



Taronga Zoo Wharf Upgrade

Submissions report

Transport for NSW | August 2021

Taronga Zoo Wharf Upgrade

Submissions report

Transport for NSW | August 2021

Prepared by Cardno (NSW/ACT) Pty Ltd and Transport for NSW



TfNSW: 21.227

ISBN: 978-1-922549-23-5

COPYRIGHT: The concepts and information contained in this document are the property of Transport for NSW. Use or copying of this document in whole or in part without the written permission of Transport for NSW constitutes an infringement of copyright.

Document controls

Approval and authorisation

Title	Taronga Zoo Wharf Upgrade Submissions Report
Accepted on behalf of Transport for NSW by:	Bob Rimac Senior Project Manager
Signed:	
Dated:	20 August 2021

Document status

Document status	Date	Prepared by	Reviewed by
Rev A	4 June 2021	Kiera Plumridge	Belinda Crichton
Rev B	2 August 2021	Belinda Crichton	Kevin Roberts
Rev 0	2 August 2021	Belinda Crichton	Kevin Roberts

Executive summary

The proposal

Transport for NSW is proposing to upgrade Taronga Zoo wharf (the proposal) as part of the Transport Access Program (TAP). The proposal includes both landside and waterside work including installation of new covered gangways and an accessible ramp, and removal of part of the existing wharf structure.

The upgraded wharf would provide access for customers with mobility needs, meeting the standards of the *Disability Discrimination Act 1992* (DDA) and the *Disability Standards for Accessible Public Transport 2002* (DSAPT).

Details of the proposal are provided in section 1.1 of this Submissions report.

Display of the Review of Environmental Factors

Transport for NSW prepared a Review of Environmental Factors (REF) for the Taronga Zoo wharf upgrade (TfNSW, 2021). As part of the planning process the REF was publicly displayed between Friday 26 March and Friday 7 May 2021. The REF was published on the Transport for NSW project webpage and made available for download. Due to COVID-19 printed versions of the REF were available by request.

A number of activities were carried out during the public display period to provide the community with an opportunity to learn more about the proposal, ask questions and 'have their say'. Activities included installation of posters at the wharf, distribution of community updates and postcards, a targeted social media campaign and two community drop-in sessions at the wharf.

Summary of issues and responses

A total of six submissions were received, all from the general community. The main issues raised were:

- Feedback, suggestions and concerns relating to the proposed design including the pontoon size and remaining life, weather protection around the wharf area, prioritisation of accessibility in the design and future power requirements
- Project justification
- Ferry passenger inconvenience during construction
- Reducing the noise made by the existing pontoon
- Construction waste entering the water.

A summary of the response to these is provided below:

- Through an options consideration process it was determined that retaining the existing wharf for the remaining life of the structure and making minor modifications to ensure it is compliant with relevant accessibility legislation is the preferred option over constructing a new wharf.
- Cover would be provided to the new accessible ramp, however covered walkways around Taronga Zoo are outside the scope of this proposal.
- The key objective of the proposal is to ensure compliance with DSAPT and *Disability (Access to Premises – Buildings) Standards 2010* made under the DDA which require all public transport infrastructure, including wharves, to be fully compliant by December 2022.
- The wharf upgrade construction work would take around five months, during construction there may be changes to the ferry timetable to accommodate construction schedules however the work would be staged so that the wharf would remain operational and disruption minimised where possible.
- The pontoon is required to move with the tide water level to allow for safe access to ferries, however as part of detailed design the structure will be assessed and where possible improvements made.

- All construction related impacts, including waste management, would be appropriately managed prior to and during construction through implementation of a Construction Environmental Management Plan (CEMP).

A more detailed summary of feedback received and our responses is available in Section 2 of this report.

After consideration of the issues raised in the public submissions no changes have been made to the assessment or safeguard and management measures as described in the REF.

Next steps

Transport for NSW as the determining authority will consider the information in the REF and this Submissions report and make a decision whether or not to proceed with the proposal. The decision will be shared with stakeholders and the community.

Where a decision is made to proceed, the project will move into detailed design and then construction. Transport for NSW will continue to inform the community and stakeholders prior to and during the construction phase.

Contents

Executive summary	i
Contents	iii
1. Introduction and background	1
1.1 The proposal.....	1
1.2 Review of Environmental Factors display.....	3
1.3 Purpose of the report	3
2. Response to issues	4
2.1 Overview of issues raised	4
2.2 Proposal design	5
2.3 Proposal justification	7
2.4 Transport, traffic and access.....	8
2.5 Noise and vibration	8
2.6 Construction impacts	9
3. Environmental management	10
3.1 Environmental management plans (or system)	10
3.2 Summary of safeguards and management measures	10
3.3 Licensing and approvals	28
4. References	29

Tables

Table 2-1: Respondents	4
Table 5-1: Summary of environmental safeguards and management measures.....	11
Table 5-2: Summary of licensing and approval required	28

Appendices

Appendix A	Taronga Zoo Wharf Upgrade, Review of Environmental Factors, March, 2021
------------	---

1. Introduction and background

1.1 The proposal

Transport for NSW proposes to upgrade the Taronga Zoo wharf (the proposal) as part of the Transport Access Program (TAP). The proposal includes both waterside and landside upgrade work as shown on Figure 1-1.

The waterside features of the proposal would include:

- Retention of most of the existing jetty and covered pontoon. However, to accommodate the new longer gangways the existing jetty structure and pontoon roof structure would be cut back by about 3.5 metres
- Removal of existing gangways
- Installation of two new covered aluminium 18 metre dual-lane gangways between the cut back jetty and pontoon. Each gangway would be held in place by two new piles (four in total)
- Two new transition ramps on the existing pontoon to cater for the new gangways
- Replacement of two of the existing jetty canopies to accommodate the change in jetty size
- Construction of a new covered *Disability Standards for Accessible Public Transport* (DSAPT) compliant accessible ramp leading from the street level wharf entrance to the gangway entrances. The ramp would be held in place by nine new piles (three waterside and six landside)
- Removal and relocation of the Transdev office and café on the existing jetty
- Removal of the existing ferry arrestors on each side of the wharf to allow space for construction activities. Ferry arrestors would be replaced with two protection piles on each side of the wharf (four in total)
- Changes to steel fencing on the pontoon to cater for changes in customer flows due to new gangways
- Relocation of existing Opal Card readers and Opal top-up machine
- Upgrade (where required) of safety and security features including lighting, closed circuit television (CCTV) security cameras, ladders to the water and tactile ground surface indicators, if required.

The landside features of the proposal would include:

- Regrading of the footpath and bus stop to achieve DSAPT compliance to the new accessible ramp
- Retention of the five existing bicycle parking hoops
- Retention of the public telephone booth
- Removal of foreshore vegetation to construct the new accessible ramp.

