo	- Travel surveys of staff - Feedback from staff	Within 3 months of initial occupation	Sustainability manager	Every two years up to five years post occupancy
GTP support and advice	Time in staff meetings to share tips and support for staff wanting to start walking, cycling or using public transport to and from Taronga Zoo	Increase in number of staff and visitors using non-car modes of transport	- Staff feedback in meetings	Immediately post occupation	Sustainability manager	Ongoing as part of staff meetings
Flexible working	Taronga Zoo to maintain existing policy of flexible working / work from home policy for staff	Reduction in overall travel demand, particularly during peak hour	- Staff feedback	Ongoing	Sustainability manager	N/A
Events	Participate in events that promote active travel such as National Walk to Work Day and National Cycle to Work Day	Increase in number of staff and visitors using non-car modes of transport	- Staff travel survey - Participation in events	Ongoing	Sustainability manager	Annual – five years post occupancy

5.3 Engagement techniques

Travel Plans are about impacting people's travel habits and encouraging changes in travel behaviour, so keeping people engaged sits at the heart of developing and implementing a successful Travel Plan. Many techniques are available to engage with employees, visitors and other stakeholders and can involve a range of different levels of participation. These techniques, for further consideration by the sustainability manager of Taronga Zoo, include the following:

Table 5 Engagement techniques

Engagement Type	Examples
Printed materials	• Fact sheets • Newsletters • Brochures • Posters • Articles in local papers • Maps • Reports • Guides
Displays	• Signage • Banners • Noticeboards
Digital methods	• Internal messaging (such as from senior executive) • Website (intranet and/or internet) • e-Newsletters • Online / email discussion group or feedback
Events	• Travel clinics • Employee events • Launches • Open days • Field Trips
Meetings / workshops	• Executive • Employee • Precinct partners • Other stakeholders

5.4 Monitoring and review

In order for the Travel Plan to be effective it must be monitored on a regular basis (every two years) to ensure that the objectives are being met. The monitoring measures could include:

- Collecting data on employee travel patterns for trips to the site through travel surveys. This will be an internal process run and signed off by Taronga Zoo for the purposes of monitoring the success of the travel plan and whether any changes are required. A sample travel survey for staff has been developed and is provided in Appendix B and a visitor survey is provided in Appendix C;
- Utilisation of bicycle parking facilities within Taronga Zoo; and
- General feedback from staff

In order for the Plan to be effective, it will be necessary to investigate feedback from employees to ensure that the Green Travel Plan is achievable. Any changes to mode shifts and staff achievements should be rewarded and recognised company-wide, and communicated with employees on a reoccurring basis, for example at quarterly workplace meetings.

Appendix A: Transport Access Guide

TARONGA ZOO

TARONGA ZOO SYDNEY

TRANSPORT ACCESS GUIDE

TRAVELLING TO TARONGA ZOO SYDNEY

Travelling to Taronga Zoo can be made via a number of forms of sustainable transport. Active transport such as walking and cycling are healthy and environmentally conscious alternatives. However, if the distance of travel is an issue, consider using public transport in tandem with active transport.

WALKING

Walking is a great way to get moving travel to Taronga Zoo if feasible. Well established footpaths are provided on all key approach routes to the site including on both sides of Bradleys Head Road. A safe pedestrian crossing point is provided across the Bradleys Head Road, at the main entrance. Fully accessible paths and vertical transport is available within Taronga Zoo itself.

CAR POOLING

Car pooling is a great way to reduce traffic congestion. Please consider your friends when travelling to and from work to arrange your schedules.

CYCLING

The site is connected to the broader regional cycling network, with the nearest cycle route in vicinity of the site runs along the Bradleys Head Road-Athol Wharf Road.
Bicycle parking is available for visitors outside the main site entry point on Bradleys Head Road for use free of charge throughout the day.
Building staff have access to secure bicycle parking and end of trip facilities within Taronga Zoo.

