Darling Point Wharf Upgrade

Submissions Report

Transport for NSW | November 2022

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Executive summary

The proposal

Transport for NSW (Transport) is proposing to upgrade Darling Point Wharf (the proposal) as part of the Transport Access Program (TAP). The proposal includes both landside and waterside work including the removal of the existing wharf structure and the installation of a new waiting area, gangway, hydraulic platform, foreshore path, lift, stairs and a kiss and ride zone.

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 prepared a Review of Environmental Factors (REF) for the Darling Point Wharf upgrade (Transport, 2022). As part of the planning process the REF was publicly displayed between Friday 6 May and Sunday 29 May 2022. The REF was published on the Transport project webpage and made available for download. 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 post, email to members of the distribution list, and two community drop-in sessions.

Summary of issues and responses

A total of 35 individual submissions were received from the local community.

A number of respondents supported the proposal noting the upgrades were needed and would improve accessibility of travelling.

The main issues raised were:

- feedback, suggestions and concerns relating to the proposed design including the lift structure and its position, and the visual impacts of the new wharf including the size and appearance
- wharf closure during construction and alternative transport options
- impacts to the heritage listed baths including heritage significance, appearance, access and function
- concern over potential noise impacts including proposed work outside of standard hours
- concerns regarding fishing from the new wharf.

A short summary of Transports response to the main issues is provided below. Detailed responses to all submissions are provided within section 2 of this report.

- The wharf upgrade has been designed to meet key requirements under the *Disability Discrimination Act 1992* (DDA), Disability Standards for Accessible Public Transport (DSAPT), AS 1428.1 and AS1428.2 with reference to the National Construction Code (NCC) for best practice.

- Several options were considered during the concept design and installing a lift in Darling Point Reserve is the preferred option. Placement of the lift in McKell Park was not supported as it would have a greater impact on heritage, vegetation and visual amenity of the Park.
- The design of the wharf aims to unify and identify the harbour wharves and the ferry commuter transport system. The size of the wharf structures were determined by factors such as wave and wind conditions, and to meet accessibility and future demand requirements while minimising impacts to heritage, aesthetics and vegetation.
- Following feedback, the lift height has been reduced and the staircase removed to minimise the visual impact of the proposal and impact to Darling Point Reserve.
- The wharf would be closed for around eight months during construction, however options to reduce this timeframe would be investigated when preparing the construction work schedule, including the possibility of staging the work while minimising time and cost impacts. During this time, customers could use the existing bus, train and ferry public transport options in the area. There may be a period of overlap between the closure of both the Double Bay Wharf and Darling Point Wharf. Should this occur, Transport would work to minimise disruption during this period and keep the community informed of alternate public transport options.
- Overall impacts to the heritage listed baths are considered minor and the heritage item would maintain its aesthetic significance at a local level. The proposal would maintain access to the baths and the harbour from McKell Park foreshore via a gate along the foreshore path. The introduction of the pathway would also allow access to the remains of the former boathouse and bath house.
- The noise levels predicted in the REF are for the worst case scenario with all noise sources operating simultaneously within the construction footprint. In practice, noise experienced by nearby receivers is likely to be substantially lower than the noise model predictions. To minimise potential noise impacts to the local community a Construction Noise and Vibration Management Plan (CNVMP) would be prepared which would include mitigation measures. Construction work would be carried out primarily during daytime hours, however, some construction activities such as piling may require work to be carried out at night or early in the morning when conditions are most calm.
- Fishing would continue to be permissible at the new upgraded wharf. Recreational fishing in Sydney Harbour is regulated by the Department of Primary Industries (DPI Fisheries). Waste bins would be provided on the new wharf waiting area and the existing wharf cleaning and maintenance schedules would be maintained. Signage would be installed to inform the fishing community of the requirements of responsible fishing.

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

Design changes

During design development and following community feedback Transport has made changes to the design, including:

- a new accessible pathway in Darling Point Reserve over the tree roots
- removal of the proposed staircase adjacent to the lift and upgrade of the existing steps in Darling Point Reserve via a new circular pathway
- repositioning of the kiss and ride zone (now a drop off zone)
- relocation of the entry to the waiting area.

In addition, other temporary and early works are required to facilitate the proposal. A description of these changes is provided in Chapter 3.

Next steps

Transport 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 finalise the detailed design and then move to construction. Transport would continue to inform the community and stakeholders prior to and during the construction phase.

Contents

Tables

Figures

Appendices

Appendix A	Darling Point Wharf Upgrade, Review of Environmental Factors, April, 2022
Appendix B	Supplementary Biodiversity Assessment
Appendix C	Supplementary Heritage Assessment

1. Introduction and background

1.1 The proposal

Transport proposes to upgrade the Darling Point Wharf (the proposal) as part of the Transport Access Program (TAP).

The water-based features of the proposal as described in the REF would include (refer Figure 1-1):

- a new covered fixed waiting area (about 16 metres by 11 metres) over the water with a nine metre by 13.5 metre curved zinc roof, steel columns, glass weather protection screens, stainless steel balustrades, seating, information boards and opal card readers. The waiting area would be supported by eight new piles
- a new covered three metre by 18 metre aluminium gangway connecting the fixed waiting area with the hydraulic platform
- a new hydraulic platform (about 90 square metres) for safe and level customer boarding and alighting. The platform would be held in place by three new piles, and protected by six fender piles
- safety features including ladders to the water and life buoys
- demolition of the existing wooden jetty, tidal steps and piles.

