URBIS

TARONGA ZOO SKY SAFARI

ENVIRONMENTAL IMPACT STATEMENT SSD-46807958

PREPARED FOR

TARONGA CONSERVATION SOCIETY AUSTRALIA

SEPTEMBER 2024

URBIS STAFF RESPONSIBLE FOR THIS REPORT WERE:

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Project Code	P0037017
Report Number	1

Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

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Project details		
Project name	Taronga Zoo Sky Safari	
Application number	SSD-46807958	
Address of the land in respect of which the development application is made	Bradleys Head Road, Mosman Lot 22 in DP843294	
Applicant details		
Applicant name	Taronga Conservation Society Australia	
Applicant address	Bradleys Head Road, Mosman	
Details of people by whom this EIS was prepared		
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Declaration

The undersigned declares that this EIS:

- has been prepared in accordance with Schedule 2 of the *Environmental Planning and Assessment Regulation 2021*;
- contains all available information relevant to the environmental assessment of the development, activity or infrastructure to which the EIS relates;
- does not contain information that is false or misleading;
- contains the information required under the *Registered Environmental Assessment Practitioner Guidelines*;
- addresses the Planning Secretary's environmental assessment requirements (SEARs) for the project;
- identifies and addresses the relevant statutory requirements for the project, including any relevant matters for consideration in environmental planning instruments;
- has been prepared having regard to the Department's *State Significant Development Guidelines - Preparing an Environmental Impact Statement*;
- contains a simple and easy to understand summary of the project, having regard to the economic, environmental and social impacts of the project and the principles of ecologically sustainable development;
- contains a consolidated description of the project in a single chapter of the EIS;
- contains an accurate summary of the findings of any community engagement; and

▪ contains an accurate summary of the detailed technical assessment of the impacts of the project as a whole.		
Signatures		
		
Alaine Roff, Director (RPIA) REAP no. 50177	Sarah Horsfield, Director	Brigitte Bradley, Senior Consultant
Date	2 September 2024	

Glossary and Abbreviations

Reference	Description
ACHA	Aboriginal Cultural Heritage Assessment Report
AEP	Annual Exceedance Probability
AHD	Australia Height Datum
AHIMS	Aboriginal Heritage Information Management System
AIA	Arboricultural Impact Assessment
ANEF	Australian Noise Exposure Forecast
BAM	Biodiversity Assessment Method
BC Act	Biodiversity Conservation Act 2016
BC Reg	Biodiversity Conservation Regulation 2017
BDAR	Biodiversity Development Assessment Report
CBD	Central Business District
CEEC	Critically Endangered Ecological Community
CEMP	Construction Environmental Management Plan
CMP	Construction Management Plan
CTMP	Construction Traffic Environmental Plan
DCP	Development Control Plan
DP	Deposited Plan
DPHI	New South Wales Department of Planning, Housing and Infrastructure
DSI	Detailed Site Investigation
EDC	Estimated Development Cost
EIS	Environmental Impact Statement
EP&A Act	Environmental Planning and Assessment Act 1979
EPA Regulation	Environmental Planning and Assessment Regulation 2021
EPBC Act	Environment Protection and Biodiversity Conservation Act 1999
EIS	Environmental Impact Statement
EPA	New South Wales Environment Protection Authority
EPI	Environmental Planning Instrument
ESD	Ecologically Sustainable Development

Reference	Description
GANSW	Government Architect New South Wales
GFA	Gross Floor Area
GTP	Green Travel Plan
HIS	Heritage Impact Statement
LAeq	A frequency-weighted Equivalent Continuous Sound Level
LEC	Land Environment Court New South Wales
LEP	Local Environmental Plan
LGA	Local Government Area
LSPS	Local Strategic Planning Statement
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
NSW	New South Wales
NVIA	Noise and Vibration Impact Assessment
Hazards SEPP	State Environmental Planning Policy (Resilience and Hazards) 2021
PAD	Potential Archaeological Deposit
PBP	Planning for Bushfire Protection
PCT	Plant Community Type
PMF	Probable Maximum Flood
POM	Plan of Management
PSI	Preliminary Site Investigation
Planning Systems SEPP	State Environmental Planning Policy (Planning Systems) 2021
SAII	Serious and Irreversible Impacts
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environmental Planning Policy
SIA	Social Impact Assessment
SIDRA	Signalised & Unsignalised Intersection Design and Research Aid
Site	Lot 22 in DP843294
SSD	State Significant Development
SSDA	State Significant Development Application
T&I SEPP	State Environmental Planning Policy (Transport and Infrastructure) 2021
TfNSW	Transport for New South Wales

Reference	Description
TIA	Traffic Impact Assessment
VIA	Visual Impact Assessment
WCM	Water Cycle Management
WMP	Waste Management Plan
WSUD	Water Sensitive Urban Design

Summary

This Environmental Impact Statement (**EIS**) has been prepared by Urbis Ltd (**Urbis**) on behalf of Taronga Conservation Society Australia (**TCSA, the applicant**). The EIS is submitted to the NSW Department of Planning, Housing and Infrastructure (**DPHI**) in support of a State Significant Development Application (**SSDA**) for Taronga Sky Safari at Taronga Zoo (**the site**).

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 SSDA seeks consent for redevelopment of the former Sky Safari. The reimagined cable car experience replaces infrastructure along the existing cable car route with stations located at the upper and lower entrances of the Zoo. The new proposal introduces new cable cars that are accessible to visitors with prams, larger wheelchairs and mobility issues, to ensure all visitors to the zoo have a safe and dignified experience in utilising the Sky Safari. The new cable cars are also larger in capacity than existing cable cars to meet current and future visitor demand to visit the Zoo.

The intended outcomes of the project are to:

- Feature additional, larger cable cars that are more accessible, dramatically improving the guest experience journey for all visitors.
- Connect to recent upgrades to the Taronga Zoo Wharf under the NSW Government's Transport Access Program.
- Increase the Sky Safari's former capacity, allowing for a more efficient 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 in a seamless journey to and from 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, the strong historical presence of Taronga, and Connection to Country.
- Enhance opportunities for educating the community on TCSA's conservation efforts.

The proposed development has an estimated development cost (**EDC**) of $77,317,384. The project is therefore classified as a State Significant Development (**SSD**) pursuant to Clause 2(h) of Schedule 2 of *State Environmental Planning Policy (Planning Systems) 2021* (**Planning Systems SEPP**).

The Site

Taronga Zoo is located at Bradleys Head Road, Mosman and is situated in the Mosman Local Government area (**LGA**) on Cammeraigal land. 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 in DP843294 and is Crown Land managed by the TCSA (**the Zoological Park Board**).

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 focuses on wildlife conservation, animal welfare and providing a range of visitor learning experiences.

An aerial photograph of the site detailing the development footprints is provided at **Figure 1**.

Figure 1 Site Aerial with location of Sky Safari bounded in red

Source: Urbis

Feasible Alternatives

Throughout the development of the project, various project alternatives were identified in relation to both the overall route of the Sky Safari and the stations themselves which are discussed in detail at **Section 2.4** of this EIS.

The redevelopment of the former Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which improve accessibility, ease increased demand and assist the public in moving around the Zoo.

The Proposal

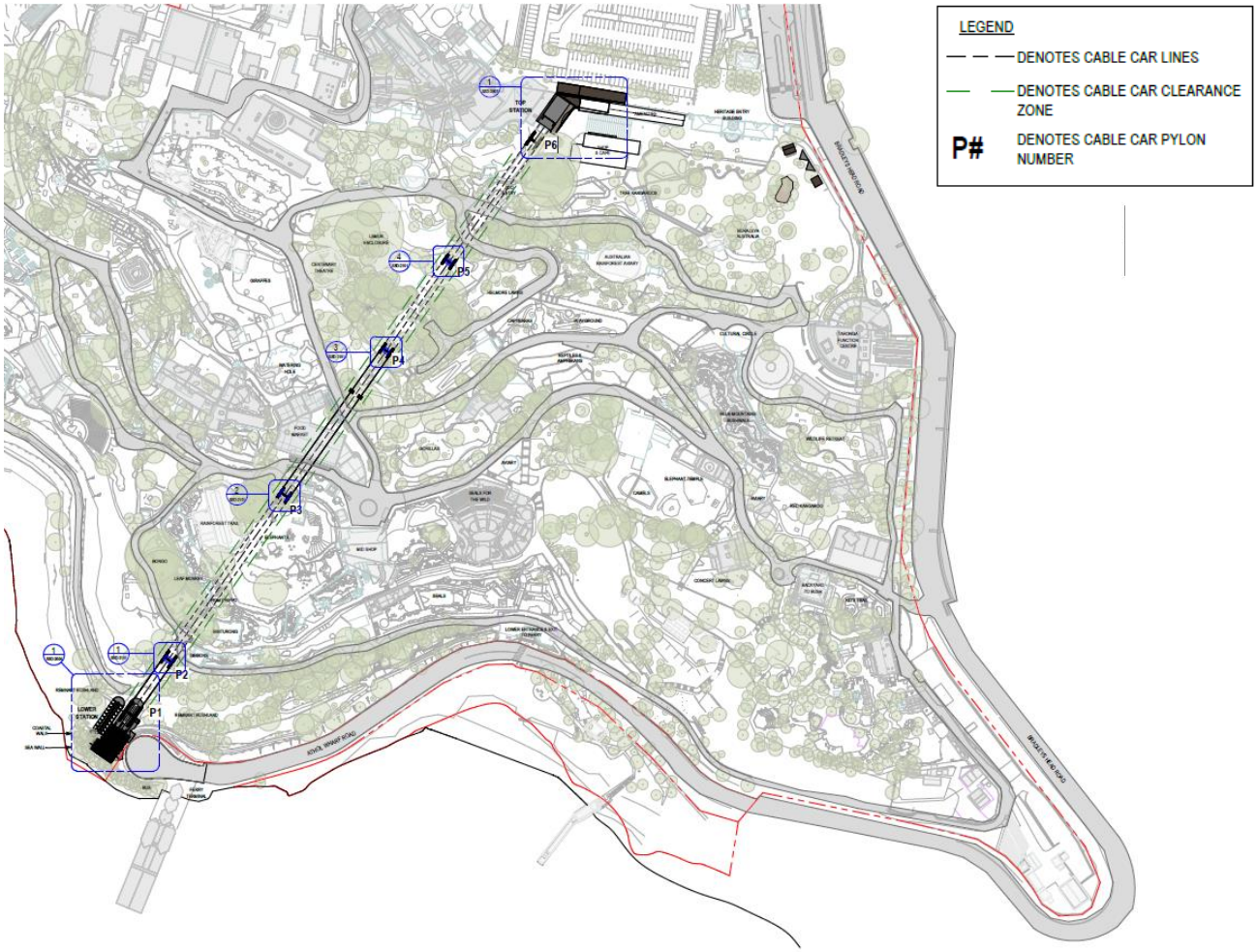
The SSDA seeks consent for:

- Site establishment works including the decommissioning and removal of the former 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 4.3m (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, wayfinding signage.
- Excavation, site preparation works and tree removal/pruning to allow the works to occur.

The Zoo is currently in operation 24/7. It is intended that the Sky Safari will continue to operate during regular visitor hours with opportunities for sunrise and early morning sessions, sunset and twilight sessions and for special events.

The proposal will be undertaken in accordance with the Architectural Plans prepared by Studio SC at **Appendix B**. The proposed site plan is provided in **Figure 2** below.

Figure 2 Proposed Site Plan



Source: Studio SC

Consultation

Community and stakeholder engagement has been undertaken by Urbis and the project team in the preparation of the SSDA. This includes direct engagement and consultation with:

- Adjoining landowners and occupants;
- The local community including key community groups; and
- Government, agency and utility stakeholders

The outcomes of the community and stakeholder engagement have informed the feasible alternatives throughout the design development process and have been incorporated into the proposed development. Consultation is discussed in detail at **Section 5** of this EIS.

Justification of the Project

The EIS has assessed the project against the requirements of the Secretary's Environmental Assessment Requirements (**SEARs**) (**Appendix A**), and the relevant planning instruments and policies (**Section 4** and **Appendix B**).

The key issues identified within the SEARs have been assessed in **Section 6** of the EIS. This assessment has been informed by specialist reports which include recommendations and mitigation measures. The assessment of key issues includes the mitigation measures which can be adopted to ensure the project does not result in any significant impacts. Thes mitigation measures are included at **Appendix C.**

The proposal represents a positive development outcome for the site and surrounding area for the following reasons:

- **The proposal is consistent with state and local strategic planning policies:**

  The proposal is consistent with the relevant goals and strategies contained in:

  – *NSW Visitor Economy Strategy 2030*
  – *Greater Sydney Region Plan: A Metropolis of Three Cities*
  – *Our Greater Sydney 2056: Northern City District Plan*
  – *Zoo 2000 – 'The View to the Future' Master Plan*
  – *Taronga Zoo Centenary Master Plan 2015*
  – *Mosman Development Control Plan 2012*
  – *Mosman Local Strategic Planning Statement 2020*
  – *Taronga Zoo Strategic Plan 2021 – 2025*
  – *Zoo 2000 – 'The View to the Future' Masterplan*

- **The proposal satisfies the applicable local and state development controls:**

  The proposal satisfies the objectives of all relevant planning controls and achieves compliance including the relevant controls of *State Environmental Planning Policy (Planning Systems) 2021*, *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (formerly the *Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005*) and *Mosman Local Environmental Plan 2012*.

- **The design responds appropriately to the opportunities and constraints presented by the site:**

  As a conservation community, TCSA is committed to the ongoing process of reconciliation; to respect, connect, consult and be led by the complex and vital knowledge of First Nations Peoples as part of their ongoing work to safeguard the future of our planet. Through engagement with First Nations elders and design consultation, this project is an opportunity to create a connected journey from the saltwater of Sydney Harbour to the sky, showcasing Cammeraigal Country. At same time the journey is the opportunity to celebrate and witness the amazing wildlife of Taronga Zoo and the natural setting of the Zoo.

- The overall design has considered the steep topography of the site and maintains the former Sky Safari route to ensure that the works will not have any significant detrimental impact on the scenic, visual and natural bushland setting of Sydney Harbour.

  Having been present on the site in a similar nature to that now proposed for the past 35 years, the Sky Safari is a well-established and valued part of the Zoo landscape. Where visible, it is reasonable to assume that over time supplementary planting and ongoing maturation of existing vegetation will mitigate the prominence of vertical elements in views from outside the Zoo overtime.

  The proposed works will not have any adverse heritage impacts and will facilitate the continued use of the Zoo site for animal conservation and welfare. While the proposed works will result in the removal of existing buildings and structures on site, the proposal does not result in any changes to heritage listed items within the site. Overall, the proposed works are respectful of the heritage significance of the Zoo and aim to replace existing infrastructure to meet the requirements of visitors and staff.

- **The proposal is highly suitable for the site:**

  The proposal continues the permitted use of the site as a 'Zoological Garden'. The proposal will replace existing infrastructure currently located on site, which is considered ancillary and considered ordinarily incidental to the overarching use of the site as a zoo. The scheme is sensitively integrated within bushland and harbour setting of the site and has taken into consideration heritage items, significant trees and site topography to minimise any potential adverse impacts on surrounding land.

  The Sky Safari will provide an immersive Zoo experience that will create a unique opportunity for people to see and connect with an array of wildlife species from above and be educated on First Nations and conservation stories via audiovisual and interpretive design elements.

  The minimum number of trees possible are proposed to be removed to accommodate the new development. While retention of trees is preferred by TCSA, four Category A and three Category Z trees are identified for removal as they sit within the building footprint or along the route. The project will provide immersion and connection to the Indigenous landscape through retention of mature trees and introduction of replacement plantings incorporating a diverse array of locally Indigenous plants. Further, none of the trees to be removed are listed on the Section 170 Heritage Register.

- **The proposal is in the public interest:**

  The Sky Safari is an iconic part of the Zoo experience and is much loved by the general public. The redevelopment of the former 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.

  The proposal will have minimal environmental impacts upon nearby residential as the proposed construction works will be managed to ensure there are no impacts on neighbouring properties. Subject to the various mitigation measures recommended by the specialist consultants, the proposal does not have any unreasonable impacts on adjoining properties or the public domain in terms of views, traffic, acoustic impacts during construction and ongoing operation.

In view of the above, it is considered that this SSD Application has significant merit and should be approved subject to the implementation of the mitigation measures described in this report and supporting documents.

1. Introduction

This EIS is submitted to the Department of Planning, Housing and Infrastructure (**DPHI**) on behalf of the Taronga Conservation Society Australia (**TCSA**) and in support of for a State Significant Development Application (**SSDA**, SSD-46807958) for the redevelopment of the Sky Safari at Taronga Zoo, Mosman which is legally described as Lot 22 in Deposited Plan 843294.

The site is located on Cammeraigal Country, and we acknowledge their elders past and present, and their deep and continuing connection to their land. In preparing this EIS we acknowledge the importance of a Country-centred approach to the design, guided by Aboriginal people, who know that if we care for Country, Country will care for us.

1.1. Applicant Details

The applicant details for the proposed development are listed in the following table.

Table 1 Applicant Details

Descriptor	**Proponent Details**
Full Name(s)	Taronga Conservation Society Australia
Postal Address	Bradleys Head Road, Mosman
ABN	41 733 619 876
Nominated Contact	Shelley Wang, Senior Project Manager – TCSA Brigitte Bradley, Senior Consultant – Urbis

1.2. Overview Of Taronga Conservation Society Australia

The *Zoological Parks Board Act* 1973 (**Zoological Act**) is the Act that governs Taronga Zoo, Mosman and Taronga Western Plains Zoo, Dubbo. A corporation named the "Zoological Parks Board of New South Wales" (**the Board**) is constituted under the Zoological Act. The Board may also be called the Taronga Conservation Society Australia and the use of that name has the same effect for all purposes as the use of its corporate name.

Under Clause 5(2)(b) of the Zoological Act the Board shall, for the purposes of any Act, be deemed to be a statutory body representing the Crown.

Taronga Conservation Society Australia has a formal mandate, as defined in Section 15 of the Zoological Parks Board Act 1973, to:

> *(a) carry out research and breeding programs for the preservation of endangered species;*
>
> *(b) carry out research programs for the conservation and management of other species;*
>
> *(c) conduct public education and awareness programs about species conservation and management; and*
>
> *(d) display animals for educational, cultural and recreational purposes.*

The Taronga Sky Safari meets these objectives, as it will provide an upgrade of existing ancillary infrastructure which has been part of the Zoo for over 35 years. The Sky Safari provides a unique perspective for visitors to view exhibit and animals from above. The new cable cars offer opportunities for audio experiences within the cabins which can be updated to tell stories and maintain awareness of specific conservation and education programs. New amenities and waiting areas have been integrated into the design providing additional opportunities for incidental learning and 'calls to action' for visitors on conservation and education programs being undertaken across the Zoo and other Taronga sites.

1.3. Project Description

The SSDA seeks consent for:

- Site establishment works including removal of the former Sky Safari including the nine existing pylons;
- 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 4.3m (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 including the introduction of additional mature trees, shade structures and seating areas.
- Excavation, site preparation works and tree removal/pruning to allow the works to occur.

The Zoo is currently in operation 24/7. It is intended that the Sky Safari will continue to operate during regular visitor hours with opportunities for sunrise and early morning sessions, sunset and twilight sessions and for special events.

The key objectives for the proposed development and the way in which these have been achieved are summarised in **Table 2**.

Table 2 Project Vision and Objectives

Objective	Proposed Development
Feature more and larger cable cars that are more accessible, dramatically improving the guest experience journey for all visitors.	The former Sky Safari cable cars incorporated 21 cable cars with a maximum capacity of six guests and could accommodate wheelchairs up to a width of 610mm but prams or wheelchairs which did not fold could not be transported given the size restraints. The upgraded cable car experience introduces 20 - 25 new cable cars that are accessible to visitors with prams, larger wheelchairs and mobility issues, to ensure all visitors to the Zoo have a safe and dignified experience in utilising the Sky Safari.
Connect to recent upgrades to the Taronga Zoo Wharf under the NSW Government's Transport Access Program.	The new lower station has been designed to provide a new entrance which connects via a pedestrian pathway to the Taronga Zoo Ferry Wharf. Ongoing consultation has occurred with TfNSW to ensure that public transport connections are maintained and encouraged as the preferred transport method for visitors to the Zoo. New amenities are also provided including public bathrooms and seating to provide a point of respite for visitors starting their day at the Zoo via the ferry.
Increase the Sky Safari's current capacity, allowing for a more efficient flow of guests around the Zoo, while also enhancing opportunities for educating guests on Taronga's conservation efforts.	Improved stations have been located at the upper and lower entrances for the Zoo. Both stations have been designed with dedicated queuing areas providing between 50-100m of undercover areas to provide weather protection for visitors. Dedicating queuing areas provide opportunity for interpretive elements which can assist in storytelling.
Encourage guests off the roads and onto public transport as they explore the harbour on route to the Zoo.	The project aims to promote a modal shift away from private vehicles towards public transport via a new Green Travel Plan for staff and visitors. It is important to recognise that the Sky Safari is not expected to increase trips to the Zoo and will instead support travel via public transport, contributing to a reduction in demand for private vehicle travel compared to current conditions.

Objective	Proposed Development
	which will ultimately benefits the transport network and surrounding road network.
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.	The Sky Safari remains an iconic and much loved feature of Taronga Zoo. While it is not anticipated that the replacement of infrastructure will result in increases to visitation at a substantial scale, it remains a core part of the visitor experience and will remain part of the Zoo.
Consider the heritage significance of local heritage items within the Zoo grounds and the strong historical presence of Taronga.	The Zoo is a locally heritage listed item. The new route and stations generally remain within the existing route to minimise impacts on key heritage items within the Zoo. The proposal also ensures that a much loved and important element of the Zoo which has been in operation for over 35 years can be continued on site.
Enhance opportunities for educating the community on TCSA's conservation efforts.	The upgraded stations and cabins have been designed to incorporate opportunities for new experiences including audio tours as well as the opportunity to share First Nations and conservation stories through interpretative design elements.

A map of the site in its regional setting is provided as **Map 1**.

Map 1 Regional Context

Source: Urbis

1.4. Project Background

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 current route provided direct transportation up the steep headland site from the Taronga Zoo wharf ferry to the Upper Zoo Entrance. The former Sky Safari was an ageing asset and was formally retired in January 2023.

The redevelopment of the former Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which provide improved amenities and assist the public in moving around the Zoo.

The proposed works aligns with the goals of TCSA's Strategic Plan 2021–2025 which further develops Taronga's position as a world leading contemporary conservation zoo organisation. Modern zoos have recognised their place as lead proponents in global conservation and education, and Taronga Zoo has embraced its contemporary mandate as an advocate and representative for wildlife – not just within the Zoos but across Australia and around the world. Taronga's reach extends far beyond the care of animals within its Zoos, with multiple programs both on site and in the field, including breeding and re-wilding species on the cusp of extinction, rehabilitation of injured wildlife, and conservation science that enhances understanding and protection of environments.

This project offers the opportunity to upgrade the existing infrastructure which helps transport people around the Zoo and to share First Nations and conservation stories as guests engage with both the natural setting of the Zoo and Sydney Harbour.

Figure 3 TCSA Vision and Objectives

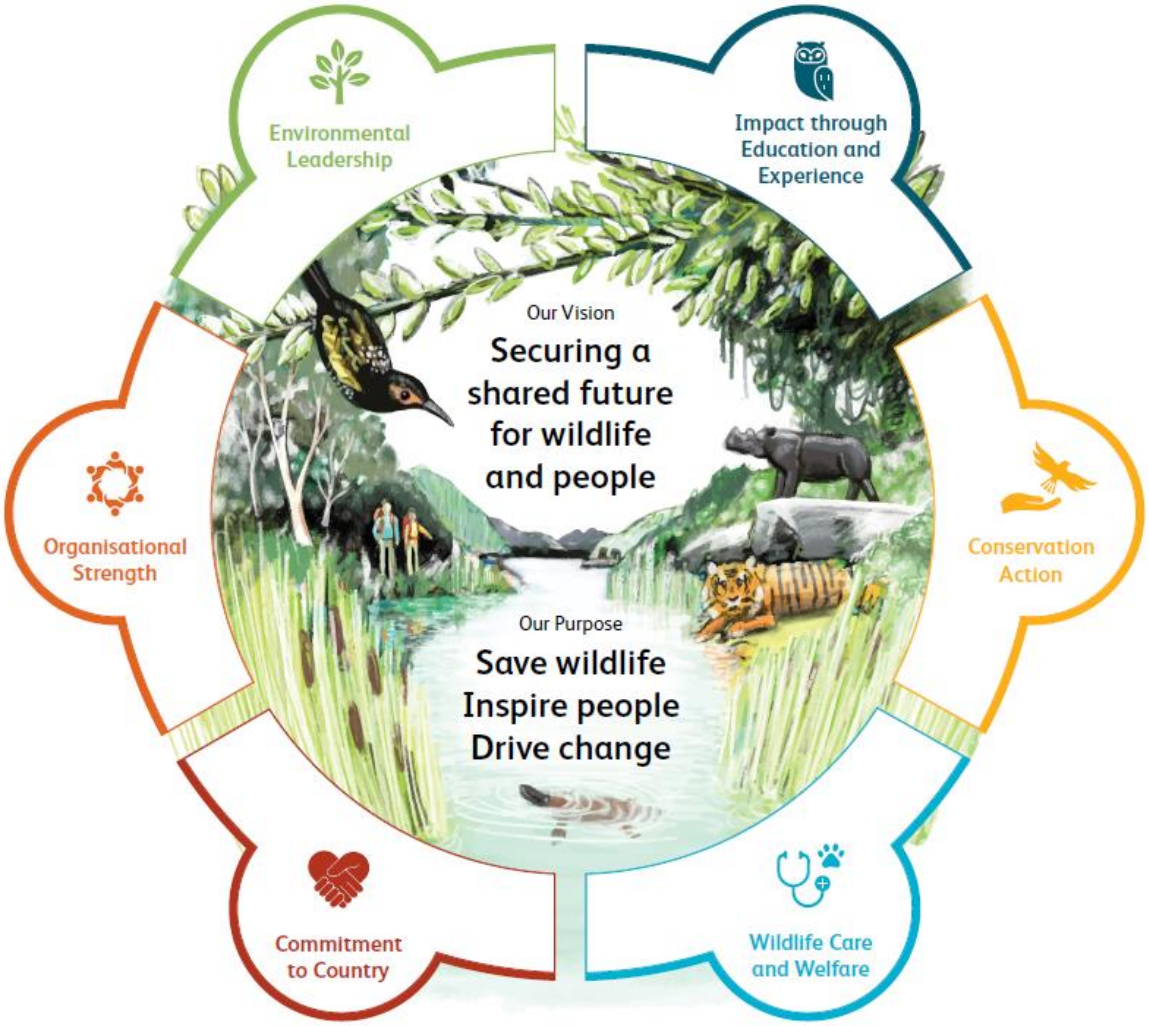


Figure 4 Taronga Sky Safari

Picture 1 Taronga Sky Safari, 1987

Picture 2 Taronga Sky Safari, 2000 upgrade

Source: TCSA

2. Strategic Context

This section of the EIS describes the way in which the proposal addresses the strategic planning policies relevant to the site. It identifies the key strategic issues relevant to the assessment and evaluation of the project, each of which are addressed in further detail in **Section 7** of this EIS.

2.1. Key Features of Site and Surrounds

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.

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 focuses 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 1.7 million visitors annually.

The location of the site is illustrated in **Map 1**. Photographs of the current site condition are provided in **Figure 5**.

Figure 5 Site Context

Source: Studio SC

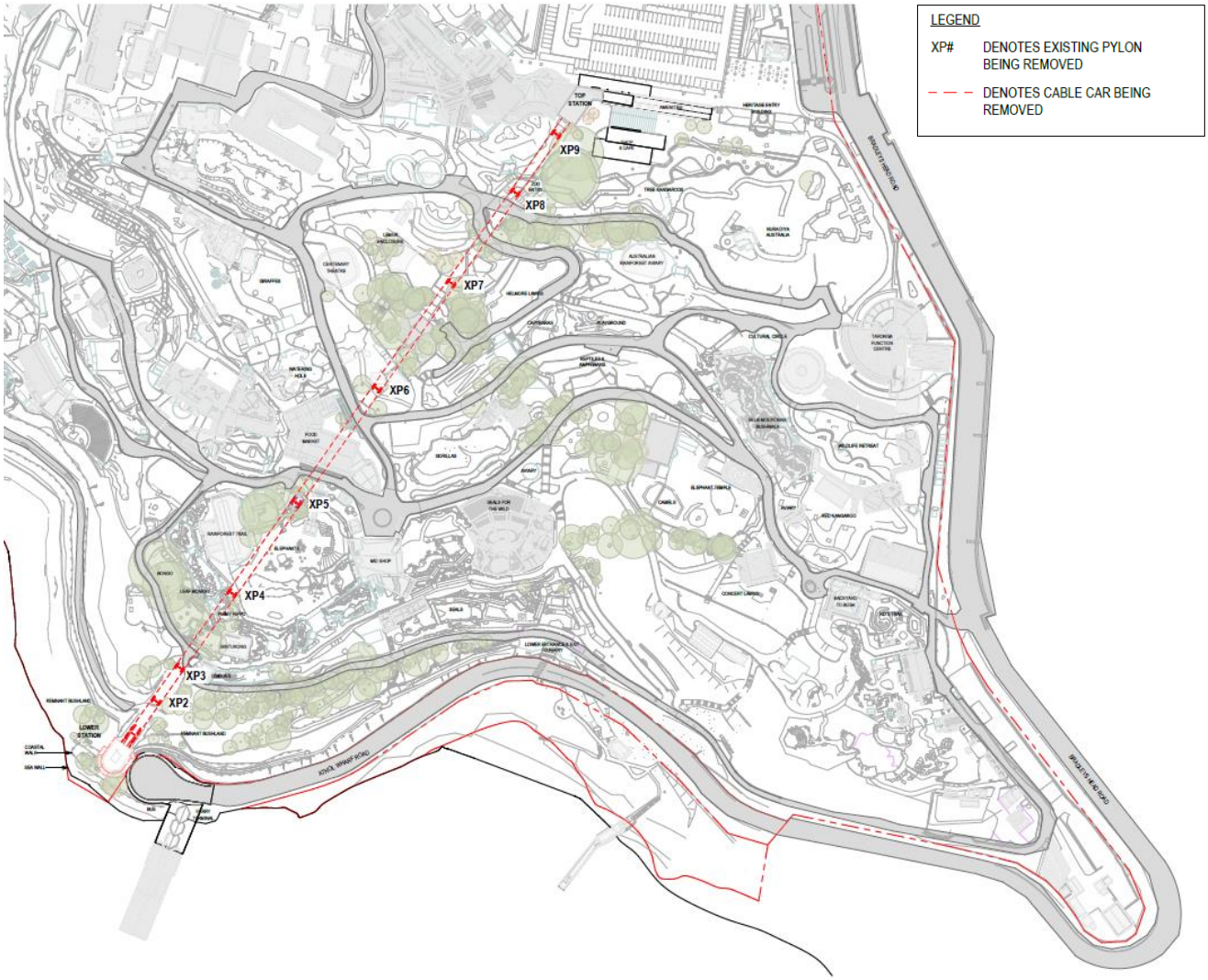
2.2. Former Sky Safari

As noted above, the former Sky Safari is an ageing asset within the Zoo that was retired on 31 January 2023. The former Sky Safari route is a lineal route of 450 metres with each one-way journey taking approximately 4 minutes.

Access to the retired Sky Safari was open to all Zoo visitors generally between the hours of 9.30am – 4.15pm as well as on special occasions such as VIVID or to transport guests to conference facilities. The majority of trips were only one way from the Lower Station near the Taronga Zoo Ferry Wharf as they entered the Zoo or from the Top Station near the Top Plaza (Main Entrance) as they exited the Zoo.

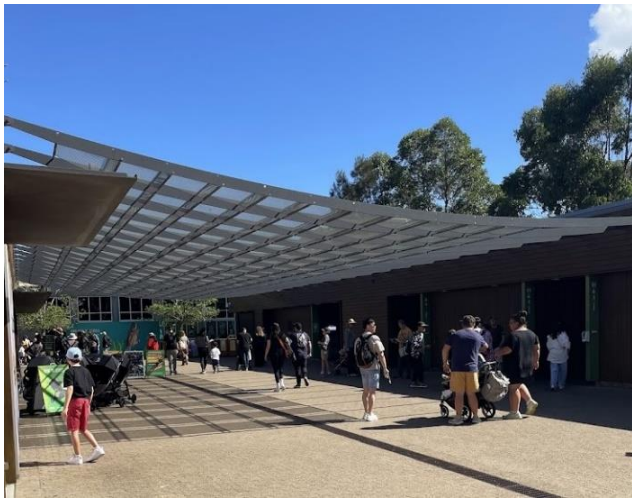
The former Sky Safari cable cars incorporated 21 cable cars with a maximum capacity of six guests and could accommodate wheelchairs up to a width of 610mm but prams or wheelchairs which did not fold could not be transported given the size restraints. Taronga experienced capacity constraints in peak periods, with visitors waiting up to 60 minutes at the bottom station after arriving by ferry.

Figure 6 Former Sky Safari Route and Pylon Locations



Source: Studio SC

Figure 7 Site photos



Picture 3 Taronga Upper Entrance Plaza

Picture 4 Current cable car storage (location of future Top Station)

Picture 5 Existing pylon (XP5) and cable visible from inside the Zoo (near the African Savannah exhibit)

Picture 6 Existing pylon (XP4) and cable visible from inside the Zoo (near the Taronga Food Market)

Picture 7 Existing Lower Station and queuing from Athol Wharf Road

Picture 8 Supporting pylons and sandstone under the existing Lower Station

Source: Urbis

The key features of the site which have the potential to impact or be impacted by the proposed development are summarised in **Table 3**.

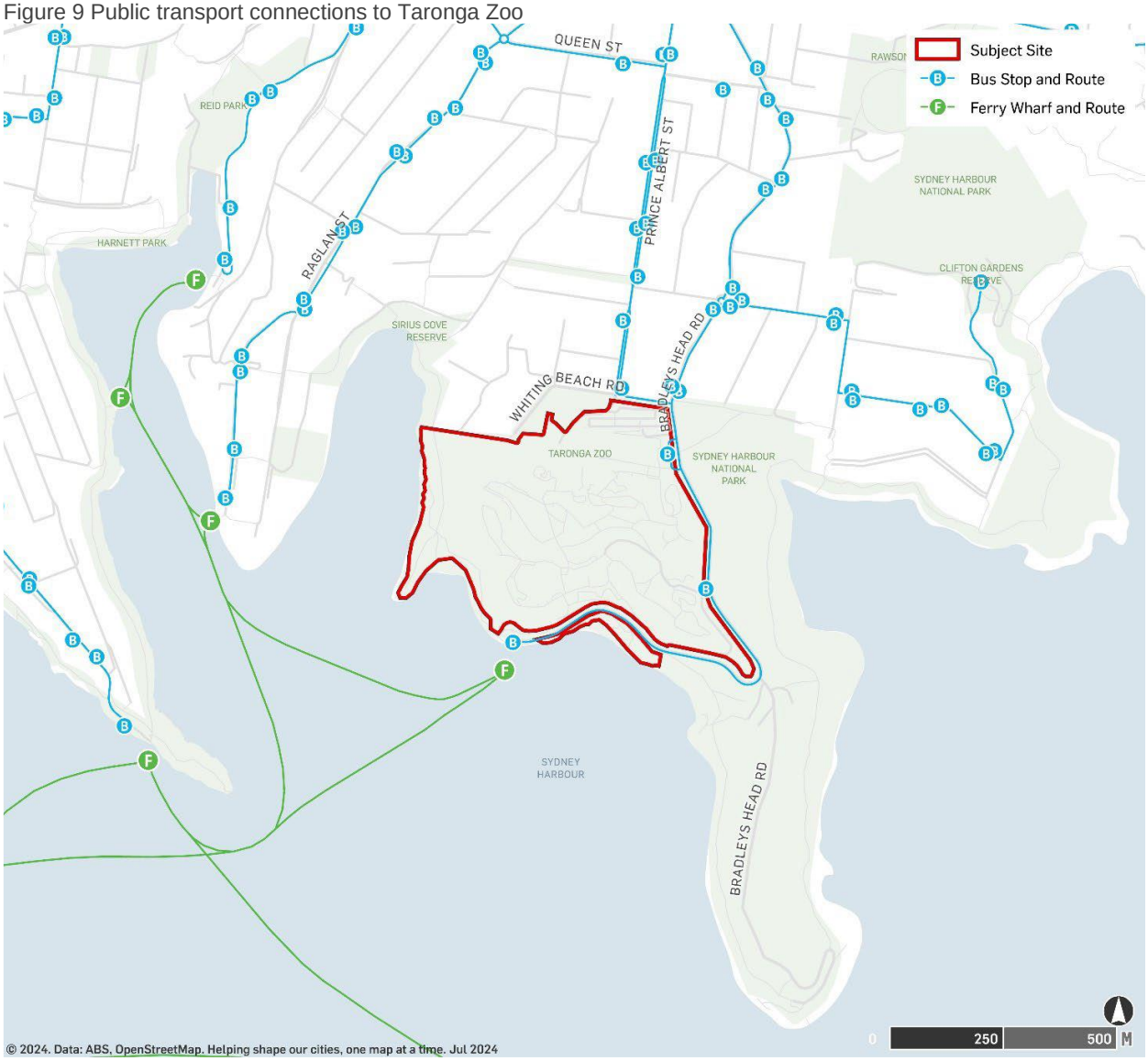
Table 3 Key Features of Site and Locality

Descriptor	Site Details
Country	Taronga Zoo is located on Cammeraigal Country.
Zoning	SP1 Special Activities (Zoological Gardens)
Land Configuration	The overall Zoo is relatively steep with a generally shallow thickness soil profile (characteristically of sand and gravel filling) typically less than 1.5 metres deep, overlying low and medium strength sandstone bedrock. From the top to bottom of the site is approximately 67 metres which visitors need to traverse to experience the entire site. The location of new stations and pylons are all located in land heavily disturbed by existing development within the Zoo footprint. The general area of the lower station has undergone substantial cut and fill earthworks associated with the former Lower Station which is demonstrated through various retaining walls between 1 m to 3 m high across the site, creating sudden changes in levels on the hillside.
Flora and Fauna	The subject site is comprised of existing buildings and hardstand with areas of remnant native vegetation and exotic vegetation are present. A Biodiversity Development Assessment Report (**BDAR**) has been prepared by Narla Environmental (**Appendix S**) which has not identified any areas of Outstanding Biodiversity Value within the Sky Safari subject site or surrounding area. Current vegetation within the Sky Safari site area is largely comprised of planted vegetation that is subject to landscaping and regular maintenance by TCSA's horticulture team. Field surveys conducted by Narla confirmed that one (1) native Plant Community type (PCT 3594: Sydney Coastal Sandstone Foreshores Forest) was identified within the site area. Vegetation within this zone consists of a mixture of predominately planted locally indigenous native species, with minor levels of weed infestation. The site investigation area has been identified as a known habitat for the *Lathamus discolour* Swift Parrot, which is a threatened species. Further assessment of the biodiversity impacts of the proposal are summarised in **Section 6.8** of this report.
Non-Aboriginal Heritage	The Zoo was constructed on the current site between 1913-1916, with the official opening date Saturday 7 October 1916. Taronga Zoo has been modified extensively over time, reflecting social and cultural expectations on approaches to animals in captivity. The site is a locally listed heritage item (Item 34) within the *Mosman Local Environmental Plan 2012* (**MLEP**) as shown in **Figure 8**. The item is identified as the '"Rainforest Aviary", "Elephant House", "bus shelter and office, floral clock and upper and lower entrance gates". The upper and lower entrance gates are located in proximity to the former Sky Safari stations. Although Taronga Zoo is not listed on the State Heritage Register, as a Crown authority, a database of heritage assets called a Section 170 Heritage and Conservation Register is required. The Register identifies over 250 individual built and landscape heritage items within Taronga Zoo. Consideration of identified heritage items has occurred as part of this proposal. An assessment of the potential impacts and mitigation measures associated including a summary of Section 170 heritage items in close proximity to proposed works are summarised in **Section 6.11** of this report.