The work would be carried out over a period of up to five months starting in late 2021. During construction the wharf would remain operational, however the café would be closed.

A more detailed description of the proposal is found in the Taronga Zoo Wharf Upgrade Review of Environmental Factors (REF) prepared by Transport for NSW in March 2021 (TfNSW, 2021).

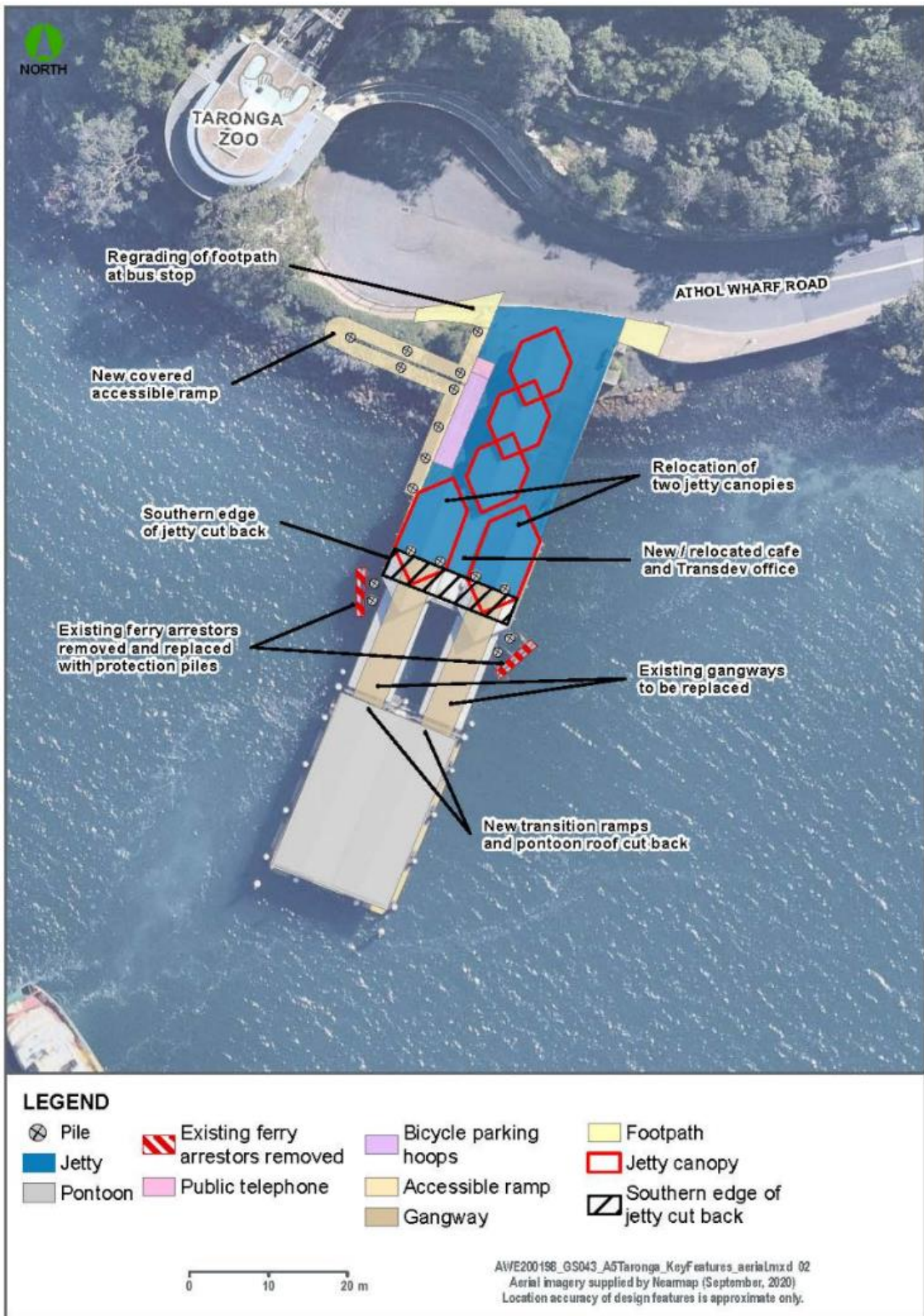


Figure 1-1: Plan of the proposal

1.2 Review of Environmental Factors display

Transport for NSW prepared a Review of Environmental Factors (REF) to assess the potential environmental impacts of the proposed works. The REF was publicly displayed for 44 days between Friday 26 March and Friday 7 May 2021. The consultation was longer than the normal four weeks to account for the school holiday period.

The REF was published on the Transport for NSW project webpage and made available for download. Due to COVID-19 printed versions of the REF were available by request. A range of community consultation activities were carried out for the public display which included:

- Installation of posters at the wharf with quick response (QR) codes taking passengers to an online survey
- Distribution of around 850 community updates letterbox dropped within the suburbs of Mosman, Cremorne Point and Clifton Gardens at the start of the public display period
- Distribution of around 850 postcards halfway through the public display period as a reminder for the community to have their say
- Targeted social media campaign during the public display period that reached 15,990 people
- Email sent to 66 people on the project database
- Two community drop in sessions held at the wharf on Sunday 11 April, 2-4pm and Wednesday 21 April, 7-9am.

1.3 Purpose of the report

This Submissions report relates to the REF prepared for the Taronga Zoo Wharf Upgrade and should be read in conjunction with that document.

The REF was placed on public display and submissions relating to the proposal and the REF were received by Transport for NSW. This Submissions report summarises the issues raised and provides responses to each issue (Chapter 2) and identifies the environmental management measures for the proposal (Chapter 3).

No revisions have been made to the assessment or environmental management measures as described in the REF.

2. Response to issues

Transport for NSW received six submissions, accepted up until the Friday 7 May 2021. Table 2-1 lists the respondents and each respondent's allocated submission number. The table also indicates where the issues from each submission have been addressed in this Submissions report.

Table 2-1: Respondents

Respondent	Submission No.	Section number where issues are addressed
Individual	1	Section 2.2.1, Section 2.2.2, Section 2.2.3, Section 2.2.4
Individual	2	Section 2.6
Individual	3	Section 2.5
Individual	4	Section 2.3, Section 2.4
Individual	5	Section 2.3
Individual	6	Section 2.2.5

2.1 Overview of issues raised

A total of six submissions were received in response to the REF display. This consisted of six individual submissions from the community.

Each submission has been examined individually to understand the issues being raised. The issues raised in each submission have been extracted and collated, and corresponding responses to the issues have been provided. Where similar issues have been raised in different submissions, only one response has been provided. The issues raised and the Transport for NSW response to these issues forms the basis of this chapter.