The land-based features of the proposal as described in the REF would include (refer Figure 1-1):

- a new 55 metre long Disability Standards for Accessible Public Transport 2002 (DSAPT) compliant foreshore path connecting the new waiting area to the lower lift landing area via a suspended bridge structure
- an 11 metre high lift and adjacent stairs to take customers between the street and foreshore
- a new DSAPT compliant path from Darling Point Road to a new lift and stairs
- a kiss-and-ride drop off zone at the end of the Darling Point Road cul-de-sac
- removal and relocation of the existing bicycle parking hoops
- safety and security features including lighting, closed circuit television (CCTV) cameras, and tactile ground surface indicators (TGSI).

Should the proposal be approved, work would be carried out over a period of up to eight months starting in early 2023. During construction the wharf would be closed. A more detailed description of the proposal is found in the Darling Point Wharf Upgrade Review of Environmental Factors (REF) prepared by Transport in April (Transport, 2022).

Following display of the REF, Transport has made the following changes to the proposal (refer Figure 1-2):

- inclusion of a new accessible pathway in Darling Point Reserve over the tree roots
- removal of proposed staircase adjacent to the lift and upgrade the existing steps in Darling Point Reserve via a new circular pathway
- reposition of the kiss and ride zone (now a drop off zone)
- relocation of the entry to the waiting area.

In addition, other temporary and early works are required to facilitate the proposal. A description of all the design changes is provided in Chapter 3. An assessment of potential impacts and identification of additional mitigation measures proposed is provided in Chapter 4 of this report.

Figure 1-1: Plan of the proposal as described in the REF

Figure 1-2: Updated plan of the proposal

1.2 Review of Environmental Factors display

Transport prepared an REF to assess the potential environmental impacts of the proposed work. The REF was publicly displayed for 24 days between Friday 6 May and Sunday 29 May 2022.

The REF was published on Transport's project webpage (*nswroads.work/darlingpointwharf*) and made available for download. Printed versions of the REF were available by request. A range of community consultation activities were carried out for the public display which included:

- community drop-in sessions held at the entrance to McKell Park on Thursday 12 May and Saturday 14 May 2022
- installation of posters at the wharf with quick response (QR) codes taking passengers to an online survey
- distribution of 1327 community updates letterbox dropped within the suburb of Darling Point at the start of the public display period
- distribution of 1327 postcards halfway through the public display period as a reminder for the community to have their say
- targeted social media post during the public display period that reached 77,866 people
- email sent to 191 people on the project database.

1.3 Purpose of the report

This Submissions Report relates to the REF prepared for the Darling Point 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. This Submissions Report summarises the issues raised and provides responses to each issue (Chapter 2). It details changes to the proposal (Chapter 3), describes new environmental assessments (Chapter 4) and identifies the environmental management measures for the proposal (Chapter 5).

No proposal changes are proposed that would require the preparation of a preferred infrastructure report.

2. Response to issues

Transport received 35 submissions, accepted up until the Sunday 29 May 2022. 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 2.2.2
Individual	2	Supportive of proposal
Individual	3	Supportive of proposal
Individual	4	Sections 2.3.3, 2.5.3, 2.14.2
Individual	5	Sections 2.3.1, 2.3.6, 2.4, 2.6, 2.10
Individual	6	Supportive of proposal
Individual	7	Section 2.2.1
Individual	8	Sections 2.3.1, 2.3.2, 2.3.3, 2.5.2, 2.11, 2.14.1
Individual	9	Section 2.14.2
Individual	10	Section 2.2.2, 2.2.6, 2.5.1, 2.7
Individual	11	Supportive of proposal
Individual	12	Sections 2.2.1, 2.2.3, 2.2.5, 2.3.5, 2.3.7, 2.5.2, 2.6, 2.8.1, 2.8.2, 2.14.1, 2.14.3
Individual	13	Sections 2.2.1, 2.2.3, 2.2.5, 2.3.5, 2.3.7, 2.5.2, 2.6, 2.8.1, 2.8.2, 2.14.1, 2.14.3
Individual	14	Sections 2.2.3, 2.3.4
Individual	15	Sections 2.2.1, 2.3.4, 2.4, 2.5.1, 2.5.3
Individual	16	Sections 2.2.1, 2.4
Individual	17	Sections 2.2.1, 2.3.4, 2.4
Individual	18	Sections 2.3.1, 2.3.2, 2.4, 2.6, 2.7, 2.9, 2.13, 2.14.4
Individual	19	Supportive of proposal
Individual	20	Sections 2.5.1, 2.7
Individual	21	Section 2.2.4
Individual	22	Sections 2.3.1, 2.3.2, 2.5.1, 2.6
Individual	23	Sections 2.2.4, 2.5.2, 2.8.1
Individual	24	Sections 2.4
Individual	25	Sections 2.2.1, 2.4, 2.5.1, 2.7
Individual	26	Supportive of proposal

Respondent	Submission No.	Section number where issues are addressed
Individual	27	Section 2.4
Individual	28	Supportive of proposal
Individual	29	Sections 2.2.2, 2.2.6, 2.3.3, 2.4, 2.7, 2.8.1, 2.9
Individual	30	Sections 2.3.1, 2.4
Individual	31	Supportive of proposal
Individual	32	Section 2.4
Individual	33	Sections 2.3.2, 2.5.2, 2.6
Individual	34	Section 2.3.3
Individual	35	Sections 2.2.2, 2.2.4, 2.12, 2.14.3

2.1 Overview of issues raised

A total of 35 individual submissions from the community were received in response to the REF display.

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 response to these issues forms the basis of this chapter.

A number of respondents supported the proposal noting the upgrade was needed and would improve accessibility of travelling. Some were supportive of the design and noted that whilst there would be temporary disruptions, they are acceptable as the outcome is desirable.

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

- proposal design
- transport, traffic and access
- landscape character and visual impacts
- social/amenity
- noise and vibration
- non-Aboriginal heritage
- wharf management
- Aboriginal heritage
- consultation
- proposal justification
- climate change
- biodiversity
- other.