Descriptor	Site Details
Figure 8 Extract of MLEP Heritage Map  *Source: Mosman Council*	
Existing Road Network	Bradleys Head Road functions as a local collector road and is aligned in a north-south direction linking the area with Military 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. Kerbside parking is permitted north of the site entrance and angled parking spaces are marked south of the entrance. Whiting Beach Road is a local road and in proximity to 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. Unrestricted kerbside parking is permitted on the northern side of the road.
Parking and Pick-Up / Drop Off Arrangements	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. Approximately 650 visitor parking spaces are available within the main multi-storey parking facility accessed via Bradleys Head Road as indicated in **Figure 10.** An overflow parking area is available which can accommodate approximately 180 further parking spaces and is typically made available during peak period and once the multi-storey car park approaches its capacity.

Descriptor	Site Details
	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. A range of drop off and pick up opportunities are also 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
Public and Active Transport	The Zoo is well serviced by local public and active transport services and is accessible by bus and ferry. Bus stops are located at the main entrance off Bradleys Head Road and the Taronga Zoo ferry wharf is located at southern entrance of the Zoo. All services are available at least every 30 minutes during peak hours. Based on available information and historical data from the Zoo, approximately 60 per cent of Taronga Zoo visitors travel to and from the zoo by ferry or bus, with the remaining 40 per cent using private vehicles. The nearest cycle route in vicinity of the site runs along the Bradleys Head Road-Athol Wharf Road.

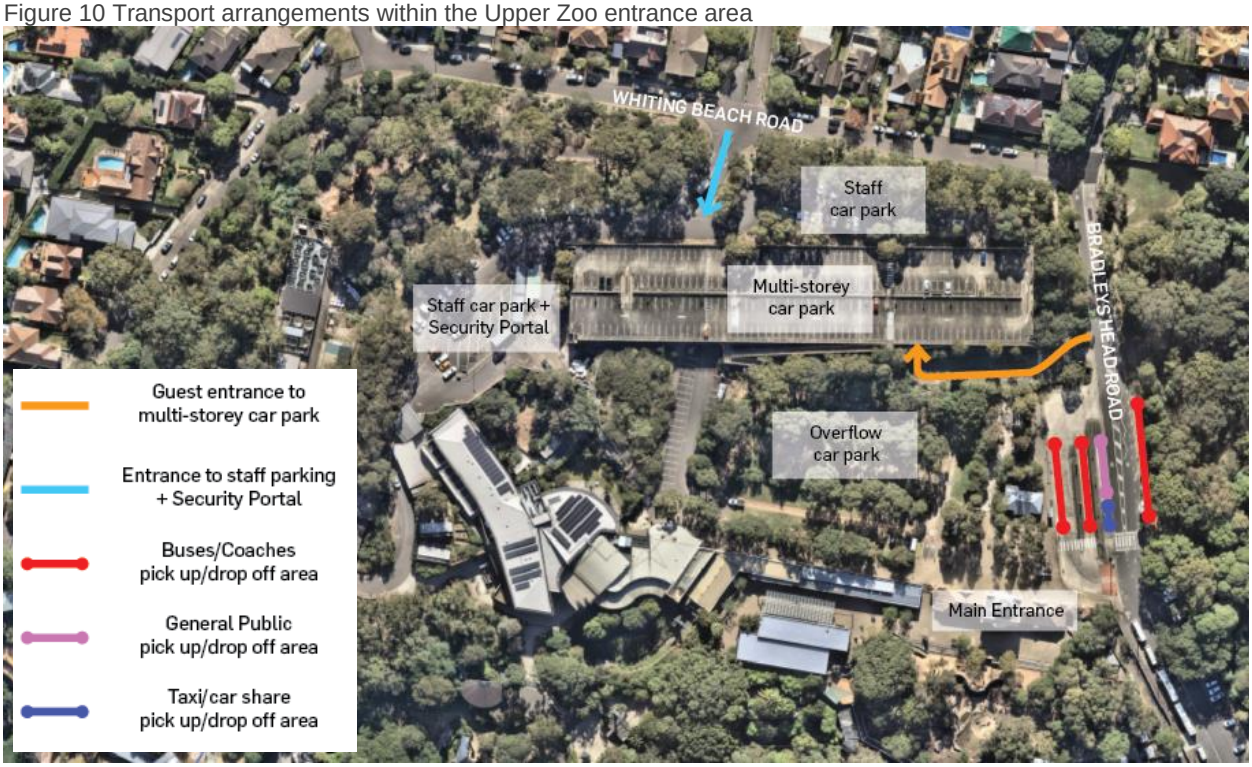
Figure 9 Public transport connections to Taronga Zoo



Source: Urbis

Descriptor	Site Details

Figure 10 Transport arrangements within the Upper Zoo entrance area

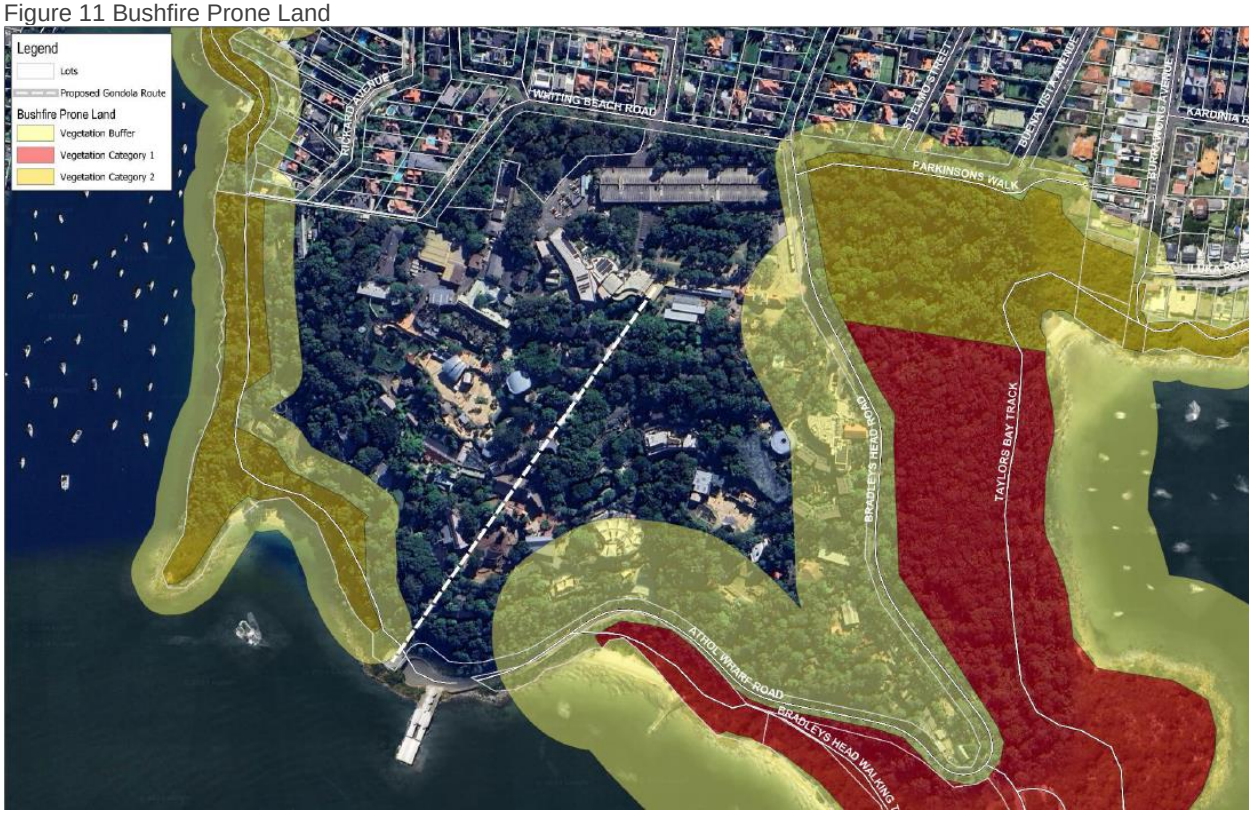


Source: Urbis

Services	The site currently contains and is connected to all necessary services including electricity, water, drainage and sewage. Required relocation, upgrades and augmentation of these services and infrastructure will occur as required subject to detailed design and construction. An assessment of the potential impacts and mitigation measures associated with infrastructure servicing is provided in **Section 6.14** of this report.
Contamination	Based on multiple investigations across the site, there are no clear indicators of contaminating activities within the Zoo other than imported fill and in the later years demolition of buildings that may have contained asbestos-containing material. An assessment of the potential impacts and mitigation measures associated with contamination impacts is provided in **Section 6.14** of this report.
Stormwater and Flooding	The overall Zoo site generally falls from north to south, towards Sydney Harbour and is not identified as flood prone land. The site incorporates a network of inground pits and pipes connecting to existing downstream internal stormwater drainage of Taronga Zoo to discharge via gravity. Taronga Zoo has an existing Waste Water Treatment Plant located to the south-west corner of the Zoo which captures overland stormwater flow from within the Zoo. Excess stormwater during large storm events is treated via the treatment plant prior to being redirected to an ocean outfall. The treated water from the plant is reused on site for irrigation, cleaning/hose down and toilet flushing purposes. An assessment of the potential impacts and mitigation measures associated with stormwater and flooding is provided in **Section 6.10** and **Section 6.14** of this report.
Bushfire Prone Land	As illustrated in **Figure 11** below, the site and surrounds are partially mapped as bushfire prone land. The proposed route is partially located within land identified as 'Vegetation Category 2' which is associated with vegetation along the Sydney

Descriptor	Site Details
	Harbour National Park coastal walk. This applies to a small area of the route to the west of the Lower Station and partially covers the existing Lower Station. An assessment of the potential impacts and mitigation measures associated with bushfire is provided in **Section 6.14** of this report.

Figure 11 Bushfire Prone Land



Source: Australian Bushfire Assessment Consultants

2.3. Cumulative Impacts with Future Projects

There are a number of recently approved and completed State Significant projects within the Taronga Zoo site as illustrated in **Figure 12**. Approved and likely future developments which may be relevant in the cumulative impact assessment of the proposal are summarised in **Table 4**.

Table 4 Approved and Likely Future Developments

DA Reference	Development Description
Upper Australia Precinct (SSD-10456)	Approval was granted on 21 December 2020 by DPHI for the redevelopment of the Upper Australia Precinct, now known as the Nura Diya Precinct. Koala, macropod and dingo exhibits opened to the public in April 2023. The koala encounters areas are planned to open fully by the end of October 2024. The Nocturnal House opened at the end of September 2023.
Reptile and Amphibian Conservation Centre (SSD-17483577)	Approval was granted on 24 December 2021 by DPHI for the relocation and redevelopment of the existing reptile and amphibian exhibit within Taronga Zoo to provide an updated exhibit which is purpose built for animals which is now known as the Amphibian and Reptile Conservation Centre. Construction of all approved works are now completed, and the Precinct has recently opened to the public.
Taronga Wildlife Hospital Nutrition Centre (SSD-17655146)	Approval was granted on 18 August 2022 by DPHI for the construction of a nutrition centre to support the health and wellbeing of wildlife, and Taronga Zoo's animals,

DA Reference	Development Description
	through the provision of veterinary services and dietary/nutritional requirements. The centre will be ancillary to the approved Wildlife Hospital. There is currently no firm project dates for construction as there is further design development occurring with the TCSA Capital Works Team.
Taronga Wildlife Hospital (SSD-33211326)	Approval was granted on 30 June 2023 by DPHI for the construction of a new state of the art Wildlife Hospital. The wildlife hospital facility will provide dedicated and purpose built spaces for the husbandry, treatment, diagnostics and education specifically related to the care of wildlife. The tender has been awarded and work is expected to start in Q3 2024. There will be a six month overlap between the Wildlife Hospital finishing in 2025 and Sky Safari starting which is acknowledged in the Construction Management Plan prepared by RPS **(Appendix GG**).

Figure 12 Map of Current and Future Projects at Taronga Zoo

Source: Urbis

The potential cumulative impacts of the project are addressed in **Section 6** of the EIS in accordance with the DPHI *Assessing Cumulative Impacts* guidelines.

2.4. Feasible Alternatives

Clause 192(c) of the *Environmental Planning and Assessment Regulation 2021* (**EP&A Regulations**) requires an analysis of any feasible alternatives to the proposed development, including the consequences of not carrying out the development.

Throughout the development of the project, multiple project alternatives were identified in relation to both the overall route of the Sky Safari and the stations themselves. TCSA identified four alternative routes which were considered in respect to the identified need for the upgrades to the proposed Sky Safari. Each of these options is listed and discussed in **Table 5** below.

Table 5 Assessment of Feasible Alternatives

Option 1 - Do Nothing

The former Sky Safari was an ageing asset within the Zoo and was retired on 31 January 2023. Maintaining the existing infrastructure presented major operational challenges for TCSA for the following reasons:

- The existing infrastructure did not meet current demand, with 21 operating cable cars providing capacity for 720 passengers per hour. The Zoo experiences capacity constraints in peak and mega-peak periods, with visitors waiting up to 60 minutes at the bottom station after arriving by ferry. The current queuing areas provide minimal weather protection.
- The cable cars and waiting areas are not fully DDA compliant and accessible to all. To get from the Taronga Zoo ferry wharf, patrons with accessible infrastructure requirements must use a ramp or a lift. The lift was small and experiences capacity constraints which impacts timing for visitors. When boarding a cable car, door width restrictions limit wheelchair width to under 625mm.
- The current Sky Safari is now a 25-year-old asset and has reached a significant stage in its operations and maintenance lifecycle where the entire system would be required to be completely rebuilt in the next 5-10 years.

The redevelopment of the former Sky Safari will allow the Zoo to update the now obsolete infrastructure on site and provide new facilities which improve accessibility, ease increased demand and assist the public in moving around the Zoo.

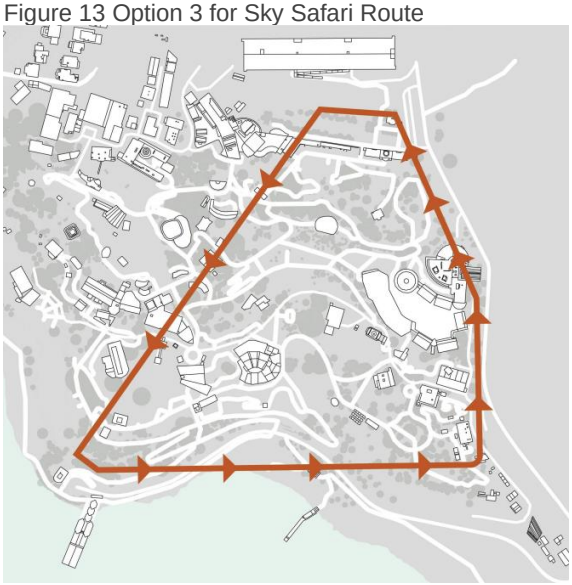
Option 2 – Demolition of existing infrastructure + Alternative Travel Methods

The Sky Safari has been a much-loved fixture of the Taronga Zoo experience since it was first opened in 1987. With the current infrastructure obsolete, buses are currently providing access from the Taronga Zoo Ferry Wharf to the upper entrance and arrival plaza.

The demolition of the former Sky Safari without a replacement of infrastructure would result in the loss of an iconic part of the Zoo experience and would have long term traffic impacts on Bradleys Head Road. The replacement of former Sky Safari and introduction of travel from both the top and lower entrances of the Zoo will allow for a more efficient flow of guests, while also providing a unique opportunity to see and connect with an array of wildlife species.

Option 3 – Perimeter Route

Figure 13 Option 3 for Sky Safari Route



Source: Studio SC

One of the original options investigated by TCSA was a 1.5km perimeter loop of the Zoo site. This route would travel in a counter-clockwise direction from a new lower station adjacent to the ferry wharf then travel around the Zoo boundary. Potential stations were investigated at the upper entrance and adjacent to the function centre facilities.

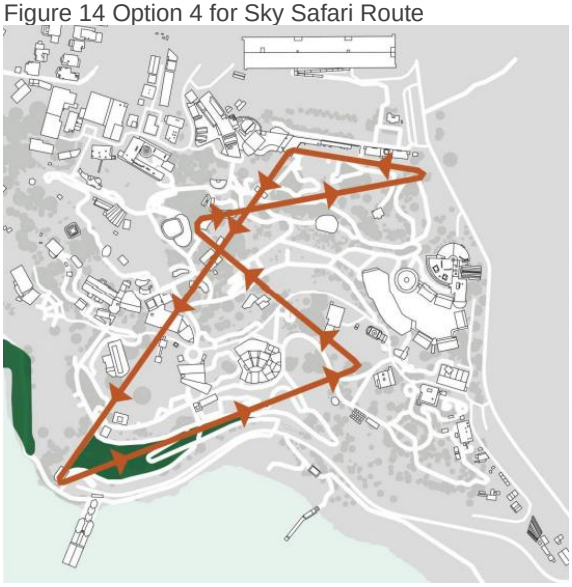
During the investigation of this route, the following impacts/key risks were identified:

- Potential impacts on a range of back of house facilities on the south-east portion of the site.
- Likely impacts on remnant bushland along the harbour foreshore, including crossing over land outside of the Zoo boundary.
- Impacts on overflow parking and arrival experience.
- Reliance on land outside of the Zoo grounds including Bradleys Head Road and across the southern portion of the route.
- Visual impacts associated with pylons along Bradleys Head Road adjacent to Sydney Harbour National Park.

Overall, the risks associated with this option were considered to outweigh the benefits.

Option 4 – 'B' Route

Figure 14 Option 4 for Sky Safari Route



Source: Studio SC

Option 3 was developed to maximise the accessibility of the guests to key areas of the Zoo and adding new opportunities for guests to view Sydney Harbour and the Zoo from above. This route proposed three stations:

- Top station: Located within the entrance plaza adjacent to the heritage entrance
- Mid station: Located within the Zoo adjacent to the Centenary Theatre; and
- Lower station: Replacing the existing lower station

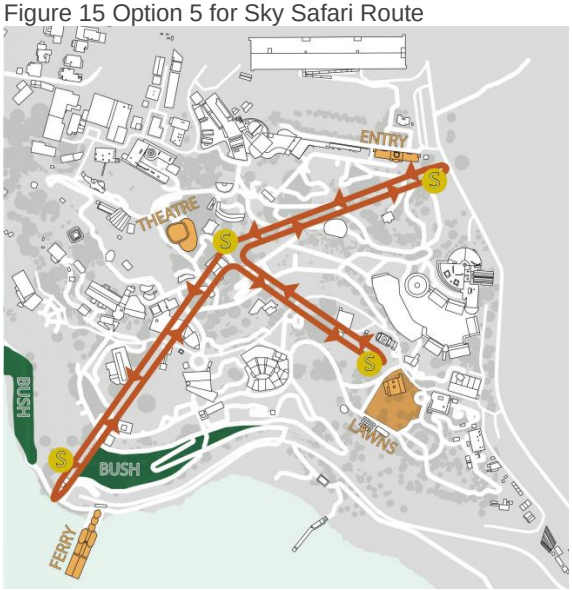
During the investigation of this route, the following impacts/key risks were identified:

- Complexity with cable car design resulted in the need to extend the height to ensure that the cable car route crossed over, creating excessive visual clutter.
- To achieve the required turn from lower station to the first turn, there were unresolved impacts on remnant bushland (illustrated in green) which would likely require infrastructure to cross onto Bradleys Head Road, which is Council owned land and outside of the Zoo boundary.
- This route would run cables within the arrival plaza directly behind the Upper Entrance, a locally listed heritage item. This was likely to impact both movement within the Zoo plaza as well as impacts on the heritage item by virtue of requiring pylons within the arrival plaza.
- Given the length of the route, the route included a high number of pylons within or directly adjacent to animal exhibits and significant trees.

Overall, the risks associated with this option were considered to outweigh the benefits.

Option 5 – Arrow Route

Figure 15 Option 5 for Sky Safari Route



Source: Studio SC

To rationalise the cable car system to meet supplier engineering needs and remove the need to overlap the route, Option 4 was investigated which resulted in a 1 km counter-clockwise route. This option maintained the three stations from Option 3 and created a new 'leg' and station connecting to the Bush to Backyard and lawns south of the function centre facilities.

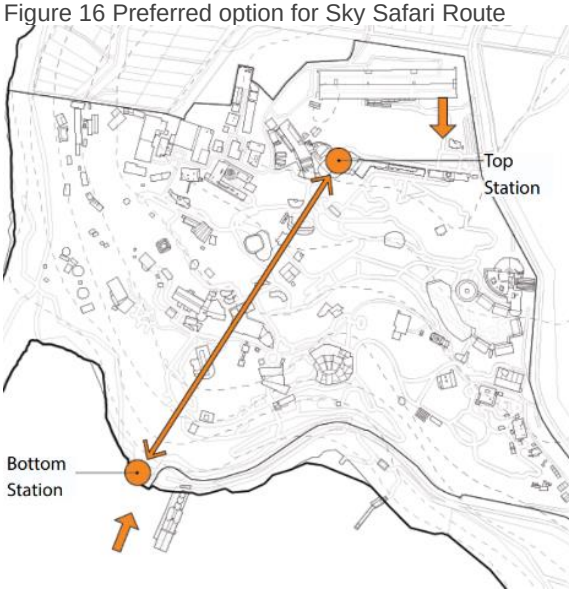
While this option minimised impact on significant trees within the Zoo and visual impact, the following impacts/key risks were identified:

- Maintained perceived heritage impacts on the Upper Entrance and the functionality of the arrival plaza.
- Relied on up to 11 pylons throughout the Zoo that had a range of potential impacts on trees and animal exhibits.

Overall, the risks associated with this option were considered to outweigh the benefits.

Option 6 – Preferred Option (Retention of current route)

Figure 16 Preferred option for Sky Safari Route



Source: Studio SC

It is considered that the proposed redevelopment of the former Sky Safari presents as the most strategically viable of all the options.

Overall, the revitalised Sky Safari:

- Relies on the existing route on site but will feature additional, larger cable cars that are more accessible, dramatically improving the guest experience journey for all visitors.
- Reduces the total number of pylons across the site to six
- Maintains the two existing stations but integrates queuing, with equitable access and significant shading as well as additional amenities to improve the guest experience including universal accessibility.
- Does not result in any changes to existing animal exhibits within the Zoo.
- Allows for entrance and egress at both locations allowing better connections and movement on site and allowing for a more efficient flow of guests around the Zoo.
- Connects with the existing arrival experience without impacting on the heritage significance of the Upper Entrance.
- Increases the Sky Safari's former capacity, which will reduce queuing. This in turn supports a greater capacity to the bottom station, encouraging public transport use.
- Responds to stakeholder feedback including visual impact associated with a longer route.

While the changes in the route have resulted in a number of different stations, there has also been many options investigated into the final design of the two stations. A summary of changes to the two stations is provided as part of the response to SDRP comments in the Design Report prepared by Studio SC (**Appendix F**).

2.5. Strategic Planning Alignment

The proposed development is aligned with the State, district and local strategic plans and policies applying to the site as outlined in **Table 10** below.

Table 6 Strategic Planning Consistency

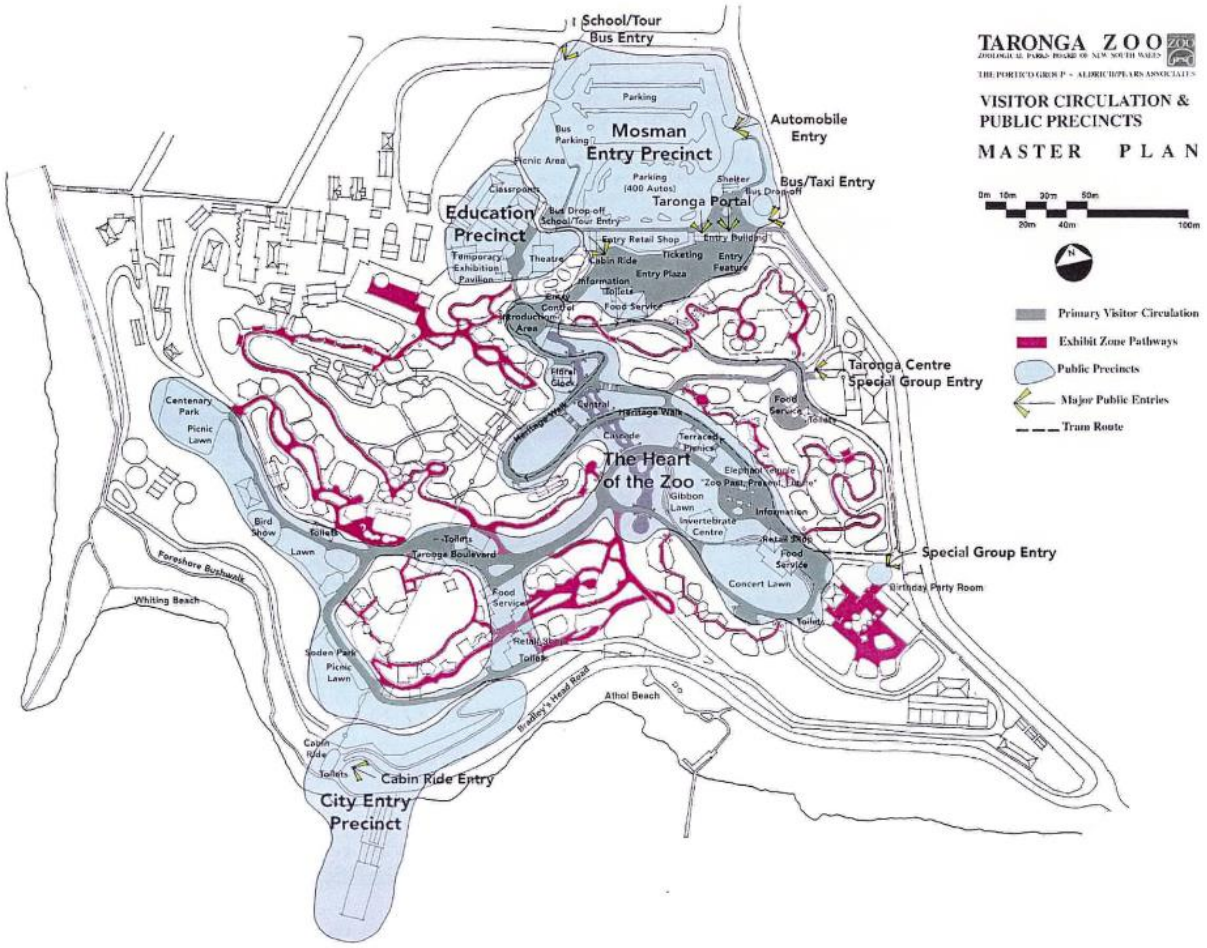
Policy	Alignment	
Greater Sydney Region Plan – A Metropolis of Three Cities	The Greater Sydney Region Plan (**Region Plan**) provides the overarching strategic plan for growth and change in Sydney. It is a 20-year plan with a 40-year vision that seeks to transform Greater Sydney into a metropolis of three cities - the Western Parkland City, Central River City and Eastern Harbour City. It identifies key challenges facing Sydney including increasing the population to eight million by 2056, 817,000 new jobs and a requirement of 725,000 new homes by 2036. The Proposal will enhance and revitalise critical infrastructure at the end of its useful life; for the Zoo and is generally consistent with the relevant objectives of the Region Plan as follows:	
	Objective 13: Environmental heritage is identified, conserved and enhanced.	The redevelopment of the Sky Safari will reinstate existing infrastructure within the Zoo. The retention of the existing route reduces any potential impacts on heritage items within the site.
	Objective 15: The Eastern, GPOP and Western Economic Corridors are better connected and more competitive	The Proposal is situated within the Eastern Economic Corridor. The Proposal will facilitate 280 construction jobs and 9 operational jobs. Further, the Proposal will maintain an iconic part of the Taronga experience and help the organisation deliver on its strategic priorities of inspiring and driving change toward a shared future for wildlife and people.

Policy	Alignment	
		Bolstering the financial and commercial sustainability of the organisation will in turn strengthen the delivery of its critical conservation and education work.
	Objective 18: Harbour CBD is stronger and more competitive	The Sky Safari, as a key tourism attraction within Sydney and the State will positively contribute to a stronger and more competitive Harbour CBD. The Proposal will increase Sky Safari's former capacity, allowing for a more efficient flow of guests around the Zoo, while also enhancing opportunities for educating guests on the Zoo's conservation efforts. Additionally, Sunset and Twilight Sessions will positively contribute to Sydney's vibrant 24-hour economy. Importantly, the Proposal will support the Zoo in responding to the broader economic of NSW recovery from COVID 19.
	Objective 27: Biodiversity is protected, urban bushland and remnant vegetation is enhanced	The proposed route aligns with the former Sky Safari route. This ensures that tree removal is minimised across the site. Given the location of the lower station, there are opportunities to regenerate vegetation to connect with the adjoining coastal walkway and integrate additional native species across the site.
Our Greater Sydney 2056: North District Plan	The North District Plan is a 20-year plan to manage growth in the context of economic, social and environmental matters to implement the objectives of the Greater Sydney Region Plan. The Proposal aligns with the relevant planning priorities of the District Plan by: ▪ Supporting the growth of an internationally recognised tourism destination. ▪ Providing upgraded facilities to contribute to the ongoing operation of a historically significant tourist facility. ▪ Providing continued job opportunities within the North District.	
Mosman Local Strategic Planning Statement	The Mosman Local Strategic Planning Statement (LSPS) sets out the Council's 20-year vision for land use planning in Mosman, along with a suite of planning priorities and actions relating to housing, local centres, infrastructure and the environment. Taronga Zoo is a significant tourism attractor to the Mosman area and plays an important role in the Mosman LGA, providing employment opportunities and contributing to the local economy. Taronga Zoo is identified in the LSPS as a regional attractor to which Mosman is renowned. All foreshore land in Mosman at or below the 60 metre contour line is identified as being scenically significant given its importance to Sydney and Middle Harbours and is subject to Section 6.4 Scenic Protection of the Mosman Local Environmental Plan 2012. The Proposal will be established along the existing route to facilitate a seamless integration with the existing built and natural environment within and proximate to the site inclusive of the environmental heritage and scenically significant setting. The Proposal will continue to enhance the Zoo's alignment with the LSPS by: ▪ Providing improved infrastructure to meet community needs and foster a culturally rich, creative and socially connected Mosman community through the Proposal's design, including but not limited to its Connecting to Country Framework, site-specific biodiversity response and environmental heritage treatment. ▪ Protecting, conserving and enhancing the natural, visual, environmental and heritage qualities of Mosman's foreshore scenic area, and significant views to and from foreshore slopes. ▪ Upgrading Zoo facilities, which provide an overall unique combination of recreational, cultural, tourism and amenity benefits to Mosman LGA. ▪ Providing opportunities for local employment during construction and operation.	
NSW Visitor Economy Strategy 2030	The NSW Government's Visitor Economy Strategy 2030 (**Visitor Economy Strategy**) provides a roadmap to support all industries involved in the visitor economy to recover from the impact of drought, bushfires and COVID-19 and to grow in the future. The strategy sets a bold vision for NSW to be the premier visitor economy of the Asia-Pacific by 2030. The Proposal will provide unique, affordable, family-focused sightseeing tourism infrastructure that provides comfortable all-season experiences to support year-round visitation to the Zoo. This	

Policy	Alignment
	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. The Proposal features additional, larger cable cars which are more accessible, dramatically improving the guest experience journey for all visitors. Larger cable cars will improve accessibility by accommodating prams and wheelchairs which are not required to be folded. The current Sky Safari only accommodates up to a 610mm width for wheelchairs and prams. Improving accessibility is a critical component of the proposal as the current Sky Safari is not fully DDA compliant. Overall, the Zoo attracts tourists from target markets identified within the Visitor Economy Strategy, including intrastate and international regions such as the Asia-Pacific. This will positively contribute to the domestic international tourism industry of Sydney and NSW. Recovery in the tourism and events industry is vital given the social and economic impacts imparted during the COVID pandemic and to maintain Sydney's status as a global city.
Taronga Conservation Society Australia Strategic Plan 2021 – 2025	Taronga's Strategic Plan 2021-2025 (**TCSA Strategic Plan**) builds on Taronga's expertise in wildlife conservation, education and community engagement, to tackle some of the most pressing issues that humanity and our planet have ever faced. The TCSA Strategic Plan recognises Taronga's important role and responsibility in the protection and restoration of nature through targeted action and by inspiring and engaging the two million guests that visit Taronga Zoos each year. Overall, the Proposal reflects the strategic priorities of the plan and will: ▪ Support transformational guest experience through the upgrade of existing infrastructure to meet demand and improve amenity. ▪ Support the overall economic growth of the Zoo to assist in facilitating the expansion of the Zoo's current conservation work and remit which extends beyond the care of animals within its Zoos. ▪ The Proposal positively contributes to the Zoo's vision to help secure a shared future for wildlife and people with activities that span the fields of animal care, recovery, education, community engagement, guest experience and science.
Better Placed	Better Placed is an integrated design policy for the built environment developed by the NSW Government Architect. The policy aims to enhance the quality of life for the people of New South Wales by promoting good design in the planning, design, and construction of buildings, spaces, landscapes, and neighbourhoods. Studio SC The Design Report prepared by Studio SC (**Appendix F**) responds to the Better Placed principles and discusses how the proposal has adopted the seven objectives into the design process. Whilst the project is an infrastructure item, connection and transportation around the Zoo is a key element of engaging with the location, setting and character of the zoo, as a location that balances built form with a natural environment. Collaboration within the project team has focused on preserving and responding to the local landscape characteristics of the site in a way that can support an improved and accessible cable car experience. By adopting the objectives of the Better Placed policy, the development responds to the key challenges and directions for NSW.
Connecting to Country Framework	The NSW Government Architect's "Connecting to Country" framework aims to integrate Aboriginal cultural knowledge into the planning, design, and development of the built environment. The proposal has been designed with a Country-centred approach guided by Aboriginal people, who know that if we care for Country, Country will care for us. In listening and exploring the opportunities for the project, the design team including FCAD (First Nations Design Consultant), Studio SC, and Newscape (Landscape Architects) consulted and engaged with Taronga Indigenous staff and the Taronga Aboriginal Advisory Group. As part of this process, the project has adopted the design strategies to connect the Sky Safari to Cammeraigal Country. TCSA are committed to continuing their dialogue with First Nations People and will continue to integrate story telling into the design of the Sky Safari.
Zoo 2000 – 'The View to the Future' Masterplan	*Zoo 2000 – 'The View to the Future' Masterplan* (**Zoo Masterplan**) sets the overarching vision for works within the Zoo and a range of capital works projects. At the time of preparation of the Zoo Masterplan 2000, the cable car which is referenced as the 'Cabin Ride' was undergoing renovation with stations located within the Mosman Entry Precinct and the City Entry Precinct. The redevelopment maintains the identified locations of both stations. It is noted that the Mosman Entry Precinct serves approximately 40% of visitors and the City Entry Precinct servicing the majority of the Zoo's visitors via the ferry. The proposed redevelopment aims to re-align with the historic modal shift and encourage Zoo guests to use

Policy	Alignment
	public transport. The redevelopment of the Sky Safari aligns Zoo Masterplan as it aims to improve accessibility and improve the guest experience visiting the Zoo and using the Sky Safari.

Figure 17 Taronga Zoo Visitor Circulation and Public Precincts



Source: TCSA

Taronga Zoo Master Plan Urban Design Principles and Visual Analysis (UDAS Guidelines) May 2001	The UDAS Guidelines form part of the Zoo Masterplan and provide a framework for assessing development within the Zoo. The existing cable car and associated cutting and pylons are identified as a significant item within the site. The guidelines acknowledge that the existing cable car is visible from the harbour as it follows the north-south ridge. As noted in the UDAS Guidelines: *The ridge is highly exposed, particularly the portion close to the foreshore, any more generally te lower southern edge of the ridge. This high exposure, however, provides opportunities for expansive, open views.* The proposal reduces the number of pylons along the ridgeline and retains the opportunity for expansive, open views for guests experiencing the Sky Safari. To align with the UDAS Guidelines, a Visual Impact Assessment has been prepared by Ethos Urban (**Appendix L**) to address the visual impacts associated with the redevelopment of the Sky Safari.