The issues raised in the submissions from the community and agencies can be categorised into five main areas as follows:

- Proposal design
- Proposal justification
- Transport, traffic and access impacts
- Noise and vibration impacts
- Construction related impacts.

2.2 Proposal design

2.2.1 Pontoon size

Submission number(s)

1

Issue description

The respondent noted Taronga Zoo wharf is a high demand passenger terminal and suggested that the wharf is currently unable to safely accommodate large crowds as:

- Loading areas on either side of the pontoon are too narrow and the waiting area is too small
- There is a misalignment of wharf elements (gates, bollards, fenders) which slows the embarkation process
- Egress away from the pontoon is slowed by insufficient Opal card totems.

The respondent suggests modifying the design to incorporate a new larger pontoon to alleviate the deficiencies with the current wharf, and asks whether passenger modelling has been completed to inform the final design.

Response

Taronga Zoo wharf is a popular wharf providing access to Taronga Zoo and Sydney Harbour National Park. It is one of the busiest wharves in Sydney. The majority of customers using the wharf are visitors to the area; commuters make up a smaller number of users as there are no residences within 500 metres of the wharf.

Capacity requirements for the pontoon were assessed for waiting and queuing based on current and future patronage. Based on calculations outlined in the concept design for the wharf, a total of 813 passengers could be accommodated at any one time across the waiting area on the pontoon, gangways and jetty. Queuing analysis undertaken during concept design suggests that the maximum number of people that would be waiting for a ferry during the peak hour would be around 400 people at any one time.

Transport for NSW acknowledges that the current wharf can be crowded during peak times, however, through an options consideration process it was determined that retaining the existing wharf for the remaining life of the structure and making minor modifications to make it compliant with relevant accessibility legislation is the preferred option over constructing a new wharf. During detailed design, Transport for NSW will investigate ways to improve passenger flow on the wharf including optimising the placement of opal card readers.

2.2.2 Remaining life of pontoon

Submission number(s)

1

Issue description

The respondent is concerned that retaining the existing pontoon based on an assessment of its remaining life is a false economy if the wharf proves to be unfit for purpose and requires further upgrade in 10 years.

Response

The existing pontoon at Taronga Zoo has been estimated to have approximately 20-year design life remaining, and a full wharf replacement may be required after this time. When replacing wharves, Transport for NSW plans for a 50-year design life. Given the existing pontoon has approximately 20 years of design life remaining, it was determined through an options consideration process that retaining the existing wharf for the remaining life of the structure and making minor modifications to make it compliant with relevant accessibility legislation is the preferred option over constructing a new wharf.

2.2.3 Prioritisation of disabled access in design

Submission number(s)

1

Issue description

The respondent is concerned the upgrade only addresses disability requirements and does not take into account other design aspects of upgrading the wharf that may be beneficial.

Response

Transport for NSW acknowledges that the key objective of the proposal is to ensure compliance with *Disability Standards for Accessible Public Transport (DSAPT)* and the *Disability Discrimination Act 1992 (DDA)*.

During the concept design, three options were developed and evaluated with key stakeholders. One of these options was to demolish the existing wharf and construct a new wharf to the north of the existing location, which could consider other design aspects such as pontoon size. Through this options consideration process it was determined that retaining the existing wharf for the remaining life of the structure and making minor modifications to make it compliant with relevant accessibility legislation is the preferred option.

2.2.4 Future of the fleet

Submission number(s)

1

Issue description

The respondent notes that the project documents do not make reference to the possibility of the Sydney Ferry fleet converting to electric propulsion, and notes that if Taronga Zoo wharf is required to have additional power requirements in the future it should be considered before the design is finalised.

Response

Transport for NSW is not considering the provision of power upgrades for electric ferries at Taronga Zoo Wharf.

2.2.5 Weather protection

Submission number(s)

6

Issue description

The respondent would like the design to incorporate covered walkways around the jetty and zoo.

Response

The current proposal design includes shelter for customers with overhead cover provided on the accessible ramp, gangways, pontoon and parts of the jetty.

The key objective of the proposal is to ensure compliance with DSAPT and Disability (Access to Premises – Buildings) Standards 2010 made under the DDA. Taronga Zoo wharf has been identified for an accessibility upgrade as it does not currently meet key requirements of the DSAPT or the DDA which require all public transport infrastructure, including wharves, to be fully compliant by December 2022.

As the key objective of the proposal is accessible access to the wharf, covered walkways around Taronga Zoo are outside the scope of this proposal. As owners of the footpaths, Mosman Council is responsible for considering weather protection options around Taronga Zoo. This request will be passed on to Mosman Council for consideration.

2.3 Proposal justification

Submission number(s)

4, 5

Issue description

One respondent was concerned about the environmental impacts of the proposal and unsure of the benefits of the proposal. Another respondent was concerned the proposal is unnecessary and that the benefit would lie in upgrades to the bus arrangements near the main entrance to Taronga Zoo instead.

Response

The key objective of the proposal is to ensure compliance with DSAPT and Disability (Access to Premises – Buildings) Standards 2010 made under the DDA. Taronga Zoo wharf has been identified for an accessibility upgrade as it does not currently meet key requirements of the DSAPT or the DDA which require all public transport infrastructure, including wharves, to be fully compliant by December 2022.

Whilst the proposal presented in the REF best meets the project objectives, Transport for NSW acknowledges the proposal would still result in some environmental impacts such as minor vegetation removal and temporary noise and transport impacts. However, on balance the proposal is considered justified as the proposal would provide better commuter experience through improvements to passenger amenity, safety, access for people with a disability and overall user experience.

As the key objective of the proposal is upgrade the wharf to meet accessibility requirements under the DDA and DSAPT to the wharf, bus arrangements around the main entrance to the Zoo are outside the scope of

this proposal. There are currently no plans to change bus service arrangements at the entrance to Taronga Zoo. Transport will continue to monitor bus route demand in the area.

2.4 Transport, traffic and access

Submission number(s)

4

Issue description

The respondent was concerned about ferry passenger inconvenience during construction.

Response

The new wharf would be constructed over a period of up to five months, depending on weather, however the construction contractor would investigate options to reduce this timeframe when preparing the construction work schedule.

Due to the importance of the Taronga Zoo wharf to the adjoining Taronga Zoo and other recreational areas, demolition and construction activities would be staged and the wharf would remain operational during construction.

However, it is noted that during construction there may be changes to the ferry timetable to accommodate construction schedules. Disruptions to ferry timetables may result in slightly increased travel times for ferry users. Any disruption would be minimised via notification ahead of construction, and consequent updates provided to customers.

The existing local bus services would also remain operational during construction, with exception of when works are occurring near the bus stop in the Athol Wharf Road cul-de-sac. Transport for NSW would aim to minimise the impact to the bus service through working out of hours where required, and outside peak patronage.