BUS

The 100 Bus (Mosman to City) operates between Mosman (Taronga Zoo Sydney) and the Queen Victoria Building in the city from early morning until around midnight, seven days a week. Buses will run every 10 minutes across the day and at least every 20 minutes in the early morning and late at night.
The 238 bus route travels between Balmoral Beach, the Taronga Zoo Sydney main entrance and the Taronga ferry wharf on the water's edge for passengers arriving or leaving by ferry

FERRY

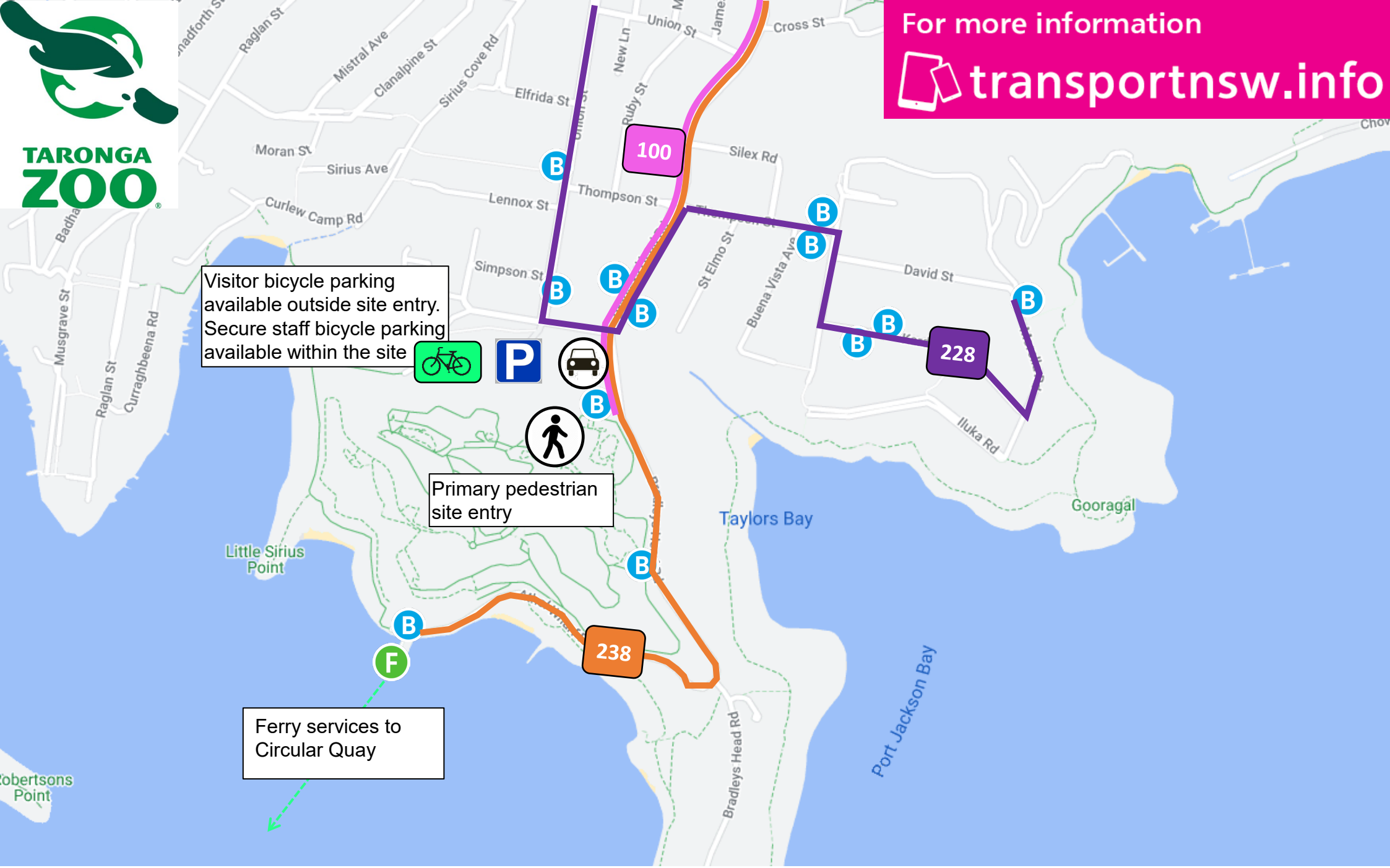
Taronga Zoo has its own Ferry Wharf, located towards the south end of Taronga Zoo. Taronga Zoo Sydney is 12 minutes from Circular Quay by ferry. This ferry service can provide routes to Mosman, Watsons Bay, Circular Quay and Darling Harbour. weekends.