2.6. Justification Summary

The Proposal achieves significant strategic merit for the following reasons:

- The Proposal has considered the key site characteristics through a detailed analysis of the relevant opportunities and constraints to which the Proposal is thoughtfully designed within.
- The Proposal has considered the wider locality including surrounding infrastructure, public transport and the cumulative impacts of other projects in accordance with DPHI's Cumulative Impact Assessment Guidelines for State Significant Projects.
- The Proposal has considered feasible alternatives and how these would meet the objectives of the development, this includes the consequences of not carrying out the development. The analysis has found that Option 6 is the most strategically viable of the all the options.

3. Project Description

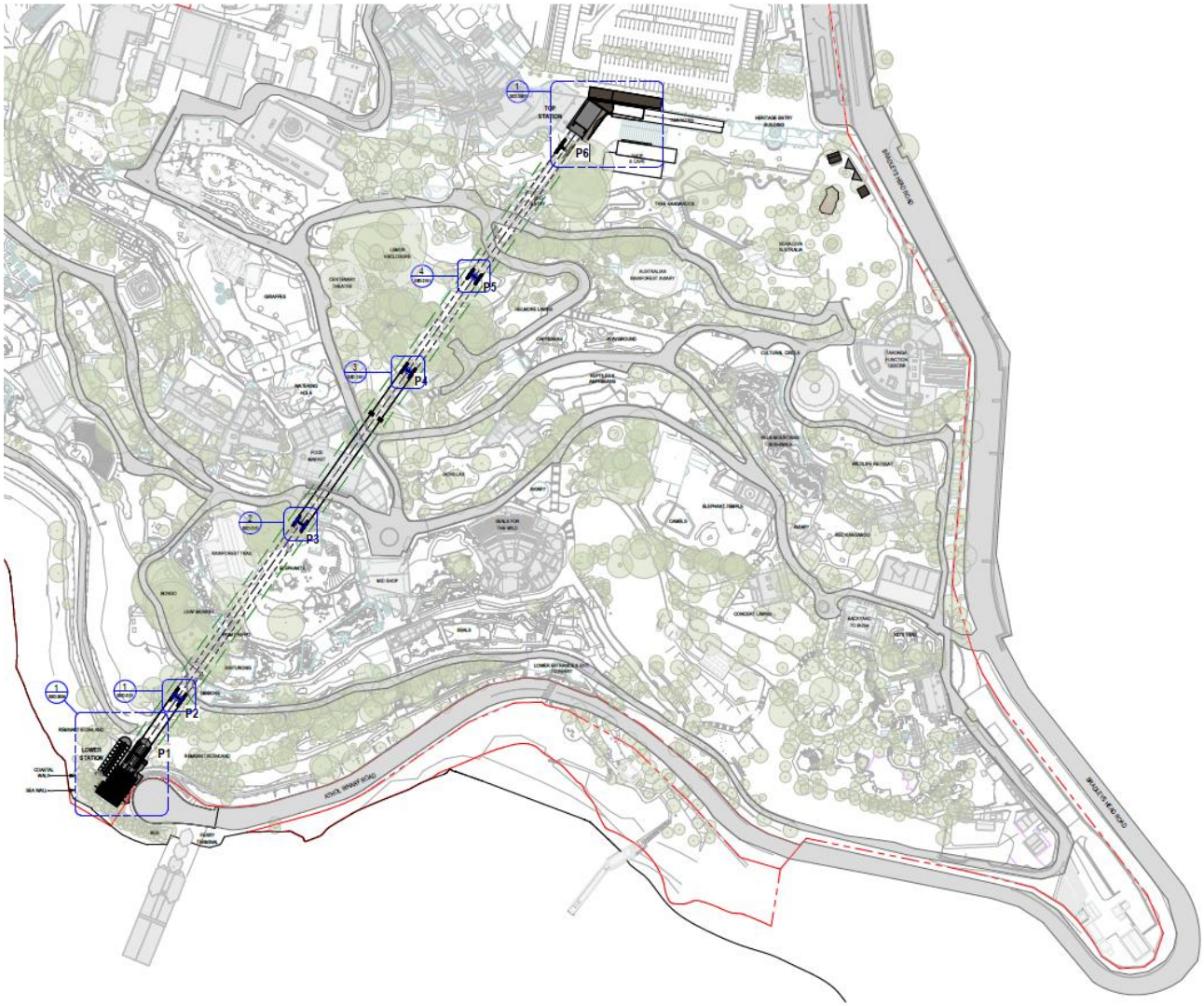
The following sections of the EIS summarise the key numeric components of the proposed development and describe the demolition, site preparation, construction and operational phases in further detail.

The reimagined cable car experience introduces approximately 20 to 25 new cable cars that are accessible to visitors with prams, larger wheelchairs and mobility issues, to ensure all visitors to the Zoo have a safe and dignified experience in utilising the Sky Safari. The new cable cars are also larger in capacity than existing cable cars to meet current and future visitor demand to visit the Zoo.

The infrastructure associated with the cable cars will incorporate six (6) pylon towers ranging in height from 4.3m (P2) to 36.5m (P5). The route itself has been carefully located to minimise impact on remnant bushland, existing trees and the archaeological and built heritage as well as scenic values of the Zoo.

Overall, the new route maintains the existing footprint of the Sky Safari. However, will require the cable car corridor to increase from 9m to 12.5m to facilitate the wider cabins (allowing for 10 patrons) as well as prams and wheelchairs.

Figure 18 Sky Safari Cable Car Route and Pylon Locations



Source: Studio SC

Figure 19 Photomontages of new Sky Safari Stations

Picture 9 Photomontage of Top Station (Nature Station)

Source: Studio SC

Picture 10 Photomontage of Lower Station

Source: Studio SC

The key components of the proposed development are summarised in **Section 6**. A copy of the architectural plans prepared by Studio SC are provided as **Appendix G**.

3.1. Project Overview

The following section summarises the components of the proposed development and describes the demolition, site preparation, construction and operational phases in further detail.

Table 7 Project Summary

Project Element	Summary
Project Area	The site has a total area of 28 hectares. Approximately 0.5 hectares of the site is expected to be disturbed by the project which includes the former Sky Safari Route.
Physical layout and design	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 and station platform adjacent to the Upper Entrance Plaza. The new station will provide Zoo guests with direct access to the Sky Safari via the existing Upper Entrance plaza. The station provides covered queuing within the heritage building and associated landscaping and shading provided in the plaza space. A new storage and maintenance building is attached to the Top Station which can accommodate approximately 20-25 cable cars. **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 prams, larger wheelchairs and with mobility issues. 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 and staff amenities. There are **six pylons**, one located at each station (top and lower) and four within Zoo compared to the existing nine pylons within the Zoo. There are no pylons outside of the Zoo grounds. ▪ Pylon 1 (4.3m above the station or 7.71m from existing ground level) – located in close proximity to the existing and proposed Lower station ▪ Pylon 2 (9.7m) – located by existing Pylon 2. ▪ Pylon 3 (26.2m) – located by the existing Food Court. ▪ Pylon 4 (35.7m) – in front of the existing Savannah toilet facilities. ▪ Pylon 5 (36.5m) – located to the north of the Helmore lawns; and ▪ Pylon 6 (6.5m)– located in close proximity to the existing and proposed Top station with Pylon 4.3m above adjoining station level
Use and Activities	The proposal results in the replacement of existing infrastructure within the Zoo grounds.
Demolition	Infrastructure associated with the former Sky Safari will be decommissioned and either removed and/or demolished.
Tree Removal	The proposed development results in the removal of four (4) category 'A' trees (Trees 10, 468, 473 and 552) and three (3) category 'Z' trees (Trees 472, 902 and 912). The proposed development will also retain 79 category 'AA' and 'A' trees and nine (9) 'Z' trees. A replacement strategy of 2:1 trees for all Category A and AA trees is proposed which is complemented by additional endemic plantings and mature trees.
Earthworks/Cut and Fill	It is anticipated that: ▪ The proposed Lower Station may require excavation or the placement of fill to depths of up to 3 m to form level pads at each proposed station. ▪ Drilling for bored piles to depths of up to 5 m will be required to support the proposed pylons (subject to loads and subsurface conditions).

Project Element	Summary
	▪ Additional excavation along the proposed cable car corridor, and near the stations to depths of up to 3 m will be required to allow sufficient clearance as the cable cars travel along the corridor and approach the stations.
Maximum height	Top Station – 6.73m to the top of the cable car enclosure Lower Station – 14.665m to top of the roof enclosure Pylons – 36.5m to the top of Pylon P5
Vehicular Access and Parking Arrangements	No changes are proposed to existing parking and access arrangements for the Zoo.
Signage	Consent is not sought for signage within the Zoo. Wayfinding and building identification signage will be undertaken as exempt development in accordance with Clause 1(f) of Schedule 2 of the MLEP.
Hours of Operation	Construction hours are limited to: ▪ 7.00am to 5.00pm on Monday to Friday; and ▪ 8.00am to 1.00pm on Saturday. The Zoo is currently in operation 24/7. It is intended that the Sky Safari will continue to operate within the following indicative hours to activate the site and create a new immersive experience to educate visitors on the work of the TCSA: ▪ Indicative Sunrise & Early Morning Sessions – Daylight savings (AEDT): 6:00am to 9:30am – Non-daylight savings (AEST): 5:00am to 9:30am ▪ Zoo Operating Period – 9:30am to 5:00pm (September to April) – 9:30am to 4:30pm (May to August) ▪ Indicative Sunset & Twilight Sessions – Daylight savings (AEDT): 5:00pm to 9:00pm – Non-daylight savings (AEST): 5:00pm to 7:00pm ▪ Indicative Special Events (ie. Vivid): 5:00pm to 12:00am To meet safety standards, and comply with manufacturer specifications, commissioning, and maintenance will occur between 6:00pm – 6:00am. These hours may fluctuate from time to time.
Jobs	Construction – 280 Operation – 9
Estimated Development Cost	$77 million

3.2. Detailed Description

3.2.1. Design Principles & Response

A Design Report has been prepared by Studio SC (**Appendix F**) which outlines the key design principles have been adopted to ensure the project vision and objectives can be achieved including:

- **Saltwater + Sky Country**: Both stations are located at the key entrances to the Zoo. The cable cars are the vessel which takes the public on a journey from Saltwater to Sky similar to the Nawi, a traditional bark canoe used by the Cammeraigal people on Sydney Harbour. The cable cars have the opportunity to integrate First Nations and Conservation storytelling, both physically and through interpretive elements.
- **Connection + Accessibility:** The key aim of the proposal is to improve accessibility and amenity for guests. The design has integrated the cable car infrastructure with core amenities including new undercover queuing, public amenities and seating for guests to ensure that their experience at the Zoo meets expectations from the time they enter the site.
- **Harbour + Zoological Engagement**: Interpretive elements and the retention of the Sky Safari allows guests to engage with both the natural setting of the zoo and the geological formation of Sydney Harbour that stretches from the North and South Heads to the western harbour. Through the architectural, way finding, interpretation and audio visual aspects of the cable car system there are many opportunities to convey the conservation messaging of the zoo and the Indigenous story of place.

3.2.2. Connecting with Country

The project has been informed by a deep understanding of the system of Country and the importance of embedding cultural knowledge into the planning, design, and development of Taronga Zoo and the Sky Safari.

As custodians of this area for many thousands of years, Cammeraigal people cared for and respected the land which provided for all of their needs. From the fish, shellfish and seafood of the inlets and shorelines of Mosman and Balmoral to the freshwater billabongs, swamp lands and gullies away from the harbour, Cammeraigal fished, hunted, gathered and collected on the very same ground that now forms part of Taronga Zoo.

As a conservation community, TCSA is committed to the ongoing process of reconciliation; to respect, connect, consult and be led by the complex and vital knowledge of First Nations Peoples as part of their ongoing work to safeguard the future of our planet. Through engagement with First Nations elders and design consultation, this project is an opportunity to create a connected journey from the saltwater of Sydney Harbour to the sky, showcasing Cammeraigal Country. At the same time, the journey is an opportunity to celebrate and witness the amazing wildlife of Taronga Zoo and the natural setting of the Zoo on one of the great natural harbours of the world.

The Cammeraigal clan had strong Nawi (bark canoe) Culture. Saltwater was their Country, as much as land was their Country. The Nawi was an efficient watercraft and allowed travel around the harbour and rivers quickly and easily. Nawi making knowledge belonged to men, whilst Nawi and Garradjun (line fishing) knowledge belonged to women. The Vessel presents a unique narrative that underpins the built form narrative for the Lower Station which connects Saltwater (Lower Station) to Sky (Top Station)

Figure 20 Representations of Nawis

Picture 11 Painting of Nawis in Sydney Harbour

Source: Mitchell Library, State Library of New South Wales

Picture 12 Nawis created on the land of the Awabakal people

Source: David Payne, Australian Maritime Museum

In listening and exploring the opportunities for the project, the design team including FCAD (First Nations Design Consultant), Studio SC, and Newscape (Landscape Architects) consulted and engaged with:

- Taronga Indigenous staff and Community & Cultural Team, Cammeraigal & Wiradjuri Country.
- Taronga Aboriginal Advisory Group (**TAAG**), Cammeraigal Country

Through this process, the project has adopted the following primary design strategies to connect the Sky Safari to Cammeraigal Country:

- Integration of the ‘Nawi’ story from Saltwater to Sky into the design across the stations and cable cars.
- Architectural and interpretive design elements that will provide immersion, play, education, connection and celebration including audiovisual experiences, wayfinding and signage, sculpture and the like.

TCSA's Commitment to Country ensures meaningful consultation with First Nation Peoples as an ongoing process that will continue throughout all elements of design and construction of the project, supporting best practise in embedding and understanding cultural commitments and protocols across the organisation.

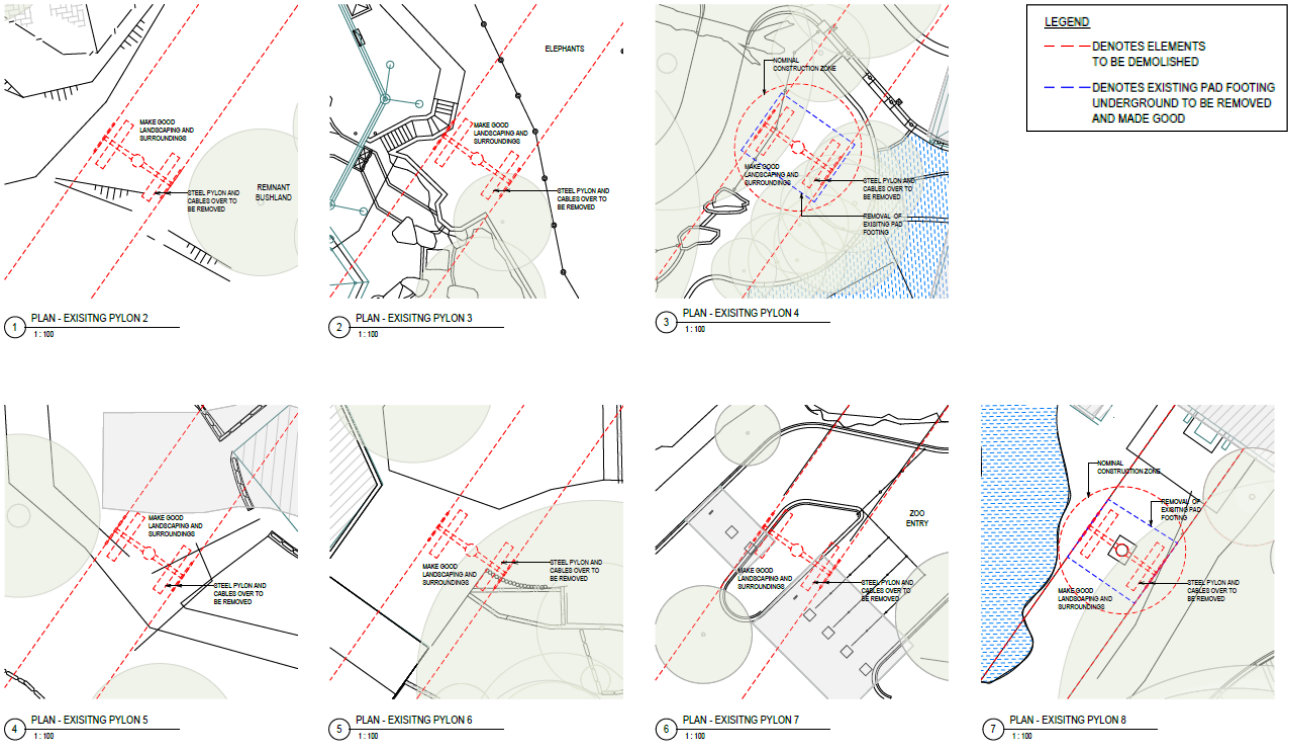
3.2.3. Site Preparation Activities

3.2.3.1. Demolition and Tree Removal

As part of the Sky Safari, the former Sky Safari infrastructure will be decommissioned and removed from the site. There are currently nine (9) existing pylons (labelled XP1 to XP9). Their locations are shown in **Figure 21** below. Proposed works incorporate the removal of the existing cable (haul rope) and disassembling the existing pylons and unbolting of the existing pylons from their concrete footings. The existing cable cars have already been stored on site.

Concrete footings associated with the existing pylons will be retained and will be integrated into the landscape. TCSA is currently in discussions with interested parties to buy the current system, install and commission as a working cable car system. In the absence of a buyer, TCSA's key priority is ensuring the system is sustainably reused for parts or recycled.

Figure 21 Proposed Demolition Plan – Existing Pylons



Source: Studio SC

Demolition of the existing infrastructure on site is also required within the footprint of the proposed lower and top stations.

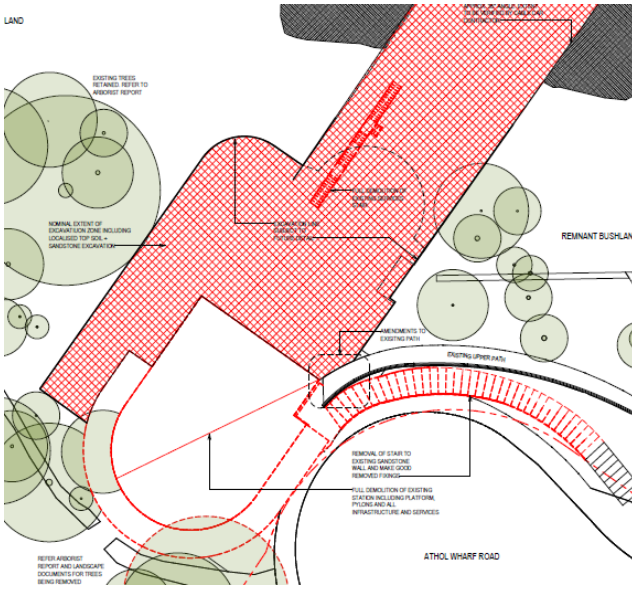
To introduce the updated Top Station within the Taronga Upper Entrance Plaza, demolition of the existing facility is proposed. Partial demolition of existing walls is also proposed to create new openings for queuing areas located within the existing amenities building. It is acknowledged that a portion of the heritage wall (Section 170 Item 07L Sandstone Wall) will be removed. Further assessment of the heritage impacts of the demolition are included in **Section 6.11** of this report. Excavation works are also required to ensure adequate levels for footings associated with the new infrastructure. The footprint of the new Top Station will require the removal of one Category A tree (Tree 10). Trees located within planter beds are to be relocated within the Zoo. The landscape plans also incorporate two *angophora costata* (Sydney Red Gum) trees within the Top Station area.

Demolition of the existing Lower Station will incorporate the existing platform, pylons, services and part of the pathway along the sandstone wall. The proposed footprint will also require the removal of two Category A trees (Trees 468 and 473) and one category Z (low value) tree (Tree 472). The existing pathway through the

remnant bushland which connects to the Sydney Harbour coastal walk will be retained with additional landscaping connecting with the remnant bushland.

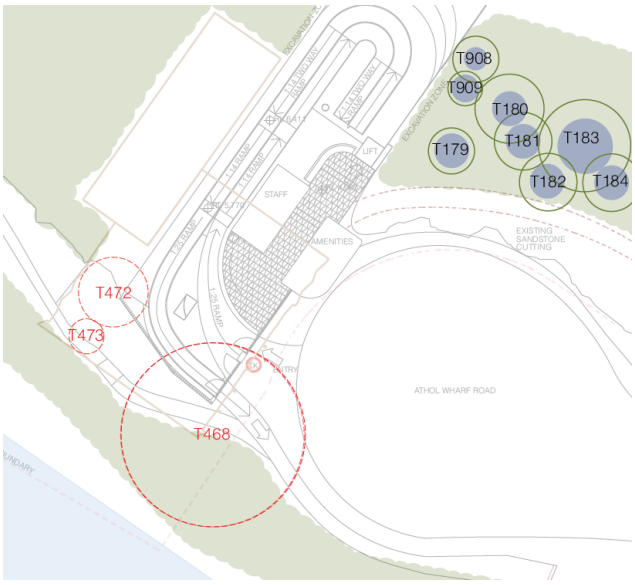
One additional Category A tree (Tree 552) and two category Z (low value) trees (Tree 902 and 912) are also required to be removed to facilitate new pylons within the site. A 2:1 replacement rate is proposed for all Category A trees with endemic planting incorporated into the landscape design.

Figure 22 Proposed Demolition Plans - Lower Station



Picture 13 Extract of Proposed Demolition Plan – Lower Station

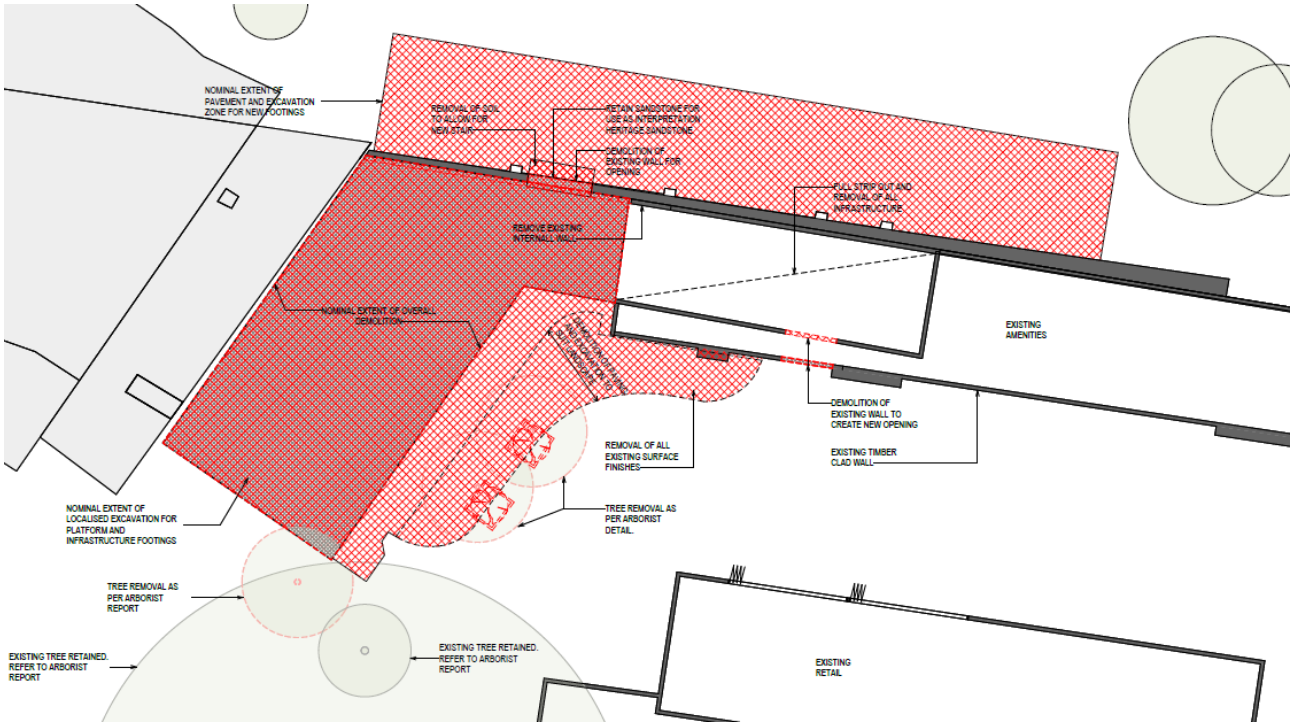
Source: Studio SC



Picture 14 Extract of Proposed Tree Management Plan – Lower Station

Source: Newscape

Figure 23 Proposed Demolition Plan – Top Station



Source: Studio SC

3.2.3.2. Excavation/Cut and Fill

Given the topography of the site, cut and fill is required to facilitate the proposed works.

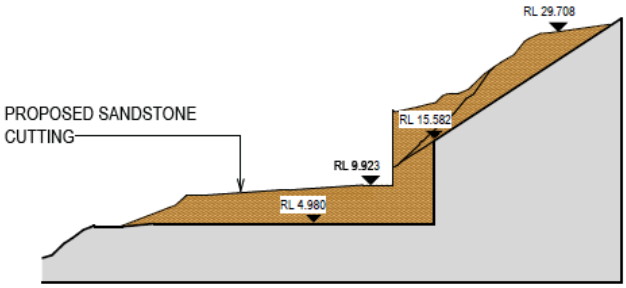
- The proposed station buildings may require excavation or the placement of fill to depths of up to 3 m to form level pads at each proposed station.
- Drilling for bored piles to depths of up to 5 m will be required to support the proposed pylons (subject to loads and subsurface conditions).
- Additional excavation along the proposed cable car corridor, and near the stations to depths of up to 3 m to allow sufficient clearance as the cable cars travel along the corridor and approach the stations.

Excavation into the sandstone surrounding at the Lower Station is required. As illustrated in **Picture 15,** the stone has already been heavily disturbed by the current Sky Safari. Where possible, this sandstone will be incorporated into design elements including seating. As noted in **Section 6.11**, consultation with Registered Aboriginal Parties made note of this proposed change and raised no concerns with the proposed works.

Figure 24 Proposed Excavation Works

Picture 15 Existing excavation at the existing Lower Station showing the sub-vertical joints and bolts observed within the exposed rock face

Source: Douglas Partners



Picture 16 Proposed section identifying excavation associated with the Lower Station

Source: Studio SC

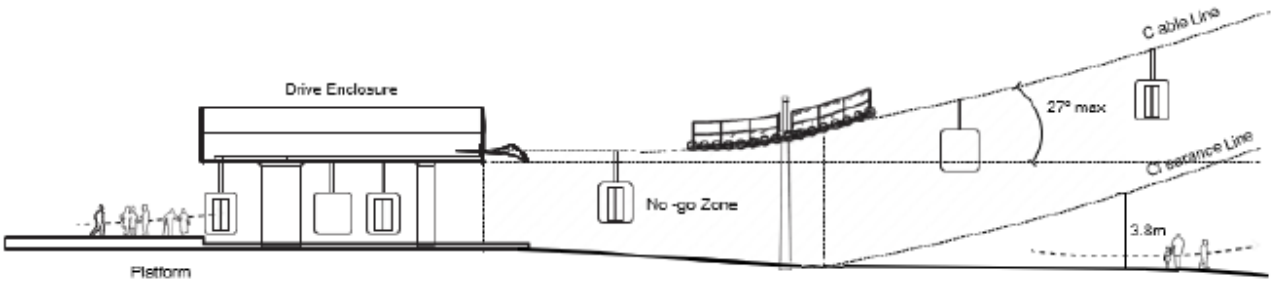
3.2.4. Physical Layout and Site Design

The former Sky Safari, now decommissioned, provided a 400m up-down route running from the upper entrance to the lower entrance of the Zoo. The redevelopment of the former Sky Safari follows the existing cable car route within the Zoo boundary.

The Sky Safari is a complex piece of infrastructure with specific requirements around structure, clearances, and capacity. Combined with the steep topography and natural setting of the Zoo, it makes for a challenging integration. The proposed system is known as a monocable, circulating gondola cableway, where vehicles attach and detach from the continuously moving cable in the stations, and the cabins are spaced equally along the line.

The system consists of a relatively simple electric motor that drives a circa 35mm diameter cable tensioned at the stations. The cable turns continuously around the full circuit at the nominated speed (in this case a peak of 3m/s). A bullwheel sits at each turn at the stations and holds the cable in tension and allows the cable to decouple from the cabins. The cabins then connect to an overhead conveyor system slowing right down to allow passengers to embark and disembark the cabins. Operators can also stop the cabins for prams, larger wheelchairs and people with mobility issues, or for emergencies.

Figure 25 Typical Long Section of a Cable Car System



Source: Studio SC

3.2.4.1. Top Station

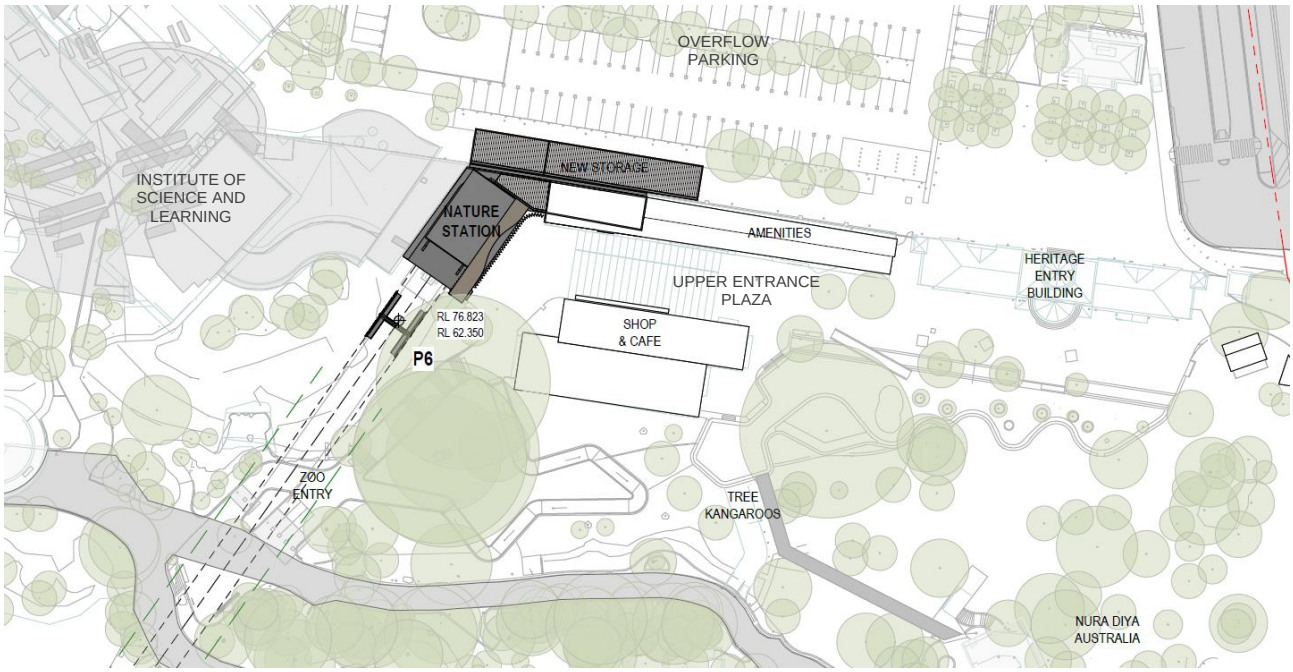
Top Station, also referred to as the Nature Station is located within the Upper Entrance Plaza, as illustrated in **Figure 26**. The station location was previously used for the storage of cable cars as well as boarding onto the cable cars.

The western end of the Upper Entrance Plaza includes numerous existing buildings including the ticketing and public amenities facilities and the café and gift shop which will be complemented by the upgrade of the cable car station. The station has been designed to integrate into the existing buildings by maintaining timber cladding on the façade and screening elements. The new structures also utilise a skillion roof with a gentle slope for rainwater drainage system.

A new storage and maintenance building is located outside of the primary boundary wall, a Section 170 heritage item. The new structure is deliberately lightweight and incorporates similar timber cladding as the existing pavilion buildings within the Entrance Plaza. The storage building can accommodate approximately 20 gondolas cable cars.

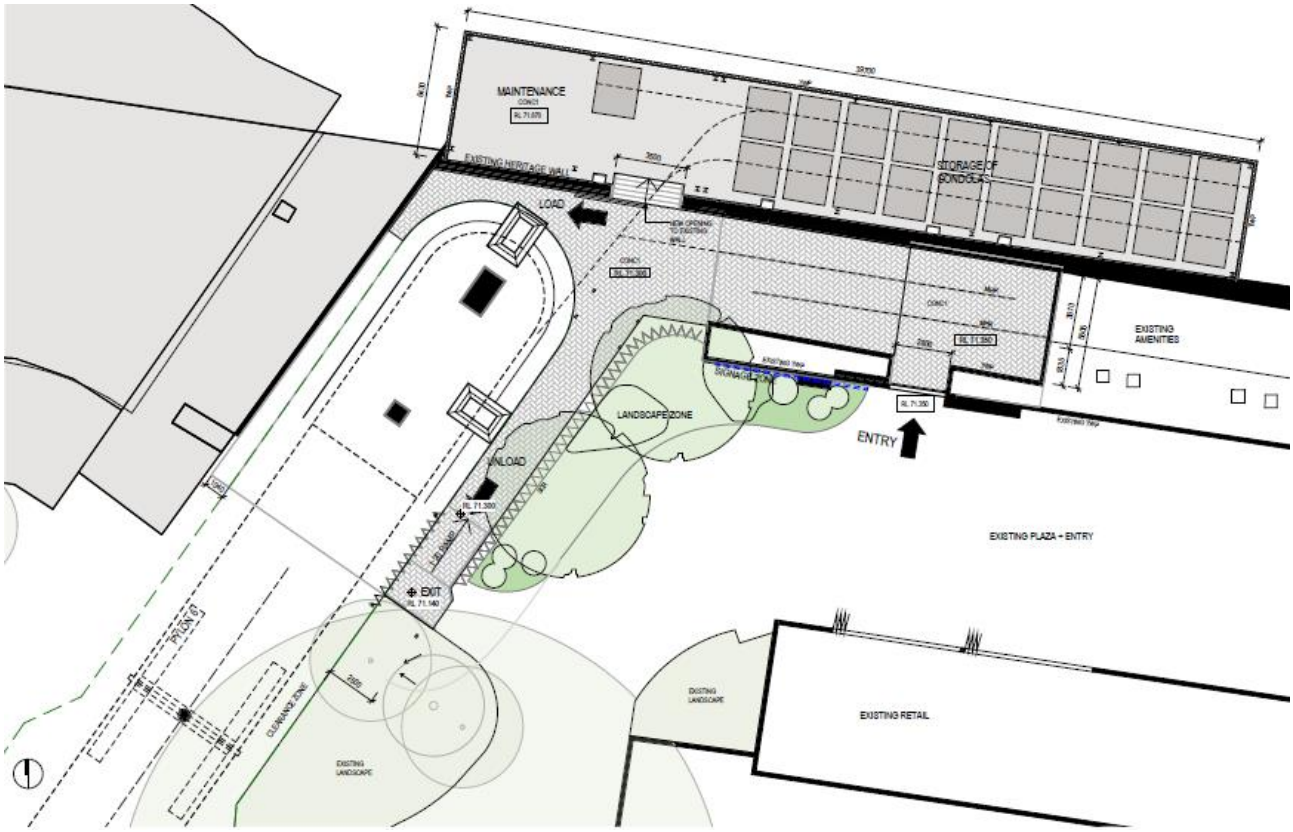
Material and finishes incorporate timber elements and the colours of the angophora, which integrates with the landscaping strategy further described in **Section 3.2.5**.