2.5 Noise and vibration

Submission number(s)

3

Issue description

The respondent notes that when there are wind and waves the existing wharf moves up and down creating noise, and desires a solution in proposal design.

Response

The pontoon has increased movement during times when the sea is rough, and this creates some noise. However, the pontoon is required to rise and fall with the water level to allow for safe boarding and alighting of vessels over all tidal levels. This upgrade is required to make the wharf more accessible for everybody but replacing the pontoon is not in the scope of this upgrade. However, as part of the detail design an assessment of the existing structure will be undertaken and where possible improvements made.

2.6 Construction impacts

Submission number(s)

2

Issue description

The respondent was concerned about construction waste entering the waterway.

Response

All construction related impacts including waste management and potential water pollution would be appropriately managed prior to and during construction through implementation of a Construction Environmental Management Plan (CEMP).

3. Environmental management

The REF for the Taronga Zoo wharf upgrade identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7.2 of the REF).

After consideration of the issues raised in the public submissions and changes to the proposal, the safeguard and management measures remain unchanged from the exhibited REF to mitigate potential impacts.

Should the proposal proceed, environmental management will be guided by the framework and measures outlined below.

3.1 Environmental management plans (or system)

A number of safeguards and management measures have been identified in order to minimise adverse environmental impacts, including social impacts, which could potentially arise as a result of the proposal. Should the proposal proceed, these management measures would be incorporated into the detailed design and applied during the construction and operation of the proposal.

A Construction Environmental Management Plan (CEMP) will be prepared to describe safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

The CEMP will be prepared prior to construction of the proposal and will be reviewed and certified by environment staff, Greater Sydney Project Office, prior to the commencement of any on-site works. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements. The EMP would be developed in accordance with the specifications set out in the QA Specification G36 – Environmental Protection (Management System), QA Specification G38 – Soil and Water Management (Soil and Water Plan), QA Specification G40 – Clearing and Grubbing and QA Specification G10 – Traffic Management.

3.2 Summary of safeguards and management measures

The REF for the Taronga Zoo Wharf Upgrade identified a range of environmental outcomes and management measures that would be required to avoid or reduce the environmental impacts.

After consideration of the issues raised in the public submissions, the environmental safeguard and management measures remain unchanged from the exhibited REF. The measures are reproduced in Table 5-1. Should the proposal proceed, the environmental management measures in Table 5-1 would guide the subsequent phases of the proposal.

Table 3-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
GEN1	General – minimise environmental impacts during construction	<p>A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Environment Manager prior to commencement of the activity.</p> <p>As a minimum, the CEMP will address the following:</p> <ul style="list-style-type: none"> • Any requirements associated with statutory approvals • Details of how the project will implement the identified safeguards outlined in the REF • Issue-specific environmental management plans • Roles and responsibilities • Communication requirements • Induction and training requirements • Procedures for monitoring and evaluating environmental performance, and for corrective action • Reporting requirements and record-keeping • Procedures for emergency and incident management • Procedures for audit and review. <p>The endorsed CEMP will be implemented during the undertaking of the activity.</p>	Contractor/Transport for NSW project manager	Pre-construction / detailed design
GEN2	General – notification	All businesses, residential properties and other key stakeholders (e.g. schools, local councils) affected by the activity will be notified at least five days prior to commencement of the activity.	Contractor/Transport for NSW project manager	Pre-construction
GEN3	General – environmental and sustainability awareness	<p>All personnel working on site will receive training to ensure awareness of environment protection requirements to be implemented during the project. This will include up-front site induction and regular ‘toolbox’ style briefings. Sustainability initiatives and targets will also be addressed.</p> <p>Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include:</p> <ul style="list-style-type: none"> • Areas of non-Aboriginal heritage sensitivity • Waterside impacts. 	Contractor/Transport for NSW project manager	Pre-construction/detailed design