2.2 Proposal design

2.2.1 Alternate options and lift location

Submission number(s)

7, 12, 13, 15, 16, 17, 25

Issue description

Respondents were opposed to the installation of a lift at the wharf and suggested that an accessible ramp would provide adequate access to the wharf. Respondents recommended the lift be located in McKell Park, either just north-east of the proposed location or near the memorial pond (which was considered as Option 1 in the REF). It was also suggested that Darling Point Reserve become a visual lookout for locals instead of having a lift.

Response

The wharf upgrade has been designed to meet key requirements under the *Disability Discrimination Act 1992* (DDA), DSAPT, AS 1428.1 and AS1428.2 with reference to the National Construction Code (NCC) for best practice.

Installing a lift is the preferred option as it would provide safe and equitable access from street level to the wharf for all customers including those with mobility needs and people with prams and luggage.

Several options were investigated during the concept design as summarised in section 2.4 of the REF. The option of providing a pathway and lift in McKell Park (Option 1) was considered however it was not supported as it would have higher heritage, vegetation, and visual impacts on the park.

A ramp within Darling Point Reserve (Option 3) was investigated however it would need to be a long ramp, with multiple bends, to ensure it was not too steep for accessible use. The ramp would require a larger footprint in Darling Point Reserve due to the required length and is not considered equitable given the distance to travel up and down the ramp required for people with mobility issues in comparison to the direct access for those without mobility issues.

During detailed design Transport considered the option of shifting the lift to the north-east of the proposed location within McKell Park, however, the option was not supported due to the impacts on McKell Park.

Following feedback received during the REF consultation the lift height would be slightly lowered (by approximately one metre) to minimise visual impacts.

Through the detailed design process, the proposed stairs next to the lift have been removed from the design and the existing stairs in Darling Point Reserve would be upgraded or replaced and the area landscaped. Further information on this design change is provided in Chapters 3 and 4.

The existing benches in Darling Point Reserve would be removed during construction and reinstated. Customers and community members would be able to view Sydney Harbour from rest and recreational areas in Darling Point Reserve, on the foreshore path and waiting area.

2.2.2 Foreshore path

Submission number(s)

1, 10, 29, 35

Issue description

Concern the proposed foreshore path may impact the memorial pond located on the foreshore of McKell Park. It was noted the upgrade work could be an opportunity to restore the pond and present as a heritage feature.

A respondent was concerned how existing surface water flows during rain events from the northern side of the memorial pool would be managed.

Respondents suggested the proposed foreshore pathway width is not adequate for people travelling in opposing directions (especially for prams and wheelchairs) and that the pathway should be located further from the harbour's edge.

Response

The proposed foreshore path would be complaint from an accessibility perspective with rest areas and passing points integrated into the design. Removal of one planted native tree (*Cupaniopsis anarcardioides*; Tuckeroo) may be required to accommodate the required widths. Further description and assessment of the tree removal is provided in Chapter 4.

The memorial pond located on the foreshore (between the new pathway and rock escarpment) would not be impacted by the new foreshore pathway. The foreshore path would be located on the southern side of the seawall. There is not enough space between the seawall and the memorial pond to locate the foreshore path further from the harbour's edge.

Flooding and drainage issues associated with the foreshore pathway would be considered during detailed design, however the path adjacent to the memorial pond would be fibre reinforced plastic (FRP) which would allow water to drain through it without ponding.

The primary purpose of the wharf upgrade is to meet accessibility requirements under the DDA and DSAPT, to ensure equitable access is provided for all public transport ferry customers. Restoration of the memorial pond within McKell Park is not within the scope of the wharf upgrade. This comment has been passed on to Woollahra Municipal Council (Council) as the owners of McKell Park.

2.2.3 Lighting

Submission number(s)

12, 13, 14

Issue description

Concern regarding the lack of lighting around the existing wharf and suggestions that lighting be improved as part of the proposal. It was also noted that street lighting at other locations along Darling Point Road needs consideration.

Response

The proposal would provide additional lighting around the new wharf structures and pathways for the safety and security of customers and staff.

Lighting designs would be NCC complaint with product and performance specifications in accordance with Council lighting guidelines and standards. Lighting is generally designed to spill downwards and would aim to limit potential impacts of light spill to surrounding properties.

Lighting would turn on automatically in the evening when the sun sets and is reduced to 'half-light mode' after the last ferry service at night to save power and reduce light spill. The lights turn off in the morning when the sun rises. During winter, the lights would turn on for ferry services scheduled to arrive before the sun rises.

Street lighting along Darling Point Road is the responsibility of Council and Ausgrid. This comment has been passed on to Council and Ausgrid.

2.2.4 Wharf location

Submission number(s)

21, 23, 35

Issue description

Respondents suggest the wharf be located in line with Darling Point Road, noting this is where it has historically been, which would allow separation from McKell Park, a reduced path length, and would minimise resource use and security risk.

Response

The wharf platform would be located in the same position as the existing wharf as it allows ferries to efficiently and safely berth. Whilst this would result in a longer pathway to the wharf, the proposal would consider recycled, durable, and low embodied energy products to minimise resource use and include features such as lighting and CCTV cameras to reduce security risk. This location also avoids impacts to existing moorings.

2.2.5 Transport, traffic and access

Submission number(s)

12, 13

Issue description

Concerns about potential increase in traffic, reduced parking availability and impacts to property access in the Darling Point Road cul-de-sac, including in response to the proposed kiss-and ride zone. Several suggestions and requests were made including:

- relocation of existing kerb and removal of the Jacaranda tree to create additional space
- installation of line markings to show the location of the kiss and ride, a 'no stopping' sign in the cul-de-sac and a 'no through road' sign at Thornton Steet

- regular monitoring by Council of the new zone to ensure compliance and confirmation that garbage pick-up is still possible
- provision of traffic assessment information (including current traffic patterns on Darling Point Road, impact on residents' access to homes, requirements of Council and emergency vehicles) and details of proposed signage.