TRAIN

While Taronga Zoo is not directly served by train, it is possible to access The Zoo through connecting bus services (routes 100 and 228) from North Sydney train station. Alternately access from Circular Quay train station is available via connecting ferry services directly to Taronga Zoo Wharf.

DROP OFF

Dedicated drop off and pick up areas, including for taxis, are available near the main visitor entry point accessible from Bradleys Head Road.



TRAVEL ACCESS GUIDE

Taronga Zoo

F Taronga Zoo Ferry Wharf

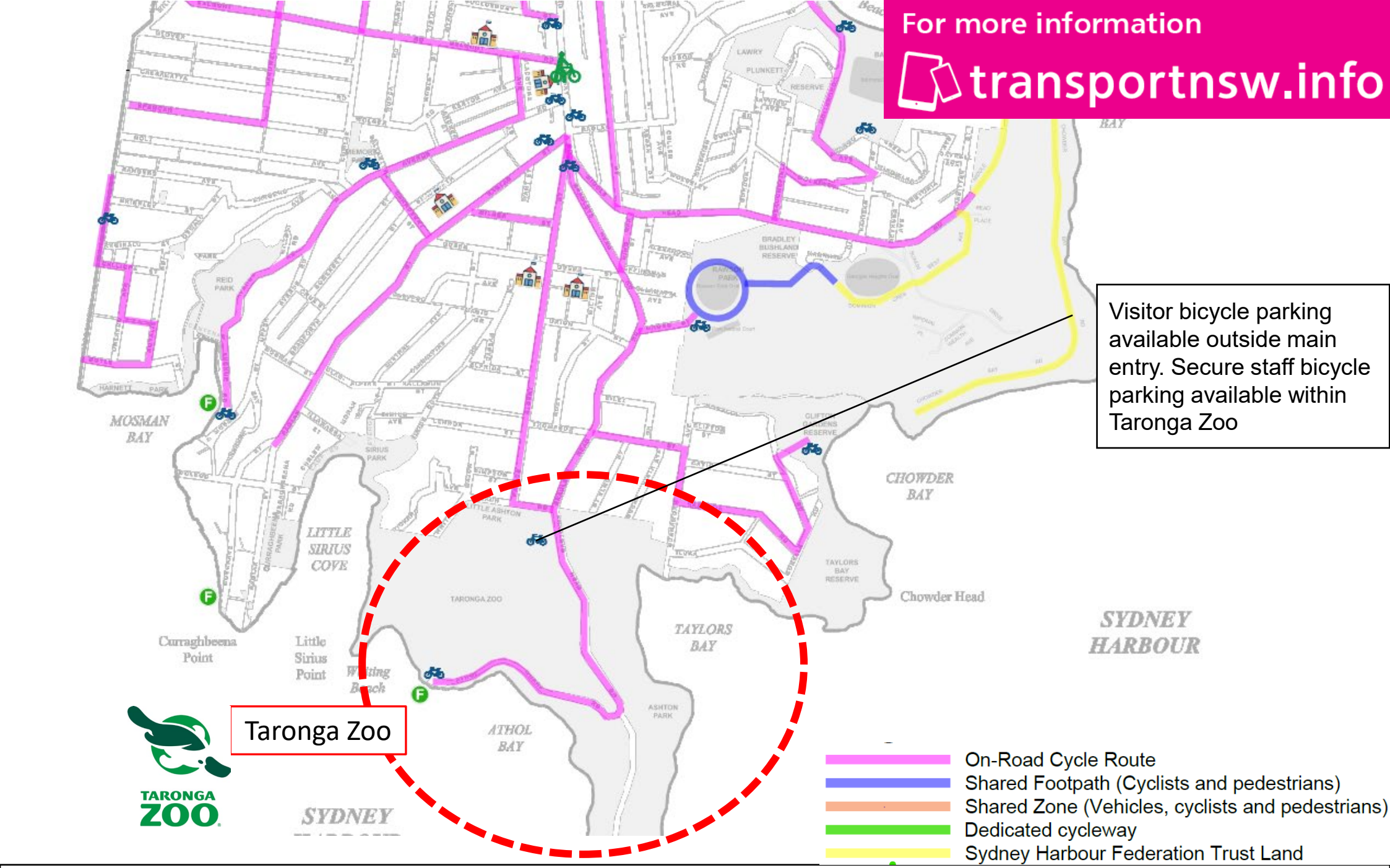
B Bus stop

100 Bus route service number