No.	Impact	Environmental safeguards	Responsibility	Timing
LS1	Land surface and hydrology	A Soil and Water Management Plan (SWMP) will be prepared and implemented as part of the CEMP. The SWMP will identify all reasonably foreseeable risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction.	Contractor	Pre-construction
LS2	Land surface and hydrology	Any excavated sediments or soil that require disposal will be sampled, tested and classified in accordance with the EPA's <i>Waste Classification Guidelines: Part 1 Classifying Waste</i> (EPA, 2014) prior to being disposed of at a waste facility licensed to accept the relevant class of waste. Any materials classified as Hazardous Waste may require treatment or an immobilisation approach in accordance with Part 10 of the <i>Protection of the Environment Operations (Waste) Regulation 2014</i> prior to off-site disposal.	Contractor	Construction
LS3	Land surface and hydrology	Clean and suitable topsoil will be stockpiled and reused on site where appropriate.	Contractor	Construction
LS4	Land surface and hydrology	If unexpected contaminated areas are encountered during construction, appropriate control measures will be implemented to manage the immediate risks of contamination. All other works that may impact on the contaminated area will cease until the nature and extent of the contamination has been confirmed and any necessary site-specific controls or further actions identified in consultation with the Transport for NSW Environment Manager and/or EPA.	Contractor	Construction
LS5	Land surface and hydrology	The piling methodology shall seek to mitigate the risk of sediment dispersal.	Contractor	Construction
LS6	Land surface and hydrology	Site specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of the SWMP. Control measures are to be implemented and maintained (in accordance with the Landcom/Department of <i>Housing Managing Urban Stormwater, Soils and Construction Guidelines</i> , the Blue Book) to: <ul style="list-style-type: none"> • Prevent sediment moving off-site and sediment laden water entering any water course, drainage lines, or drain inlets • Reduce water velocity and capture sediment on site 	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> Minimise the amount of material transported from site to surrounding pavement surfaces Divert clean water around the site. 		
LS7	Land surface and hydrology	<p>Prior to commencement of construction activities, sediment control device (such as sediment boom and curtain) will be installed around the construction footprint to contain disturbed sediment from the water surface by allowing suspended sediments to settle back on the bottom of the seabed overtime. The silt boom and curtain will extend from a minimum of 100 millimetres above the water line to a minimum of 2.5 metres below the water line before starting work.</p> <p>Installation should be undertaken during high tide periods from a boat. The device should be designed to rise and fall with the tide to prevent disturbance. Inspection of the device should be undertaken on a daily basis after ebbing tides, with additional inspection be carried following storm events. Prior to removing the sediment control device, conditions within the curtain would be assessed visually and with a field instrument to verify that sediment has settled resulting in similar water turbidity to that outside the curtain.</p>	Contractor	Construction
LS8	Land surface and hydrology	<p>Visual monitoring of local water quality (i.e. turbidity, hydrocarbon spills/slicks) is to be undertaken on a regular basis to identify any potential spills or deficient silt curtains or erosion and sediment controls.</p> <p>Results of the observations are required to be recorded. Records are required to be kept on the site and to be made available for inspection by persons authorised by Transport for NSW.</p>	Contractor	Construction
LS9	Land surface and hydrology	The number of jack-ups/anchor points will be minimised where possible. The locations will be selected to avoid areas of sensitive habitat.	Contractor	Construction
LS10	Land surface and hydrology	Works associated with positioning barges, drilling and pile driving will occur during calm conditions to prevent excessive scouring and other impacts.	Contractor	Construction
WQ1	Water quality	<ul style="list-style-type: none"> A spill management plan will be developed as part of the CEMP and communicated to all staff working on site. 	Contractor	Pre-construction / Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> Appropriate land and aquatic spill kits are to be maintained on site and on barges. Aquatic spill kits must be specific for working within the marine environment. The spill kit must be appropriately sized for the volume of potentially polluting liquids stored at the work site. All workers will be advised of the location of the spill kit and trained in its use. 		
WQ2	Water quality	If an incident (e.g. spill) occurs, the Transport for NSW <i>Environmental Incident Classification and Reporting Procedure</i> is to be followed and the Transport for NSW Contract Manager notified as soon as practicable.	Contractor	Construction
WQ3	Water quality	In the event of a maritime spill, the incident emergency plan will be implemented in accordance with Port Authority of NSW's response to shipping incidents and emergencies outlined in the <i>NSW State Waters Marine Oil and Chemical Spill Contingency Plan</i> (RMS, 2016c). (This Plan defines which types of spills need to be notified by external combat agencies).	Contractor	Construction
WQ4	Water quality	Emergency contacts will be kept in an easily accessible location on vehicles, vessels, plant and site office. All workers will be advised of these contact details and procedures.	Contractor	Pre-construction / Construction
WQ5	Water quality	Vehicles, vessels and plant must be properly maintained and regularly inspected for fluid leaks.	Contractor	Construction
WQ6	Water quality	No vehicle or vessel wash-down or re-fueling will occur on-site.	Contractor	Construction
WQ7	Water quality	Any chemicals or fuels stored at the site or equipment barges will be stored in a bunded area.	Contractor	Construction
WQ8	Water quality	An environmental work method statement (EWMS) will be developed for the removal of the existing wharf elements (e.g. jetty canopy and portion of existing pontoon) to minimise the risk of pollutants and debris entering the waterway. The EWMS must be approved by Transport for NSW prior to the demolition works.	Contractor	Pre-construction
B1	Biodiversity	Integrate the management of flora and fauna into the construction environmental management plan (either as a standalone flora and fauna management plan or a subplan). This is to include all terrestrial and marine flora and fauna and include but not be limited to such measures as:	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> Documenting and establishing the limits of construction activities, including clearing, vessel traffic and anchoring Establishment of no go zones Implementation of tree protection measures. 		
B2	Biodiversity	Retained vegetation in close proximity to construction activities will not be damaged or removed.	Contractor	Construction
B3	Biodiversity	Native vegetation and habitat removal will be minimised through detailed design.	Transport for NSW	Detailed design
B4	Biodiversity	Pre-clearing surveys will be undertaken in accordance with Guide 1: Pre-clearing process of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011).	Contractor	Pre-construction
B5	Biodiversity	Vegetation and habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011).	Contractor	Construction
B6	Biodiversity	The unexpected species find procedure is to be followed under <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified in the construction footprint.	Contractor	Construction
B7	Biodiversity	Considerations during detailed design to promote colonisation of habitat-forming species could include the installation of structures which provide habitat complexity (e.g. designs available as part of the Living Seawalls Project).	Transport for NSW	Detailed design
B8	Biodiversity	Direct removal of marine vegetation and habitat limited to the footprint of the eleven piles and some minor anchoring during water-based construction activities.	Contractor	Construction
B9	Biodiversity	Minimise anchoring where possible and avoid anchoring on subtidal rocky reef habitat.	Contractor	Construction
B10	Biodiversity	Complete a targeted survey for Black Rockcod and White's Seahorse within 24 hours prior to the commencement of water-based construction activities. Black Rockcod individuals should be encouraged to move away from the study area and White's Seahorse should be captured and relocated to nearby similar habitat using methods approved by DPI Fisheries. A White's Seahorse relocation plan will be	Transport for NSW	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		developed in consultation with DPI Fisheries to dictate this activity. These activities are to be completed by a qualified marine ecologist.		
B11	Biodiversity	A Section 37 permit under the FM Act to relocate Syngnathids collected during the targeted pre-clearance survey will be required as part of the White's Seahorse relocation.	Transport for NSW	Pre-construction
B12	Biodiversity	Aquatic habitat will be protected in accordance with Guide 10: Aquatic habitats and riparian zones of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011) and Section 3.3.2 Standard precautions and mitigation measures of the <i>Policy and guidelines for fish habitat conservation and management Update 2013</i> (NSW DPI, 2013).	Contractor	Construction
B13	Biodiversity	Piling to stop if marine mammals are observed within approximately 100 metres of the construction footprint and only to recommence once they have moved beyond 100 metres of the construction footprint or are not seen for at least 20 minutes.	Contractor	Construction
B14	Biodiversity	The detailed design should aim to avoid/minimise any impact to coastal processes and hydrology.	Transport for NSW	Detailed design
B15	Biodiversity	Fauna will be managed in accordance with Guide 9: Fauna handling of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011).	Contractor	Construction
B16	Biodiversity	Weed species will be managed in accordance with Guide 6: Weed management of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011).	Contractor	Construction
B17	Biodiversity	Pathogens will be managed in accordance with Guide 2: Exclusion zones of the <i>Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects</i> (RTA, 2011).	Contractor	Construction
B18	Biodiversity	Water-based equipment and vessels to be sourced from local suppliers where possible. Equipment and vessels will be cleaned and inspected prior to entering the construction footprint.	Contractor	Construction
B19	Biodiversity	Occurrence of any marine pests must be reported to DPI Fisheries.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
B20	Biodiversity	Shading and artificial light impacts will be minimised through detailed design.	Transport for NSW	Detailed design
B21	Biodiversity	Consultation with Taronga Zoo will be undertaken to determine whether the expected noise and vibration impacts from construction are likely to have a detrimental impact on the nearby resident Taronga Zoo fauna and to determine suitable mitigation measures to address this if required.	Transport for NSW	Detailed design / Pre-construction
NV1	Noise and vibration	<p>Preparation of a noise and vibration management plan based on recommendations provided within the NSW ICNG and Australian Standard AS 2436-1981: Guide to Noise Control on Construction, Maintenance and Demolition Sites. This is to include, but not be limited to:</p> <ul style="list-style-type: none"> • Plant controls: <ul style="list-style-type: none"> – Use of noise attenuating controls at the source, such as mufflers, acoustic screens, etc. – Plant and equipment would be in good working order to prevent excess noise generation. – Locating static sources of noise such as the generators as remotely as possible from noise sensitive receivers – Use of broadband reversing alarms, or ‘quackers’, on mobile equipment in accordance with the relevant health and safety regulations – Use of temporary noise barriers where practical. The height and location of these barriers would be determined during preparation of the construction noise and vibration management plan when more information regarding the proposed plant to be used for each construction stage is available – Investigate whether ‘at plant’ mitigation or muffled plant is available for plant with high source noise levels such as rock hammers and piling rigs, and plant emitting continuous noise such as generators – Acoustic curtains (generally loaded vinyl based products), attached to wire construction fencing or laid over steel scaffold can also provide practical temporary noise barriers. We recommend that this is investigated for stationery plant within the worksites once a detailed schedule of works and plant is available – Provision of a solid 2 m high anti-gawk barrier along the site work area boundaries may provide some reduction to nearby receivers, however this is 	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		<p>only expected to benefit the lower levels of the nearby receivers. Local barriers will have minimal effects on noise reduction for receivers with multiple levels as there will still be a clear line of sight from the works to the receivers. Inclusion of an angled return at the top of the barrier (if this is practical to construct) may provide increased benefit to multiple storey receivers when the plant is located close to the barrier and is generally stationary. We recommend that this is further investigated once a detailed schedule of works and plant is available.</p> <ul style="list-style-type: none"> • Management and behavioural controls: <ul style="list-style-type: none"> – Ensure that managers effectively communicate acceptable and unacceptable work practices for the site, through staff site inductions, notice boards, and prestart meetings – Avoid the need for reversing in the construction area by creating a loop road or similar – Avoid dropping materials from height – Workers should avoid shouting, minimise talking loudly, and avoid slamming vehicle doors. • Allowing construction to occur only during approved construction hours, unless otherwise required as a condition of Transport for NSW safety requirements. • Conducting noise monitoring during all construction phases/scenarios considering the potential exceedances for the purposes of assisting in noise mitigation and to verify the findings of this noise assessment. • Implementing a procedure for dealing with complaints to ensure that all complaints are registered and dealt with appropriately. • Conducting additional monitoring if complaints are received or proposed activities and number of plants exceed those assumed in this assessment. • Modifying of work activities where noise or vibration is found to cause unacceptable impact. • Implementation of additional mitigation measures in accordance with the CNVG including notification, respite periods and alternate accommodation as reasonable and feasible. 		