Response

The proposal would not change the function of the turning circle on Darling Point Road. Transport would modify the cul-de-sac to provide a compliant pram ramp and path that connects to the new lift. Removal of the Jacaranda tree is not required to meet the accessibility, operational and maintenance requirements of the proposal.

To support traffic movement in the cul-de-sac, the design has changed so that the kiss and ride zone would become an informal drop off zone with compliant ramp and would be moved from the northern to eastern corner. The change to an informal drop off zone means that there would be no line markings at the ramp and 'no standing' signage installed. An assessment of this change is provided in Chapter 4.

Parking along Darling Point Road and the surrounding local roads, installation of a 'no through road' sign at Thornton Street and monitoring the Darling Point Road cul-de-sac for compliance are matters for consideration and management by Council. These comments have been passed on to Council.

The potential traffic, transport and access impacts of the proposal during construction are discussed in section 6.8.3 of the REF. Details of current traffic patterns were not part of this assessment.

Additional traffic information on specific access arrangements for residents, Council and emergency vehicles, parking arrangements and projected numbers of construction vehicles would be included in the Traffic Management Plan (TMP).

2.2.6 Design

Submission number(s)

29

Issue description

The respondent seeks clarity on the proposal design principles, and requests direction to where the design narrative is considered in the REF. The respondent recommends the design be led by a skilled architect/artist, and questions why a design competition was not undertaken.

Response

The Wharf Upgrade Program has been designed to create a recognisable theme for Sydney Harbour. The design aims to identify the harbour wharves and the ferry commuter transport system.

The Darling Point Wharf upgrade options were developed to meet design objectives and requirements, including mandatory accessibility, operational and maintenance requirements. The shortlisting of options and selection of a preferred option is carried out via targeted stakeholder consultation and key stakeholder workshops.

The key architectural objectives of the proposal are to:

- use Kit-of-Parts elements in designing the wharf
- ensure compliance with functional and operational requirements
- balance core operations and customer needs
- design all elements for easy maintenance with an appropriate human scale
- maintain elegant simplicity in architectural planning and detailing
- respond sensitively to current and likely future built environment around the wharf
- consider sustainable design.

The key urban design objectives for the proposal are to:

- integrate the wharf within its local area, taking into consideration the nature of the site, local context and the surrounding biodiversity
- integrate the wharf with its future urban context
- create a high quality, secure and positive addition to the public domain.

Urban design principles would be integrated throughout the detailed design and construction of the proposal and include:

- Consideration of tinted and less reflective glazing for the lift structure rather than light and highly reflective clear panels.
- Smart use of materials and finishes to minimise reflectivity and maximise transparency of the new structures. Consideration of contemporary design practices and lightweight materials and muted finishes.
- Consideration of colours that blend into the landscape (as viewed from the Harbour) and that complement the materiality and heritage listing of McKell Park elements (e.g. sandstone). In particular, the balustrade to the suspended bridge structure and foreshore pathway, and lighting poles. Darker colours would blend into the landscape more than white, light colours and/or silver/metal materials.
- Incorporate landscaping elements, such as suitable shrubs which can also mitigate impacts of these structures.
- Incorporate Connecting with Country storytelling elements in the designs where appropriate including indigenous plantings, imagery and interpretative signage.

Submission number(s)

10

Issue description

The respondent requested a second set of steps to be installed on the eastern side of the hydraulic platform to prevent conflict with boat access on the northern side.

Response

A ladder would be provided on the eastern side of the hydraulic platform which may be used by the community when the platform is not being used by a ferry. Access to the water via the existing stone steps on the foreshore would be maintained for use by the community.

2.3 Transport, traffic and access

2.3.1 Wharf closure

Submission number(s)

5, 8, 18, 22, 30

Issue description

Concerns about the closure of the wharf for an eight month construction period and the possibility that Double Bay Wharf may be closed at the same time. A phased approach has been suggested to reduce the impacts of wharf closure.

Response

Construction is expected to take up to eight months to complete, weather and maritime conditions permitting. A detailed work schedule would be prepared prior to construction and options to reduce this timeframe would be investigated, including the possibility of staging the work, while minimising time and cost impacts.

There may be a period of overlap between the closure of both the Double Bay Wharf and Darling Point Wharf. Should this occur, Transport would work to minimise any disruption during this period and keep the community informed of alternate public transport options.

Ferry users and community members would be notified ahead of construction and updated throughout construction.

2.3.2 Alternative public transport during construction

Submission number(s)

8, 18, 22, 33

Issue description

Concerns about inadequate options for alternative transport while the wharf is closed and the additional travel times of the suggested alternative transport options. Given the COVID pandemic, there is also concern the alternative public transport options are in an enclosed space (bus/train) and that additional rides would cost more money. One respondent suggested that an alternative bus service could operate between Darling Point and Circular Quay during the construction period.

Response

Transport acknowledge that the wharf closure would cause inconvenience for customers. Planning for construction is underway. Once more is understood about the program for both Darling Point and Double Bay wharves Transport would provide more information on potential alternative transport options, should they be provided.

Customers could also use the existing bus service (route 328), train services from Edgecliff Station and ferry services from Double Bay Wharf. When the 328 bus route is not operating, customers could also catch the 324 or 325 bus services from Edgecliff Road or Edgecliff Station bus stand.

It is noted that the daily and weekly travel price is capped on Opal cards which means passengers can travel all day on the metro, train, bus, ferry and light rail services and a set price limit will not be exceeded.