Figure 26 Top Station Location Plan



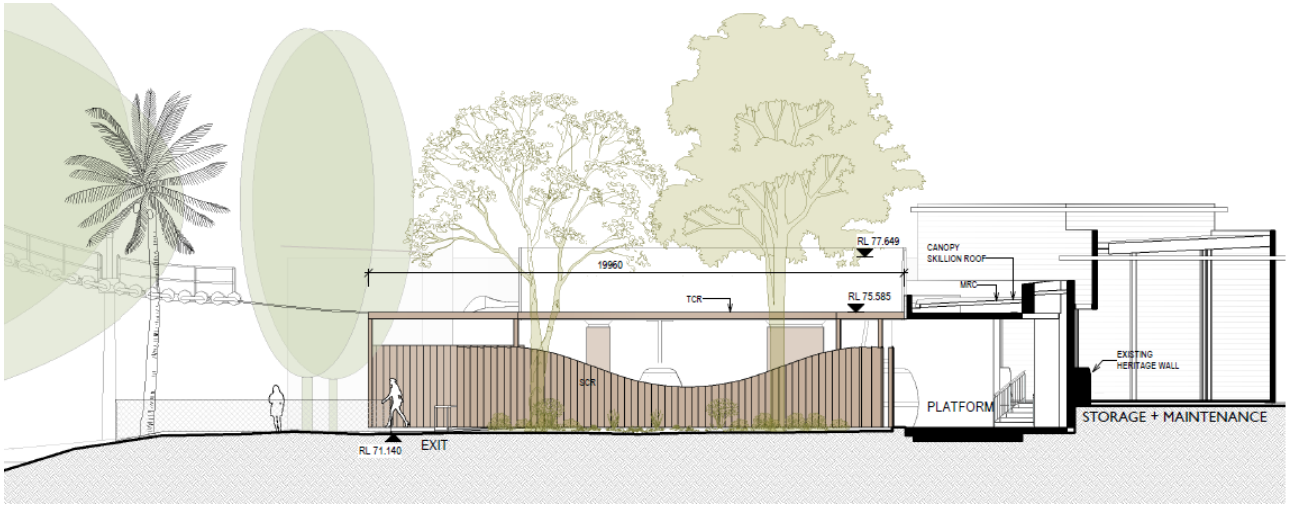
Source: Studio SC

Figure 27 Top Station Ground Plan



Source: Studio SC

Figure 28 Top Station Elevation



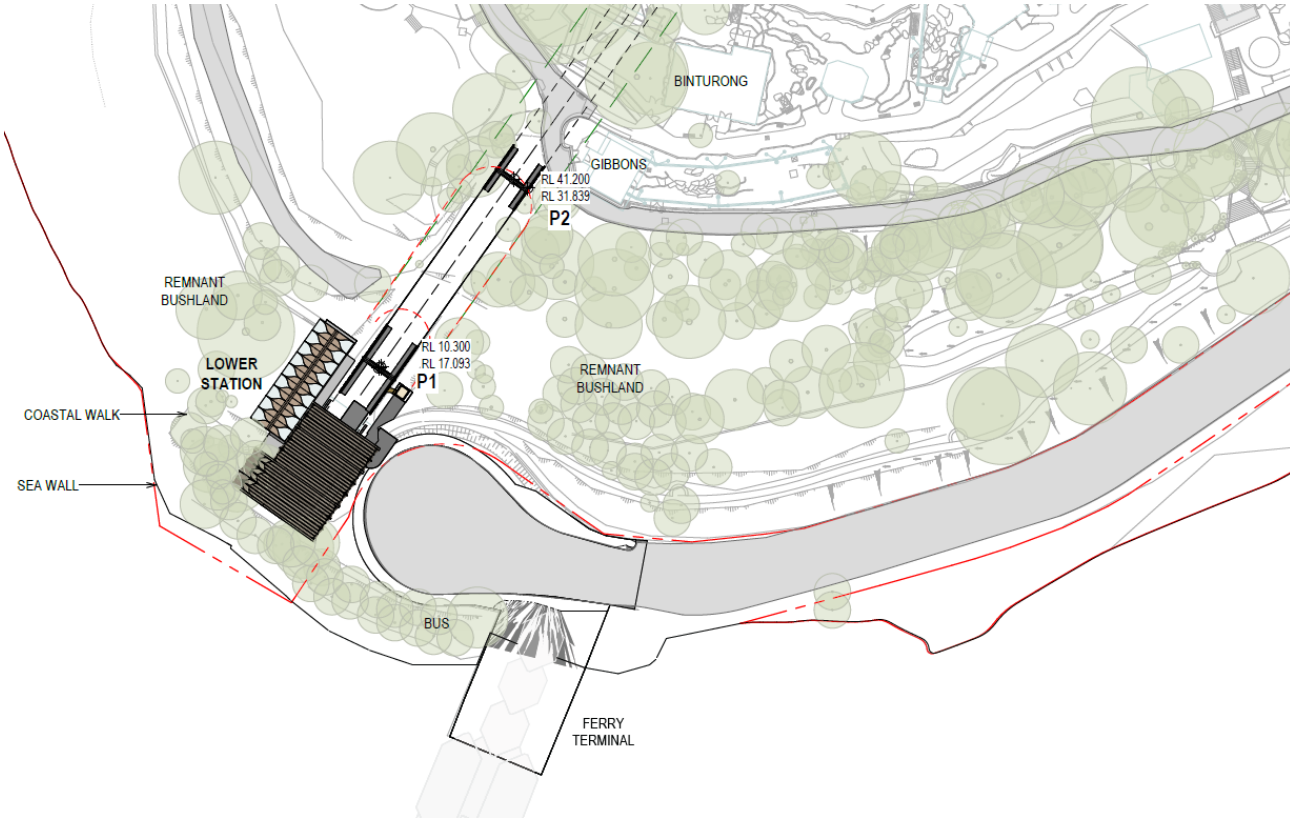
Source: Studio SC

3.2.4.2. Lower Station

The Lower Station will replace the existing station, located adjacent to the Taronga Zoo Ferry Wharf and Athol Wharf Road (refer to **Figure 29)**. The upgraded station reads as a two storey element with an arrival plaza at ground level with accessible ramping providing access to the cable car platform above. The introduction of new DDA compliant ramping replaces the existing steps located on the northern edge of Athol Wharf Road.

The new arrival plaza provides unisex public amenities, staff facilities, seating areas and a lift that provides an alternate route to the platform above. Ramping from the ground level wraps under the platform structure and then folds out into the landscape and sandstone cutting.

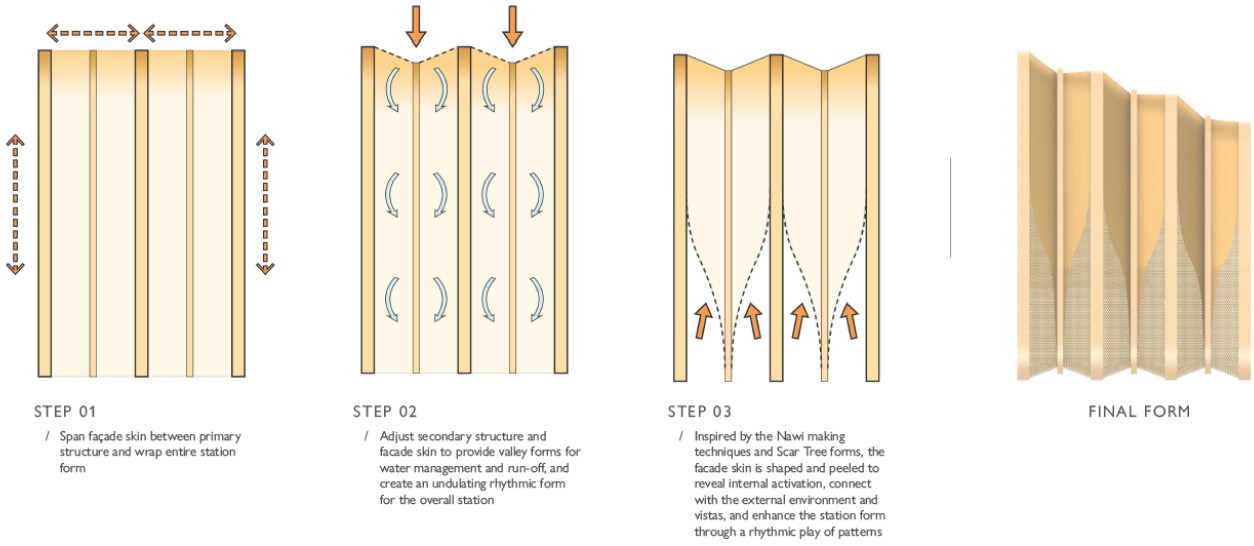
Figure 29 Lower Station Location Plan



Source: Studio SC

The 'standard' required infrastructure of the cable car station is enclosed with an architectural skeletal roof element. A similar roof form provides weather protection to the ramp outside of the station enclosure. The architectural language and design elements of the Lower Station has been informed by the Nawi given the close proximity to Sydney Harbour as part of the Saltwater to Sky narrative.

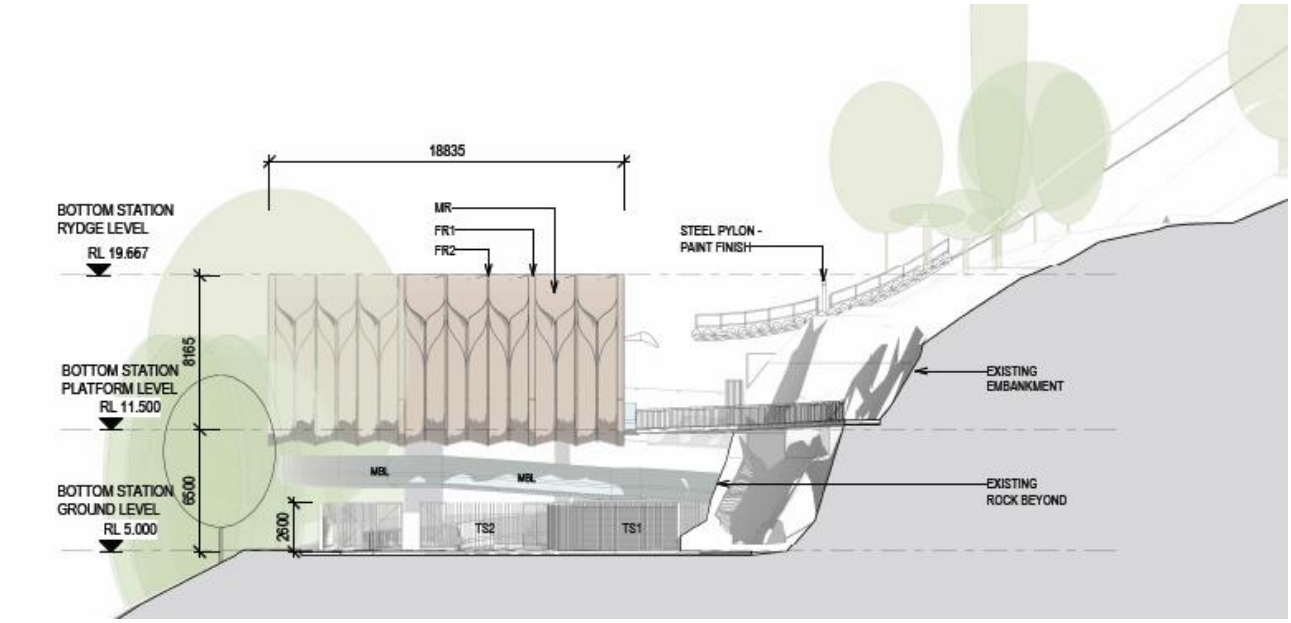
Figure 30 Interpretation of the Nawi



Source: Studio SC

The existing coastal walk is retained with new landscaping integrated between the plaza and the existing path as described in **Section 3.2.5**.

Figure 31 Lower Station Elevation



Source: Studio SC

3.2.4.3. Pylons

Six pylons are proposed within the Zoo to replace the existing nine pylons. One pylon is located at each station with four within the Zoo grounds. The cable car rises and falls around the route, defined by:

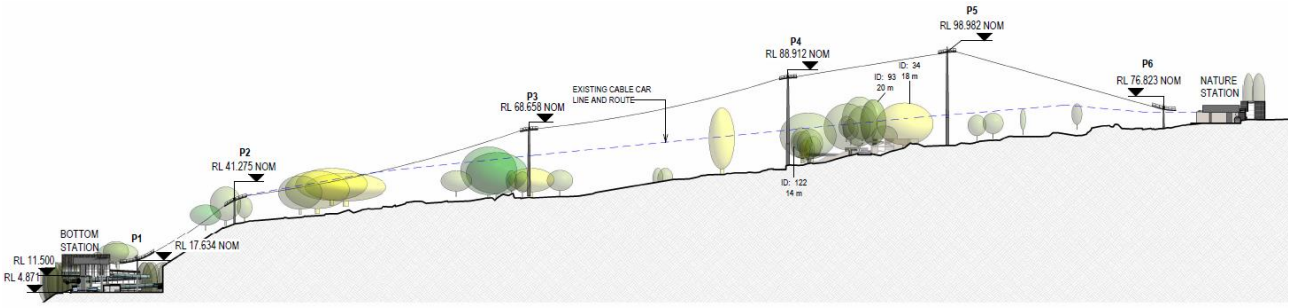
- The angle of incline and decline, with maximum 27 degrees for occupant comfort.
- Location of line towers with cross arms and sheeves guiding the cables in both directions.
- Clearance to significant trees, the overarching tree canopy and preservation of projected tree growth.
- The span of cables, with an engineered extent of sag and compliant clearances required under cable cars to buildings, people and in this case, animals.

Each line tower has been carefully located within the Zoo around both existing and future exhibit needs, and in consideration of natural and built form heritage. The tallest towers have a circa 2m diameter base with all footings and structure below ground. Following construction, landscaping will be integrated into the ground plane. Pylons are located in the following locations:

- **Pylon 1** is located at the Lower Station replacing the previous Pylon 1. The new pylon has been integrated into the new ramping area and rises up to Pylon 2.
- **Pylon 2** replaces the existing Pylon 2 and sits to the south of the main pathway in a non-accessible area for guests. The cable rises with the terrain gently increasing in height towards Pylon 3, in order to clear the existing tree canopy.
- **Pylon 3** replaces the existing Pylon 4 and is located by the existing Food Market/café area. There is a steady incline over the existing tree canopy towards Pylon 4 and 5.
- **Pylon 4** is located to the north of the previous Pylon 5 behind the amenities building known as the Savannah Block and continues to incline towards Pylon 5.
- **Pylon 5** is located to the north of the previous Pylon 6 which is in close proximity to the Helmore lawns. The cable declines towards the Top Station.
- **Pylon 6** is located at the Top Station replacing Pylon 8.

With increased cable car sizes to improve accessibility and capacity of the Sky Safari, the width of the cable car route is wider than the existing corridor. Impacts on existing trees is further assessed in **Section 6.5** of this report.

Figure 32 Proposed Pylons within the Zoo



Source: Studio SC

3.2.4.4. Cable Cars

The upgraded Sky Safari will introduce 20-25 new cable car cabins which will provide capacity for up to ten people with foldable seating to allow for wheelchairs and double prams. **Figure 33** provides illustrative diagrams of both the cabin layouts and indicative signage/public art.

Figure 33 Indicative Cable Car Design

Picture 17 Example of internal layout for a 10 person cable car

Source: SCJ

Picture 18 Indicative signage for Sky Safari cable cars

Source: TCSA

It is intended that the bottom section of the cable car would be wrapped in vinyl and that the wrap design is a Public Art opportunity to connect to the Saltwater to Sky narrative. The Zoo logo is indicative of the integration of a Corporate Partner. Taronga Zoo works regularly with Aboriginal artists and one of the placeholder wraps included is a licensed artwork Burrul Warrambool (Milky Way) by Lucy Simpson.

3.2.5. Public Domain and Landscaping

The landscape and open space strategy for the development designed by Newscape (**Appendix O** and **Appendix P**) aims to provide a sensory experience and reinforce its cultural significance to visitors, firmly grounding them on Cammeragial Country. It is envisaged that the proposed planting palette will be further developed as the interpretation strategy is refined.

Plants have played an important part in cultural life, with many having not only practical and medicinal uses but form an integral part of stories and as indicators of what is happening in the surrounding environment. The use of endemic plants reduces the maintenance requirements of the project as they are adapted to the local climatic conditions, making them more resilient to climate change impacts such as drought, extreme temperatures or shifting rainfall. This translates to more efficient use of water and nutrients, minimising requirements for irrigation and fertilisers.

3.2.5.1. Top Station

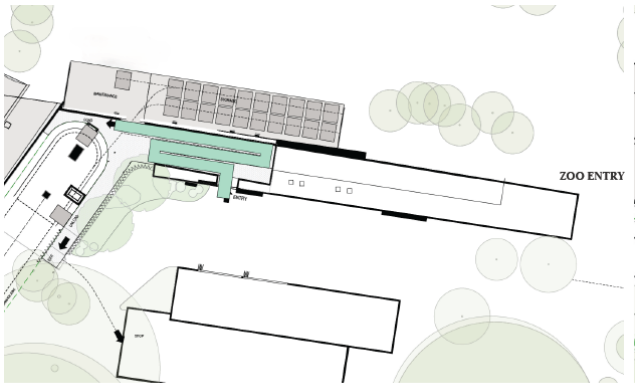
The landscape design for the Top Station complements the light touch nature of the proposed built form. Larger trees have been used to provide shade in the public domain, combined with shrubs and ground covers, allowing visitors catch glimpses of the cable cars as they wait, building a sense of excitement for the experience ahead. Endemic planting, including *Angophora* and *Banksia* trees, are integrated into the Upper Entrance Plaza. Conversations with knowledge holders reveal that these trees tell a seasonal story, flowering and shedding bark at different times of year, providing markers for what is happening within the natural environment. Interwoven with the interpretation strategy, the landscape will be a teaching tool to deepen the visitors appreciation of Country not only during their visit to the Zoo but as they move through their daily lives, recognising the seasonal patterns within their own landscape.

Figure 34 Top Station Landscape Concept Plan

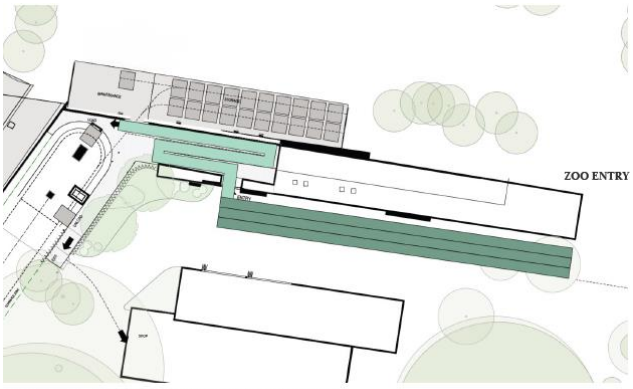
Source: Newscape

Entry to the station is located on the northern side of the Entrance Plaza, outside of the main ticketed entrance. Queuing is provided within the new covered area for approximately 75 guests. Additional queuing during peak events may also be located within the Entrance Plaza. A separate unloading/exit point on the western edge of the plaza is separated by landscaping and screening. The architecture of the screening is deliberately pared back and incorporates timber batten elements similar to other elements within the Entrance Plaza. Within the queuing area, elements will be introduced for visitor immersion in cultural stories and education associated with both First Nations history and the zoological conservation of Taronga Zoo.

Figure 35 Top Station Queuing Plans



ıture Station - Entry Queue - Ground Floor Level (Non-Peak)



ature Station - Entry Queue - Ground Floor Level (Peak)

Picture 19 Entry Queue during non-peak/average days Picture 20 Entry Queue during peak days

Source: Studio SC

3.2.5.2. Lower Station

As the primary entrance point from Sydney Harbour, the Lower Station provides a landmark for Taronga Zoo. The landscaping aims to soften the built infrastructure and integrate the Lower Station into the native bushland that surrounds the site. The introduction of new trees and shrubs will assist in breaking up the lines of the infrastructure, nestling the station into the surrounding bushland. The endemic plant list for the foreshore and stories from Indigenous knowledge holders have informed the planting palette for the landscape design.

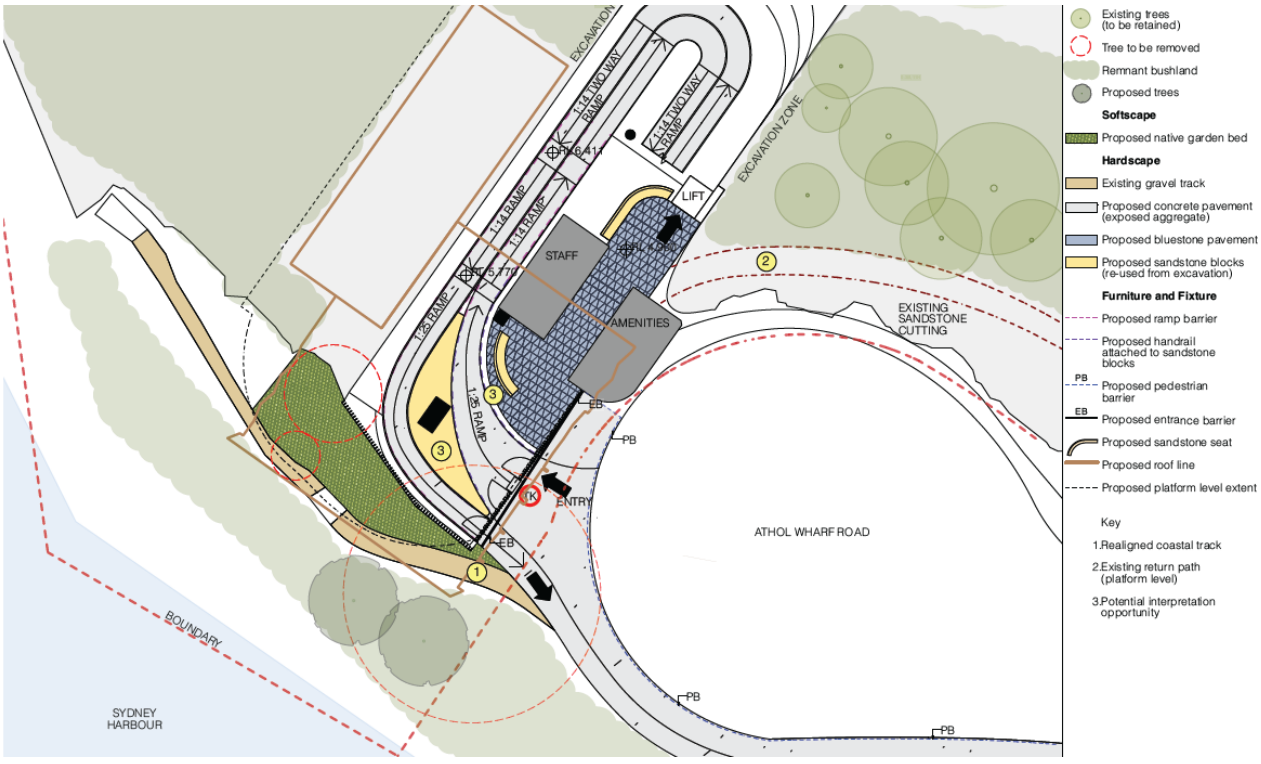
Within the public domain, sandstone, excavated from the site, will be used to create bespoke seating for visitors within the arrival plaza. A low free standing wall of the same material also divides the entry and exit ramps. The reuse of sandstone can also be used as a canvas for artwork and interpretation.

While every effort has been made to retain the significant Southern Mahogany tree (Tree 468) that sits at the base of the Lower Station, the project arborist has advised that there is a high likelihood of damage during the construction phase of the project and recommends this tree be removed. Two *Elaeocarpus reticulatusis* (blueberry ash) have been introduced into the Landscape Plans as replacement trees within the arrival plaza and surrounds. Blueberry Ash are part of the existing vegetation community at the Lower Station. They grow 5-10m in height which will create an appropriate sense of scale. Similar to the Top Station, new plantings are seasonable in nature providing natural indicators for storytelling via the landscaping.

The previous Lower Station required guests to walk from the Ferry Terminal to the other side of Athol Wharf Road with steps and non-DDA compliant ramping used for queuing. The upgraded station instead provides an arrival plaza which connects via a pedestrian pathway to the Ferry Wharf. Screening and gates will be used to close this area outside of operational hours.

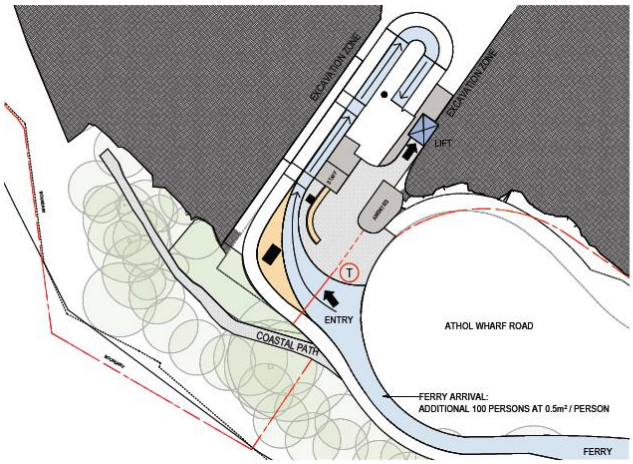
A lift is also available which connects the platform to the ground plane that also serves guests leaving the existing top pathway from the Zoo. This pathway is the route that guests within the Zoo take to re-enter the cable car.

Figure 36 Lower Station Landscape Concept Plan

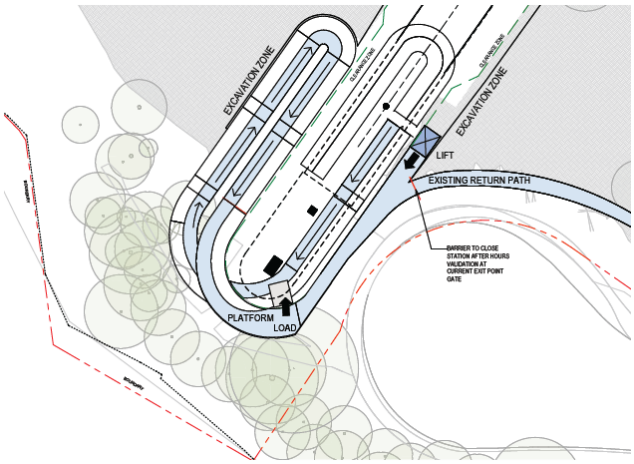


Source: Newscape

Figure 37 Lower Station Queuing Plans



Picture 21 Queuing from arrival plaza



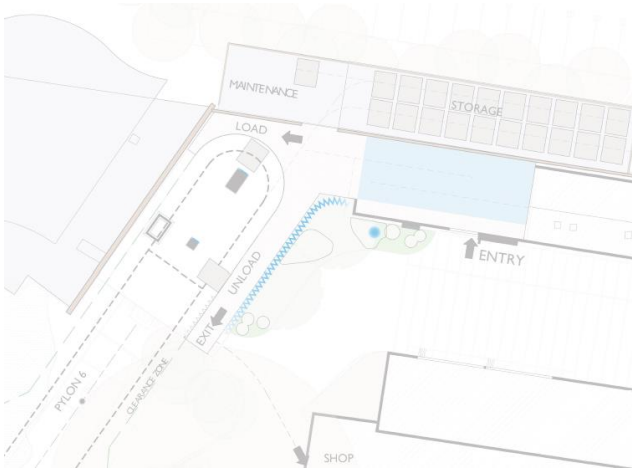
Picture 22 Upper level queuing

Source: Studio SC

3.2.6. Public Art

Opportunities for public art installations at both stations including key elements such as the ramp balustrade design (indicative design illustrated in **Figure 39**) which connect to the Saltwater to Sky narrative are identified within the Design Report (**Appendix E**). TCSA will undertake an EOI process to procure Indigenous designers to assist in finalising patterns and designs that will form part of the final design.

Figure 38 Nominal public art opportunities



Picture 23 Top Station Public Art Opportunities

Picture 24 Lower Station Public Art Opportunities

Source: Studio SC

Figure 39 View of Lower Station from platform

Source: Studio SC

3.2.7. Sustainability Initiatives

Sustainability and ESD forms a core part of the Zoo operations and is key to their *Sustainability Strategy 2021-2025.* This plan aligns with the Zoo's role as as a leader in conservation, protecting wildlife and empowering people to secure a sustainable future for the planet.

TCSA is targeting an Infrastructure Sustainability (**IS**) Certified rating for the Sky Safari which will be administered by the Infrastructure Sustainability Council (**ISC**). Key sustainability objectives and initiatives will be tracked over the lifetime of the Proposal with measurable outcomes defined to provide positive social and environmental impacts. An ESD Report has been prepared by Cundall and is provided at **Appendix Q** and is further assessed in **Section 6.6** of this report.

3.2.8. Development Timing and Staging

It is anticipated early works and site preparation will begin in mid-2025 (pending timely development approval) with main works beginning late 2025 based on an 18 month construction and design program.

A Preliminary Construction Management Plan has been prepared by RPS (**Appendix GG**) which outlines the indicative approach to staging for the proposal and ensures that possible impacts that may arise from the works have been appropriately identified, managed and minimised.

Table 8 provides an indication of the likely demolition and construction phasing required for the works proposed. The current timeframes are indicative and will be confirmed and agreed with the head contractor once the contract is awarded.

Table 8 Development Staging

Stage	Timing
Site Establishment	Mid 2025
Enabling Works	Mid – End 2025
Construction Works	Mid 2026 – Mid 2027

Stage	Timing
Commissioning and Handover Works	Mid to Late 2027

3.2.9. Development Contributions

Mosman Contributions Plan 2018 is the Contributions Plan which covers the Mosman LGA and authorises the Council to collect contributions of money towards the provision of public amenities and services. The plan was prepared in reference to Section 7.12 of the EP&A Act. It is noted that the Mosman Contributions Plan 2018 specifically does not incorporate the Zoo and contributions are not required for works within the Zoo grounds.

4. Statutory Context

This section of the report provides an overview of the key statutory requirements relevant to the site and the project, including:

- *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* (**EPBC Act**)
- *NSW Biodiversity Act 2016* (**BC Act**)
- *Environmental Planning and Assessment Act 1979* (**EP&A Act**)
- *Exhibited Animals Protection Act 1986* (**Animal Protection Act**)
- *NSW Roads Act 1973* (**Roads Act**)
- *NSW Rural Fires Act 1997* (**Fires Act**)
- *Environmental Planning Assessment Regulation 2021* (**the Regulations**)
- *State Environmental Planning Policy (Planning Systems) 2021* (**Planning Systems SEPP**)
- *State Environmental Planning Policy (Biodiversity and Conservation) 2021* (**Biodiversity and Conservation SEPP**)
- *State Environmental Planning Policy (Resilience and Hazards) 2021* (**Resilience and Hazards SEPP**)
- *State Environmental Planning Policy (Sustainable Buildings) 2022* (**Sustainable Buildings SEPP**)
- *State Environmental Planning Policy (Transport and Infrastructure) 2021* (**Transport and Infrastructure SEPP**)
- *Mosman Local Environmental Plan 2012* (**MLEP**)

It identifies the key statutory matters which are addressed in detail within the EIS, including the power to grant consent, permissibility, other approvals, pre-conditions and mandatory considerations.

4.1. Statutory Requirements

The following sections provide a summary of the relevant statutory requirements having regard to the *State Significant Development Guidelines*. A detailed statutory compliance table for the project is provided at **Appendix C**.

4.1.1. Power to Grant Approval

The legal pathway under which the consent is sought, why this pathway applies, and the relevant consent authority is outlined in **Table 20**.

Table 9 Power to Grant Approval

Matter	Consideration
Declaration of SSD	In accordance with Schedule 2 of the Planning Systems SEPP, development that has a estimated development cost (**EDC**) of more than $10 million on land identified on the State Significant Development Sites Map is considered State Significant Development. The proposed works have an EDC of $77 million excluding GST (refer **Appendix C**) and accordingly, the proposal is SSD for the purposes of the Planning Systems SEPP. The *Zoological Parks Board Act* 1973 (**Zoological Act**) is the Act that governs Taronga and Taronga Western Plains Zoos. A corporation named the "Zoological Parks Board of New South Wales" (**the Board**) is constituted under the Zoological Parks Board Act. The Board may also be called the Taronga Conservation Society Australia (**TCSA**) and the use of that name has the same effect for all purposes as the use of its corporate name. Under Clause 5(2)(b) of the Zoological Act the Board shall, for the purposes of any Act, be deemed to be a statutory body representing the Crown.

Matter	Consideration
	TCSA has a formal mandate, as defined in Section 15 of the Zoological Parks Board Act 1973, to: *(a) carry out research and breeding programs for the preservation of endangered species;* *(b) carry out research programs for the conservation and management of other species;* *(c) conduct public education and awareness programs about species conservation and management; and* *(d) display animals for educational, cultural and recreational purposes.* The Taronga Sky Safari meets these objectives, as it will provide an upgrade of existing infrastructure which has been part of the Zoo for over 35 years. The Sky Safari provides a unique perspective for visitors to view exhibit and animals from above. The new cable cars offer opportunities for audio experiences within the cabins which can be updated to tell stories and maintain awareness of specific conservation and education programs. New amenities and waiting areas have been integrated into the design providing additional opportunities for incidental learning and 'calls to action' for visitors on conservation and education programs being undertaken across the Zoo and other Taronga sites
Consent Authority	Under section 4.5 of the EP&A Act

4.1.2. Permissibility

The permissibility of proposed development is outlined in **Table 10**.

Table 10 Permissibility of the Proposed Development

Matter	Consideration
Zoning and Objectives	In accordance with the MLEP, the site is zoned 'SP1 Special Activities' and is identified on the zoning map as "Zoological Gardens". The objectives of the SP1 Special Activities zone are: ▪ *To provide for special land uses that are not provided for in other zones.* ▪ *To provide for sites with special natural characteristics that are not provided for in other zones.* ▪ *To facilitate development that is in keeping with the special characteristics of the site or its existing or intended special use, and that minimises any adverse impacts on surrounding land.* The upgrade of the Sky Safari and associated works are consistent with the zone objectives in that: ▪ The Sky Safari is existing infrastructure specific to the Zoo which is not specifically permissible in other zones in the MLEP. ▪ The scheme is sensitively integrated within bushland and harbour setting of the site and has taken into consideration heritage items, significant trees and site topography to minimise any potential adverse impacts on surrounding land. ▪ It will provide an immersive Zoo experience that will create a unique opportunity for people to engage with wildlife and be educated on First Nations and conservation stories via audiovisual and interpretive design elements.
Permissibility	"Zoological Gardens" is not defined in any NSW legislation. The Macquarie Dictionary defines a "zoo" as follows: "*park or other large enclosure in which live animals are kept for public exhibition; a zoological garden.*" The only uses permitted on the site with development consent is for the purpose shown on the Land Zoning Map including any development that is ordinarily incidental or ancillary to development for that purpose. The proposed redevelopment of the Sky Safari is considered to be a use that is **ancillary** and **ordinarily incidental** to a zoo.

Matter	Consideration	
	The Macquarie Dictionary defines “ordinarily incidental” as something that arises “in fortuitous or subordinate conjunction with” something else. In a development context, this means a land use that naturally and commonly arises out of another land use. The NSW Land and Environment Court has found that for a land use to be “ordinarily incidental” to another use, it does not have to be “ordinarily incidental” to that particular development, but rather to the type of development generally. The Court also found in the same matter that a land use that is “ordinarily incidental” can be a separate and significant use of the site. As such, questions as to whether the land use also meets the ancillary test do not arise. TCSA has a world class reputation in education and immersion of people with wildlife. A core function of the Zoo is to increase understanding of conservation and change human behaviour to support the conservation and preservation of species. One of the ways they do this is through creating interactive experiences and ‘call to action’ points to inspire guests to understand their impact on the planet and the importance of conservation. The former Sky Safari operated for over 35 years and provided guests with the opportunity to view the Zoo from a new perspective. Calls to action and information about conservation programs are to be integrated into queuing areas as well as the cable car journey itself. The upgraded infrastructure provides an opportunity for visitors to learn first-hand about conservation, education and research programmes undertaken by TCSA and the revenue from visitor tickets helps support future conservation projects. As stated above, in order to determine whether a use is ‘ordinarily incidental’ to another, the test is whether that type of development is ordinarily incidental to ‘zoological gardens’ generally, rather than looking at the particular site or development. This means it is necessary to consider whether cable car infrastructure and other similar forms of transport naturally or commonly arises in conjunction with zoological gardens. While the Sky Safari is a unique element of Taronga Zoo, there are numerous examples of cable cars at zoos in overseas, including: ▪ Tapei Zoo, Taiwan: Opened on in 2007, the Maokong Gondola and operates between Taipei Zoo and Maokong. The 4.3 km line has four passenger stations connecting with surrounding metro stations and other activities in Taipei. ▪ Jardim Zoologico, Portugal: Opened in 1994, the Jardim Zoologico cable car provides a 20 minute ride. ▪ Kolmården Wildlife Park, Sweden: Opened in 2011, the 2.6 km long system includes six turns and takes approximately 30 minutes to traverse the entire site. ▪ Toronto Zoo, Canada: A two person chairlift was opened in 2016 allowing guests to soar over the Tundra Trek exhibit in an open air seat. The provision of cable car systems is found in zoos worldwide and provides a new perspective from the public to view wildlife. The cable car infrastructure is therefore considered to be “*ordinarily incidental*” to zoological gardens generally and the redevelopment of the Sky Safari is the replacement of existing infrastructure within Taronga Zoo. In accordance with Planning Circular PS 21-008, an ancillary use is defined as ‘a use that is subordinate or subservient to the dominant purpose.’ The Planning Circular provides a range of matters for consideration when considering if a use is considered ancillary. While the Planning Circular states that these considerations are not determinative, they can be used to inform DPHI’s assessment.	
Assessment of Planning Circular PS 21-008	Is the component going to serve the dominant purpose of the development or is it independent?	The proposed use remains subordinate to the primary use of the site as a zoo. Whilst the proposed Sky Safari may provide travel to guests outside of animal exhibition hours, such as morning or sunset sessions, the central purpose of the Sky Safari is to accommodate and enhance the experience of people visiting the Zoo, similar to the existing Sky Safari. Furthermore, any visitors, including guests who come to the site only to ride the Sky Safari will still have a connection to the Taronga Zoo experience, given that conservation and education experiences will be integrated

Matter	Consideration	
		into the Sky Safari and will remain within the immediate visual and aural catchment of a world class Zoo.
	What is the amount of land to be used for a certain component, relative to the amount of land proposed to be used for other purposes? If the amount of land is relatively small, it is more likely to be ancillary.	The Sky Safari is less than 0.5 hectares of the total 28 hectares of the Zoo. The main building footprints are retained within the existing locations. The number of pylons compared to the former Sky Safari has been reduced from nine to six pylons which reduces the impact on the Zoo experience including animal exhibits and trees within the site.
	Evidence of a purpose that is inconsistent with the dominant purpose is likely to undermine a claim that a component is ancillary.	The Sky Safari is an existing use within Taronga Zoo. It will not undermine the purpose of the zoological gardens, is consistent with the Zone SP1 Zoological Gardens zone objectives, and remains a complimentary use. It is therefore not inconsistent with the dominant purpose.
	If the component is temporary, it is more likely to be ancillary; if it is regular (that is, will constitute an ongoing use for a long period of time), it is likely to be an independent use.	Whilst the proposed Sky Safari is permanent, the Sky Safari has been an iconic part of the Zoo experience for over 35 years. Further, we understand that the law relating to 'ancillary' development does not in fact preclude or discourage permanency, as ancillary developments are often by their very nature inspired by the dominant use and arise to serve that dominant use on a permanent and continuing basis.
	If the component goes beyond what is reasonably required in the circumstances for the development to implement the dominant purpose, it is likely to be an independent use (regardless of whether it has ancillary qualities).	The Sky Safari responds to the unique nature of the site including the steep topography to ensure that guests can comfortable access the site. As a public zoo, this is critical to provide a useable and pleasant experience for all guests. There is a natural trend of investigating new ways to engage visitors into the education and conservation works of TCSA. The Sky Safari will serve and be inspired by the dominant purpose in providing an integrated immersive experience for visitors, with the Zoo as its central theme, and is not a dominant or truly independent use in its own right.
	Related components of a development are likely to have an ancillary relationship, although this is not necessarily determinative of such a relationship.	Not applicable for the purposes of this assessment.
	Physical proximity of the component to the rest of the development is likely to be evidence of an ancillary relationship, although again not necessarily determinative.	The Sky Safari meets this test as it will be immersed in the zoo landscape and retains the same route as the former cable car experience. It runs from the top to the bottom of the Zoo maintaining its role as a transportation option for Zoo guests.

4.1.3. Other Approvals

The other approvals required to carry out the project are outlined in **Table 11** below.