No.	Impact	Environmental safeguards	Responsibility	Timing
NV2	Noise and vibration	<ul style="list-style-type: none"> Carrying out works within standard daytime hours as follows: <ul style="list-style-type: none"> 7:00 am to 6:00 pm Monday to Friday 8:00 am to 1:00 pm Saturdays, no work on Sundays or public holidays. Do not carry out operations during evening or night-time hours, unless required for safety reasons when the water is calmer during the night period or due to requirements to enable bus access. Should operations be required outside standard hours, an Out of Hours procedure detailing works schedule, approval process, communications requirements and management measure will be prepared. All reasonable and feasible efforts should be undertaken to ensure noise levels will not exceed the ICNG noise management levels stated in Section 5.1 of this assessment by carrying out night-works with reduced numbers of plant for example. 	Contractor	Construction
NV3	Noise and vibration	<ul style="list-style-type: none"> Notification of potentially affected receivers detailing work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night time period, any operational noise benefits from the work (where applicable) and contact telephone number. Notification will be a minimum of 7 calendar days prior to the start of work. A contact telephone number and email address will be available for community feedback. 	Transport for NSW / Contractor	Pre-construction
NV4	Noise and vibration	Conduct short term background noise monitoring prior to construction to confirm the ambient noise levels presented in this report, which were carried out during COVID 19 and may not be representative of typical levels.	Transport for NSW / Contractor	Pre-construction
NV5	Noise and vibration	Where works are proposed within the safe working limits for the heritage structures (Taronga Zoo wharf (remains and seawall, LEP No. A438), Athol Wharf Tram Terminus (including escarpment and retaining wall, LEP No. A482) and the Upper and Lower Entrance Gates, Elephant House, Aviary and Floral Clock (LEP No. I34)), specialist advice will be sought from an appropriately qualified structural engineer, Transport for NSW Noise and Vibration specialist and Transport for NSW heritage advisor who are familiar with heritage structures to assess if vibrations associated with the proposed works will potentially result in impacts to heritage structures.	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		Vibration monitoring will be carried out to confirm vibration levels prior to construction commencement.		
NV6	Noise and vibration	<p>Regular inspections of the construction activities and work areas should be undertaken by structural engineers and any other required specialist to monitor and review the construction methodology and confirm the integrity of the sandstone retaining wall in the Taronga Zoo wharf (remains and seawall, LEP No. A438), Athol Wharf Tram Terminus (including escarpment and retaining wall, LEP No. A482) and the Upper and Lower Entrance Gates, Elephant House, Aviary and Floral Clock (LEP No. I34). Assessment and monitoring of vibration impacts should adhere to:</p> <ul style="list-style-type: none"> British Standard BS 7385: Part 2: Evaluation and Measurement for Vibrations in Buildings – Part 2 Guide to Damage Levels from Ground-Borne Vibration German Standard DIN 4150, Part 3: Structural Vibration in Buildings: Effects on Structures. 	Contractor	Construction
NV7	Noise and vibration	Where buildings are located within the safe working distance zone, dilapidation surveys will be carried out prior to construction.	Contractor	Pre-construction / Construction
NV8	Noise and vibration	Where receivers are located within the safe work distance zones, vibration monitoring will be carried out to ensure compliance with the required criteria. If exceedances are recorded, works will be modified accordingly to reduce vibration levels.	Contractor	Pre-construction / Construction
LV1	Landscape and visual	<p>Urban design principles will be integrated throughout the detailed design and construction of the proposal and include:</p> <ul style="list-style-type: none"> Similar visual structures (such as jetties, pontoons and wharfs) as those located within Neutral Bay, Neutral Harbour and Careening Cove A coordinated palette of materials and colours to respond to the existing maritime and foreshore character Low-scale landside and waterside works to improve accessibility, wayfinding and services The approaches to and surrounds of the wharf designed to maximise amenity and keeping with the existing urban and landscape environment Landscape treatment of the approaches to the wharf to be appropriate and complimentary to the existing landscape of Taronga Zoo. 	Transport for NSW	Detailed design