Provision of a dedicated bus service between the wharf and Circular Quay is not feasible as there is no capacity at Circular Quay for extra buses. Ferry users would be notified ahead of construction and during construction so that they can plan their trip via alternative transport modes. Customers are encouraged to plan their trip by visiting *transportnsw.info* or phone Transport Info on 131 500 before starting their journey.

Transport's web page (*transportnsw.info/covid-19*) provides current information and guidance on staying COVID safe when using public transport. This includes wearing a face mask, practicing good hygiene as well as following NSW health advice. Transport also provides estimated capacity information and has increased the frequency and intensity of cleaning for all public transport services.

2.3.3 Public transport

Submission number(s)

4, 8, 29, 34

Issue description

Respondents suggest that the frequency and reliability of the existing ferry service are addressed. There were also concerns about the limited public transport access to the Darling Point Road drop off point and proposed lift. It was suggested that a connecting bus service to the lower end of Darling Point Road is needed to connect with the ferry.

Response

The primary purpose of the wharf upgrade is to meet accessibility requirements under the DDA and DSAPT, to ensure equitable access is provided for all public transport ferry customers.

As the key objective of the proposal is to make the wharf accessible, suggestions regarding changes to the broader transport network including timetabling, reliability and frequency of ferries are outside of the scope of this proposal. This feedback has been passed on to the Transport Planning and Programs team. Future feedback on transport routes can be provided via *transportnsw.info*.

2.3.4 Existing footpath conditions/access

Submission number(s)

14, 15, 17

Issue description

Concerns that the footpath on Darling Point Road leading down to the wharf is in poor condition (uneven surfaces, no railings, slippery and no anti-slip surfaces). The condition of the path in McKell

Park down to the wharf along with the steep terrain is a hazard for pedestrians and impedes access to the wharf. Respondents request that Council consider the footpath improvements.

Response

Council is responsible for the footpaths on Darling Point Road and in McKell Park. These comments have been passed on to Council for their consideration.

The Darling Point Wharf project footprint extends from the drop off zone in Darling Point Road down to the new wharf and hydraulic platform. The paths in this footprint would be upgraded to be DSAPT compliant. The upgraded stairs, connecting the upper and lower ends of Darling Point Reserve, would be NCC compliant.

2.3.5 Construction impacts

Submission number(s)

12, 13

Issue description

Concerns regarding increased truck movements during construction and potential impacts from proposed compound areas on property access. Request that any damage to private property caused by construction work is repaired.

Response

The potential traffic, transport and access impacts of the proposal during construction are discussed in section 6.8.3 of the REF. A further detailed review of traffic impacts would be carried out as part of the construction TMP.

The TMP would be prepared before the start of work and in consultation with Council. The TMP would outline measures to minimise disruption to residents and the community during construction and would include details on property and construction site access, parking arrangements and alternate pedestrian and cyclist access and transport.

Access to the surrounding properties would be maintained at all times throughout the construction phase and notification of any alternate access arrangements would be provided in advance. Transport would consult with affected residents prior to the start of construction and look to minimise impacts where possible.

Where possible, barges would be used to transport materials to and from site. When materials are required to be transported via road to site, vehicle movements, drop off and pick up activities would be managed by traffic management personnel. Where possible, the site boundary fencing would be re-positioned after hours to maximise road space.

Pre and post construction dilapidation surveys of existing properties/structures, pavements and roads potentially impacted by the work would be carried out.

Transport would explore alternative locations for the site compound structures to minimise the compound area used on Darling Point Road, thereby reducing potential traffic congestion during construction. These possible alternative locations are outlined in Chapters 3 and 4 and would be subject to Council approval.

2.3.6 Parking

Submission number(s)

5

Issue description

Concern that the new wharf would increase the issue of parking availability for residents.

Response

The number of existing carparks on Darling Point Road would not be changed as part of the upgrade.

2.3.7 Other

Submission number(s)

12, 13

Issue description

Concerns with trees and traffic management which sit outside of the scope of the proposal.

Response

Trees and traffic management for the broader Darling Point area is outside the scope of this proposal. As the responsible authority Council should be contacted regarding these concerns.

2.4 Landscape character and visual impacts

Submission number(s)

5, 15, 16, 17, 18, 24, 25, 27, 29, 30, 32

Issue description

Multiple comments were received from the community with respect to the visual impact of the proposal including:

- the visual/aesthetic impact of the lift and foreshore pathway from both the land and the sea
- visual impacts of the proposed covered gangway and waiting area
- impacts on the character and view from McKell Park
- concern the structures are too modern and not in keeping with the historic and existing setting of the area
- design of the foreshore path not aligned with the aesthetics of the natural look of the foreshore
- impacts on the heritage significance and visual amenity of the existing foreshore seawall and baths
- large size of the infrastructure associated with the upgrade.

Suggestions were made to consider different colour schemes and materials and consider an uncovered gangway with railings to match those along the new pathway connecting to the lift.

Response

The design of the wharf is consistent with other wharves within Sydney Harbour. The look of the design aims to unify and identify the harbour wharves and the ferry commuter transport system.

The proposed wharf upgrade structures have been designed to consider factors such as heritage, visual and vegetation impacts, sea conditions and to meet accessibility and future demand requirements.

Following community and stakeholder feedback on the concept design, the design was changed to remove the over-water boardwalk structure and replace it with a pathway along the park foreshore instead. The pathway along the foreshore, connecting the lift and wharf waiting area, would be made of FRP and be recessed at the rear of the seawall to minimise the visual impact from the land and water.