Table 11 Other Approvals

Matter	Consideration	
Consistent approvals s4.42 of the EP&A Act 1979	**Act**	**Applies (Y/N)**
	Fisheries Management Act 1994 (s144)	N
	Coal Mine Subsidence Compensation Act 2017 (s22)	N
	Mining Act 1992 (380A)	N
	Petroleum (Onshore) Act 1991 (s24A)	N
	Protection of the Environment Operations Act 1997 (s43)	N
	Roads Act 1993 (s138)	N
	Pipelines Act 1967	N
EPBC Act	The *Environmental Protection and Biodiversity Conservation Act 1999* (**EPBC Act**) protects and manage nationally and internationally important flora, fauna, ecological communities, and heritage places. Bilateral Agreement 18 allows for the streamlining of environmental assessments and approvals between the Australian Government and the states and territories, ensuring both levels of government work together to protect Australia's unique environment while reducing duplication in the approval process. The likely impact of the proposed development on biodiversity values as assessed in the Biodiversity Development Assessment Report (**BDAR**) prepared by Narla is enclosed in **Appendix S**. The Minister for Planning may (but is not required to) further consider under that BC Act the likely impact of the proposed development on biodiversity values.	
Other Approvals	***Exhibited Animals Protection Act 1986*** The *Animal Protection Act* 1986 identifies the need for approvals to be given for the Zoo to exhibit animals, with certain animals requiring specific permits. TCSA sees animal welfare as being of paramount importance. No changes to animal exhibits are proposed as part of this proposal.	
Approvals etc. that do not apply	***NSW Native Vegetation Act 1997* (NV Act)** Pursuant to section 4.41 of the EP&A Act, SSD is exempt from the need for an authorisation under section 12 of the Native Vegetation Act 2003 to clear native vegetation.	
	***NSW National Parks and Wildlife Act 1974* (NPW Act)** Pursuant to Section 4.41 of the EP&A Act, SSD is exempt from the need for a section 90 permit for the removal of items of Aboriginal heritage. Due to the site's location in close proximity to known archaeological items, an Aboriginal Cultural Heritage and Archaeology (ACHA) has formed part of the EIS and is considered in Section 6.2.3 of this report.	
	***NSW Heritage Act 1997* (Heritage Act)** Pursuant to Section 4.46 of the EP&A Act, SSDA does not constitute Integrated Development as the site is not a State Heritage listed item under Part 3A of the Heritage Act. Pursuant to Section 170 of the Heritage Act all state government agencies including Taronga Zoo must keep and administer a database of heritage assets called a Section 170 Heritage and Conservation Register. The proposal will result in some works to items identified on the Section 170 register as noted in **Section 2.1** of this report. The whole site is also identified under the MLEP as a local heritage item. The proposed works do not disturb any of the described heritage items within the Zoo.	

Matter	Consideration
	NSW Roads Act 1973 Any works proposed to a public road as part of the proposed development would require the consent of TfNSW. No works are proposed to a public road. However, we understand TfNSW may be notified of the SSDA to consider construction management and have been notified of the proposed development as part of preliminary consultation.
	NSW Rural Fires Act 1997 The site is identified as bushfire prone land. Pursuant to section 4.41 of the EP&A Act, SSD is exempt from the need for a bushfire safety authority under Section 100B of the Rural Fires Act. However, RFS may be notified of the SSDA and have been notified of the proposed development as part of preliminary consultation.

4.2. Pre-Conditions to Granting Consent

Table 14 outlines the pre-conditions to exercising the power to grant approval which are relevant to the project and the section where these matters are addressed within the EIS.

Table 12 Pre-Conditions

Statutory Reference	Pre-Condition	Section in EIS
Resilience and Hazards SEPP – clause 4.6(1)	Potential sources of contamination exist at the site but are not expected to preclude the proposed development. Under the SEPP a consent authority must be satisfied that the land is suitable in its contaminated state - or will be suitable, after remediation - for the purpose for which the development is proposed to be carried out.	**Appendix B**
Biodiversity and Conservation SEPP – clause 8.8(1) and (2)	The project is located on land within the Sydney drinking water catchment. Under the SEPP: 1. A consent authority must not grant consent to the carrying out of development under Part 4 of the Act on land in the Sydney drinking water catchment unless it is satisfied that the carrying out of the proposed development would have a neutral or beneficial effect on water quality. 2. For the purposes of determining whether the carrying out of the proposed development on land in the Sydney drinking water catchment would have a neutral or beneficial effect on water quality, the consent authority must, if the proposed development is one to which the NorBE Tool applies, undertake an assessment using that Tool.	**Appendix B**

4.3. Mandatory Considerations

Table 13 outlines the relevant mandatory considerations to exercising the power to grant approval and the section where these matters are addressed within the EIS.

Table 13 Mandatory Considerations

Statutory Reference	Mandatory Consideration	Section in EIS
Consideration under the EP&A Act and Regulations		
Section 1.3	▪ Relevant objects of the EP&A Act	**Appendix B**
Section 4.15 (1)(a)(i) Relevant environmental planning instrument	All relevant EPIs will be addressed in the EIS, these include; ▪ State Environmental Planning Policy (Planning Systems) 2021 ▪ State Environmental Planning Policy (Resilience and Hazards) 2021	**Appendix B**

Statutory Reference	Mandatory Consideration	Section in EIS
	▪ State Environmental Planning Policy (Transport and Infrastructure) 2021 ▪ State Environmental Planning Policy (Biodiversity and Conservation) 2021 ▪ Mosman Local Environmental Plan 2012	
Section 4.15 (1)(a)(ii) Relevant draft environmental planning instrument	None relevant to the proposed development.	N/A
Section 4.15 (1)(a)(iii) Relevant development control plan	Relevant plans include: ▪ Mosman Development Control Plan 2012 (Mosman DCP) ▪ Sydney Harbour Foreshore and Waterways Area Development Control Plan (Harbour DCP)	**Appendix B**
Section 4.15 (1)(a)(iiia) any planning agreement or draft planning agreement	None relevant to the proposed development.	N/A
Section 4.15(1)(b) the likely impacts of that development,	The likely impacts of the development including environmental impacts on both the natural and built environments, and social and economic impacts in the locality,	**Appendix B**
Section 4.15(1)(c)	The suitability of the site for the development	**Appendix B**
Section 4.15(1)(d)	Any submissions made in accordance with the Act or regulations	**Appendix B**
Section 4.15(1)(2)	The Public Interest	**Appendix B**
Considerations under other legislation		
Biodiversity Conservation Act 2016 Part 7 and Part 8 (2) (**BCA**)	The likely impact of the proposed development on biodiversity values as assessed in the Biodiversity Development Assessment Report (**BDAR**) prepared by Narla enclosed in Appendix S. The Minister for Planning may (but is not required to) further consider under that BC Act the likely impact of the proposed development on biodiversity values.	**Appendix B**
Rural Fires Act 1997	The relevant provisions of Planning for Bushfire Protection have been considered as part of the Bushfire Report prepared by Australian Bushfire Consultants enclosed in **Appendix EE.**	**Appendix B**
Development Control Plan		
Mosman Development Control Plan 2012 (**Mosman DCP**)	Clause 2.10 of the Planning Systems SEPP states that development control plans (whether made before or after the commencement of this Policy) do not apply to SSD. As such, there is no requirement for assessment of the proposal against the Mosman DCP for this SSDA. Notwithstanding this, an assessment of the following relevant provisions of the Mosman DCP has been undertaken: ▪ Part 4 General Planning Controls (Open Space and Infrastructure)	**Appendix B**
Sydney Harbour Foreshore and Waterways Area Development Control Plan (**Harbour DCP**)	The Harbour DCP is the relevant Development Control Plan for sites identified in Chapter 10 of the Biodiversity and Conservation SEPP, previously known as the *Sydney Harbour Catchment Regional Environmental Plan 2005* (SHREP 2005). In accordance with Clause 2.10 of the Planning Systems SEPP there is no requirement for assessment of the proposal against the Harbour DCP for this SSDA.	**Appendix B**

Statutory Reference	Mandatory Consideration	Section in EIS
	Notwithstanding an assessment of the relevant provisions of the Harbour DCP including planning controls for strategic foreshore sites has been undertaken including: ▪ Section 2: Ecological Assessment ▪ Section 3: Landscape Assessment ▪ Section 5: Design Guidelines for Land-Based Development	

5. Community Engagement

The following section of the report describes the engagement activities that have been undertaken during the preparation of the EIS and the community engagement which will be carried out if the project is approved.

5.1. Engagement Carried Out

Extensive community and stakeholder engagement has been undertaken by the Project Team in the preparation of the SSDA. Details of the outcomes of the community and stakeholder engagement is contained in the Consultation Outcomes Report prepared by WSP enclosed in **Appendix HH**.

Various strategies were implemented during the consultation process since preliminary engagement began in September 2022. Urbis note that the Consultation Outcomes Report (WSP, 2024) covers three rounds of consultation undertaken between 2022-2024, which are summarised in **Table** 14 below.

Table 14 Engagement Carried Out

Round	Consultation undertaken
Round 1: Initial design (September to December 2022) The initial design phase which featured an expanded route for the Sky Safari	▪ Neighbourhood door knock to over 120 houses within the neighbourhood. Where residents were not home or unable to speak to Zoo representatives, a postcard with the details of upcoming information sessions and project webpage was delivered. ▪ Newspaper advertisement providing information about the upcoming preliminary engagement opportunities and details for the project webpage. ▪ Community drop-in information session held at Taronga Zoo (outside of ticketed area to maintain accessibility to whole community) ▪ Online community information session ▪ Updates to the Taronga Zoo website to inform people about community engagement opportunities, invite people to join the mailing list for project updates and encourage people to register to attend an information session (online or face-to-face). ▪ Meetings with key community and government stakeholders
Round 2: Changes to the expanded route (2023) Revisions and adjustments to the expanded route proposed in Round 1.	▪ Ongoing discussions with key community stakeholders ▪ Updates to the Taronga Zoo website In late January 2023, the announcement of the retirement of the Sky Safari attracted significant media attention with 115 news stories.
Round 3: Retention of the original footprint (2024) Introduction of an updated design that retains the footprint of the former Sky Safari instead of extending it across the site.	▪ Newspaper advertisement providing information about the upcoming preliminary engagement opportunities and details for the project webpage ▪ Two community drop-in information sessions – one at Mosman Square and one held at Taronga Zoo (outside of ticketed area to maintain accessibility to whole community) ▪ Letter box drop to over 2,500 residents and businesses received the flyer within the locality ▪ Updates to the Taronga Zoo website ▪ Meetings with key stakeholders ▪ Survey to Taronga Zoo's database of guests and Zoo Friends subscribers

Consultation was also undertaken with the certain stakeholders to inform the detailed assessment of key matters. The engagement carried out for the project is outlined in **Table 15**.

Table 15 Consultation with Key Stakeholders

Stakeholder	Consultation Undertaken	
Community Stakeholders		
Mosman Parks and Bushland Association Mosman Headland Preservation Group	Meetings were held during each round of consultation on 10 October 2022, 22 May 2023 and 24 May 2024 with members of both the Parks and Bushland Association and Headland Preservation Group.	
Mosman Environment Group	Meetings were held during each round of consultation on 5 December 2022, 9 May 2023 and 24 May 2024.	
Key Agencies		
Mosman Council *Consultation has involved meetings with both Council staff and the Mosman Councillours*	*Height and Changes to Route* Meeting attendees were interested in the overall height of the Sky Safari, particularly given the route would overlap itself. There were concerns impacts associated with the increase of height may have on the tree canopy and visual amenity. *Capacity* Meeting attendees were interested in the total number of gondolas, and how this compares to the existing number. *Community concerns* Meeting attendees shared that members of the community were concerned that the Zoo was becoming more like a 'theme park'. Community concerns shared at the meeting also included visual impacts and impacts on existing traffic and parking conditions. *Heritage* Meeting attendees noted the importance of the heritage gates at the Zoo entrance and sought confirmation that a Heritage Assessment would be included, along with a traffic consultant, during the planning process.	15 November 2022
	Design feedback Attendees noted there had been a significant improvement in the route, with the route no longer overlapping. The initial design had been considered overwhelming due to its height and scale. *Height and visual impact* Attendees raised concerns about the height of the pylons. It was noted the highest points would be in the middle of the zoo, reducing visual impact from the water. *Ticketing* Questions were raised about the main entry gate and ticketing options. It was noted this is an ongoing discussion. *Preserve the costal walk* Changes at the bottom entrance towards the water were also discussed, ensuring that the coastal walk would continue uninterrupted. Some attendees expressed concern about the carving up of public land and the impact on bushland and the harbour. All works remain within the Zoo boundary. *Capacity and accessibility* Attendees noted accessibility improvements have been a key consideration. The new design proposes increasing capacity with 42 cabins, each accommodating 10 people, including prams and wheelchairs. The circuit is expected to take 20 minutes, with adjustments for faster or slower speeds as needed. (note: the number of cabins has further been reduced since this meeting)	18 April 2023

Stakeholder	Consultation Undertaken	
	Operational hours and noise Attendees were concerned about noise levels for neighbours. It was noted that the new cable cars are quieter, and a noise study would be conducted to assess impacts. *Storage and use of cable cars* Attendees were interested to understand the storage of the gondolas when not in use. Gondolas will be housed at night in the top station, ensuring they are not visible. The cable will remain in place. The experience could include cable car rides only, like current practices where people visit the Zoo for various reasons beyond animal viewing. *Tree impact* Attendees concerns about the number of trees to be cut down were noted. It was recognised that the number of trees being lost was less than the first design. It was noted there has been an arborist report and efforts to minimise tree damage.	
	Overall, Mosman Council were supportive of the replacement of existing infrastructure on site and appreciated the evolution of the design to reflect community and local feedback. The height of the pylons and associated visual impact of the proposed development was discussed and it was noted that a full Visual Impact Assessment will be prepared as part of the SSDA and Council would be notified on public exhibition dates. It was also acknowledged that TCSA are investigating ways to improve public transport usage for Taronga visitors and will be implementing a new Green Travel Plan.	11 June 2024
Transport for NSW – Ferry Wharf Upgrade Program	At the time of meeting, upgrades were occurring to the Taronga Ferry Wharf. Discussions focused on plans for people accessing the Zoo via the ferry wharf while the previous infrastructure is decommissioned and during construction of the new infrastructure.	6 October 2022
Transport for NSW – Place and Precincts (North)	The initial discussions focused on modal shift and ways to improve public transport usage. The importance of effective wayfinding, communication and coordination with wharf upgrades was also noted.	10 October 2022
	As part of recent discussions with TfNSW, it was agreed that consultation with TfNSW will continue to manage construction impacts associated with the Lower Station and adjoining ferry wharf.	11 June 2024
National Parks and Wildlife Service	Meeting attendees supported project objectives to reduce queue times from the ferries and move more people, more efficiently across the site. Meeting attendees encouraged the project team to explore ways to offset the electricity consumption of the Sky Safari, suggesting contemporary solar as an option. It was noted offsetting electricity consumption is a key objective key objective of TCSA's existing sustainability principles which is being considered across the site. Meeting attendees noted that the height of the Sky Safari upgrade may have visual impacts and be negatively received by community stakeholders and Zoo visitors. Visual impacts from the National Park were noted as of interest.	9 September 2022
Sydney Harbour Federation Trust	Meeting attendees were interested to know whether the Sky Safari upgrade related to targets to reduce car use for accessing	30 September 2022

Stakeholder	Consultation Undertaken	
	the Zoo, and whether such targets have been set. It was noted a traffic assessment and Green Travel Plan would be required as part of the SSDA. Meeting attendees asked how the Sky Safari upgrade may alter how people experience seeing animals at the Zoo. (Note: this meeting was held when the route was to be expanded). Meeting attendees highlighted that the Sky Safari upgrade would have some visual impacts and potentially some heritage impacts, noting that how the Zoo interfaces and relates with Sydney Harbour is important. Since this meeting, work has been undertaken to ensure the route does not impact on local heritage items within the site. Meeting attendees noted that it is important to clearly communicate the construction impacts, as well as the period of time between decommissioning the former Sky Safari and commissioning the upgrade. Communication with volunteers was also raised as an important consideration, noting that Harbour Trust volunteers and Zoo volunteers are often the same people.	
Government Architect	The SEARs require consultation with the GANSW through the NSW State Design Review Panel (**SDRP**) process. In response, the proponent engaged with the SDRP three times ▪ SDRP 1 and 2: Option 5 (Arrow route) ▪ SDRP 3: Option 6 (Retention of current route) The reduced scope and footprint for the cable car route presented in SDRP 3 was supported by the SDRP. The consideration of alternative design options and implementation of SDRP recommendations has resulted in design improvements and refinements to ensure the built form responds to the site's unique qualities. A detailed response to comments from the GANSW and SDRP is provided within the Architectural Design Report prepared by Studio SC (**Appendix F**). It is anticipated an additional SDRP meeting will be undertaken post-lodgement of the SSDA Package.	▪ SDRP 1: 29 March 2023 ▪ SDRP 2: 19 July 2023 ▪ SDRP 3: 2 May 2024

Throughout the development of the proposal, there has been continued engagement with Taronga's stakeholders representing the guest experience, wildlife and nature on the site and animal welfare.

As identified in **Section 3.2.2** of this report, in listening and exploring the opportunities for the project, the design team including FCAD (First Nations Design Consultant), Studio SC, and Newscape (Landscape Architects) consulted and engaged with:

- Taronga Indigenous staff and Community & Cultural Team, Cammeraigal & Wiradjuri Country.
- Taronga Aboriginal Advisory Group (TAAG), Cammeraigal Country
- First Nations knowledge and IP through Matt Fellingham (FCAD) initial community consultation (harnessing relevant Elders and Land Council members).

Urbis Archaeology also consulted with First Nations knowledge holders to determine the cultural significance of objects and/or places on and surrounding the site, and requirements to mitigate any impacts. A record of this consultation can be found in the Aboriginal Cultural Heritage Assessment (**Appendix Z**) accompanying this EIS.

In accordance with the Regulations, the EIS will be placed on formal public exhibition once DPHI has reviewed the EIS and deemed it 'adequate' for this purpose. Following this exhibition period, the applicant will respond to any matters raised by notified parties.

5.2. Community Views

The key issues raised by the community and key stakeholders are summarised in **Table** 16 below. A detailed community engagement table is provided as **Appendix D** which details the way in which these issues have been addressed in the EIS.

Table 16 Community Feedback

Key Issue	Community Stakeholder	Project Response
Round 1: Initial Design (2022)		
Connection and accessibility	The Sky Safari plays a vital role in connecting ferry wharf users to the Zoo's top entrance. Additional stops or stations would enhance accessibility across the Zoo, particularly around steep terrain areas. Larger cable cars will provide accessibility benefits by accommodating wheelchairs and prams and people with mobility issues.	The proposed route and replacement infrastructure aims to improve the visitor experience by providing upgraded infrastructure which incorporates larger, more accessible cable cars as well as amenities including shading for queuing areas, accessible access and toilets. As discussed in **Section 2.4,** additional stations were investigated but the impacts associated with increasing the route were considered to outweigh the improvements to accessibility. TCSA are also investigating other travel methods within the Zoo to increase accessibility via more temporary options.
Value of natural character and landscape	The leafy character of the Zoo should be maintained for ecological and aesthetic reasons. An expanded Sky Safari could have negative impacts on the existing tree canopy and associated visual and ecological aspects.	These comments are acknowledged and has been reflected in maintaining the existing route. Increasing the height of the pylons also aims to ensure that growth of trees is not impacted in the future. The potential impacts of trees (existing and future) on the proposed Taronga Sky Safari infrastructure is assessed as part of the Landscape Design Report prepared by Newscape (**Appendix O**) and in **Section 6.5** of this report.
Visual amenity	Concerns the new Sky Safari will not successfully visually integrate into the hillside, respect nearby heritage structures and how it would appear from a harbour viewpoint.	A Visual Impact Assessment has been prepared by Ethos Urban (**Appendix L**) in response to the SEARs and community feedback which is assess in **Section 0** of this report. The Top Station location was also relocated during design development back into its current location away from the Upper Entrance gates to ensure that key heritage items were not impacted by the proposed works.
Design elements and alternatives	The new cable cars could be complemented with small electric vehicles to support access across the steep site. The cable cars could include additional features to enhance the experience e.g. glass bottoms, screens and audio cues to share information about the views experienced.	Other methods of travel within the Zoo site are being considered by TCSA to complement the Sky Safari experience. It is intended that cable cars will provide audio visual elements to incorporate storytelling for visitors.

Key Issue	Community Stakeholder	Project Response
Additional consultation opportunities	Consultation sessions about the proposal should be held in prominent locations, such as the Zoo's top entrance or Mosman library, and short surveys could be offered.	This was acknowledged with community sessions heavily notified. A community drop-in session was held at Mosman Square Seniors Centre in the morning and Taronga Zoo Sydney's main entrance in the afternoon on 1 June 2024.
Scope and scale	The scope and scale of the proposal may have impacts on the welfare of Zoo animals. The rationale for upgrading the former Sky Safari was noted but the expansion of the route was a key concern.	Expansion of the route has been reduced with the current proposal maintaining the existing route.
Cumulative construction impacts	There has been 'constant' construction at the Zoo that impacted neighbouring residents, Zoo visitors and the animals. Construction staging should be carefully considered to minimise impacts.	This is noted. A cumulative assessment of construction impacts has been considered as part of the Construction Management Plan prepared by RPS (**Appendix GG**).
Round 2: Changes to the expanded route (2023)		
Design improvements and visual impact	There have been significant improvements in the proposal design from the early iteration, particularly the elimination of the overlapping of the route and reduced height, addressing initial concerns about the scale.	This is acknowledged.
Environmental and operational concerns	Efforts to minimise tree damage and preserve natural areas in the design were noted but there were ongoing concerns regarding potential impacts on bushland and animal welfare. There will likely be challenges associated with changes to access to the site and ferry during construction and operation. Travel and transport access should be carefully assessed, and any issues addressed.	As discussed in **Section 2.4,** further design refinements have occurred to minimise impacts on bushland and animal welfare. Ongoing discussions have occurred with TfNSW to manage expectations regarding construction and the ferry wharf. A Construction Traffic Management Plan will be required to be signed off by TfNSW prior to any construction works occurring.
Potential noise impacts	Attendees were concerned about noise impacts on neighbours. It was noted that the new cable cars are quieter, and a noise study would be conducted to assess impacts.	A Noise and Vibration Impact Assessment prepared by Acoustic Studio is enclosed in **Appendix T**. As noted in **Section 6.9**, the closest sensitive noise received (residential properties) are over 170m from the Top Station.
Traffic and transport	There were significant concerns raised about traffic congestion. The need for integration of transport options and coordination with Transport for NSW to promote ferry usage and alleviate local congestion was identified.	A Transport Impact Assessment (**TIA**) has been prepared by JMT Consulting, enclosed in **Appendix R** to assess the anticipated transport implications of the proposal during operational and construction stages. It is anticipated that the reinstatement of the Sky Safari will promote a modal shift away from private vehicle towards public transport which will ultimately benefit the transport network and improve traffic conditions.
Community consultation	The importance of continued community consultation and transparent communication was emphasised, and additional community consultation sessions were requested.	Additional community consultation was held in 2024 including targeted consultation with key stakeholders.

Key Issue	Community Stakeholder	Project Response
Round 3: Retention of the original footprint (2024)		
Revised design improvements	Key stakeholders noted significant improvements in the revised proposal, with positive comments about the route and design changes.	This is acknowledged.
Overall community sentiment	During community pop-up sessions held on 1 June at Mosman Square Seniors Centre and Taronga Zoo, approximately 75 people attended. The majority were supportive of the project, with positive comments about the route and design changes. Despite wet conditions limiting engagement at the Zoo session, attendees expressed enthusiasm for the Sky Safari's return.	This is acknowledged.
Traffic, transport and accessibility	There was community interest in integrating transport options to encourage greater public transport usage. Integrating the cost of a Sky Safari ticket into Zoo admission ticket was suggested to improve accessibility and visitor experience. The project team noted that a thorough traffic assessment would be conducted, considering cumulative impacts alongside other projects.	TCSA are continuing conversations with TfNSW on the opportunity to integrate ferry/public transport options with Zoo ticketing. As noted above, a Transport Impact Assessment (**TIA**) has been prepared by JMT Consulting, enclosed in **Appendix R** to assess the anticipated transport implications of the proposal during operational and construction stages. These impacts will continue to be discussed with TfNSW as the construction methodology is agreed with the Head Contractor and cable car contractor.
Accessibility and efficiency	There was support for the proposed larger, modern cable cars with positive feedback received in relation to their size, potential to accommodate prams, larger wheelchairs and people with mobility issues, and the ability to adjust speed. There was support for the improved accessibility and operational efficiency these would introduce.	This is acknowledged.
Value of local	The community supported efforts to minimise impacts on the existing tree canopy and recognised the proposal design's consideration of existing tree growth. Concerns were raised about the visual impact of pylons protruding through the canopy.	This is acknowledged. As noted above, a Visual Impact Assessment has been prepared by Ethos Urban (**Appendix L**) in response to the SEARs and community feedback.
Lower and upper station design	Stakeholders provided positive feedback in relation to the lower station design, highlighting the capacity of the new cableway system to accommodate up to 400 people in 15 minutes, the incorporation of 'Nawi' (traditional First Nations bark canoe) and the inclusion of lift and toilet facilities. The upper station was favourably described as resembling a 'tree house', with attendees expressing satisfaction with its design and the planned queuing arrangements.	This is acknowledged.

TCSA also conducted a survey in June 2024 on the importance of the Sky Safari at Taronga Zoo, involving a sample size of 420 participants, provided key insights into the Sky Safari's value and impact on visitor experience.

The survey, which was distributed to both Zoo Friends members and general Zoo visitors, highlighted that 65% of respondents rated the Sky Safari as very important to their zoo experience, with an additional 24% considering it important. The closure of the Sky Safari had a notable negative impact, with 84% of visitors reporting some degree of negative effect on their enjoyment, including 17% indicating a strong negative impact.

The survey also revealed strong enthusiasm for the proposed upgraded Sky Safari, with over 90% of respondents responding positively and 67% finding the concept very appealing. Key elements of the upgraded Sky Safari that resonated with visitors included viewing the animals from above, the ease of moving up the hill, and the elevated views of the harbour and city. One respondent noted, "It's one of the most iconic experiences that makes Taronga unique and harnesses the magnificent views of Sydney and the animals," while another stated, "It's a unique experience that doesn't exist anywhere near here." The larger cable cars for improved accessibility and the sustainable design of the new Sky Safari also garnered significant interest. Additionally, the integration with the Ferry Wharf was seen as a valuable feature, with one participant commenting, "What a magnificent way to start the day - ferry then gondola!" and another stating "Linking with the upgraded ferry wharf is an important feature and it is more appealing than the bus trip or walk up the hill. Personally, it will make arriving and leaving on the ferry much easier. Overseas visitors we have taken to the Zoo enjoyed the Sky Safari experience."

The overall positive response to the upgraded Sky Safari highlights its importance not only as a convenient way to navigate the Zoo, but also as a unique and cherished part of the Taronga Zoo experience.

5.3. Engagement to be Carried Out

TCSA welcomes feedback on the proposal and will continue to keep stakeholders and the community informed of the project approval process through the exhibition and determination phases by:

- Continuing to engage with the community about the project, its impacts, and the approval process including updates to the website and email updates to the stakeholder database.
- Providing information on how the community's views have been addressed in the EIS on the project website.
- Enabling the community to seek clarification about the project through the two-way communication channels.

If the SSDA exhibition coincides with school holidays it would be within DPHI's discretion to extend the exhibition period to ensure maximum community participation.

6. Assessment of Impacts

This section describes the way in which the key issues identified in the SEARs have been assessed. It provides a comprehensive description of the specialist technical studies undertaken regarding the potential impacts of the proposed development and recommended mitigation, minimisation and management measures to avoid unacceptable impacts. Further detailed information is appended to the EIS, including:

- SEARs compliance table identifying where the SEARs have been addressed in the EIS (**Appendix A**).
- Statutory compliance table identifying where the relevant statutory requirements have been addressed (**Appendix B**).
- Proposed mitigation measures for the project which are additional to the measures built into the physical layout and design of the project (**Appendix C**).
- Community engagement table identifying where the issues raised by the community during engagement have been addressed **(Appendix D**).

The detailed technical reports and plans prepared by specialists and appended to the EIS are individually referenced within the following sections.

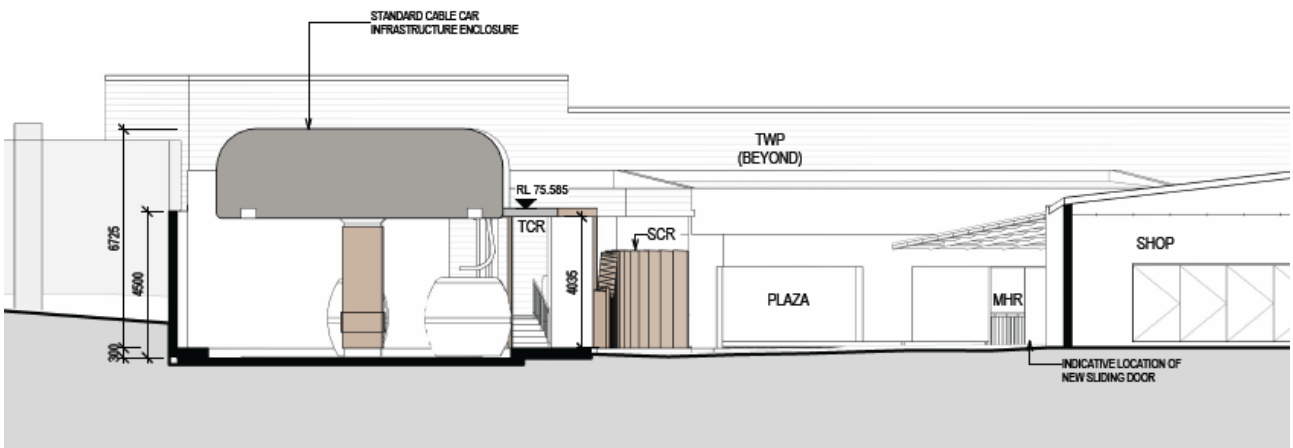
6.1. Built Form and Urban Design

6.1.1. Height, Bulk and Scale

The Top Station has been integrated within the Upper Entrance Plaza. The queuing and platform areas read as a one storey element providing a consistent height to the adjoining amenities and ticketing building. The cable car enclosure sits above the platform but remains below the height on the adjacent Institute of Science and Learning to the west.

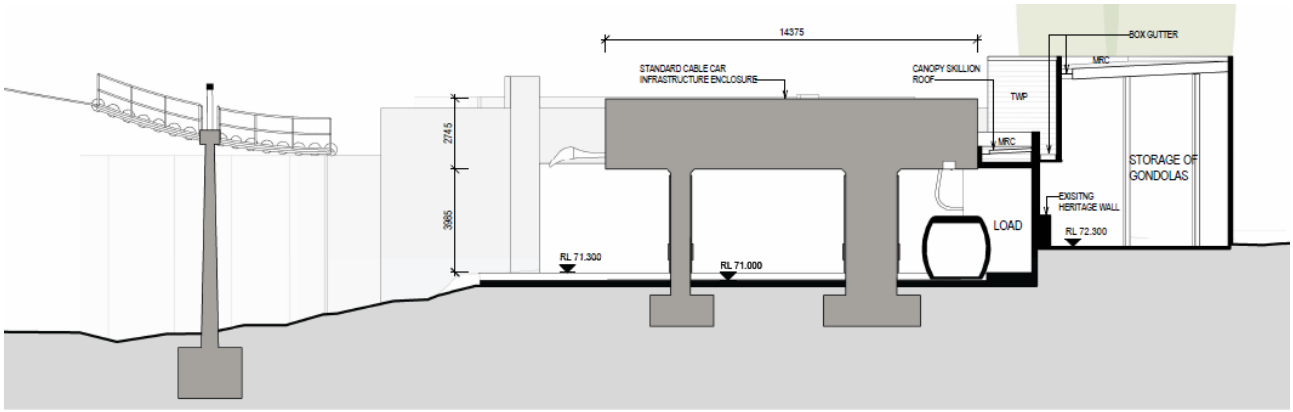
The Storage and Maintenance facility sits outside of the heritage wall which acts as an informal boundary for the Zoo. The built form adjoining the heritage wall is lightweight in nature and intends to preserve the historic wall where possible. The location of the storage facility outside of the main wall means that this facility does not impact on any existing pathways or buildings within the Zoo ground. While visible from the adjacent car park, the introduction of similar materials to existing buildings within the Plaza and other areas of the Zoo, means that this element integrates with the existing context of the site.

Figure 40 Top Station South Elevation



Source: Studio SC

Figure 41 Section cutting through Top Station Platform and Storage Facility

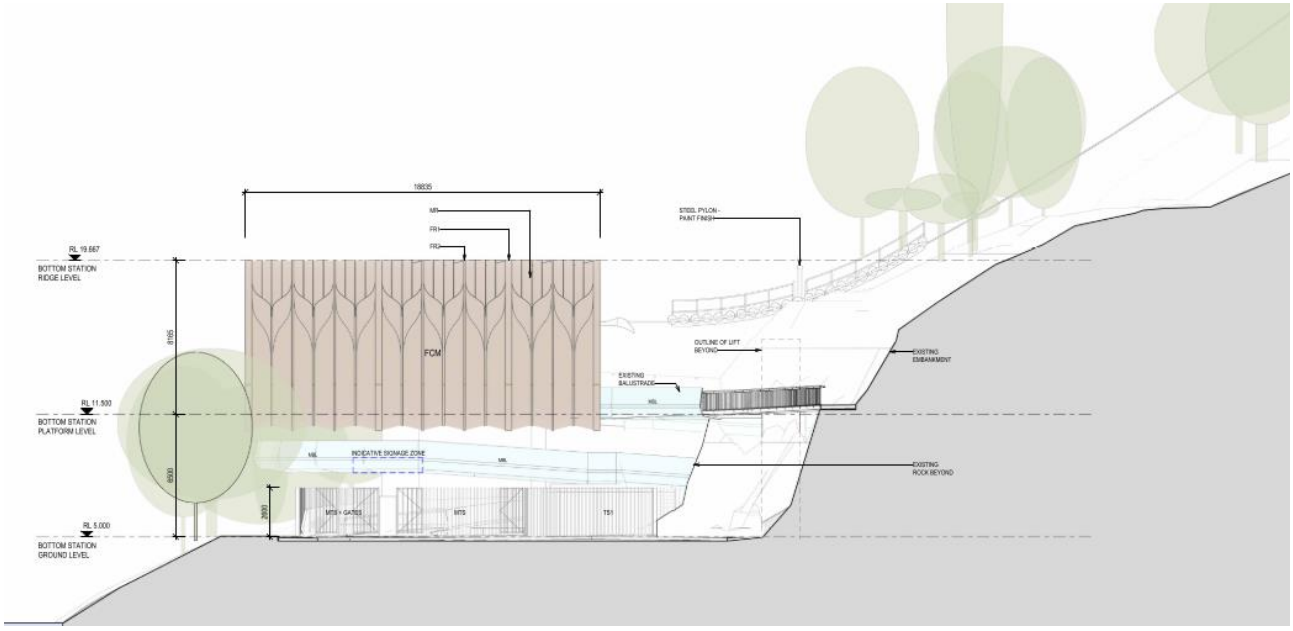


Source: Studio SC

The proposed Lower Station has been located within the footprint of the existing station. Ramping and circulation occurs predominantly under the station platform and to the north in order to minimise impact on the remnant bushland along the harbours edge.

The bulk and scale reflects existing built form associated with the former station. Ramping from the ground level wraps under the platform structure and then folds out into the landscape and sandstone cutting to reduce the perceived bulk and provide a more open experience within the ground plane.

Figure 42 Lower Station West Elevation



Source: Studio SC

It is necessary to acknowledge and consider that the scale, form and layout of the cableway and pylon elements reflect operational and structural requirements, and as such are unavoidable in service of the proposal's current intent. The reduction from nine to six pylons results in a reduced impact to the ground plane and the landscape within Taronga Zoo, improving long-term masterplan flexibility of the Zoo.

While it is acknowledged in **Section 0** and the Visual Impact Assessment prepared by Ethos Urban (**Appendix L**) that the height of the proposed pylons are visible from a number of public view points, further investigations have been undertaken by Newscape, the project landscape architect and Naturally Trees, the project arborist to determine the potential tree growth along the cable car route. As illustrated in **Figure 43**, existing and proposed tree coverage along the cable car route will mitigate potential visual impacts and associated bulk and scale. Trees identified in red are likely to touch the cable car route at their mature height and will require pruning.

Figure 43 Indicative Tree Canopy Growth

Picture 25 Current Tree Size

Source: Newscape

Picture 26 Maximum Tree Size (trees in red touch the cable at maximum mature height)

Source: Newscape

6.1.2. Building Code of Australia and Accessibility Requirements

A BCA Design Compliance Report has been prepared by Matt Shuter and Associates, enclosed in **Appendix J** to assess the compliance of the Proposal against the relevant provisions of the National Construction Code (**NCC**) including the Building Code of Australia (**BCA**). The proposed building is classified as partially Class 9b (assembly building) and Class 5 (office).

The assessment has found the proposed development is capable of achieving compliance by a combination of compliance with the Deemed-to-Satisfy (**DTS**) provisions and the provision/documentation of performance solutions in accordance with Clause A5.2 of the BCA by a suitably qualified consultant/s to achieve compliance with the performance provisions of the BCA and NCC. The provision and assessment of these reports/documents will occur prior to the issue of Crown Building Certification under Section 6.28 of the EP&A Act.

6.2. Environmental Amenity

In accordance with the SEARs, the Design Report (**Appendix F**) and associated Architectural Plans (**Appendix G**) prepared by Studio SC addresses environmental amenity achieved by the proposal including:

- **Stations have been designed to provide shelter for guests while queuing while still providing access to natural daylight and ventilation**

  The site is largely sheltered from north and eastern climatic effects due to its topography. It is exposed to prevailing summer winds from the south and winter winds from the northeast.

  The Top Station provides 36m of queuing within the new covered purpose built queuing area. There is capacity within the Upper Entrance Plaza for approximately 180m of additional queuing if required. This is located under the current shade structure within the Upper Entrance Plaza.

The Lower Station is anticipated to hold more visitors given its location adjacent to the Ferry Wharf. As such, the proposed station introduces 125m of ramping sitting within the built form ensuring that the majority of queuing is protected from inclement weather. This allows for at least 250 guests to comfortably queue.