No.	Impact	Environmental safeguards	Responsibility	Timing
LV2	Landscape and visual	Hoarding will be erected around the construction compound where possible, to reduce visibility.	Contractor	Construction
LV3	Landscape and visual	Where out of hours work is required, lighting will be directionally controlled to limit potential impacts of light spill on surrounding receivers, including residential properties.	Contractor	Construction
LV4	Landscape and visual	All impacted areas and ground surfaces will be reinstated as near as possible to their original state following the completion of works.	Contractor	Post-construction
H1	Non-Aboriginal heritage	If significant archaeological remains are encountered during excavation, design options for avoiding impacts to the significant archaeological remains should be considered where practicable and opportunities will be investigated for the implementation of heritage interpretation.	Contractor	Construction
H2	Non-Aboriginal heritage	If unexpected 'relics' are encountered during excavation, a section 146 relics notification will be forwarded to Heritage NSW, DPC. 'Relics' cannot be impacted without appropriate approvals under the <i>Heritage Act 1977</i> .	Contractor	Construction
H3	Non-Aboriginal heritage	If archaeological 'works' such as evidence of the former tramline and terminus are unexpectedly encountered during construction works and would be impacted, archaeological investigation and recording would be undertaken prior to impacts.	Contractor	Construction
H4	Non-Aboriginal heritage	The Roads and Maritime <i>Unexpected Heritage Item Procedure 2015</i> will be implemented if unanticipated heritage items or depositions are located during construction.	Contractor	Construction
H5	Non-Aboriginal heritage	A heritage induction will be provided to workers prior to construction, informing them of the location and significance of known heritage items and the implementation of the <i>Unexpected Heritage Items (RMS, 2015)</i> if unanticipated heritage items or depositions are located during construction.	Contractor	Pre-construction
H6	Non-Aboriginal heritage	If vibration monitors are attached to the retaining wall in the Taronga Zoo wharf (remains and seawall) (LEP no. A438) and Athol Wharf Tram Terminus (including escarpment and retaining wall) (LEP no. A482) heritage items or the buildings in Taronga Zoo – Upper and Lower Entrance Gates, Elephant House, Aviary, Floral Clock (LEP no. I34), they must not be attached with permanent fixings. They should	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		be removable without causing damage. Bees wax may be a suitable attachment method.		
H7	Non-Aboriginal heritage	If it is identified that levels of vibration are causing damage to heritage fabric, works must cease, and the construction methodology reviewed by the project engineers in consultation with a Transport for NSW Heritage Advisor in order to mitigate further impacts. A temporary protection plan to outline protection measures required for significant fabric during activities causing potential vibration impacts will be prepared prior to commencement of works.	Contractor	Construction
H8	Non-Aboriginal heritage	In accordance with the sustainability requirements for the project, opportunities for the implementation of heritage interpretation will be investigated during detailed design. A Heritage Interpretation Strategy (HIS) will be prepared to discuss the various media for heritage interpretation appropriate to the location and heritage significance of the Taronga Zoo wharf.	Contractor	Detailed design
H9	Non-Aboriginal heritage	If any design changes result in additional excavations and impacts to potential archaeological remains of the Athol Wharf Tram Terminus (including escarpment and retaining wall) (LEP no. A482) or Taronga Zoo Wharf (remains and seawall) (LEP no. A438), further archaeological assessment and management will be required. If underwater excavations are proposed in the curtilage of Taronga Zoo Wharf (remains and seawall) (LEP no. A438), then a maritime archaeological assessment should be undertaken to assess the potential for impacts to maritime archaeological remains of the former wharf	Transport for NSW	Detailed design / pre-construction
H10	Non-Aboriginal heritage	Any project redesign resulting in new ground disturbance, vegetation removal, or new features must be assessed in an addendum to the Taronga Zoo wharf SOHI.	Transport for NSW	Detailed design / Pre-construction
AH1	Aboriginal heritage	Should the scope of the proposed work change, further consultation with Transport for NSW's Aboriginal Cultural Heritage Officer and regional environmental staff must be undertaken to reassess any potential impacts on Aboriginal cultural heritage.	Transport for NSW	Pre-construction / Construction
AH2	Aboriginal heritage	The <i>Unexpected Heritage Items</i> (RMS, 2015) will be followed in the event that (an) unknown or potential Aboriginal object(s), including skeletal remains, is/are found during construction. This applies where Transport for NSW does not have approval to disturb the object(s) or where a specific safeguard for managing the disturbance	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		(apart from the procedure) is not in place. Work will only restart once the requirements of that procedure have been satisfied.		
T1	Traffic and transport	<p>A Traffic Management Plan (TMP) will be prepared and will include the following.</p> <ul style="list-style-type: none"> • Final access and parking arrangements • Alternate pedestrian and cyclist access around the construction area • Measures to ensure light vehicle parking is strictly in accordance with Mosman Council requirements and prevents parking on footpaths and grassed areas adjacent the site. 	Contractor	Pre-construction
T2	Traffic and transport	Where possible, the preferred means of transporting equipment and materials to the site will be via boat and barge over land transport so as to limit impacts to the local road network.	Contractor	Construction
T3	Traffic and transport	Public transport passengers will be notified of any impacts to transport services and the alternative transport options prior to the commencement of construction and ancillary facilities on Athol Wharf Road. This will include updates to the timetable (online and Opal app) indicating the construction works at the Taronga Zoo wharf.	Transport for NSW	Pre-construction / construction
T4	Traffic and transport	<ul style="list-style-type: none"> • A maritime navigation exclusion zone will be established during construction to prevent unauthorised vessels entering the area. • This zone will be clearly defined to communicate access for other water users. 	Contractor	Pre-construction / construction
T5	Traffic and transport	<p>A Maritime TMP will be prepared and implemented during the water based construction work. The Maritime TMP will be prepared consultation with Transport for NSW and approved by the Harbourmaster.</p> <p>In addition, the proposal will:</p> <ul style="list-style-type: none"> • Fit all buoys with lights • Prepare Response Plans for emergencies and spills for all construction vessels • Fit at least one vessel with an Automatic Identification System (AIS) • Retrieve any material associated with the construction of the development that enters the water to prevent the obstruction of vessel movements • Prepare a Communications Plan for implementation during the work which must include 24/7 contact details, protocols for enquiries, complaints and emergencies. 	Contractor	Pre-construction / construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		Any variation to the above will be agreed in advance with the Harbourmaster.		
T6	Traffic and transport	Commercial, recreational operators and private services that use the existing wharf will be advised of the wharf closure at least two weeks prior to closure.	Transport for NSW	Pre-construction / construction
SE1	Socio-economic	<p>A Communications and Stakeholder Engagement Plan will be developed prior to the commencement of construction and would be implemented during construction to provide timely and accurate information to stakeholders during construction. It would include (as a minimum):</p> <ul style="list-style-type: none"> • Mechanisms to provide details and timing of proposed activities to affected residents and local businesses, including changes to traffic, public transport services and access • A contact name and telephone number for complaints. 	Transport for NSW	Pre-construction / construction
SE2	Socio-economic	<ul style="list-style-type: none"> • A webpage and free-call number will be established for enquiries regarding the proposal, and will remain active for the duration of construction. • Contact details will be clearly displayed at the entrance to the site. • All enquiries and complaints will be tracked through a tracking system, and acknowledged within 24 hours of being received. 	Contractor	Pre-construction / construction
SE3	Socio-economic	Investigate opportunities to improve priorities group employment participation in line with Transport for NSW's Social Procurement Policy.	Contractor	Pre-construction/ Construction
SE4	Socio-economic	Investigate opportunities to encourage the construction contractor to purchase goods and services locally.	Transport for NSW	Pre-construction / construction
SE5	Socio-economic	Investigate opportunities to incorporate community health and wellbeing initiatives in the design and construction of the proposal.	Transport for NSW	Detailed design / construction
AQ1	Air quality	<p>Air quality during construction will be considered and addressed within the CEMP and would include methods to manage work during strong winds or other adverse weather conditions as required. As a minimum, the following measures will be included:</p> <ul style="list-style-type: none"> • Covering all loaded trucks and vessels • Machinery to be turned off rather than left to idle when not in use 	Contractor	Pre-construction / construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> • Maintenance of all vehicles, including trucks and vessels entering and leaving the site in accordance with the manufacturers specifications to comply with all relevant legislation • Maintenance of all plant and equipment to ensure good operating conditions and exhaust emissions comply with the Protection of the Environment Operations Act 1997 • Maintaining the work site in a condition that minimises fugitive emissions such as minor dust • Appropriate sediment and erosion controls for any exposed earth or stockpiled waste. 		
AQ2	Air quality	During construction, the construction contractor is to monitor performance of their non-road diesel plant and equipment against US EPA, EU or equivalent emissions standards using Transport for NSW <i>Air Emissions Workbook - DMS-FT-439</i> .	Contractor	Construction
WM1	Waste management	<p>A Waste Management Plan (WMP) will be prepared in accordance with the WARR Act. A WMP is to be prepared as part of the CEMP and would include measures to minimise waste, outline methods of disposal, reuse and recycling and monitoring, as appropriate. This is to include the following:</p> <ul style="list-style-type: none"> • Appropriate measures to avoid and minimise waste associated with the proposal should be investigated and implemented where possible • Waste management, littering and general tidiness will be monitored during routine site inspections. 	Contractor	Pre-construction / Construction
WM2	Waste Management	Recycled, durable, and low embodied energy products will be considered to reduce primary resource demand in instances where the materials are cost and performance competitive and comparable in environmental performance (e.g. where quality control specifications allow).	Transport for NSW	Detailed design
WM3	Sustainability	During construction, the construction contractor is to monitor waste and recycling quantities using Transport for NSW <i>Waste Data Collection Workbook – DMS-FT-436</i> to support compulsory requirement 4 of the Transport for NSW <i>Sustainable Design Guidelines version 4.0</i> .	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
HR1	Hazards and risks	Weather forecasts will be monitored during construction. In the unlikely event of a major flood event or strong marine winds/waves, equipment and materials will be temporarily removed from the site, where possible.	Contractor	Construction
HR2	Hazards and risks	Further assessment of impacts to local utilities will be undertaken.	Transport for NSW	Detailed design
CC1	Climate change	During detailed design undertake a compliant carbon footprinting exercise in accordance with the Transport for NSW <i>Carbon Estimate and Reporting Tool Manual</i> (TfNSW, 2019). The carbon footprint will be used to inform decision making in design and construction.	Contractor	Detailed design / Construction
CC2	Climate change	During detailed design undertake a compliant climate risk assessment in accordance with the Transport for NSW <i>Climate Risk Assessment Guidelines – DMS-SD-081</i> .	Contractor	Detailed design
CC3	Climate change	The detailed design process will consider adaptation measures for climate change, including the following: <ul style="list-style-type: none"> • Design of pontoons, waiting areas and gangways • Integrate coastal erosion control techniques around landside infrastructure • Drainage and storm water infrastructure • Specifications of materials in design • Weather protection features. 	Contractor	Detailed design
S1	Sustainability	The Contractor shall propose a suitably qualified and experienced sustainability officer at a minimum 14 days prior to site establishment to be endorsed by Transport for NSW. The sustainability officer will be responsible for implementing the sustainability objectives for the Project. Details of the sustainability officer, including defined responsibilities, duration and resource allocation throughout the appointment are to be submitted to Transport for NSW prior to the preparation of the Sustainability Management Plan.	Contractor	Detailed design
S2	Sustainability	Prior to commencement of construction, a Sustainability Management Plan shall be endorsed by Transport for NSW. The Plan will be provided prior to construction and include the following minimum components:	Contractor	Detailed design