The waiting area would be covered to provide a comfortable and sheltered place to wait for the ferry. The curved roof of the waiting area is designed to be low profile and minimise the impact on the views to and from the water. The zinc roof sheeting is a natural product that would weather and form a natural patina over time. The proposal includes an uncovered footpath and foreshore pathway to reduce the visual impact of the structure.

Following feedback received during the REF consultation the lift height would be slightly lowered (by approximately one metre) to minimise visual impacts. The stairs next to the lift have been removed from the design, and the existing path and stairs in the reserve would be upgraded, further reducing the impact to the reserve.

A Landscape Character and Visual Impact Assessment (LCVIA) was prepared as part of the REF to identify the overall impact of the proposed work on each of the landscape character zones and to identify the visual changes and impacts on the site and its surroundings when viewed from key vantage points. The LCVIA assessment is provided in section 6.5 and Appendix F of the REF. It is acknowledged that the main source of impact of the proposal on the landscape character and visual quality would be the construction of the lift and adjacent stair structure as viewed from Darling Point Road, Darling Point Reserve and the harbour. The waterside structures (covered gangway and waiting area, hydraulic platform), while increased in footprint compared to the existing facilities, would exist as appropriate low scale maritime infrastructure consistent with other harbour wharves. The waterside structures have limited visibility from higher areas of Darling Point such as upper sections of McKell Park due to topography and existing vegetation screening, and hence would have a lesser scale impact.

A Statement of Heritage Impact (SoHI) was prepared as part of the REF to assess the potential impacts to listed heritage items and potential archaeological remains as a result of the proposal. The SoHI assessment is provided in section 6.6 and Appendix G of the REF. The SoHI included assessment of both direct impacts and visual impacts of the proposal on heritage items and archaeology. There are two listed heritage items in proximity to the proposal, they are: ‘Remains of bath house and site of jetty’ and ‘Fence, gates, and foundation remains of former house Canonbury’. The assessment concluded that the proposal would result in minor visual impact and that the overall significance of the heritage items would not be impacted.

The new foreshore path, bathhouse outcrop and waiting area would provide an additional viewpoint of the Sydney Harbour Bridge and central business district backdrop.

Final materials and finishes to the lift and paths would be considered during detailed design to minimise visual impacts. Landscaping elements, such as large shrubs and plantings, would also be considered during detailed design to mitigate impacts of the new structures. Appendix F of the REF provides photomontages with examples of some alternative lift treatments that would be considered for the lift during detailed design.

2.5 Social/amenity

2.5.1 Heritage baths

Submission number(s)

10, 15, 20, 22, 25

Issue description

Concern about the impacts of the proposed foreshore path on the recreational use of the heritage baths by swimmers and kayakers, including reduced access to the water and reduced amenity of bath users given the proximity to the new pathway. There was also concern regarding the scheduling of works during summer, noting it is the peak season for local swimmers.

Respondents suggested the historic baths be reopened and restored as part of the upgrade.

Response

A gate would be provided along the foreshore pathway to maintain access to the heritage baths for swimmers and recreational users including kayakers.

Kayakers may also use the ferry platform for launching as recreational use of the ferry platform is allowed. However, ferries would have priority use, and due to the design of the platform (which automatically rises and falls to the free board of the approaching ferry), kayakers may prefer to access the water from another location.

Access to the foreshore would be enhanced by providing an accessible connection in Darling Point Reserve via the lift and upgrading the stairs down to the foreshore in Darling Point Reserve.

During construction, temporary exclusion areas would be established to maintain the safety of people using the park and water. Recreational access to the foreshore would be restricted during the eight month construction period, which is planned to commence early 2023.

The baths are located within a public area and ferry wharf. Personal privacy is a matter for swimmers who choose to use the area.

As the key objective of the proposal is to provide access to the wharf, restoration of the heritage baths is outside the scope of this proposal. Council is responsible for the baths, please direct your request to Council.

2.5.2 Fishing

Submission number(s)

8, 12, 13, 23, 33

Issue description

Concerns about fishing from the new wharf due to rubbish (including fishing hooks, lines and bait) being left behind which enters the waterway, and antisocial behaviour. Respondents suggest that fishing is banned from the wharf and designated fishing areas with signage be provided along the foreshore so fishing activities do not interfere with wharf users. Some respondents suggested the cover on the gangway be removed to discourage people from fishing at the wharf.

Response

Fishing is currently permissible at Darling Point Wharf and would continue to be allowed at the new wharf.

Recreational fishing in Sydney Harbour is regulated by the NSW Department of Primary Industries (DPI Fisheries). Banning of fishing activities is the responsibility of the DPI Fisheries. Transport will forward community feedback in regard to this matter on to DPI Fisheries for their consideration.

Waste bins would be provided on the new wharf waiting area. The existing wharf cleaning and maintenance schedules would be maintained at the upgraded wharf. The Darling Point Wharf is cleaned five days per week in the summer which includes bin emptying and three days per week in winter. Safety and security features including lighting and CCTV cameras would also be provided as part of the proposal.

Signage would be installed as part of the upgrade to inform the fishing community of the requirements of responsible fishing which includes consideration of nearby residents, other wharf and park users, keeping noise to a minimum and not leaving hooks, bait and fishing lines at the wharf.

One of the objectives of the project is to provide customers with protection from the weather. The new wharf provides improved weather protection with a roof on the waiting area and gangway.

Illegal or suspect fishing activities can be reported to the DPI Fisheries via the Fishers Watch Phone line on 1800 043 536 or contact NSW Police to report any anti-social behaviour.

For general fishing information, call the DPI Fisheries Information Line on 1300 550 474.

2.5.3 Coffee shop

Submission number(s)

4, 15

Issue description

Respondents suggested having a coffee shop or cart near the wharf.