- **The stations have been designed to improve pedestrian movement throughout the site.**

  The Top Station has been designed to integrate into the Upper Entrance Plaza with separated entrance and egress points to minimise pedestrian conflicts. Queuing during peak events is located within the new built form providing shelter. Additional queuing is available during peak visitor times within the Plaza. This will be managed by Taronga staff to ensure that queuing is formalised and visitors not utilising the Sky Safari can still access amenities within the Plaza.

  The Lower Station provides a new arrival plaza at a key entrance point to the Zoo. As noted in **Section 3.2.5**, the new Plaza provides a new pedestrian connection to the Ferry Wharf replacing the existing on site arrangements which relied on visitors from the Ferry Wharf walking around the Athol Wharf Road cul-de-sac. Queuing is now provided on an accessible ramp compared to the existing 30m staircase.

  While it is anticipated that the Sky Safari will run at a similar speed to the retired infrastructure, it is possible to vary the speed to meet demand when required with the intention to maintain a maximum queuing time of 15 minutes at the Lower Station. This will assist in managing queuing levels and guest experience.

- **New built form is separated from residential dwellings**

  The majority of the route is internal to the Zoo with the only external interface associated with the Lower Station, which directly abuts Athol Whard Road. The location of the Lower Station is not located within close proximity of any residential or sensitive receivers with all residential properties located over 170 metres from the closest proposed works (Top Station). As such, it is not anticipated that the proposal will result in any detrimental impacts to residential or other sensitive uses.

- **Solar access is appropriate managed within publicly accessible areas**

  Analysis on the potential overshadowing associated with the proposed stations has been prepared by Studio SC within the enclosed Architectural Plans (**Appendix G**). Shadow diagrams have been provided for every hour of summer and winter solstices from 9am to 3pm.

  Shadows associated with the Top Station during the Winter Solstice generally fall on existing built form within the Upper Entrance Plaza. Shadowing on the plaza provides shadow coverage to queuing areas while still providing solar access to seating areas associated with the café.

  Shadows associated with the Lower Station during the Winter Solstice generally fall onto the road and remnant bushland to the south. Given the existing built form on site, there is no additional impacts identified associated with the proposal.

Structural advice has also been prepared by Meinhardt (**Appendix I)**, which confirms that the structural design of the pylon foundation will be based on the design loads provided by the cable car supplier. The design loads shall include dead and live loads, seismic loads, wind loads, impact and vibration loads required by the relevant Australian Standards. Further work will continue following confirmation on the cable car supplier and during construction.

6.3. Visual Impact

A Visual Impact Assessment (**VIA**) has been prepared by Ethos Urban (**Appendix L**) to assess the visual changes and impacts of the proposed built form associated with the redevelopment of the Sky Safari. The key substantive issues for consideration by this VIA are:

- Integration with the landscape when seen from outside the Zoo
- Integration with the landscape when seen from inside the Zoo
- Interruption or blocking of high value views from the Zoo
- Impact on private property in Mosman.

6.3.1. Methodology

The VIA was conducted in accordance with methodology established under the following:

- ‘Guidelines for Landscape and Visual Impact Assessment’ version 3 (GLVIA3);
- NSW Land and Environment Court (LEC) planning principle for ‘impact on public domain views’ established in Rose Bay Marina Pty Limited v Woollahra Municipal Council and Anor [2013] NSWLEC 1046 (Rose Bay); and

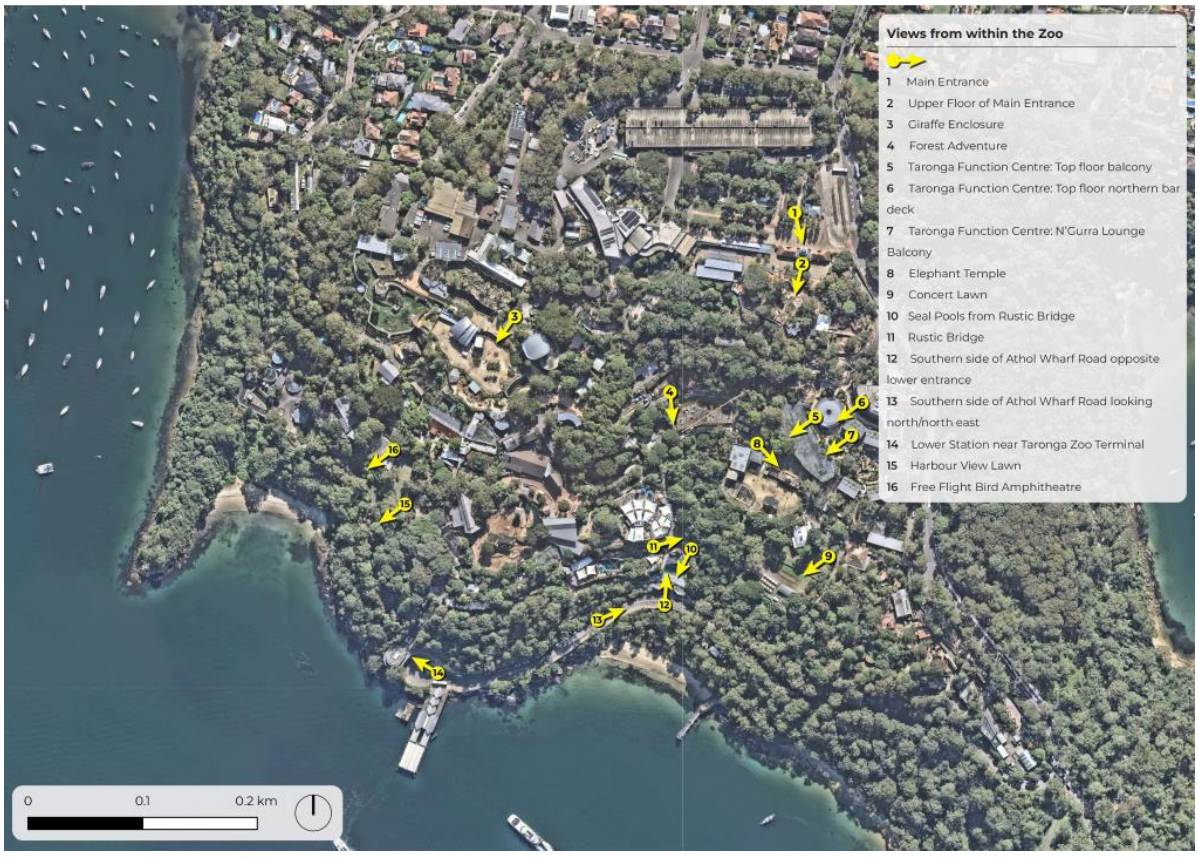
The visual catchment of the Sky Safari is largely contained to views within the Zoo and the immediate surroundings of the Zoo. However, the Sky Safari will be visible from other public and private locations outside the Zoo in the surrounding area and other locations within Sydney Harbour including:

- Key locations within the Zoo
- Reserves and public spaces in the surrounding area, south-east and south-west of the Zoo
- Public viewpoints in the Sydney Harbour and its foreshore, further south and south-west of the Zoo
- Local street network in the immediate surrounding area
- Residential areas to the north-east and north-west of the Zoo

Based on the visual catchment identified, 28 viewpoints from views within the Zoo, outside the Zoo (close, medium and long range) and surrounding residential streets have been identified within the VIA (refer to **Figure 44**).

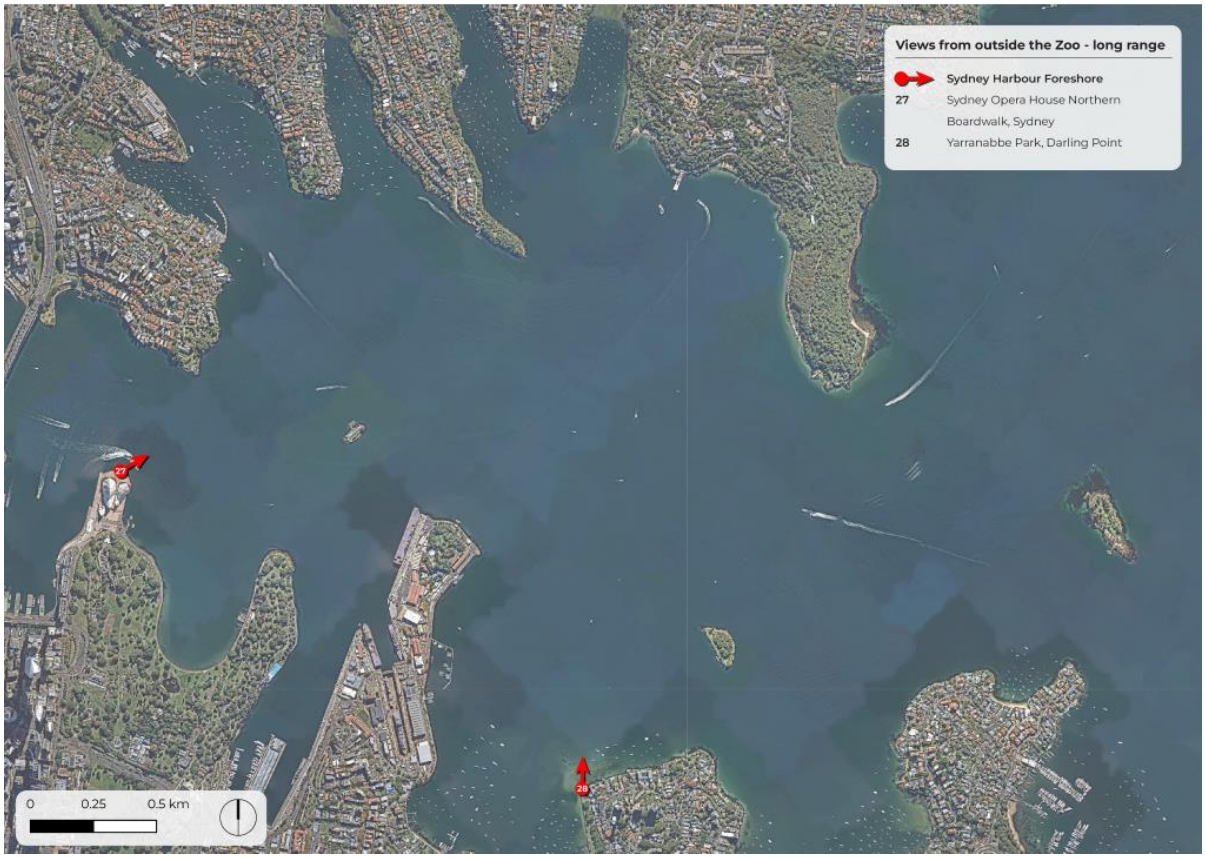
Key viewpoints have been chosen to represent the pattern of viewing and show the impact on key visual matters relevant to the Zoo. Their selection has also been informed by review of relevant planning documents, including the Taronga Zoo Master Plan, and in collaboration with Taronga Zoo’s heritage advisor.

Figure 44 Identified View Points



Picture 27 Views from within Taronga Zoo

Picture 28 Views from outside the Zoo – close to medium range



Picture 29 Views from outside the Zoo – long range

Source: Ethos Urban

A number of identified viewpoints were impacted by previous schemes investigated by the project team, as described in **Section 2.4**. However, these views have been retained in the VIA to address the SEARs and also demonstrate the lack of visual impact on key views, in particular heritage items within the Zoo.

The evidence base for the VIA was informed by photomontages prepared in accordance with the LEC photomontage policy for viewpoints in the nearby public and private domain. Significance of visual impact is determined through analysis of photomontages taking to account factors of sensitivity and magnitude. It is noted that cable cars were not incorporated within the photomontages prepared for the VIA.

6.3.2. Assessment

An assessment of visual impact against the factors of sensitivity to the nature of change proposed and the magnitude of the change to identify significant visual impacts has been undertaken against all 28 viewpoints. In terms of significance of visual impact:

- The proposal will have a negligible visual impact on fifteen (15) viewpoints
- The proposal will have a low visual impact on four (4) viewpoints
- The proposal will have a moderate visual impact on nine (9) viewpoints
- The proposal will have a high visual impact on zero (0) viewpoints.
- The proposal will not have a major visual impact on any viewpoint.

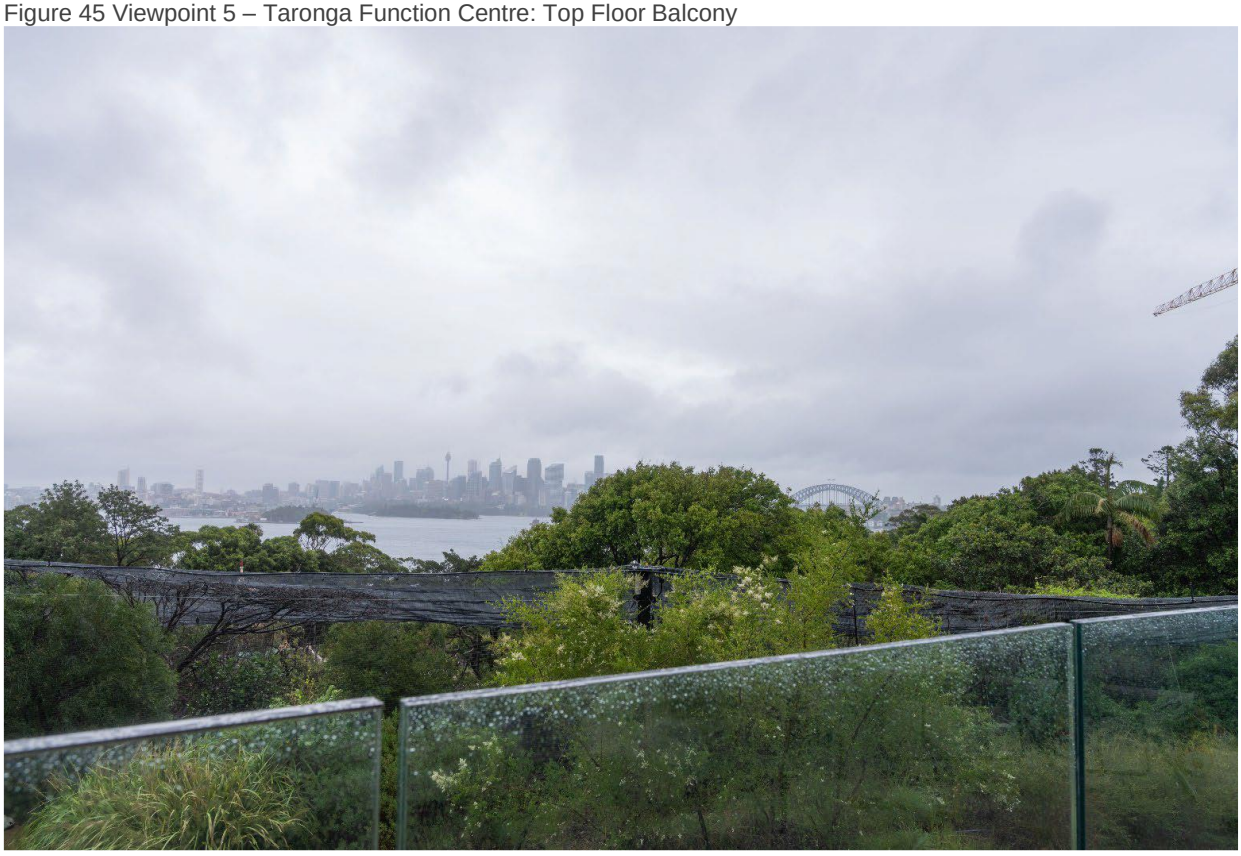
Further assessment of the nine viewpoints identified to have the highest visual impact (moderate visual impact) are assessed in **Table 17** below with further assessment of all viewpoints provided in the VIA enclosed in **Appendix L.**

Table 17 Visual Impact Summary of Views within the Zoo with moderate impact

Viewpoint	Assessment
Viewpoint 5: Taronga Function Centre: top floor balcony	Viewpoint 5 is an oblique view of Sydney Harbour and is approximately 300m from the Sky Safari. The cableway and pylon (P3) will be visible in the centre right corner of the background of this view. While partially visible, the height of the pylon element is level with the Harbour Bridge in the background. The cableway does exceed the height of the dominant canopy line in the midground. It is noted that the pylon and cableway do not impede upon views to the Sydney Harbour bridge, Sydney Harbour and CBD skyline. The verticality of the pylon will be softened by thickly vegetated nature of existing animal exhibits which dominates the foreground and midground of this view. Overall, the visual impact is considered to constitute a **moderate** change (due to the verticality of the pylon) over a restricted area that is ongoing but capable of being reversed.
Viewpoint 6: Taronga Function Centre: top floor northern bar deck	Viewpoint 6 is also an oblique view of Sydney Harbour and is approximately 200m from the Sky Safari. The cableway and pylon (P4) will be visible in centre of the midground. The Sky Safari is predominantly screened by the existing, dense vegetation and tree canopy across the Zoo. Whilst a significant proportion of the pylons are set behind existing tree canopy, the cableway does exceed tree height and interrupt canopy coverage in the midground. However, the profile of the function centre building in the foreground is not compromised and view lines to the Sydney Harbour and CBD are not impacted. Overall, the visual impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.
Viewpoint 7: Taronga Function Centre – N'Gurra Lounge Balcony	Viewpoint 6 is an oblique view of Sydney Harbour and is approximately 150m from the Sky Safari. Pylon elements (P3 & P4) and the cableway are visible in the midground.

Viewpoint	Assessment
	While the pylon elements and cableway are the visible in the centre of the midground, the Sky Safari is predominantly concealed by the dense vegetation and tree canopy across the Zoo. Whilst a significant proportion of the pylons are set within existing tree canopy, the cableway does exceed tree height and interrupt canopy coverage in the midground. However, the Habitat and Wildlife retreat buildings and landscaping and existing vegetation across the Zoo still define the visual character of the view. Importantly, the panoramic view of Sydney Harbour and CBD is not unreasonably impacted. Overall, the visual impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.
Viewpoint 14: Lower Station near Taronga Zoo Terminal	Viewpoint 14 is an oblique view of the former Sky Safari from Athol Whard Road. The Lower Station occupies a significant proportion of the midground of this view. However, its location, footprint, size and massing is similar to that of the existing building. While the proposed station is distinct and highly visible element, the proposed design for the Lower Station is more contextually responsive and provides a new arrival experience which aligns with the objectives of the Zoo. This is achieved by its unique architectural profile and materiality that includes timber battens, palisade fencing and design elements incorporating Indigenous art and storylines. The foreground and background will not be directly affected by the proposed works. Considering the increased visual prominence of the proposed Lower Station, the visual impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.

Figure 45 Viewpoint 5 – Taronga Function Centre: Top Floor Balcony



Picture 30 Existing View

Picture 31 Proposed View

Source: Ethos Urban

Figure 46 Viewpoint 6 – Taronga Function Centre: Top floor northern bar deck

Picture 32 Existing View

Picture 33 Proposed View

Source: Ethos Urban

Figure 47 Viewpoint 7 – Habitat and Wildlife Retreat: N'Gurra Lounge Balcony

Picture 34 Existing View

Picture 35 Proposed View

Source: Ethos Urban

Figure 48 Viewpoint 14 – Lower Station near Taronga Zoo Terminal

Picture 36 Existing View

Picture 37 Proposed View

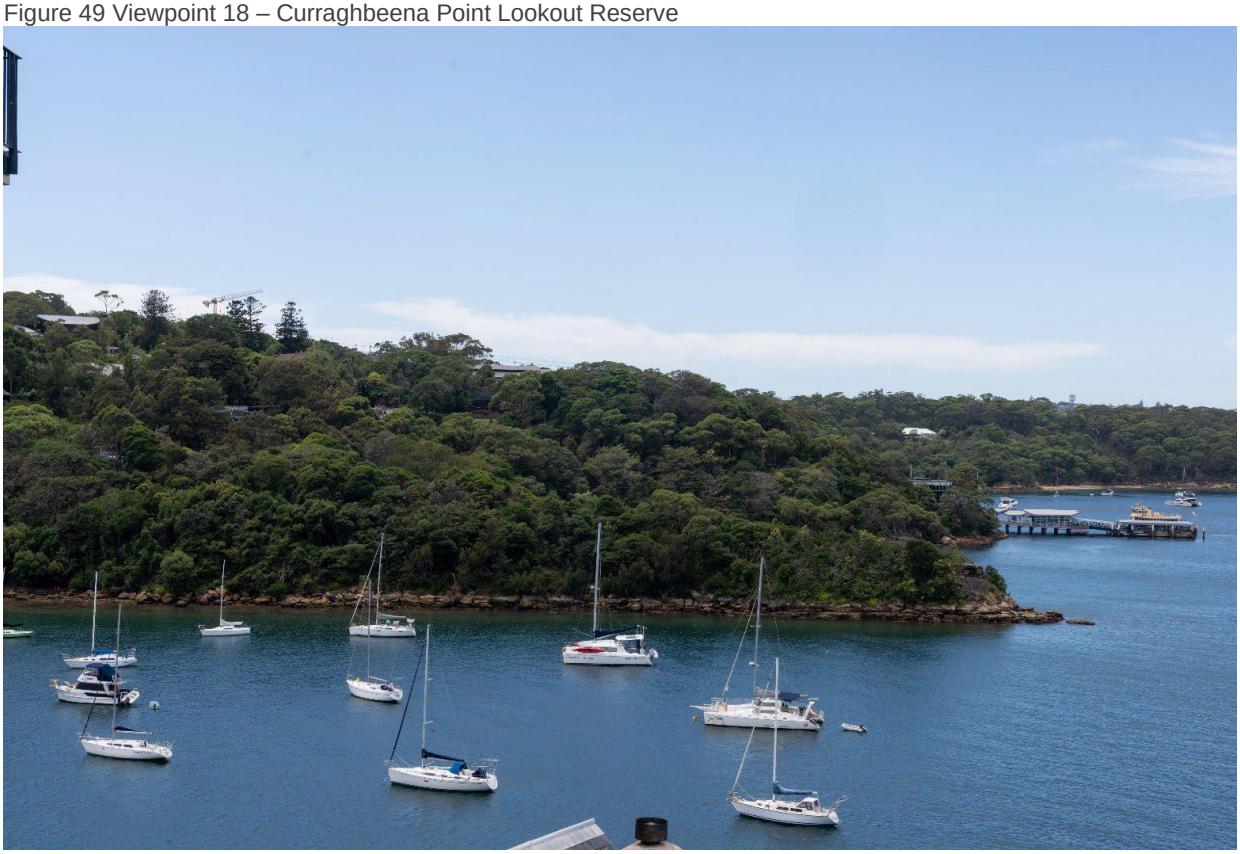
Source: Ethos Urban

Table 18 Visual Impact Summary of Views outside the Zoo with moderate impact

Viewpoint	Assessment
Viewpoint 18: Curraghbeena Point Lookout Reserve	Viewpoint 5 is an oblique view facing east across Sirius Cove (Sydney Harbour) in the foreground to Whiting Beach headland in the midground and the Taronga Zoo headland and Ferry Wharf in the background. The Lower Station pylon elements (P2, P3, P4 and P5) and cableway are visible in the midground and background of this view. The majority of the Lower Station built form will be visible in the right midground of this view. Vertical pylon elements and cableway are visible through the tree canopy in the centre and left corner midground of the view. The Lower Station will emphasise the role and functionality of Taronga Zoo and the Wharf from surrounding headlands and Sydney Harbour. Importantly, the proposal will not affect views to the Harbour in the foreground. The impact is considered to constitute a **moderate** change over a wide area that is ongoing but capable of being reversed.
Viewpoint 19: Taronga Zoo Ferry (Close Range)	Viewpoint 19 is an oblique view to the north across Sydney Harbour from Taronga Zoo Ferry toward Taronga Zoo and the broader Mosman headland. This view is approximately 150m from the Sky Safari. This viewpoint is critical as it replicates the experience of visitors travelling by Ferry as they arrive to Taronga Zoo Wharf. The Lower Station, pylon elements (P2, P3, P4 and P5) and cableway are visible in the midground of this view. The Lower Station built form will be visible in the centre midground of this view. A considerable proportion of the Lower Station is concealed by existing vegetation and the roof profile sits below the tree canopy. Vertical pylon elements and cableway across the Zoo campus are visible in the centre and right upper midground. While the Sky Safari will be a new prominent feature of this view, it reinforces the identity and location of the Zoo from Sydney Harbour. Importantly, the proposal does not impede upon views to the Harbour in the foreground. The impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.
Viewpoint 20: Taronga Zoo Ferry (Medium Range)	Viewpoint 20 is another oblique view to the north across Sydney Harbour from Taronga Zoo Ferry toward Taronga Zoo and the broader Mosman headland. This view is approximately 250m from the Sky Safari. This viewpoint also replicates the experience of visitors travelling by Ferry as they arrive to Taronga Zoo Wharf. The Lower Station, pylon elements (P2, P3, P4 and P5) and cableway are visible in the midground of this view. While predominantly concealed by existing vegetation, the façade and upper roof elements of the Lower Station will be visible in the centre midground of this view. Vertical pylon elements and cableway are also visible in the centre midground, exceeding the height of dominant tree canopy within the Zoo landscape. While the Sky Safari will be a new prominent feature of this view, it reinforces the identity and location of the Zoo from Sydney Harbour. Importantly, the proposal does not impede upon views to the Harbour in the foreground. The impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.
Viewpoint 22: Ashton Park/ Athol Bay Lookout	Viewpoint 22 is an oblique view looking north-west across Athol Bay toward Athol Wharf and Taronga Zoo headland. The Sky Safari is approximately 500m away from this view. Vertical pylon elements (P3) and cableway are visible as new, prominent features in the background of this view. While P2 is visible, the majority of pylons and cableway do not protrude above the dominant canopy line. It is reasonable to assume that supplementary

Viewpoint	Assessment
	planting and ongoing maturation of existing vegetation will mitigate the verticality of the Sky Safari. The proposal does not impede upon views across Athol Bay or toward Taronga Zoo. The impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.
Viewpoint 23: Bradleys Head Wharf	Viewpoint 23 is an oblique view looking north-west across Sydney Harbour from Bradleys Head Wharf toward Athol Bay and Taronga Zoo. The Sky Safari is approximately 1000m away from this view. The Lower Station, pylon elements (P2, P3, P4 and P5) and cableway are visible in the midground of this view. Majority of the eastern Lower Station façade will be visible in the left midground of this view. Pylon elements and the cableway are also visible across the Zoo landscape of the midground, positioned above existing tree canopy. The proposal does not impede upon views to the Harbour in the foreground. The impact is considered to constitute a **moderate** change over a restricted area that is ongoing but capable of being reversed.

Figure 49 Viewpoint 18 – Curraghbeena Point Lookout Reserve



Picture 38 Existing View

Picture 39 Proposed View

Source: Ethos Urban

Figure 50 Viewpoint 19 – Taronga Zoo Ferry (Close Range)

Picture 40 Existing View

Picture 41 Proposed View

Source: Ethos Urban

Figure 51 Viewpoint 20 – Taronga Zoo Ferry (Medium Range)

Picture 42 Existing View

Picture 43 Proposed View

Source: Ethos Urban

Figure 52 Viewpoint 22 – Ashton Park/Athol Bay Lookout

Picture 44 Existing View

Picture 45 Proposed View

Source: Ethos Urban

Figure 53 Viewpoint 23 – Bradleys Head Wharf

Picture 46 Existing View

Picture 47 Proposed View

Source: Ethos Urban

Based on the visual analysis undertaken, it is acknowledged that the proposal will result in a change to the Zoo's visual setting when seen from outside the Zoo. All reasonable steps have been taken to ensure the proposal effectively integrates with the landscape of the Zoo and to minimise protrusion to the Zoo's dominant tree canopy line to ensure views from outside the Zoo are not adversely impacted.

The former Ski Safari already protrudes above existing tree canopy and vegetation within the Zoo and Bradleys Head headland. It is also currently visible from Sydney Harbour as well as public spaces, landmarks and surrounding foreshore areas. The proposal, including the cableway, new pylons and Lower Station, do exceed the existing height, bulk and form of the current Sky Safari and do protrude above the dominant tree line in certain areas of the Zoo landscape. The Top Station is not perceptible from viewpoints outside the Zoo.

The proposal will be effectively integrated within the Zoo landscape and will not be a visually dominant feature seen from outside the Zoo due to the following additional reasons:

- The existing, lower cable car terminal building currently projects out from the hillside as a landmark. The proposed design for the Lower Station which abuts Taronga Zoo Ferry Wharf, appropriately addresses Sydney Harbour and creates a new arrival experience for guests arriving via the Ferry Wharf. This in turn, should assist in encourage visitors to use public transport to visit the Zoo.
- The Sky Safari route follows the route of the former Sky Safari to reduce impacts on animal exhibits as well as mature vegetation and tree canopy across the site.
- The design and structural forms of the stations and materiality, better responds to the environmental and heritage context of the Zoo and creates a stronger visual integration between the Zoo and the surrounding foreshore landscape.
- As noted in **Section 6.1**, supplementary planting and ongoing maturation of existing vegetation will continue to mitigate the prominence of vertical elements in views from outside the Zoo overtime.

As surrounding residential areas are more sensitive to the nature of change, this VIA has considered impact on private views obtained from the public domain. As determined by the assessment of photomontages, the Sky Safari is not visible from most residential areas to the north/north-east of the site (refer to **Figure 54**). The established tree canopy and thickly vegetated landscape of the Zoo mitigates the visual impact of the proposal on the surrounding private properties and the local street network more broadly. Views to the proposal are also mitigated by existing built elements and vegetation within the surrounding landscape, which predominately conceal the proposal from view.

Figure 54 Viewpoint 25 – proposed view from Bradleys Head Road

Source: Ethos Urban

It is acknowledged that elements of the proposal, the Lower Station and vertical pylon elements (Pylons P2 to P5) in particular, will be partially visible from certain foreshore residential areas in Mosman and Cremorne Point located to the west of the site. This is demonstrated by the potential view obtained from Curraghbeena Point Lookout Reserve (refer to **Figure 49**). While visible, all built elements are softened by the extensive coverage of existing vegetation and tree canopy within the Zoo landscape. It is also reasonable to assume that supplementary planting and ongoing maturation of existing vegetation will mitigate the prominence of vertical elements overtime.

The VIA has also considered impacts of the Sky Safari at night. The VIA notes that artificial lighting is already existing in the foreshore landscape and it is not highly visually sensitive to additional artificial light sources.

In terms of the operation stage, it is anticipated that the nature and impact of lighting for the proposal will be generally comparable to what already exists at Taronga Zoo Ferry Wharf, the site and surrounding area as illustrated in **Figure 55**. No external lighting is proposed for the pylons and cable cars will be internally lit. It is acknowledged that events might occur at night aligning with the proposed operation hours and details. Given the existing lighting within the visual catchment, any increased or enhanced lighting to support operation, navigation, wayfinding and user safety can be justified as a reasonable outcome that can be absorbed in the environment without unacceptable impact.

No external lighting is proposed for the pylons and cable cars will be internally lit.

Figure 55 Viewpoint 18 – proposed view at night

Source: Ethos Urban

The proposal is considered to have an acceptable visual impact for the following reasons:

- Having been present on the site in a similar nature to that now proposed for the past 35 years, the Sky Safari is a well-established and valued part of the Zoo landscape. Given this and the typical useable lifespan of such structures, it is reasonable to expect continuation of a Sky Safari within the site.
- While having a highly landscaped setting, the Zoo itself is also inherently an urban zoo. This is evidenced by a number of buildings and structures being visible from locations outside the Zoo, in particular the Function Centre, Wildlife Retreat and the Great Southern Oceans exhibit. It is also often seen, in particular from locations on the southern Sydney Harbour foreshore such as the Opera House, within the context of the more developed lower North Shore west of Little Sirius Cove

- The proposal has been subject to a comprehensive and detailed design process, including multiple State Design Review Panel sessions, with considerable reductions being made to its original scope to reduce visual impact.
- Remaining incursion of pylons (P2-P5) above the prevailing tree canopy line are necessary for structural safety and operational reasons, and as such are unavoidable in service of the proposal's current intent.
- The proposed scale, massing, form and architectural detailing of the Lower Station will further reduce visibility of the proposal, in particular when seen from more distant locations.
- Where visible, it is reasonable to assume that over time supplementary planting and ongoing maturation of existing vegetation will mitigate the prominence of vertical elements in views from outside the Zoo overtime.

6.3.3. Mitigation Measures

As noted in the Design Report (**Appendix F**), the proposal has been subject to a comprehensive and detailed design process, including multiple State Design Review Panel sessions, with considerable reductions being made to its original scope to reduce visual impact. Changes made to the design in response to feedback are further outlined in **Section 2.4** of this report. This has resulted in the incorporation of a number of design consideration that seek to avoid and minimise any potential significant adverse visual impacts. As noted by Ethos Urban, these design influences have been critical to the determination of acceptable visual impact.

Nonetheless, it is recommended that further investigation be undertaken and additional measures be considered as part of more detailed design development including further investigation of materiality and colours that facilitate 'blending in' with the natural environment of Taronga Zoo e.g. non-reflective materials and natural colours and screening storage, motor units and other similar infrastructure from public view.

It is also recommended that during construction compliance with Australian Standard AS4282-2019 'Control of the obtrusive effects of outdoor lighting' is implemented to reduce light spillage and glare through the placement and design of lighting.

6.4. Public Space

The entire Sky Safari route remains within the Zoo boundaries with the Lower Station having a direct interface to Bradley's Head Road and the Taronga Ferry Wharf. The Top Station is located within the Arrival Plaza and sits behind the entrance boundary to the site.

In response to the SEARs, a Crime Prevention Through Environmental Design (**CPTED**) Report has been prepared by Urbis (**Appendix M**) to identify potential risk areas and recommendations to help reduce crime risk and enhance safety associated with the Sky Safari with particular focus on the two stations, as the locations where people will gather.

6.4.1. Methodology

The CPTED report provides an assessment of local context and site analysis, based on a site visit undertaken on 6 June 2023 and review of the available BOSCAR crime data to understand the existing context and crime activity for the Mosman area.

Analysis of the proposal has been provided against CPTED principles, in accordance with the *Crime Prevention and the Assessment of Development Application Guidelines (2001)* and the relevant provisions of the Mosman DCP.

6.4.2. Assessment

Based on the findings of the CPTED report, the station location and design has effectively addressed active and natural surveillance measures by redesigning the site in a way which improves site lines, and increases movement and activity, especially outside normal daylight hours. Furthermore, the station will have ample CCTV coverage which increase perceived safety.

A Plan of Management has been prepared for the operation of the Sky Safari which outlines a number of controlled access measures which minimise opportunities for crime and increase the effort required to commit crime. Stations have been designed with clear physical and symbolic barriers which are used to attract, channel or restrict the movement of people through operational and non-operational periods. Greater

activation at site entrances will contribute to making the area less attractive to potential offenders due to the higher risk of being observed.

6.4.3. Mitigation Measures

The CPTED provides key recommendations for the Sky Safari to further increase safety and reduce crime risk. The recommendations are provided against each of the four CPTED principles.

Surveillance

Signage:

- Signage is designed for universal legibility to help visitors navigate spaces. During future detailed design stages, develop a comprehensive signage plan. New signage will:
  - Be compatible with existing Taronga Zoo signage.
  - Utilise symbology and visual elements to accommodate visitors of diverse abilities and linguistic backgrounds.
  - Be thoughtfully positioned and well-lit to ensure visitors can safely read and understand directions at night.
  - Use CCTV and alarm signage to deter criminal and anti-social behaviour, while reinforcing the existing levels of mechanical surveillance.

Gardens and landscaping:

- Balance aesthetics and safety in the landscaping around the station sites, pylons, pathways, and access ramps. Select plant species based on their height, bulk, and shape to maintain sightlines, visual connection and safety including:
  - Ensure lower tree limbs are above average head height.
  - Avoid shrubs that provide easy concealment, especially below the coastal path below the Lower Station platform.

Lighting:

- Lighting meets minimum Australian Standards. Implement gradual transitions in lighting brightness to reduce discomfort and visual impact when moving between differently lit areas. Lighting provision will pay particular attention to the transition lighting between the upgraded station structures and the surrounding public areas, in particular along the publicly accessible 'Coastal Path' below the Lower Station.

Operator houses:

- Utilised glazing in the façade of the operator houses within each station to facilitate natural and organised surveillance both inside and outside the stations.

Access Control

Clear boundaries and directional signage:

- Areas with unclear boundaries or movement cues are susceptible to trespassing. 'No Go Zones' adjacent to new stations should be clearly identifiable with signage, symbolic and physical boundaries (fencing, landscaping) to prevent shortcutting through these spaces.
- Use on-ground directional signage or design cues on the 'one-way ramps' to direct pedestrian flow and avoid confusion and congestion.
- Use clear signage, stationed staff, and/or one-way turnstiles to restrict entrance to the pedestrian egress ramps.

Anti-Climbing measures:

- Building and pylon surfaces do not include elements that can serve as footholds or handholds that could enable unauthorised access or climbing.

Territorial reinforcement

Material selection:

- Use materials that reduce opportunities for vandalism and graffiti on external surfaces. Avoid large flat surfaces prone to graffiti. Instead, use highly articulated surfaces, glazed areas, and green screens or climbing plants.

Space and activity management

Early consultation:

- Engage with Mosman Council and Transport NSW early in the process to clarify roles and responsibilities for management and crowd control at the interchange of the ferry wharf, bus stop, and Sky Safari Lower Station at Athol Wharf Road.

Maintenance responsibilities:

- Establish and formalise maintenance responsibilities for all new assets, fixtures, and landscaping. These will be incorporated into Taronga Zoo's existing PoM or a new PoM specifically for the Sky Safari Stations.

Operational roles:

During operation, designate Taronga Zoo employees to:

- Provide direction and control access from the ferry wharf and bus stop to the Lower Station entrance, particularly during high visitor peak periods.
- Manage movement and queuing of visitor and ensure Zoo patrons do not obstruct the Bondi to Manly 'Coastal Path,' which runs to the south of the site and beneath the Lower Station structure.

6.5. Trees and Landscaping

An Arboricultural Impact Assessment (**AIA**) has been prepared by Naturally Trees (**Appendix N**) to review the impacts of the proposed tree removal on site and provide mitigation measures to minimise the impact on native vegetation. The minimum number of trees possible have been removed to accommodate the new built form and wherever possible the route and stations has been designed and located to minimise impacts on native vegetation on site.