Visitor bicycle parking area

Primary drop off / pick up point

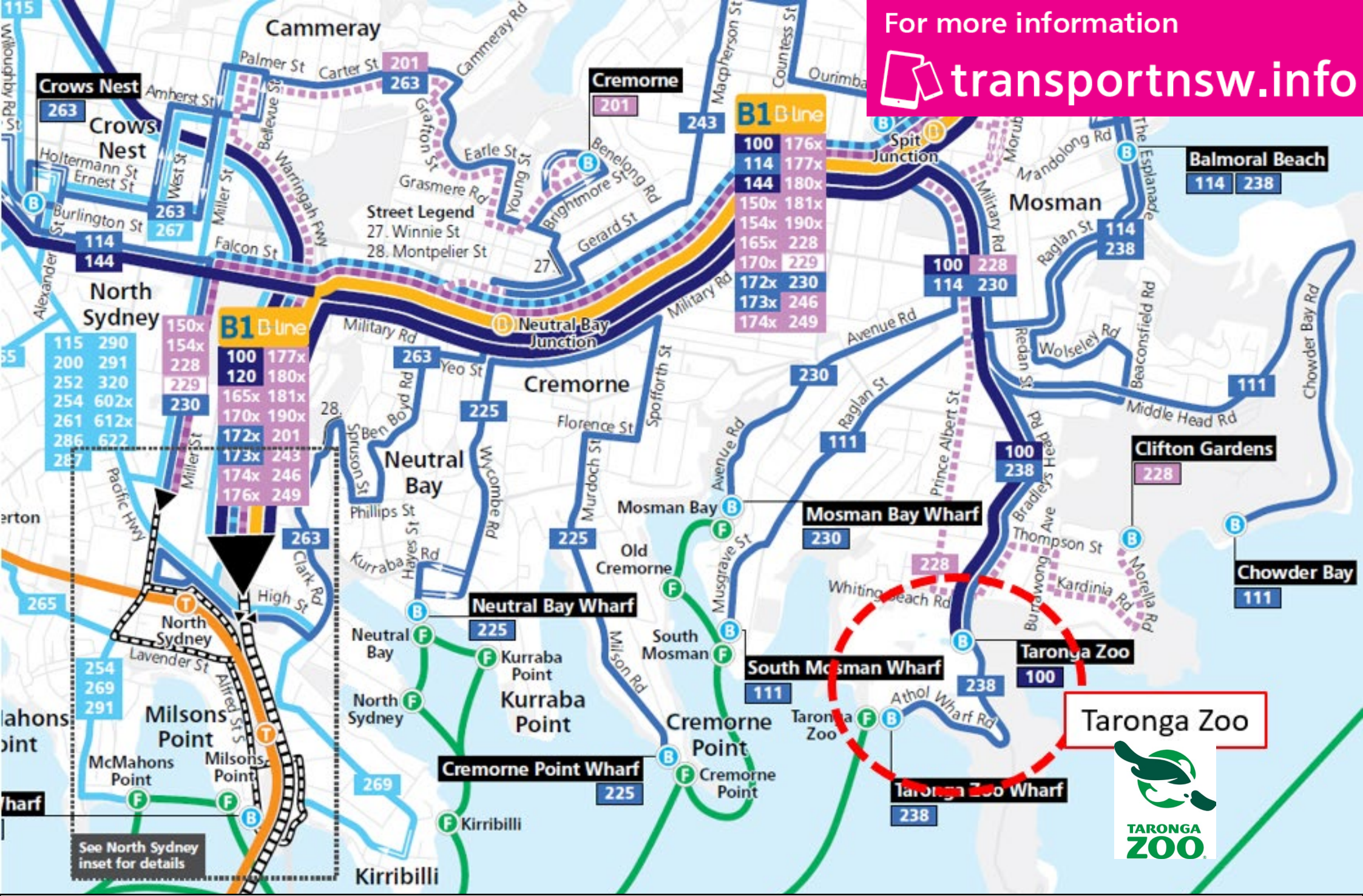
P On-site parking area



CYCLING TO TARONGA ZOO, SYDNEY

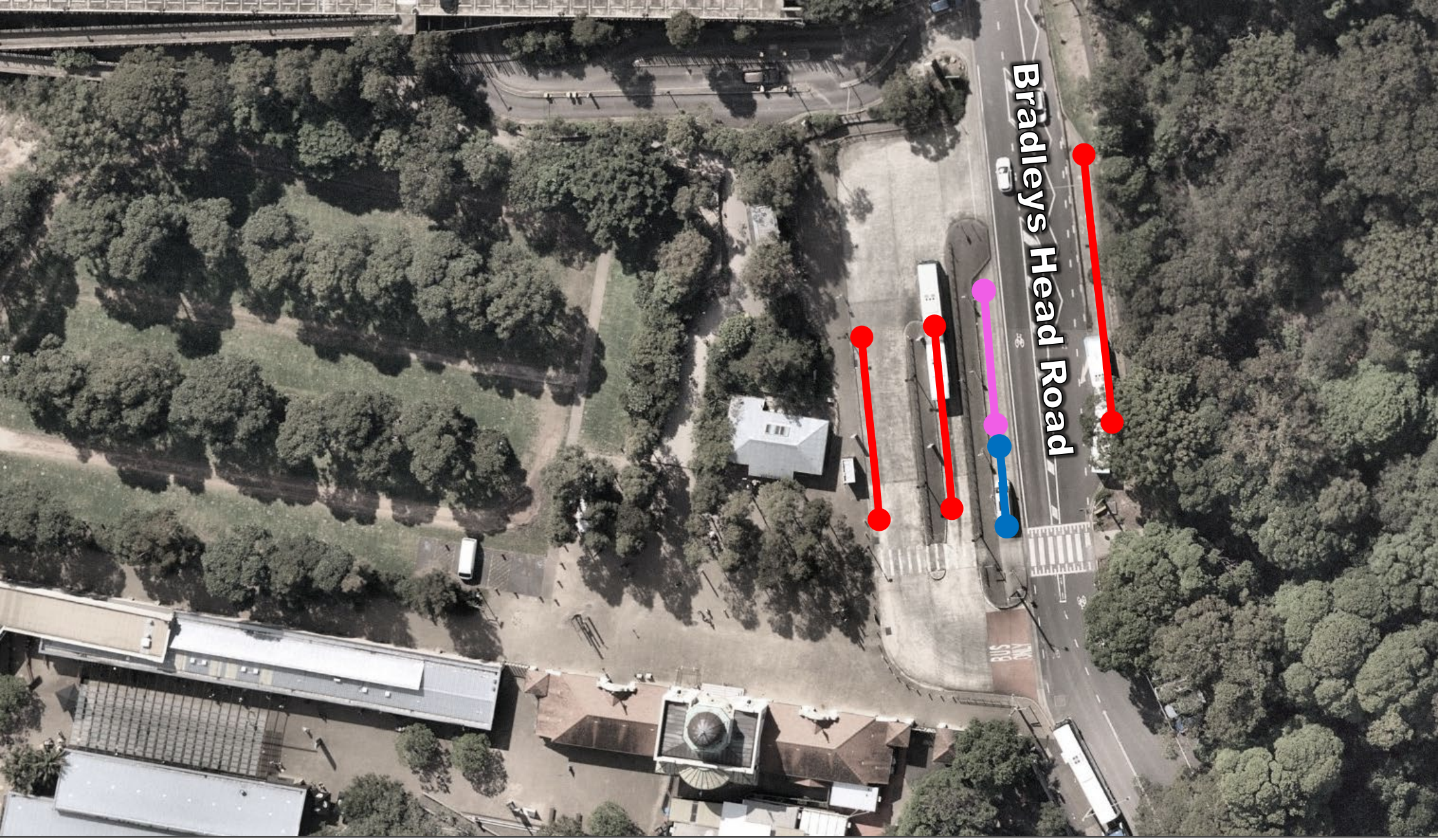
Bicycle parking spaces are available for visitors free of charge outside the main entry to Taronga Zoo