No.	Impact	Environmental safeguards	Responsibility	Timing
		<ul style="list-style-type: none"> A completed electronic checklist demonstrating compliance with Transport for NSW's <i>NSW Sustainable Design Guidelines Version 4.0</i> (7TP-ST-114) The Head Contractors sustainability goals and targets, internal procedures, and implementation strategy. 		
S3	Sustainability	The Contractor must comply with the Transport for NSW <i>Sustainable Design Guidelines version 4.0</i>	Transport for NSW / Contractor	Detailed design / Construction
C1	Cumulative construction impacts	<ul style="list-style-type: none"> Consultation would include notification prior to the start of the works. Updates on any delays or changes to the construction period would also be communicated. 	Transport for NSW	Pre-construction / construction

3.3 Licensing and approvals

A summary of the licences and approvals required for the proposal is provided in Table 5-2.

Table 3-2: Summary of licensing and approval required

Instrument	Requirement	Timing
<i>Fisheries Management Act 1994</i>	Permit under section 37 of the FM Act is required to relocate seahorses.	Prior to start of the activity.
<i>Roads Act 1993</i>	Consultation with Mosman Council is required for works on Athol Wharf Road.	Prior to start of the activity.
Ports and Maritime Administration Regulations 2012	Written permission from the Harbour Master is required to disturb sediment in Sydney Harbour.	Prior to start of the activity.

4. References

TfNSW (2021) *Taronga Zoo Wharf Upgrade. Review of Environmental Factors*. Prepared by Cardno (NSW/ACT) Pty Ltd on behalf of Transport for NSW, March 2021.

Appendix A

Taronga Zoo Wharf Upgrade, Review of Environmental Factors, March 2021