6.5.1. Methodology

Site inspections were undertaken by Naturally Trees with the supplied plans to determine the impact of the proposed development on tree species. A total of 106 trees were assessed by Naturally Trees during their site inspections.

The retention values of each tree was determined using the TreeAZ assessment system. The rating relates to the significance and estimated life expectancy of the tree prior to the start of any development:

- Category 'A' Trees ('AA' or 'A') are important trees suitable for retention for more than 10 years and worthy of being a material constraint.
- Category 'Z' Trees ('Z' or 'ZZ'): Are unimportant trees not worthy of being a material constraint, either through conflicts with infrastructure, poor condition or growing location or being young trees or being environmental weeds.

6.5.2. Assessment

Based on TreeAZ framework, the proposed development results in the following tree removal:

- Removal of four (4) category 'A' trees: (Trees 10, 468, 473 and 552).
- Removal of three (3) category 'Z' trees (Trees 472, 902 and 912).

The proposed development will also retain 79 category 'AA' and 'A' trees and nine (9) 'Z' trees.

The Lower Station will result in the removal of a Southern Mahogany which was previously identified as a Angophora. While every effort has been made to retain the significant tree (T468) that sits at the base of the

Lower Station, the project arborist has advised that it is there is a high likelihood of damage during the construction phase of the project and recommends this tree be removed. The Landscape Plans prepared by Newscape (**Appendix P**) introduce two *Elaeocarpus reticulatusis* are planted as replacement trees a safe distance from the station footprint. They grow 5-10m in height which will create a sense of scale with the station and their flowers will provide a recognisable seasonal indicator.

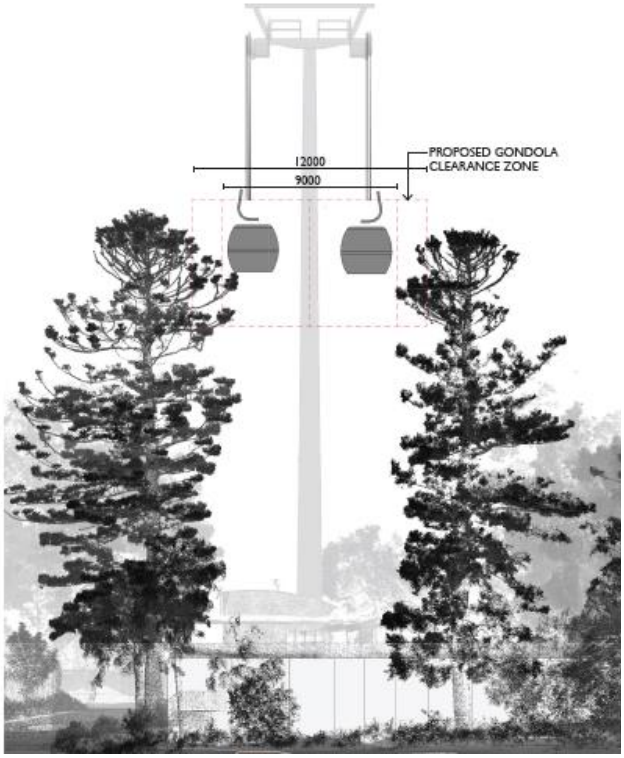
While it is noted that the proposed development will result in the removal of significant trees on site, a comprehensive landscaping scheme is proposed by Newscape Design (**Appendix P**) which includes locally indigenous trees to be planted in prominent locations. The new trees will have the potential to reach a significant height without excessive inconvenience and be sustainable in the long term, significantly improving the potential of the site to contribute to local amenity and character.

In accordance with the AIA, the Landscape Plans have incorporated four mature trees within close proximity to the station, additional planting will occur within the Zoo to reflect the 2:1 replacement ratio for Category A and AA trees. The mature trees are also complemented by a range of shrubs and grasses.

The AIA has also assessed the tree proposed for retention. Trees 35 and 36 are identified as Section 170 heritage listed trees (Section 170 item 53L “Hoop Pines”). The civil works remain outside of the Tree Protection Zone (**TPZ**) of these trees. Given the increased width of the cable car route, it is likely that pruning will be required to accommodate the new cable cars as illustrated in **Figure 56**. The AIA confirms that Trees 35 and 36 can be successfully retained without any adverse impacts if appropriate protective measures are maintained.

Trees 156, 352, 353, 553 and 556 are all Category A and AA trees within proximity of the proposed works. The AIA that the trees can be successfully retained without any adverse impacts if appropriate protective measures are maintained. The remaining Category A, AA and Z trees assessed within the AIA remains largely outside of the proposed works zone and can be successfully retained.

Figure 56 Potential impacts Trees 35 and 36



Picture 48 Typical Clearance Zone for cable cars

Source: Studio SC

Picture 49 Approximate pruning for Trees 35 and 36

Source: Naturally Trees

A cumulative assessment into the number of trees removed (including level of significance) and replacement trees for recently approved projects is also provided in **Table 9** below. Based on the cumulative assessment, open air animal exhibits such as Upper Australia, African Savannah and Congo and the Sumatran Tiger Adventure result in a large number of trees for animals as well as shading. Where new built form or replacement of existing built form is proposed, tree removal is required to facilitate built form.

Table 19 Cumulative assessment of tree removal for Taronga Zoo SSDA projects

Project	Existing Trees (Prior to SSDA)	Trees Removed	Additional Trees Planted	Trees Retained or Transplanted	Total Trees (After SSDA)
Taronga Wildlife Hospital (SSD-33211326)	9	6 Category A trees	25	123	148
Taronga Wildlife Hospital Nutrition Centre (SSD-17655146)	143	20 including: ▪ 9 category 'AA' trees ▪ 11 category 'Z' trees	22	3	25
Reptile and Amphibian Conservation Centre (SSD-17483577)	73	53 including: ▪ 9 high value ▪ 4 moderate value ▪ 37 low value	70	23	93
Taronga Upper Australia Precinct (SSD-10456)	198	▪ 41 including: ▪ 11 moderate value ▪ 30 low value	18	157	175
Taronga Wildlife Retreat (SSD-7419)	219	77 including: ▪ 39 moderate to high value ▪ 38 low value	80	142	222
Taronga Institute of Science and Learning (SSD-7311)	49	39 including: ▪ 1 high value ▪ 5 moderate value ▪ 33 very low and low value	8	10	18
African Savannah and Congo Exhibits (SSD-8008)	550	196 including: ▪ 36 high value ▪ 72 moderate value ▪ 88 low and very low value	226	15	588
Sumatran Tiger Adventure (SSD-6864)	134	78 (all good or fair health)	80	57	119
Taronga Sky Safari (SSD-46807958)	95	7 including: ▪ 4 category 'A' trees ▪ 3 category 'Z' trees	11	88	96

Retaining the existing route of the Sky Safari has reduced the number of trees requiring removal on site. Overall, tree removal has been minimised across the site with landscaping including mature plantings are incorporated into the overall design.

6.5.3. Mitigation Measures

A replacement strategy of 2:1 trees for all Category A and AA trees is proposed.

In order to successfully retain trees that have been identified for retention, Naturally Trees have outlined a site-specific tree protection strategy should be prepared detailing the location of tree protection fencing, inspection and reporting protocols and any areas where ground protection will be required.

Where trees are intended to be retained and potential works areas may enter the TPZ or SRZ, exploratory root excavation will be undertaken in a manner that causes the least amount of damage to root material in the process.

6.6. Ecologically Sustainable Development

An Environmental Sustainability Report (**ESD**) has been prepared by Cundall enclosed in **Appendix Q** to outline the proposed sustainability initiatives for the Proposal.

6.6.1. Methodology

The report contains an assessment of appropriate measures that will be implemented in design and operation to minimise potential environmental impacts of the Proposal.

6.6.2. Assessment

Sustainability and ESD forms a core part of the Zoo operations and is key to their *Sustainability Strategy 2021-2025.* This plan commits the Zoo as a leader in conservation, protecting wildlife and empowering people to secure a sustainable future for the planet. Key sustainability objectives and initiatives under the current strategy include:

- Net Zero by 2030 with 70% reduction in absolute emissions, based on Financial Year 18/19 levels.
- 100% renewable electricity before 2030.
- Divert 90% operational waste from landfill by 2025, with a focus on Circular Economy initiatives.
- Zero net increase in water use from 2025 (excluding recycled or reclaimed water).
- All projects over $2 million will embed sustainability principles into design.
- Apply a sustainable and ethical procurement framework to all purchasing decisions by 2025.
- All new conservation projects to be evaluated against climate projections, and prioritise climate refugia.

The Proposal will comply with NCC 2022 Section J energy efficiency requirements.

6.6.3. Mitigation Measures

Specific ESD objectives and initiatives which have been considered during the design development of the Proposal to maximise sustainable design opportunities from project design through to construction and operation are outlined below:

- Minimise operational energy use in buildings through passive design, efficient building services and controls.
- Minimise operational energy use in the cable car operation.
- On-site generation of renewable energy with space allocated for future battery storage systems.
- Reduce upfront carbon used in the buildings and civil works.
- Responsible management of stormwater pollution and runoff.
- Procurement of more responsible materials, including certified products and those with a higher recycled content.
- Waste minimisation plan implemented to reduce waste to landfill during demolition, construction, and operation.

Combining the design initiatives and strategies noted in the Sustainability Report, the Proposal can reduce its environmental impact, providing a suitable sustainability outcome aligning with the strategic vision for the Zoo.

6.7. Traffic, Transport and Accessibility

A Transport Impact Assessment (**TIA**) has been prepared by JMT Consulting, enclosed in **Appendix R** to assess the anticipated transport implications of the proposal during operational and construction stages. In accordance with the SEARs, the TIA provides an analysis of the impacts of the proposed development. In addition, a preliminary Green Travel Plan (**GTP**) and a Preliminary Construction Traffic Management Plan (**Preliminary CTMP**) have been prepared and are appended to the TIA**.**

6.7.1. Existing Transport Network

The TIA provides an analysis of the existing transport network surrounding the site to address the SEARs requirements and provide a baseline context for the subsequent impact assessment.

The site is highly 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 and the ferry wharf is located at southern entrance of the Zoo.

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 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 demonstrated 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.

The site currently accommodates 935 car parking spaces within the parking areas accessible off Bradley's Head Road and Whiting Beach Road. Approximately 650 visitor spaces are available within the multi-storey parking facility with approximately 180 additional parking space available for visitors in the overflow parking areas. 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.

6.7.2. Traffic Generation

Mosman Council's DCP does not specify a car parking rate for Zoos or similar uses. Similarly, the RMS *Guide to Traffic Generating Developments* does not specify a parking rate for the proposed uses. The proposed works involve the redevelopment of an existing facilities within the Zoo. Further, the site area for the Zoo will not increase and the proposal is essentially an upgrade of existing facilities, and therefore the proposal would not intensify the existing staff numbers.

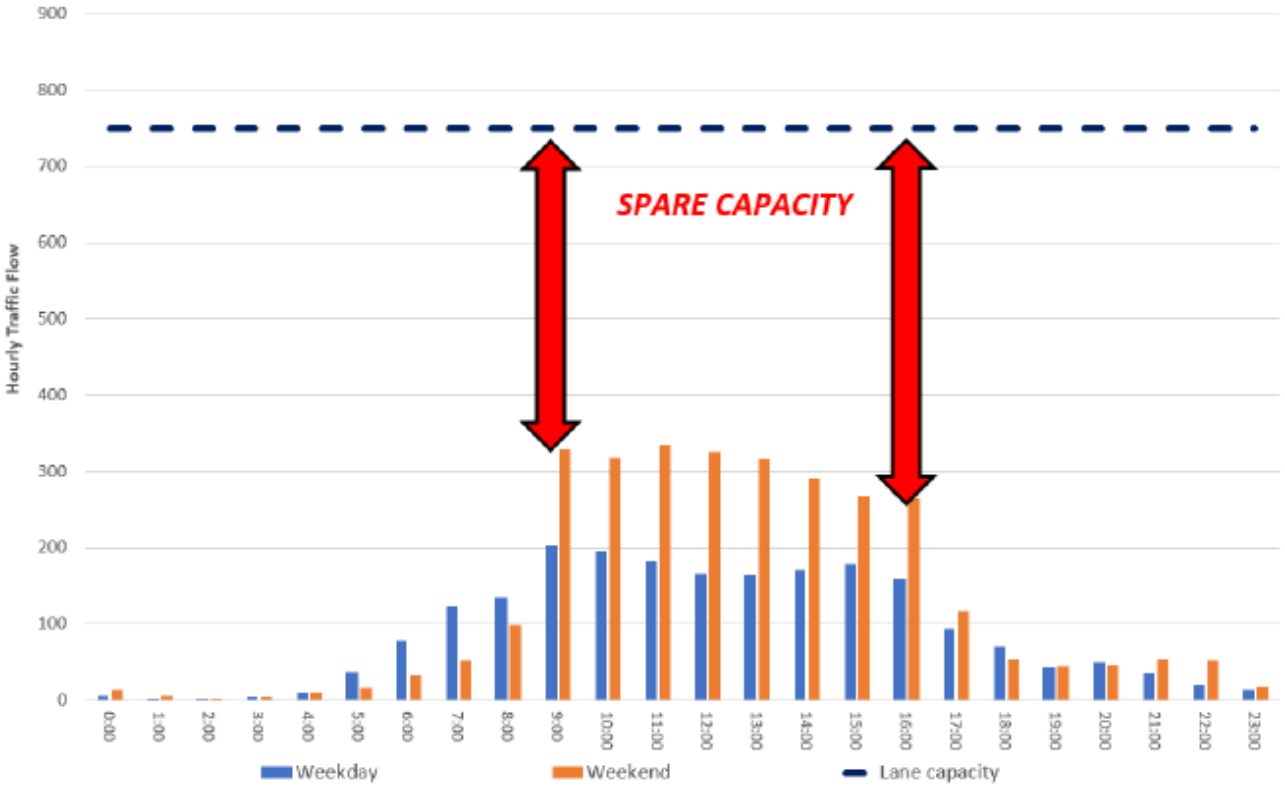
Based on the findings of the travel behaviour surveys undertaken by JMT Consulting, future year mode share and associated travel demands have been estimated within the TIA. It is anticipated that the reinstatement of the Sky Safari will promote a modal shift away from private vehicle towards public transport which will ultimately benefit the transport network and improve traffic conditions.

It is not anticipated that the reinstatement of the Sky Safari will increase visitors to the Zoo beyond a minor peak following the opening of the new infrastructure. The proposal aims to assist with 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.

To confirm the suitability of the existing road network, traffic counts were also undertaken by JMT Consulting 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. The outcomes of the modelling indicate a strong level of performance, with the intersection operating at Level of Service 'A'. An assessment was also undertaken which considered up to 50% traffic increase through the intersection to reflect peak periods at Taronga Zoo over the Christmas holiday periods, which identified that during peak periods, the intersection maintains a Level of Service 'A'.

In summary, Bradleys Head Road currently has, and will continue to have, spare capacity to accommodate traffic movements associated with the proposed upgrades to the Sky Safari. As illustrated in **Figure 57**, 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 57 Bradleys Head Road Capacity Analysis



Source: JMT Consulting

TCSA already implement a range of traffic management measures during peak days to effectively manage the flow of vehicles and maintain pedestrian safety including:

- 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.

These measures will remain part of the ongoing operation of the Zoo during peak days.

6.7.3. Access and Parking

The Sky Safari proposal will significantly enhance public transport access to Taronga Zoo by providing for a strong level of connectivity to the adjacent Taronga Zoo Ferry Wharf and bus stop at the end of Athol Wharf Road. The previous cable car required visitors accessing the Lower Station to travel up approximately 30

steps to reach the platform and therefore did not provide for universal access from the adjacent public transport options. The proposal introduces an accessible path of travel, compliant with the requirements of the relevant Australian Standards which will link the bus stop and ferry wharf to the new Lower Station.

It is not anticipated that the proposed development will have any detrimental impacts on parking for the site. Parking analysis undertaken as part of the recently approved Taronga Wildlife Hospital (SSD-33211326) indicated that the historical 85th percentile peak parking occupancy was less than 618 car spaces which remains well below the total number of visitor spaces available on site. The number of days which the parking demand exceeded the capacity was in average of five to six days over a one-year period.

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.

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. 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.

6.7.4. Loading and Servicing

The redevelopment of the Sky Safari will not impact existing loading and servicing arrangements for Taronga Zoo nor trigger additional vehicle activity. Service vehicles will continue to access the dedicated on-site loading area via the secure access point located off 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.

6.7.5. Green Travel Plan

In accordance with the SEARs, JMT Consulting has prepared a Green Travel Plan (**GTP**) which is appended to the TIA (**Appendix R**) to promote sustainable travel and reduce reliance on the private car for staff and visitors to the Zoo.

The GTP seeks to encourage the use of walking, cycling and public transport uses, noting the site's accessibility to a range of public transport options. The following potential measures and initiatives are proposed to be included in the final GTP to encourage the use of more sustainable travel modes:

- **Preparation of Transport Access Guide (TAG):** The TAG is to be developed and distributed to staff and visitors advising of the various sustainable transport options available.
- **Encourage use of secure bicycle parking for staff:** Current facilities are located in the Taronga Institute of Science and Learning, which is in close proximity to the new Top Station. Future secure bicycle parking and end of trip facilities will be located in the recently approved Taronga Wildlife Hospital. Visitor bicycle parking will continue to be available outside the main entrance to Taronga Zoo.
- **Incorporate GTP measures into staff induction:** New staff members should be 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, encouraging car pooling as well as distributing a copy of the Transport Access Guide.

Flexible working arrangements already implemented by TCSA also assist in reduction in travel demand to the Zoo. It is also noted that no increase in car parking for staff and visitors is to be provided as part of proposal as an additional measure to limit the use of private vehicles.

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

The final GTP will be prepared prior to issue of the Occupation Certificate, as per a condition of development consent.

6.7.6. Construction Traffic Management

In accordance with the SEARs, JMT Consulting has prepared a preliminary Construction Pedestrian Traffic Management Plan (**CTPMP**) 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. It is anticipated that 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 top station, envisaged to be located within the overflow parking area (see **Picture 50**). 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 **Picture 51**). Appropriate measures will be in place to maintain bus and ferry operations during the construction project and this works zone is not anticipated to significantly impact the operations of existing public transport services.

Figure 58 Anticipated construction vehicle access

Picture 50 Top Station construction access

Source: JMT Consulting

Picture 51 Lower Station construction access

Source: JMT Consulting

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 CTPMP prior to the commencement of works, detailing specific methods of safely managing construction and pedestrian traffic within the surrounding area.

6.8. Biodiversity

6.8.1. Overview

A Biodiversity Development Assessment Report (**BDAR**) has been prepared by Narla Environmental (**Appendix S**) to identify the potential impacts of the proposed development on biodiversity values.

6.8.2. Methodology

The BDAR was produced using the 'Streamlined Assessment Module' as it does not exceed the area clearing threshold for small area developments as outlined in the *Biodiversity Assessment* (2017).

A thorough literature review was undertaken to gain an insight into the ecology and applicable legislation within the locality and the Mosman LGA. Relevant data and literature reviewed in preparation of this report included:

- Relevant State and Commonwealth Databases & Datasets including NSW Wildlife Atlas BioNet (DPHI) and NSW Government Spatial Services: Six Maps Clip & Ship (NSW Government Spatial Services 2021)
- Vegetation and Soil Mapping:
  - The Native Vegetation of the Sydney Metropolitan Area and Vegetation Information System (VIS) 3.1 (OEH 2016)
  - Soil Landscapes of the Sydney 1:100 000 Sheet (Chapman and Murphy 2009).
- NSW State Guidelines:
  - Biodiversity Assessment Method (DPIE 2020a);
  - Guidance to assist a decision-maker to determine a serious and irreversible impact (DPIE 2019a);
  - Biodiversity Assessment Method Calculator Version 1.3.0.00 (DPIE 2021d);
  - Biodiversity Offsets and Agreement Management System (BOAMS);
  - Surveying threatened plants and their habitats - NSW survey guide for the Biodiversity Assessment Method (DPIE 2020b); and
  - Threatened Species Survey and Assessment: Guidelines for developments and activities. Working Draft (DEC 2004)
- Council Documents

These sources were used to gain an understanding of the natural environment and ecology of the Subject Land and its surrounds. Searches using NSW Wildlife Atlas (**BioNet**) were conducted to identify current threatened flora and fauna records within and surrounding the Subject Land. This data was used to assist in establishing the presence or likelihood of any biodiversity values as occurring on, or adjacent to, the Subject Land, and helped inform our Ecologist on what to look for during the site assessment.

6.8.3. Assessment

Historically, the subject site has undergone development and the majority of vegetation within the subject land has been altered through historic landscaping.

Due to the restricted nature of the site, with multiple buildings present, a BAM plot could not be established within the site. It was therefore positioned in remnant bushland within the Project Area (adjacent to the Subject Land), which was indicative of the Plant Community Type (PCT) within the Subject Land.

The Native Vegetation of the Sydney Metropolitan Area (OEH 2016a; OEH 2016b) indicated the presence of one (1) PCT - PCT 3594: Sydney Coastal Sandstone Foreshores Forest within the subject site.

The development has been strategically positioned to minimise impacts on native vegetation and habitat as much as possible. The proponent has located the proposed works within historically modified areas, with the majority comprising of existing buildings and hardstand areas.

The preferred approach to offset the residual impacts of the proposal is to purchase and retire the appropriate species credits from registered Biodiversity Stewardship Sites that comply with the trading rules of the NSW BOS in accordance with the 'like for like' report generated by the BAM calculator. A totally of one (1) ecosystem credit is required to offset the biodiversity impacts of the proposed development. An additional one (1) candidate species credit will require offsetting through the retiring of biodiversity offset species credits under the BOS as a result of the proposed development.

6.8.4. Management Recommendations and Mitigation Measures

The BDAR provides recommendations to be implemented before, during and post construction to avoid and minimise the impacts of the project. These mitigation measures should be incorporated into the final Construction Management Plan and the Contractor advised of them. Prior to construction works or vegetation clearing, the following tasks should be undertaken:

- Any temporary structures required for construction works will be located within hardstand and/or cleared areas that have minimal biodiversity values.
- The Construction Management Plan prepared post-approval is to include measures for the management of soil erosion and sedimentation; hazardous materials; noise, vibration and dust; and rubbish removal.
- Australian Standard 4970 (2009) Protection of Trees on Development Sites (AS-4970) outlines that a Tree Protection Zone (TPZ) is the principal means of protecting trees on construction sites. It is an area isolated from construction disturbance so that the tree remains viable. Ideally, works should be avoided within the TPZ.
- Prior to construction, the applicant will commission the services of a qualified and experienced Ecologist Consultant. The Ecologist may be commissioned to:
    - Undertake an extensive pre-clearing survey, delineating habitat-bearing trees and shrubs to be retained/removed; and
    - Supervise the clearance of trees and shrubs (native and exotic) in order to capture, treat and/or relocated any displaced fauna.
- Any woody debris (fallen trees and logs) within the Subject Land are to be relocated to areas of native vegetation elsewhere with the Zoo.
- Appropriate erosion and sediment control must be erected and maintained at all times during construction in order to avoid the potential of incurring indirect impacts on biodiversity values.
- Temporary fencing will be erected around retained native vegetation that may incur indirect impacts on biodiversity values due to the construction works.
- Allocate all storage, stockpile and laydown sites away from any native vegetation that is planned to be retained. Avoid importing any soil from outside the site as this can introduce weeds and pathogens to the site in order to avoid the potential of incurring indirect impacts on biodiversity values.
- Potential impacts relating to stormwater and runoff will be managed during construction and operation phases. The CEMP will guide stormwater management during the construction phase of development.

6.9. Noise and Vibration

In accordance with the SEARs, a Noise and Vibration Assessment has been prepared by Acoustic Studio (**Appendix T**) assessing the potential noise impacts associated with the proposed development. The nearest residential premises are located along Whiting Beach Road to the north-west and Bradleys Head Road to the north-west. As noted above, all residential receivers and are over 170m from the closest works (construction of the Top Station). There are no additional receiver developments planned or approved in the area. The existing residents represent the most affected.

6.9.1. Methodology

In order to assess ambient and background noise levels at the site, Acoustic Studio have undertaken noise surveys (both attended and unattended) within the site and at the nearest noise sensitive receivers between Jue and August 2023, to supplement data obtained previously in May 2021. The measured noise levels were compared with data obtained previously in April and May 2017 to confirm that noise levels have not changed over the past 6 years.

Figure 59 Location of noise survey locations (2017,2021 and 2023) and noise catchment areas

Source: Acoustic Studio

The noise logger data was processed according to the Noise Policy for Industry (**NPfI**). It is noted that the 2017 and 2021 data were generally consistent with the additional data from May 2021.

Acoustic Studio have also utilised, the EPA *Interim Construction Noise Guideline* (**ICNG**, 2009) to assess construction noise and provide mitigation measures.

6.9.2. Operational Noise

Acoustic Studio provided an operational noise assessment associated with the following noise sources:

- Mechanical plant and service noise
- Traffic noise
- Patron and sound system noise

Acoustic Studio confirm that given the nearest residential receivers are between 170m (Whiting Beach Road) and 220m (Bradleys Head Road) away, noise from these sources would be inaudible at all residential receivers located outside the Zoo premises. The maintenance facility is outlined to be the only noise source that would not normally operate during the Sky Safari operating hours. The report recommends the

equipment at the maintenance facility which has not yet been finalised, would need to be no more than 85dBL and 97dBL at 1m from the noise source. It is outlined that this criterion will be easily met.

6.9.2.1. Management Recommendations and Mitigation Measures

Noise emission from the external plan will be controlled by a combination of the following mitigation measures:

- Locating the units as far from transient or occupied areas as possible.
- With natural screening provided by existing zoo buildings, structure and topography, and
- Additional localised acoustic screening as required.

Therefore, the proposed activity, achieves compliance with the applicable noise criteria for general operational noise.

6.9.3. Construction Noise and Vibration

The dominant noise sources for each phase of construction identified in the Acoustic Assessment are outlined below:

- **Site preparation and set up, including site amenities** – Generators, trucks, hammers and hand tools.
- **Demolition, excavation and piling** – Excavating and rock breaking, concrete saws, piling, tipping fill, jackhammers and removal of building waste.
- **Construction of new stations, maintenance and office buildings** – Truck and crane hand tools and removal of building waste.
- **Post construction, internal fitout, landscaping commissioning and handover** – Truck and crane, diggers, excavators, hand tools.

All works will be conducted over 170m from the nearest residential receivers. There is no risk of structure-borne noise at the nearest residential receivers due to the distance attenuation through ground between works and receiver buildings.

In relation to construction traffic noise, this would be undertaken in accordance with the approved hours. Acoustic Studio confirm, that based on a minimum attenuation of 10 dB(A) with windows open, the first conclusion of the RNP suggests that short term external noises of 60 to 65 dB(A) are unlikely to cause awakening reactions. In addition, external levels of 75 to 80 dB(A) are unlikely to affect health and wellbeing significantly, provided that these events occur no more than twice in one night.

While there is potential for some exceedances in relation to construction noise and vibration, Acoustic Studio confirm that exceeding the Noise Management Levels (**NML**) is not considered a “non-compliance”, but rather leads to the requirement to consider reasonable and feasible mitigation. When applying key mitigation measures (including hoarding) the resulting noise levels may be up to 10dB above the NML at the nearest residential receiver. This is considered to be a marginal impact. Further mitigation measures are discussed below.

6.9.3.1. Management Recommendations and Mitigation Measures

To minimise impacts on surrounding noise sensitive receivers, the following recommendations are outlined in the Acoustic Assessment prepared by Acoustic Studio (**Appendix N**) and the Preliminary Construction Management Plan prepared by RPS (**Appendix W**):

Construction Activities

- Install hoarding and/or noise curtains.
- Use bored piling methods instead of vibratory or impact piling.
- Use petrol generators instead of diesel generators.
- Use small handheld compactors (wacker packers) instead of large plate compactors.
- Use pulveriser attachments instead of hammer attachments on excavators.

Plant and Equipment

- Use quieter work methods and equipment
- Use low noise and vibration piling methods such as bored or screw piling.
- Use mobile noise curtains for external works with noisy hand-held tools
- For noisy works, consider carrying out in continuous blocks not exceeding 3 hours each, with a minimum respite period of one hour between each block
- Operate plant in a quiet and effective manner.
- Plant used intermittently to be throttled down or shut down.
- Use mains power supply where possible, rather than using generators.
- Use one larger generator to power multiple plant items (ensuring safe cabling). Use petrol generators instead of diesel generators.
- Switch off generators when not in use, particularly during out-of-hours work periods.
- Maintain equipment regularly.
- Where appropriate, obtain acoustic test certificates for equipment

On Site Noise Management

- Strategically locate equipment and plant. Locate generators away from sensitive receivers.
- Avoid the use of reversing alarms through site layout to minimise reversing, or provide for alternative systems such as non-tonal reversing alarms.
- Maximise shielding in the form of existing structures or temporary barriers.
- Enclose the work site as far as possible from receivers and use hoarding. Noise reductions of at least 10dB are expected due to effective hoarding.
- Schedule the construction of barriers and structures so they can be used as early as possible.
- Consider signage at walkways affected by construction noise.
- Manage waste removal from the site to minimise noise impacts.
- Reduce noise from metal chutes and bins by placing damping material in the bin.
- Locate waste deposit bins as far as possible from sensitive receivers.
- Where possible, carry out noisy fabrication work at another site (for example, within enclosed factory premises) and then transport to site.
- Delivery vehicles should be fitted with straps rather than chains for unloading, wherever possible.
- Keep windows closed during all internal works.

Acoustic Studio have confirmed provided these recommendations are adhered to it is anticipated that the Sky Safari will have no adverse noise impacts at the nearest residential receivers.

6.10. Water Management

A Stormwater Management Plan has been prepared by Meinhardt and is enclosed in **Appendix V.** The report outlines the proposed stormwater drainage system and WSUD strategy for the proposed development. The following design features were assessed in the report:

- Stormwater Management System Design
- Stormwater Treatment System
- Soil and Erosion Management

6.10.1. Methodology

Meinhardt in undertaking the assessment, undertook a desktop review and site inspection to determine the drainage infrastructure and overland flow paths within the site. Details of existing stormwater drainage (location, size, and depth) were provided in a Service Proving Investigation Report prepared by SureSearch, This revealed the following elements of the existing stormwater infrastructure:

- The existing site slopes diagonally from east to west at an average fall of approximately 1:1 within the existing landscape areas.
- There is a network of existing inground stormwater pits and pipes primarily to the west of the site to facilitate draining.
- The existing stormwater drainage connects into the existing grated pit located on the roadway adjacent to the site to the west.
- These existing stormwater networks within the development area reticulate the captured stormwater to the existing stormwater treatment plant, which is located to the southwest of Taronga Zoo near Sydney Harbour, through the Zoo's internal private stormwater drainage system.
- All stormwater drainage is treated in above mentioned treatment plant before being discharged into Sydney Harbour.
- There are no stormwater connections into Mosman Council drainage assets.

Mosman Council's general design parameters for stormwater drainage and Best Practice Environmental Management Guidelines (BPMEG) for pollution reduction targets have also been adopted in preparing the Stormwater Management Plan.

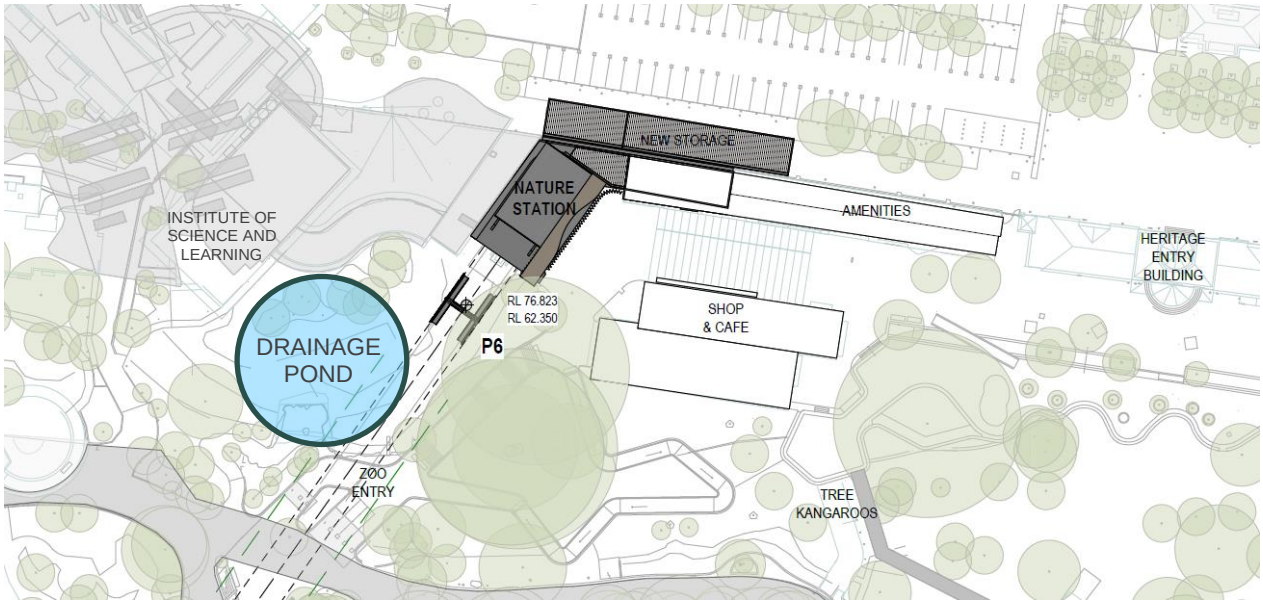
6.10.2. Assessment

6.10.2.1. Proposed Stormwater Drainage

All proposed stormwater drainage associated with the two stations will be captured by a network of inground pits and pipes connecting to existing downstream internal stormwater drainage of Taronga Zoo to discharge via gravity. The following drainage system is proposed as part of the development:

- Top Station: Drainage will be connected to the existing drainage pit which tail out to the pond located between the upgraded station and the Institute of Science and Learning to the west.
- Lower Station: Drainage will be connected to the existing drainage pit located on Athol Wharf Road.

Figure 60 Top Station drainage plan



Source: Studio SC + Urbis

6.10.2.2. Post Development Site Discharge

Post-development discharge has been calculated by Meinhardt using DRAINS software. Given the proposal reduces the level of impervious surfaces within both the Lower Station and Top Station catchments, there is no increase in the flow rates observed. The site is also serviced by private internal drainage. In summary, no impact is anticipated on Council stormwater and associated assets.

6.10.2.3. Water Sensitive Urban Design (WSUD)

Taronga Zoo has an existing Wastewater Treatment Plant where the proposed stormwater drainage will be treated. This is located to the south west corner of the Zoo and meets these WSUD requirements. All stormwater drainage is treated in the above mentioned treatment plant before being discharged into Sydney Harbour.

As such, the proposal will meet the following pollution targets in accordance with Best Practice Environmental Management Guidelines (BPMEG).

6.11. Heritage

Comprehensive heritage and archaeological studies and management plans apply to Taronga Zoo which has been considered as part of the heritage impact assessment of the proposal. These are the Heritage Council endorsed *Taronga Zoo Conservation Strategy, July 2002* (TZCS); and the *Archaeological Management Plan 2004* (AMP). The following sections address Built Heritage, Historical Archaeological and Aboriginal archaeology matters contained in the SEARs.

6.11.1. Aboriginal Cultural Heritage

An Aboriginal Cultural Heritage Assessment (**ACHA**) been prepared by Urbis to analyse the potential impacts on items of Aboriginal significance (**Appendix Z**) in accordance with the requirements of the

This assessment has been carried out in accordance with the following guidelines:

- *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010 (Department of Environment, Climate Change and Water* (DECCW), 2010) (**the Consultation Guidelines**).
- *Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW* (Office of Environment and Heritage 2011) (**the Assessment Guidelines**).
- *Code of Practice for Archaeological Investigation of Aboriginal Objects in New South Wales* (DECCW 2010) (the Code of Practice).
- *The Australia ICOMOS Charter for Places of Cultural Significance, The Burra Charter, 2013* (Burra Charter).

As part of the ACHA, contact was made with the Taronga Aboriginal Advisory Group (TAAG) and relevant Registered Aboriginal Parties (RAPs) to identify, notify and register Aboriginal people who hold cultural knowledge relevant to determining the cultural significance of Aboriginal objects and/or places in the subject area. During the design development process, the TAAG and various RAPs were invited to comment on draft plans and attend site inspections to discuss the site and the project. This process provided the opportunity for comments regarding cultural heritage to be heard and received.

6.11.1.1. Potential Impacts

While there are a number of Aboriginal archaeological sites, within the wider regional context, no Aboriginal objects and/or places are registered on the Aboriginal Heritage Information Management System (AHIMS) within or in close proximity to the subject area. The subject area is upon the Bradley's Head Peninsula which is identified by RAPs as culturally significant, with generally high cultural significance identified for the whole Zoo site. No specific cultural heritage values have been identified as associated with the subject area.

Site visits undertaken by Urbis did not result in the identification of any Aboriginal objects or areas of potential, instead concluding that the subject area is highly disturbed resulting from previous and current development activity.

The subject area is located within Zones 4 and 5 of the Taronga Zoo CMP prepared by GML in 2004. These areas are described as 'Areas which has previously been excavated down to bedrock, or culturally sterile soil

profiles' and 'Areas heavily modified by European development'. The site is identified as containing low-medium potential in areas zoned 4 and nil potential in areas zoned 5.

Following comments from the SDRP on the importance of sandstone associated with the Lower Station, an additional site visit was undertaken. While sandstone cliff faces are present in the area surrounding the Lower Station, these surfaces appear to have experienced quarrying historically which will have removed the original face of the sandstone and any associated cultural markings (refer to **Figure 61**). As such, no cultural modification is noted to occur on the sandstone outcrops.

Figure 61 Existing excavation of sandstone associated with the existing Lower Station

Source: Douglas Partners

In summary, the site is heavily disturbed by existing works within the Zoo which reduced the Aboriginal archaeological potential. Accordingly, the subject area is registered as having nil-low Aboriginal archaeological potential.