Secure bicycle parking, showers, lockers and change areas are provided on-site for building staff



ACCESS VIA PUBLIC TRANSPORT

For up to date public transport timetables please visit transportnsw.info



DROP OFF & PICK UP OPPORTUNITIES

Taronga Zoo Sydney

Drop off and pick up opportunities are available all day along Bradleys Head Road through the following zones

General drop off / pick up

Taxis

Buses / Coaches

Appendix B: Sample Staff Travel Survey

Hello and welcome to the travel survey for Taronga Zoo, Sydney! No matter whether you walk, cycle, drive or catch the bus to work – and even if you didn't come to work today – we need you to complete this!

It won't take more than 5 minutes, promise. We'll send through the results soon.

This survey will be updated regularly (or when future upgrades to the transport network come online) and forms part of our wider suite of Green Travel Plan initiatives including on-site bicycle parking, flexible working arrangements and improved wayfinding. Please talk to a representative from Human Resources for further information.

1. What is your age in years?

- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- Over 65

2. In a typical week how many times do you travel to work to at Taronga Zoo?

- Every day
- 4 days per week
- 3 days per week
- 2 days per week
- 1 day per week
- Less than 1 day per week

3. What postcode do you typically commute to work from?

4. What is your normal shift time?

- 7am to 3pm
- 9am to 5pm
- 3pm to 11pm
- Other

5. What is your main mode of transport when travelling to and from Taronga Zoo?

- Walk or run
- Bicycle
- Bus
- Train & Ferry
- Train & Bus
- Taxi or Rideshare (e.g. Uber)
- Ferry
- Car (as driver/sole occupancy)
- Car (as driver with passengers)
- Car (as passenger)
- Motorbike or Moped

6. Where do you park your car [if driver selected as mode of transport]?

- In the on-site car parking area
- On surrounding streets

7. Significant improvements are being made across the transport network in Sydney. These changes may have an impact on your journey to work. To improve your journey, how likely is it that you will choose another mode to travel to work, e.g. switching from driving to public transport or from public transport to walking or cycling?

- Very likely
- Likely
- Neutral
- Unlikely
- Very unlikely
- Not possible

8. Please enter your postcode so we can better understand travel origin and destination patterns to inform future updates of the Green Travel Plan

Appendix C: Sample Visitor Travel Survey

1. What is your age in years?

- 18 – 24
- 25 – 34
- 35 – 44
- 45 – 54
- 55 – 64
- Over 65

2. How did you arrive to Taronga Zoo today?

- Walk or run
- Bicycle
- Bus
- Train & Ferry
- Train & Bus
- Taxi or Rideshare (e.g. Uber)
- Ferry
- Car (as driver/sole occupancy)
- Car (as driver with passengers)
- Car (as passenger)
- Motorbike or Moped

3. How did you leave Taronga Zoo today?

- Walk or run
- Bicycle
- Bus
- Train & Ferry
- Train & Bus
- Taxi or Rideshare (e.g. Uber)
- Ferry
- Car (as driver/sole occupancy)
- Car (as driver with passengers)
- Car (as passenger)
- Motorbike or Moped

4. How many people were in your travelling group?

- 1
- 2
- 3
- 4
- 5 or more

5. Where do you park your car [if driver selected as mode of transport]?

- In the on-site car parking area
- On surrounding streets

6. What is your home postcode?