Response

The primary purpose of the wharf upgrade is to meet accessibility requirements under the DDA and DSAPT, to ensure equitable access is provided for all public transport ferry customers. A coffee shop or cart is not part of the proposal, but the request is noted and is a matter for Council to consider as custodians of McKell Park and Darling Point Reserve.

2.6 Noise and vibration

Submission number(s)

5, 12, 13, 18, 22, 33

Issue description

Respondents raised concerns regarding the potential noise impacts during construction, especially from the construction compound, weekend and night work. Respondents requested construction be restricted to weekdays, that night work not be carried out and that additional information on the potential noise impacts, proposed construction timeframes and durations be provided. Respondents questioned whether alternative accommodation would be provided during construction.

Response

Transport acknowledges there would be noise impacts during construction, and these are discussed in section 6.4 of the REF. The noise levels predicted in the REF are for the worst case scenario with all noise sources operating simultaneously within the construction footprint. In practice, noise experienced by nearby receivers is likely to be substantially lower than the noise model predictions.

To minimise potential noise impacts to the local community a Construction Noise and Vibration Management Plan (CNVMP) would be prepared prior to construction and implemented throughout the construction period. Construction work would be carried out primarily during daytime hours, however, for safety reasons, some construction activities such as piling may require work to be occur at night or early in the morning when conditions are most calm. Work would be planned in consultation with directly impacted residents and construction methodologies, frequency and respite periods managed to minimise disruption.

The construction period would be eight months, weather and maritime conditions permitting, starting in early 2023. There would be a maximum of 30 night shifts (from 11pm to 7am) across the construction period. Restricting the number of days of work each week would increase the length of the construction period onsite and is not considered practical.

The CNVMP would outline mitigation measures in line with the Transport *Construction Noise and Vibration Guidelines* (RMS, 2016) which, depending on noise levels, may include notifications, respite periods, and noise monitoring. Once in construction, Transport would work with the community to monitor and manage noise impacts.

2.7 Non-Aboriginal heritage

Submission number(s)

10, 18, 20, 25, 29

Issue description

Concern that construction of the lift and elevated pathway along the foreshore would impact the heritage baths including impacts to their heritage significance, appearance, visual amenity, and utility.

A respondent questioned whether the history of this location and country has been thoroughly addressed with the design and requests direction as to where to find this information within the REF.

Response

A summary of the non-Aboriginal heritage impact assessment is provided in section 6.6 of the REF, with the supporting working papers provided in appendices G and H of the REF. The assessment included a historical background to the wharf and surrounding area, outlined the listed heritage items and a undertook a detailed assessment of impacts of the proposal. Refer to section 2.9 of this report for further information on Aboriginal heritage.

The 'remains of the bath house and site of jetty' site is heritage listed on the *Woollahra Local Environmental Plan 2014* (Woollahra LEP). The connection of the proposed pathway from the lift to the foreshore would require the removal of two to three courses of the more modern section of the seawall on the east and west side of the former boathouse. It is not expected this work would impact on the underlying footings of the former bath house or boathouse. The work would cause a moderate localised impact to the seawall element of the heritage item, however, the impact to the overall heritage item would be minor. Any removed sandstone blocks would be salvaged and re-used as part of the landscaping or handed back to Council for re-use as appropriate.

From a visual perspective, the proposed work would result in a minor visual impact to the 'remains of the bath house and site of jetty' site with the heritage item maintaining its aesthetic significance at a local level. The introduction of the pathway would also allow for greater public access and engagement with the remains of the former bath house and boathouse than is currently available and would provide opportunities for heritage interpretation signage.

Access to the baths and the harbour would be maintained following construction. A gate would be provided along the foreshore pathway to maintain access to the heritage baths for swimmers and recreational users.

The proposal would connect Darling Point Reserve and McKell Park via the foreshore pathway. This connection is consistent with Council's *McKell Park and Darling Point Reserve Plan of Management* (Marler, 2013) and the draft *Generic Plan of Management for Crown Land Reserves* (WMC, 2021).

2.8 Wharf management

2.8.1 Waste

Submission number(s)

12, 13, 23, 29

Issue description

One respondent had concerns about what materials could be recycled during construction and if any plans have been made to address this.

Other respondents were concerned that the wharf upgrade would increase visitors to the area which would in turn increase the amount of rubbish. They are interested in knowing who manages waste bins on site and how often they are emptied. Respondents also recommend that adequate bins be installed along the walkway.

Response

Waste management is considered in section 6.11 of the REF. The hierarchy of avoiding waste generation and primary resource use in favour of reduction, reuse and recycling, consistent with the *Waste Avoidance and Resource Recovery Act 2001* (WARR Act) would be followed during construction. A Waste Management Plan (WMP) would be prepared in accordance with the WARR Act prior to the start of construction and would include measures to minimise waste, outline methods of disposal, reuse and recycling and monitoring, as appropriate.

Sustainability is considered in section 6.14 of the REF. The design of the proposal has been based on the principles of sustainability, including aiming for a 'Silver' rating under the *Sustainability Design Guidelines (SDG) version 4.0 rating tool* (Transport, 2017). The rating tool sets targets across several key areas including waste, recycling and materials.

Any removed sandstone blocks from the seawall, where unable to be reused on site, would be salvaged and handed back to Council for re-use as appropriate.

Waste bins would be provided on the new wharf waiting area. Transport cleaning contractors are responsible for emptying the bins on the public wharves. The Darling Point Ferry Wharf is cleaned five days per week in the summer which includes bin emptying and three days per week in winter. For concerns or questions regarding the installation of additional bins around the McKell Park and Darling Point Reserve, please contact Council.

2.8.2 Security

Submission number(s)

12, 13

Issue description

The respondents are concerned about security of the lift at night and question whether the lift would be locked outside the ferry operating hours. They are also concerned the upgrades would lead to increased anti-social behaviour.