6.11.1.2. Mitigation Measures

Based on the above conclusions, the following recommendations have been provided:

- It is recommended that induction materials be prepared in consultation with the RAPs for inclusion in the construction management plan and site inductions for any contractors working at the subject area. The induction material should include an overview of the types of sites and artefacts to be aware of (i.e. stone tools, concentrations of shells that could be middens and rock engravings and grinding grooves), under the NPW Act, and the requirements of an 'archaeological chance find procedure'. This is to be prepared for the project and included in any site management plans.
- Although considered highly unlikely, if any Aboriginal objects, archaeological deposits be uncovered during any site works, a Chance Find Procedure must be implemented.
- In the unlikely event that human remains are uncovered during any site works, a Human Remains Procedure must be implemented.
- Ongoing consultation with RAPs is to occur as the project progresses. This will ensure ongoing communication about the project and key milestones and ensure that the consultation process does not lapse, particularly with regard to consultation should the Unexpected Find Procedures be enacted.

6.11.2. Historical Archaeological Assessment

A Historical Archaeological Assessment (HAA) has been prepared by Urbis to analyse the potential impacts on the historical archaeological (non-Aboriginal) items (**Appendix BB**). This assessment has been carried out in accordance with the following guidelines:

- *Assessing Significance for Historical Archaeological Sites and 'Relics'* (NSW Office of Environment and Heritage (OEH) (2009).
- *Assessing Heritage Significance* (NSW Heritage Manual 2) (NSW Heritage Office 2001).
- *Historical Archaeology Code of Practice* (Heritage Council of NSW 2006).
- *Taronga Zoo Archaeological Management Plan*, 2004, GML
- *Taronga Zoo Conservation Strategy*, 2002, GML
- *Taronga Zoo, Australian Coastline Precinct: Archaeological Monitoring Report*, 2006, Zoological Parks Board of NSW
- *Taronga Zoo Australian Section (Upper) Heritage Items at Site*, 2018, Taronga Conservation Society
- The philosophy and process adopted is that guided by the Australia ICOMOS Burra Charter 2013.

The standard for assessment, *Assessing Significance for Historical Archaeological Sites and Relics*, was used for the assessment of significance of the site. Historical photographs and plans were also used to assess the significance of the site. A site inspection was undertaken as part of the assessment and a comprehensive historical account of the site previously prepared was reviewed.

6.11.2.1. Potential Impacts

This HAA has identified both the archaeological potential and archaeological significance as a means of assessing the potential impacts of the proposal on the non-Indigenous archaeological values of the subject area. Prior to the establishment of the Zoo, the subject area consisted of native bushland, similar to the bushland observed to the east of Bradleys Head Road within Sydney Harbour National Park. The construction of the Zoo has resulted in significant disturbance and clearance of vegetation. It is considered unlikely that historical archaeological features associated with land uses prior to the Zoo would have survived the early construction of the Zoo.

Previous archaeological investigations in the vicinity of the current subject area, with similar land use history or environmental conditions, have identified high levels of disturbance associated with later adaptations of the Zoo, with soil profiles consisting predominantly of imported fill. These investigations exposed a number of historical archaeological remains at varying states of preservation. These findings are consistent with the assertion of the Taronga Zoo CMP that there is potential for the survival of historical archaeological relics across the Taronga Zoo site, including within disturbed profiles.

This HAA has established that the site area has:

- Nil-low potential to contain evidence of the early land grants and earliest European occupation of the Mosman area
- Low potential to contain evidence of the earliest phase of Taronga Zoo under the directorship of La Souef (1912-1940)
- Moderate potential for evidence of Phase 3 (1941 – 1967) and
- High potential to contain evidence of subsequent development of the Zoo in Phase 4 and Phase 5 (1967 – present) due to extant structures.

The following provides a brief individual assessment of predicted impacts for each of the key items of works.

- Top Station: The station would replace the existing Top Station. This will also include partial demolition of the amenities block. Significant impact will have occurred to any potential archaeological deposit during the construction of extant structures.
- Storage and Maintenance Building: The proposed location of the Storage and Maintenance Building is adjacent to the sandstone northern boundary wall, outside the practical extents of the Zoo. This area has

been utilised as a carpark and entrance area during the different Phases of the Zoo's history. It has been heavily modified during 20th Century expansions of the car park. This area is unlikely to retain archaeological potential.

- Lower Station: The station would replace the existing Lower Station and will require some further excavation of the sandstone escarpment. This area was heavily modified for construction of the Lower Station which will have removed any archaeological traces.
- Pylons: The proposed Pylons will be located on the same alignment as existing pylons and at locations adjacent to the existing structures. These locations have been impacted by the construction of the former Sky Safari infrastructure in 1987. Impacts at these locations are unlikely to cause further disturbance to relics or features.

Given that the proposed route and associated infrastructure generally follows the alignment of existing infrastructure, the former Sky Safari infrastructure and correlating impacts to the archaeological record have significantly reduced the archaeological potential of the proposed locations of new upper and lower stations. Proposed impacts in these locations are unlikely to further impact significant archaeological deposits.

6.11.2.2. Mitigation Measures

Based on the above conclusions, the following recommendations are provided:

- For proposed surface disturbance, including any excavation and landscaping works, a Chance Finds Procedure is to be implemented.
- Prior to the commencement of works, an archaeological induction is to be delivered by Urbis to all relevant construction personnel for the purpose of establishing:
  - heritage obligations of all project personnel;
  - how to identify archaeological relics of State or local significance;
  - what to do in the event that potential relics are uncovered; and
  - how the Unexpected Finds Procedure works in practice.
- In the unlikely event that human remains are uncovered during any site works, a Human Remains Procedure must also be implemented.

6.11.3. Built Heritage

Comprehensive heritage and archaeological studies and management plans apply to Taronga Zoo which has been considered as part of the heritage impact assessment of the proposal. These are the Heritage Council endorsed *Taronga Zoo Conservation Strategy, July 2002* (TZCS); and the *Archaeological Management Plan 2004* (AMP). The following sections address Built Heritage, Archaeological matters and Aboriginal archaeology contained in the SEARs.

6.11.4. Built Heritage

6.11.4.1. Overview and Methodology

A Statement of Heritage Impact **(Appendix AA)** has been prepared by Urbis in accordance with the NSW Heritage Division guidelines '*Assessing Heritage Significance'*, '*Statements of Heritage Impact'* and the MLEP 2012. There is no Conservation Management Plan relevant to the works. However, the following reports have been considered in the preparation of this document. The proposal has been assessed against these reports:

- GML Heritage, 2002. *Taronga Zoo Conservation Strategy.*
- Design 5 Architects, 2006. *Taronga Zoo Landscape Management Plan*.

6.11.4.2. Assessment

The HIS outlines that the physical impacts generated by the development directly affect only one listed heritage item (not including the tree pruning) these impacts are minor and can be mitigated through the measures outlined. There is an increased visual effect due to the pylons and cable route being higher than

the existing. However, the effect on identified significant heritage views is not considered to be unacceptable and would not impact the character or the ability to appreciate the heritage item.

Lower Station

The proposed Lower Station would replace the existing station which is not heritage listed. The existing building fabric will be replaced with a structure of a similar nature which will not change the existing use or the overall character of the area. The heritage item, 07L - Standard perimeter wall and 46L – Cliff and Rock Benches are in proximity to the proposed works. The sandstone wall will not be physically impacted and therefore will maintain the same relationship with the lower station.

The proposed works would although require some excavation into the rockface. This excavation would not be within the curtilage around the listed Cliff and Rock Benches to the east of the station. However, it would be in the immediate vicinity of the significant element. The Cliff and Rock Benches should be appropriately protection during construction to ensure that the works adjacent do not comprise the integrity of the geology within the listed curtilage. Generally, it is appreciated that the significant item, as well as parts of the rockface outside the listed curtilage would remain dominant visual elements to the northeast and west of the station. It is concluded that the proposed design of the lower station is appropriate in its context.

Top Station

The station would replace the existing Top Station which is of no heritage significance. Given the removed structures would be replaced with that of a similar nature, the works would not change the existing use or character of the area. The works are also in the immediate vicinity of significant element - 07L – sandstone perimeter wall. The station would not be visible from outside the Zoo and therefore would not dominate, obscure or detract from the external (to the Zoo) face of the sandstone wall. Visually, from inside the Zoo the Station would maintain a similar relationship with the wall as it has now.

Storage and Maintenance Building

The Storage and Maintenance Building is located to the north of the sandstone boundary wall, and outside the practical extents of the Zoo. The proposed building would partly obscure the wall when viewed from the north, therefore impacting an ability to interpret the original historical zoo boundary. As the proposal includes the removal of a small section of wall only, the proposal would not preclude revealing most of the internalised wall in the future.

Pylons

The proposed pylons will carry the cables along a similar alignment as the existing. The pylons would be located in the vicinity of the following heritage items:

- P2 located adjacent to the original pathway alignment (99L) and the Remnant Bushland (262L).
- P3 located adjacent to the Brush Box (235L) and the original pathway alignment (99L).
- P4 located between the Hoop Pines (53L).
- P5 located adjacent to the Aviary (159B).
- P6 appears to extend into the remnants of the former Alligator Enclosure (368L).

There would be one less pylon than existing, which will result in a reduced visual impact in terms of the frequency of the pylons. However, the pylons and the cable route will be at a higher level than the existing. The cable route would require some impacts on trees. The proposed trees to be removed are not of identified cultural significance.

6.11.4.3. Management Recommendations and Mitigation Measures

The following management recommendations and mitigation measures are recommended to reduce the perceived heritage impacts on the precinct. It is noted that a number of these recommendations have been considered in the architectural and landscape design and can be further considered during detailed design or through conservation measures:

- The original wall alignment concealed by the store building will form part of the interpretation within the Top Station queuing area, potentially using historical images.

- The detailed design of the Maintenance and Storage building is to allow for the maximum amount of visible fabric from inside the building allowing for inspection/repairs/conservation works. The building design should provide access for inspection and maintenance of the stone wall and should not conceal or encapsulate the stonework in construction that leads to damp and other sources of deterioration.
- Any original fabric to be removed will be archivally recorded in line Heritage NSW guidelines and kept on site for interpretation or repair purposes. Significant fabric to be removed and reinstated will be documented stone by stone and returned to its original location if possible.
- Construction should include engineering/heritage supervision to monitor the stability of the sandstone wall and to inspect any areas which are currently concealed and uncovered during construction.
- Any defects in the wall such as ferrous metal inserts, open penetrations and mortar joints should be repaired during the works.
- Any elements which are to be permanently covered should be subject to inspection and any necessary repair/conservation works prior to covering. As above, allowance must be made to prohibit damp/deterioration in any areas that are enclosed.
- The proposal should be detailed to minimise removal of significant fabric. Detailed drawings of fixings (including type and frequency) into the sandstone wall are to be provided to the heritage consultant for comment prior to construction.
- All trees of cultural significance (i.e. those listed on the Section 170 Register) which are located within the works area are to be protected in accordance with the recommendations of a qualified arborist.
- The Cliff and Rock Benches will provide appropriate protection during construction to ensure that the excavation works adjacent do not comprise the integrity of the geology within the Section 170 Register curtilage of the item.

6.12. Social Impact

A Social Impact Assessment (**SIA**) has been prepared by Urbis (**Appendix CC**) in accordance with the *Social Impact Assessment Guidelines for State Significant Projects*. The SIA identifies and analyses the potential positive and negative social impacts associated with the Proposal which includes the following:

- A high (positive) improved accessibility and visitor experience into and through the site.

  The former Sky Safari included 21 cable cars with a maximum capacity of six guests each and could accommodate wheelchairs up to a width of 610mm. Prams or wheelchairs in excess of this, which did not fold, could not be transported given the size restraints. To address this, the proposal will introduce 20 to 25 new cable cars capable of accommodating larger mobility aids, ensuring equitable access for all visitors, including prams, larger wheelchairs and guests with mobility issues.

- A high (positive) impact to Aboriginal sites and culture

  The implementation of Designing with Country elements represents a positive contribution of the proposal to recognising and reflecting Aboriginal culture and heritage. With consideration of that the Zoo is a prominent tourism landmark with high visitation, the enhanced impact is assessed as a high positive.

- A high (negative) unmitigated impeded access around and through the site during construction.

  The estimated construction phase of the Proposal is 24 months. The construction phase comprises preliminary works which involve 60-100 stacked storage containers on site. These containers will be fenced off by safety fencing, restricting access along the Sky Safari route and adjacent areas. As such, the construction phase may temporarily impede access throughout the Zoo, along the Sky Safari route and extending from the main entry to the ferry terminal. Bus and ferry operations may be impacted by construction vehicles accessing the site via Bradley's Head Road and Athol Wharf Road.

  With consideration of the potential disruption of access throughout the Zoo and around the Upper and lower stations during construction, the unmitigated impact is assessed as high negative, given the likely likelihood and moderate magnitude during a contained period (approximately 24 months).

- A potential high (negative) impact on noise impacts during construction.

The Proposal will generate noise during its construction and operation. Noise emitting activities will be generated during the approximately 24 month construction period. Mitigation measures will be incorporated into the Construction Management Plan to align with **Section 6.9** of this report.

- A potential nil to low (negative) impact on noise during operation.

  The operational mitigation measures contained in the Acoustic Report will result in potential impacts on noise during operation being sufficiently mitigated.

6.12.1. Mitigation Measures

A range of mitigation measures are suggested within the SIA which have been extracted from the respective technical reports. Further mitigation measures below are proposed in the SIA as listed below:

- Impeded access around and through the site during construction
  - Develop and implement an ongoing Stakeholder and Community Communication Plan for implementation during the construction period. This is to include ongoing communications to Zoo visitors and staff and the local community regarding any access disruptions in an around the Zoo.
  - Construction vehicle movements are to be managed to avoid peak times on local roads surrounding the Zoo to minimise impacts on surrounding residents and ferry users.
- Improved accessibility and visitor experience into and through the site.
  - Incorporate tactile paving and audio cues for visitors with visual impairments at key navigation points.
  - Incorporate universal signage in the design to cater to a diverse visitor demographic.
  - Develop interpretive displays or interactive exhibits at the gondola stations to educate visitors about local wildlife, conservation efforts, and the Zoo's role in biodiversity preservation.
- Noise related impacts during construction and operation
  - Develop and implement an ongoing Stakeholder and Community Communication Plan for implementation during the construction period. This document is to include communications relating to upcoming noisy construction works, as recommended in the Acoustic Report.
  - Avoid peak periods (e.g. school holidays) and plan for rest periods when conducting very high noise construction activities.

6.13. Construction, Operation and Staging

A Construction Management Plan (**CMP**) has been prepared by RPS Group (**Appendix X**). The plan includes details of the indicative demolition and construction phasing required for the proposed works. Demolition and construction will be undertaken in a manner to minimise impacts on neighbouring residential properties, zoo visitors and staff.

6.13.1. Site Establishment

TCSA will ensure suitable and safe access, including any applicable social distancing precautions, is maintained at all times around the site for staff, and visitors by the Contractor, including but not limited to the preparation of, and consultation regarding, the maintenance of an Access Plan which, will incorporate:

- Temporary signage around the site at key locations accessible to visitors (indicatively shown with a 'S' on the plan below);
- Temporary pedestrian crossing, paths and ramps (if required);
- Hoardings and protective screens and covers (as shown in indicatively in red and blue on the plan below); and
- Temporary lighting.

6.13.2. Staging

The proposed enabling works on the site have will be sectioned into four stages as outlined below:

- Removal of existing cable car system (Stage 1);
- Demolition of the existing stations and tree removal (Stage 2);
- Construction of pylon and station footings (Stage 3);
- Excavation at lower station (Stage 4).

Construction works will be staged and separated between two contractors being the Cable Car Contractor and Head Contractor. The Head Contractor will include four stages of works including the following:

- Construction of top station including structure, platforms, piles etc. (Stage 1);
- Construction of infrastructure at lower station including the construction of the structure and ramping, lifts and stairs (Stage 2);
- Completion of the top station. Include station infrastructure, storage facility, landscaping, public art, queuing system, signage (Stage 3);
- Miscellaneous works including tidying of sites, installation of fencing and containment, wayfinding, finalisation of landscaping (Stage 4).

The Cable Car Contractor will oversee three stages of construction as follows:

- Installation of pylons in six locations (Stage 1);
- Installation of Top station and storage infrastructure (Stage 2);
- Completion of station infrastructure at the lower station including fit out requirements, landscaping public art, queuing system, signage (Stage 3).

6.13.3. Erosion, Sediment and Dust Control

The CMP outlines than an Erosion Sediment Control Plan which will identify a detailed strategy and plan to minimise other impacts such as dust emission from the site during the demolition, construction and ground works. The following mitigation measures will be carried out to manage dust impacts across the site:

- Perimeter hording will be erected around the site with shade cloth used
- Continuous water spray or wetting down will be undertaken.

The control plan will address the risk of sediment and pollutants from the site entering the stormwater drainage system.

6.14. Other impacts not requiring detailed assessment

This section of the report addresses the matters which require a standard impact assessment. It outlines the findings of the assessment and the key mitigation measures used to ensure compliance with the relevant standards or performance measures.

6.14.1. Ground and Water Conditions

A Geotechnical Report has been prepared by Douglas Partners enclosed in **Appendix U**. The report has been procured to assess the Proposal's potential impacts on soil resources and related infrastructure and riparian lands on and near the site, including soil erosion, salinity and acid sulfate soils.

Douglas Partners conclude that the development site is underlain by the Gymea / Lambert soil landscape with the Hawkesbury soil landscape along the shoreline. These soil profiles are both characterised by sandstone. The site is not known to be at risk of acid sulfate soils. As such, no further assessment or mitigation measures are required.

6.14.2. Flooding Risk

A Flood Impact Assessment has been prepared by Meinhardt as part of the Stormwater Management Plan prepared by Meinhardt enclosed in **Appendix V**. The Flood Impact Assessment identifies that the overall Zoo site has little to no flood affectation due to the sloping nature of the site towards Sydney Harbour.

Based on the low amount of risk relating to flood impacts, no additional mitigation measures are proposed in relation to flooding. Flooding will be generally managed as part of the overall stormwater management for the site, as identified in **Section 6.10** of this report.

6.14.3. Contamination and Remediation

A Preliminary Site Investigation (**PSI**) Report has been prepared by Douglas Partners and is enclosed in **Appendix W.** Based on the results of the PSI it is considered that the site can be made suitable for the proposed residential development subject to the implementation of the recommendations of the report.

The PSI concludes that the site is suitable for the proposal subject to the implementation of the following recommendations:

- Undertake a post demolition site walkover to visually check for any suspected hazardous buildings materials within any building demolition footprints and nearby surface by a qualified occupational hygienist or suitably qualified environmental consultant. This should be conducted prior to any earthworks to minimise the risk of cross-contamination between building demolition waste and subsurface conditions.
- A data gap assessment including additional intrusive investigations within existing building footprints after the demolition and surface clearance has been completed.
- Additional visual and analytic assessment of soil prior to off-site disposal is required to confirm the preliminary in situ waste classification assessment provided; and
- Preparation of an Unexpected Finds Protocol outlining the procedures that would be undertaken in the event unexpected contamination is encountered during excavation works.

6.14.4. Waste Management

TCSA is committed to ensuring its waste is managed in an environmentally responsible manner and in accordance with legislative requirements, increased resource recovery and minimising environmental impact. The Zoo has a target of 90% diversion from landfill, and a commitment to circular economy initiatives.

6.14.4.1. Construction Waste Management

A Construction Waste Management Plan (**CPTMP**) forms part of the Construction Management Plan prepared by RPS (**Appendix GG**). The report outlines mitigation measures to ensure the maximum amount of waste material resulting from demolition and early works construction activities are reused and/or recycled to reduce the environmental impact of waste disposal.

The Contractor will be encouraged to implement the following initiatives to ensure waste minimisation:

- Special attention in design and the estimating of materials to minimise waste on-site in off-site fabrication of components for the building.
- Separate building waste from other stockpiled materials in an allocated area on site.
- Separate waste streams on site and place into clearly labelled collection bins for each waste stream.
- Minimise site disturbance and limit unnecessary excavation.
- Implement measures to prevent damage from the elements, odours, health risks and windborne litter.

The appointed contractor shall remove from site rubbish resulting from the works. Rubbish shall be handled in a manner to cover the material and to minimise dust emissions and disposed of in accordance with management plans. The Contractors will ensure facilities, grounds and adjacent properties or public areas are not used for the disposal of rubbish from site.

The Contractors will engage a waste removal consultant to manage and recycle all waste that leaves the project. To encourage recycling, bins will be located close to areas of work and in a position where access for removal by trucks is possible.

6.14.4.2. Operational Waste Management

An Operational Waste Management Plan has been prepared by TCSA (**Appendix X**). The report outlines that Veolia have been engaged as the waste operators for the overall Zoo to increase the amount of waste diverted from landfill via processing through alternative waste recycling and treatment facilities. The former Sky Safari was previously serviced by Veolia Australia. All waste and recycling activities are carried out in accordance with the guidelines and laws of the NSW EPA. In all cases only lawful and approved waste facilities are utilised.

The location of bins within the Sky Safari boundary has been thoughtfully considered and therefore has resulted in bins being positioned within a suitable proximity of the entry and exit point's this will allow for maximum waste capture. A recycling station has been provided at the top and bottom stations of the proposed activity.

Table 18 provides an outline of general waste types and quantities for the Sky Safari.

Table 20 Operational Waste Collection details

Waste type	Bin Size	Estimated Daily Quantity	Collection frequency
Top Station			
General waste (external)	240 Litres	80kg	Daily
Co-mingled recyclables (external)	240 Litres	80kg	Daily
Zoo packaging	240 Litres	80kg	Daily
Lower Station			
General waste (external)	240 Litres	80kg	Daily
Co-mingled recyclables (external)	240 Litres	80kg	Daily
Zoo packaging	240 Litres	80kg	Daily

The Zoo's overall waste management operation is a daily service conducted 365 days per year and is inclusive of public holidays. Waste operators are scheduled for work daily on a rotating roster basis. Waste collection and frequency will undertaken as described in the table below.

Table 21 Waste Service Schedule for Key Waste Streams

Item Collection	Collection Frequency
General Waste including food organics waste	Daily (Mon – Sun), rear loader only travels to waste processing and recycling centre at full capacity
Cardboard and paper	Daily (Mon-Sun), Compactor only serviced when full
Compostable Packaging	Daily (Mon – Sun), combined with back of house organics and transported to large commercial composting facility
Fish waste from Great Southern Oceans exhibit	Once per week, transported to commercial composting facility
Back of house food organics waste	Twice per week, transported to commercial composting facility

Item Collection	Collection Frequency
Animal Waste (manure, bedding)	Daily (Monday- Sunday), transported to commercial composting facility
Green waste	On call - when bin full, transported to a green waste recovery centre
Metal	On call - when bin full, transported to a recovery centre

6.14.5. Infrastructure Requirements and Utilities

An Infrastructure Report has been prepared by ADP Consulting enclosed in **Appendix DD.** The report provides a review of the existing in-ground infrastructure surrounding and serving the Proposal. The following infrastructure will be provided to the development:

- Electricity supply and reticulation (derived from internal private reticulation)
- Telecommunications (subject to commercial and technical considerations, the building users may procure services from AARNET, Telstra, Optus, TPG, NBNCo, or other telcos)
- Water services (Sydney Water)
- Sewer services (Sydney Water)
- Gas Services (Jemena)

Electricity and Telecommunications

Taronga Zoo is electrically supplied via a private 11kV high voltage system owned and operated by Taronga Zoo. The report outlines that three substations out of the total nine substations located on the site are relevant to the Proposal. It is proposed that the existing infrastructure is to be retained and reconfigured to supply to new Sky Safari Stations and pylons. The existing telecommunications networks within the site will be extended to provide connectivity to the new buildings.

Sewer and Water

An existing sewer main is located throughout the site and therefore the Proposal will involve the connection to the existing sewer mains for the pylons and lower station. It is outlined that the top station does not have a direct sewer connection and therefore may require a sewer main extension. Water main connections are available to both the top and bottom stations to service the Proposal and the recycled water main will be sufficient to service the pylons. There are no recycled water mains located within the proximity to the lower station and the existing water main connection to the top station will have to be extended. The stormwater main is outlined to be sufficient to service the pylons. It is to be noted there are also direct connections to the top and lower station for stormwater.

Gas

No new works to gas infrastructure are proposed.

6.14.6. Bush Fire Risk

The SEARs identifies that if the Proposal is on bush fire prone land, or a bush fire threat is identified on or adjoining the site, a bushfire assessment must be procured which details the proposed bushfire protection measures and demonstrates compliance with *Planning for Bushfire Protection.*

The eastern/south-eastern and western parts of the site are partially situated within bushfire prone land as described in Section 10.3 of the *EP&A Act.* The extent of bushfire prone land in relation to the site is shown in **Figure 11**. As such, a Bushfire Assessment prepared by ABAC Australian Bushfire Assessment Consultants (**Appendix EE**) accompanies this EIS.

6.14.6.1. Methodology

The Proposal is not listed as development for Special Fire Protection Purpose (**SFPP**) under either s100B of the *Rural Fires Act 1997* or Clause 47 of the *Rural Fires Regulation 2022.* As such, the Bushfire Assessment

has been undertaken on the basis that the Proposal is 'other development' for the purposes of Chapter 8 of the NSW Rural Fire Service guideline, *Planning for Bushfire Protection 2019* (**PBP**).

6.14.6.2. Mitigation Measures

The following mitigation measures have been identified by ABAC, to ensure safety of Taronga Zoo:

- As a minimum, the structural elements of the Sky Safari project are to be designed to be non-combustible and capable of achieving a Fire Resistance Level (FRL) of 30/-/-. This is only applicable to areas where structural elements are within areas of vegetation within the Zoo site.
- Emergency management and response procedures for the overall Zoo site area to be updated to include shut down and evacuation procedures for the Sky Safari project in the event of a bushfire event.

6.14.7. Aviation

The requirement to notify the Civil Aviation Safety Authority (**CASA**) or Airservices Australia about structures penetrating airspace only applies to obstacles that will have a height of more than 100 metres (328 feet) above ground level or which will penetrate the obstacle limitation surface (**OLS**) of an aerodrome.

The Proposal has a maximum height of 36.5m. As such, notification of the Proposal to CASA is not required in this instance.

7. Justification of the Project

This section of the report provides a comprehensive evaluation of the project having regard to its economic, environmental and social impacts, including the principles of ecologically sustainable development. It assesses the potential benefits and impacts of the proposed development, considering the interaction between the findings in the detailed assessments and the compliance of the proposal within the relevant controls and policies.

7.1. Project Design

The proposal will result in the update of the former Sky Safari within Taronga Zoo. The overall design has considered the steep topography of the site and maintains the former Sky Safari route to ensure that the works will not have any significant detrimental impact on the scenic, visual and natural bushland setting of Sydney Harbour.

The cable cars are intended to be the vessel which takes the public on a journey from Saltwater to Sky similar to the Nawi used by the Cammeraigal people on Sydney Harbour. Taronga's Commitment to Country ensures meaningful consultation with First Nation Peoples as an ongoing process that will continue throughout all elements of design and construction of the project, supporting best practice in embedding and understanding cultural commitments and protocols across the organisation.

7.2. Strategic Planning Consistency

Strategic context and policy have been assessed in **Section 2** of this EIS. The proposal aligns with the role of Taronga Zoo as one of NSW's premier tourism destinations and will contribute to the achievement of planning objectives of the Region Plan, District Plan and Mosman LSPS.

The project is a significant investment for TCSA. The experience created through the new Sky Safari is an opportunity to not only improve transportation, accessibility and movement within the site but it also provides something new and exciting for Sydney and Sydney Harbour, compelling national and international guests to visit and be inspired by the view of Taronga Zoo, Sydney Harbour and the headlands.

7.3. Statutory Planning Consistency

The relevant State and local environmental planning instruments are listed in **Section 4** and assessed in **Appendix B**. The proposal is consistent with the key statutory land use and planning objectives of the EP&A Act and the MLEP. An assessment of the proposal against relevant statutory planning provisions demonstrates the proposal achieves the intent and is consistent with the relevant provisions.

The assessment concludes that the proposal complies with the relevant provisions within the relevant instruments as summarised in **Table 22** below:

Table 22 Statutory Planning Consistency

Matter	Consistency
Objects of Act – EP& A Act s1.3	The proposed development has been assessed and designed in respect to the relevant objects of the EP&A Act and addressed in **Appendix B**
Evaluation of development application (s4.15) – EP&A Act s4.40	The proposed development has been evaluated in accordance the relevant matters for consideration under s4.15(1) of the EP&A Act as outlined in **Appendix B.**
Compliance with environmental assessment requirements – EP&A Regulation s.191	This EIS has been all matters identified in the SEARs as outlined in **Appendix A.**
Principles of Ecologically Sustainable Development – EP&A Regulation s.193	
The precautionary principle	The precautionary principle relates to uncertainty around potential environmental impacts and where a threat of serious or irreversible environmental damage exists, lack

Matter	Consistency
	of scientific certainty should not be a reason for preventing measures to prevent environmental degradation. The Proposal will implement climate change adaptation principles and incorporate a range of ESD initiatives to minimise its ecological footprint. Initiatives will be implemented to reduce resource use including energy, water and material resources. Impacts to existing biodiversity on-site have been assessed in the BDAR prepared by Narla (**Appendix S**) and strategies to minimise/offset those impacts are outlined in the report. An Environmental Management Plan will be implemented in construction to manage environmental impacts during construction. The Proposal will implement climate change adaptation and resilience principles, apply industry best practice ESD initiatives and work to protect the nature and ecology of the site.
Inter-generational equity	A core principle of TCSA is to ensure the needs of future generations are considered in decision making and that environmental values are maintained or improved for the benefit of future generations. TCSA has a commitment to sustainability and Net Zero by 2030 which has been taken this into account in the design and implementation of this project. Key elements of this include the goal of reducing private vehicle usage and promotion of a sustainable transport methods, sustainable design and material selection, as well as limiting impacts to Country, bushland and habitat for native species and tree canopy. The revitalised Sky Safari will help TCSA achieve their vision and strategic priorities. This includes conservation, education, commitment to Country, wildlife care and presentation and environmental leadership.
Conservation of biological diversity and ecological integrity	Conservation of biological diversity and ecological integrity is also core to the Zoo. Existing on-site biodiversity will be protected and encouraged with the Landscape Plans prepared by Newscape incorporate endemic species to provide a sensory experience, firmly grounding them on Cammeragial Country. The use of endemic plants reduces the maintenance requirements of the project as they are adapted to the local climatic conditions, making them more resilient to climate change impacts such as drought, extreme temperatures or shifting rainfall. This translates to more efficient use of water and nutrients, minimising requirements for irrigation and fertilisers. As noted above, the impacts to existing biodiversity on-site have been assessed in the have been assessed in the BDAR prepared by Narla (**Appendix S**) and, and strategies to minimise/offset those impacts are outlined in that report and **Section 6.8** of the EIS. Water sensitive urban design using natural processes and stormwater filtration systems (natural and artificial) will be integrated into the development to meet water quality thresholds. The overall Zoo site generally falls from north to south, towards Sydney Harbour and a network of inground pits and pipes connecting to existing downstream internal stormwater drainage of Taronga Zoo to discharge via gravity.
Improved valuation, pricing and incentive mechanisms	This requires the holistic consideration of environmental resources that may be affected as a result of the development including air, water and the biological realm. It places a high importance on the economic cost to environmental impacts and places a value on waste generation and environmental degradation. Sustainability initiatives have been evaluated in terms of value and cost-effectiveness.

7.4. Community Views

Stakeholder engagement has been a priority for this project. During consultation, significant feedback has been received from the community highlights the Sky Safari's importance not only as a convenient way to navigate the Zoo, but also as a unique and cherished part of the Taronga Zoo experience.

Throughout the development of the proposal, there has been continued engagement with stakeholders including TCSA's internal teams representing the guest experience, wildlife and nature on the site and animal welfare, the Taronga Aboriginal Advisory Group, Mosman Council, neighbours and local interest groups. The consistent feedback from stakeholder engagement is that the proposed design has clearly responded to feedback on animal welfare, heritage, tree canopy, remnant bushland and views.

A number of alternatives have been identified in **Section 2.4** in response to both community feedback and technical inputs including modifying the design and reducing the number of pylons on site from eleven to six.

TCSA welcomes feedback on the proposal and will continue to keep stakeholders and the community informed of the project approval process through the exhibition and determination phases by:

- Continuing to engage with the community about the project, its impacts, and the approval process
- Providing information on how the community's views have been addressed in the EIS on the project website and through a letterbox drop
- Enabling the community to seek clarification about the project through the two-way communication channels.

7.5. Environmental Impacts

The proposed development has been assessed considering the potential environmental, economic and social impacts as outlined in the summary table below.

Table 23 Environmental Impact Summary

Matter	Summary
Impacts on the natural environment	Taronga Zoo is a unique location in Sydney Harbour and with this, comes an important responsibility to promote conservation, and share and celebrate the deep history of the place and Country. The proposed route and design aims to minimise tree removal and ensure the future growth of mature trees across the site. The proposal also addresses the principles of ESD in accordance with the requirements at Clause 193 of the Regulations. Beyond reinforcing the identity of the environmental landscape, the proposal also appropriately acknowledges and integrates Indigenous connections to Country. The proposed Sky Safari route, architectural design and materiality of the stations have been informed through engagement with relevant indigenous stakeholders to incorporate the new narrative of Saltwater to Sky.
Impacts on the built environment	The proposal has been designed to respond to the heritage, design principles, landscaping and existing character of Taronga Zoo. The proposal retains the former Sky Safari route to reduce potential impacts on the existing character of the site. While the route is retained, the new infrastructure allows for larger cable cars to increase accessibility and dramatically improve the guest experience journey for all visitors. While it is acknowledged that there are visual impacts associated with the increased heights of the pylons, this is in response to the technical requirements of the cable car infrastructure and results in a moderate visual impact from a number of restricted view points. As the surrounding trees within the Zoo site continue to grow and reach full maturity, the current perceived impacts will be reduced.
Social impacts	The Sky Safari remains an iconic and much loved feature of Taronga Zoo. The introduction of new cable cars provides improved accessibility into and through the site to improve the visitor experience. The new stations also incorporate a range of amenities to encourage guests to use public transport and reduce private vehicle usage.

Matter	Summary
Economic impacts	The Sky Safari will provide unique, affordable, family-focused sightseeing tourism infrastructure that provides comfortable all-season experiences to support one of NSW's premier tourism destinations. 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. The project will also assist in creating full-time jobs during construction and will sustain direct and indirect jobs during its ongoing operation.
Cumulative impacts	There are a number of recently approved and completed State Significant projects within the Taronga Zoo site as noted in **Section 2.3**. It is acknowledged that there may be some overlap with construction timing of the Sky Safari and Wildlife Hospital projects. This will be managed via construction management measures including the implementation of Construction Traffic Management Plans for all projects. None of the approved or proposed projects are anticipated on having long term, significant impacts on visitor numbers to the Zoo. As noted in **Section 6.7,** Bradleys Head Road and the surrounding road network will continue to have spare capacity to accommodate traffic movements associated with the proposed upgrades to the Sky Safari and other projects within Taronga Zoo.

The potential impacts can be mitigated, minimised or managed through the measures discussed in detail within **Section 6** and as summarised in **Appendix C** to this EIS.

7.6. Suitability of the Site

The site is considered highly suitable for the proposed development for the following reasons:

- The site is zoned SP1 'Special Activities (Zoological Gardens)' under the MLEP. The provision of cable car systems is found in zoos worldwide and provides a new perspective from the public to view wildlife. The Sky Safari has been part of the Zoo experience for over 35 years and is a well-established and valued part of the zoo landscape. The cable car infrastructure is therefore considered to be "*ordinarily incidental*" to zoological gardens generally and the redevelopment of the Sky Safari is the replacement of existing infrastructure within Taronga Zoo.
- The design positively responds to the site conditions and existing landscape character of the locality. While the proposed does result in some tree removal, the proposed stations and pylons have been designed to integrate within the landscape of the Zoo and with new planting incorporating a diverse array of locally Indigenous plants.
- Subject to the various mitigation measures recommended by the specialist consultants, the proposal does not have any unreasonable impacts on adjoining properties or the public domain in terms of views, traffic, acoustic and environmental impacts.

7.7. Public Interest

The proposed development is considered in the public interest for the following reasons:

- The proposal is consistent with relevant State and local strategic plans and studies.
- The issues identified during the stakeholder engagement have been addressed by changes to the design including retaining the existing route to reduce the perceived impacts.
- The site is well serviced by public transport and various walking and cycling routes. Further, the proposal greatly encourages the use of public transportation options to access the site by improving connections to the site and waiting times associated with the Sky Safari to move guests around the site.
- The proposal will result in the creation of 280 full-time jobs during construction, and will sustain at least 9 direct and indirect jobs during its ongoing operation.

Having considered all relevant matters, we conclude that the proposed development is appropriate for the site and approval is recommended, subject to appropriate conditions of consent.

Appendix A SEARs Compliance Table

Appendix B Statutory Compliance Table

Appendix C Mitigation Measures Table

Appendix D Community Engagement Summary Table

Appendix E EDC Report

Appendix F Design Report

Appendix G Architectural Drawings

Appendix H Survey Drawings

Appendix I Civil Drawings

Appendix J BCA / DDA Report

Appendix K Lighting Report

Appendix L Visual Impact Assessment

Appendix M Crime Prevention Through Environmental Design Report

Appendix N Arboricultural Impact Assessment

Appendix O Landscape Report

Appendix P Landscape Drawings

Appendix Q Environmental Sustainability Design Report (including Net Zero Report)

Appendix R Transport and Accessibility Impact Assessment

Appendix S Biodiversity Development Assessment Report

Appendix T Noise and Vibration Impact Assessment

Appendix U Geotechnical Assessment

Appendix V Water Management Plan

Appendix W Preliminary Site Investigation (Contamination Report)

Appendix X Operational Waste Management Plan

Appendix Y HAZMAT Survey

Appendix Z Aboriginal Cultural Heritage Assessment Report

Appendix AA Statement of Heritage Impact Assessment

Appendix BB Heritage Archaeological Assessment

Appendix CC Social Impact Assessment

Appendix DD Infrastructure Delivery, Management and Staging Plan

Appendix EE Bushfire Assessment

Appendix FF Operational Management Plan

Appendix GG Construction Management Plan

Appendix HH Engagement Outcomes Report

Appendix II Structural Statement Pylon Footings

Appendix JJ Embodied Emissions Form

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