Response

Lift operation times would be considered during detailed design in consultation with the ferry operator and Council. Generally though, lift operating hours are not limited for the following reasons:

- ferries may have late running services
- special events requiring use of the lift out of hours
- charter vessels using wharves for functions such as weddings.

The proposal has been designed to meet NSW and Australian engineering and safety standards, which provide guidance on safety and security measures consistent with the provisions of Crime Prevention through Environmental Design (CPTED) (DPE, 2001). A CPTED assessment has been

undertaken and additional CCTV, lighting and anti-graffiti surfaces on signs would be provided. CCTV and lighting locations would be positioned at locations recommended in the CPTED and required by Transdev who monitors the cameras.

Please contact NSW Police to report any anti-social behaviour.

2.9 Aboriginal heritage

Submission number(s)

18, 29

Issue description

Concerns about the impacts of the proposed work on Aboriginal heritage considering the Aboriginal land claim over McKell Park. A respondent also questioned if the history of this location and country has been thoroughly addressed with the design and requested direction as to where to find this information within the REF.

Response

As noted in section 3.5 of the REF, Transport engaged with the NSW Aboriginal Land Council and La Perouse local Aboriginal Land Council, given that there is a land claim over McKell Park (NSWALC) and water claim (LPLALC) around the wharf.

A *Procedure for Aboriginal Cultural Heritage Consultation and Investigation* (PACHCI) (RMS, 2011) assessment was completed with reference to the *Code of Practice for the Protection of Aboriginal Objects in NSW* (DECCW, 2010). The PACHCI assessment concluded that the work is unlikely to have an impact on Aboriginal cultural heritage and further assessment is not required. The assessment is outlined in section 6.7 and Appendix I of the REF.

The *Unexpected Heritage Items Procedure* (RMS, 2015) would be followed in the event that unknown or potential Aboriginal object(s) are found during construction.

A Connecting with Country Technical Advisor has been engaged to investigate connecting with country opportunities that can be included in the design and construction phases. This may include indigenous plantings, imagery and interpretative signage.

2.10 Consultation

Submission number(s)

5

Issue description

Concern that the community consultation was disingenuous and questioned whether the feedback received would influence and/or change the design.

Response

Transport has provided two formal opportunities for the community to share their feedback on the proposal, firstly through the concept design consultation phase and then through this REF

consultation phase. All feedback is carefully considered during these public consultations and addressed in the design where feasible. Any feedback received outside of these times is also welcomed and responded to.

Following community and stakeholder feedback on the concept design, which included a proposed over-water boardwalk, the design was changed so the new lift, stairs and waiting area are connected via a pathway along the park foreshore instead.

Following feedback received during the REF consultation, the following changes have been made to design:

- removing the proposed staircase adjacent to the lift and upgrading the existing steps in Darling Point Reserve to reduce the impact on reserve
- changing the formal kiss-and-ride zone to an informal drop off zone to encourage traffic movement at the end of Darling Point Road
- slightly lowering the lift height to minimise visual impacts
- providing more seating for customer comfort.

Should the proposal be approved and proceed to construction, engagement with the community and stakeholders would continue throughout the construction phase.

2.11 Proposal justification

Submission number(s)

8

Issue description

The respondent has concerns about the justification for the project as they believe the lift structure is unnecessary, costly to maintain and unsightly, and that noise would increase from party boats. They also believe that the current footpath with the addition of an incline ramp next to the stairs is adequate and that Darling Point Reserve should not be impacted.

Response

The wharf has been identified for an accessibility upgrade as it does not currently meet key requirements of the DDA. At present, elements of the existing wharf including the tidal steps and lack of accessible pathway for passengers to access the wharf are non-compliant.

The primary purpose of the wharf upgrade is to meet accessibility requirements under the DDA and DSAPT, to ensure equitable access is provided for all public transport ferry customers. In addition, the existing wharf is approaching the end of its design life and needs to be upgraded. The new wharf would have a design life of 50 years with regular maintenance regimes.

Whilst the proposal presented in the REF best meets the project objectives, Transport acknowledges the proposal would still result in some environmental impacts such as loss of visual amenity and temporary impact to traffic and access impacts. However, on balance the project is considered justified as it would provide better commuter experience through improvements to passenger amenity, comfort, safety, access for customers with mobility needs and overall user experience.

All structures would be designed to minimise corrosion and would be maintained as part of our existing maintenance schedule for wharves. The wharf upgrade has been designed to meet key

requirements under the DDA, DSAPT, AS 1428.1 and AS1428.2 with reference to the NCC for best practice.

Four options were investigated during the concept design as summarised in section 2.4 of the REF. The options were: a lift and stairs in McKell Park, a lift and stairs in Darling Point Reserve, a switchback ramp in Darling Point Reserve and a 'do nothing option'. Based on an analysis of the options, installing a lift and stairs withing Darling Point Reserve was preferred. Utilising the current footpath through McKell Park and installing an incline ramp next to the existing stairs, as suggested by a respondent, is not a feasible option due to the impact on the park. The ramp would be long and require a large footprint to achieve the required levels for safe and accessibility compliant use.

The key objective of the proposal is to ensure compliance with the DDA. As such, noise restrictions relating to private commercial and recreational boats docking at the wharf is outside the scope of this proposal. This feedback has been passed on to the Transport Planning and Programs team. Future feedback and suggestions can be provided through the online feedback form: *https://roads-waterways.transport.nsw.gov.au/contact-us/feedback-form.html*

2.12 Climate change

Submission number(s)

35

Issue description

The respondent feels there has been little consideration for impacts of storms and sea waves on the lower terrace which may make the pathway unusable especially with increased sea level and storm events.

Response

A climate change risk assessment was completed as part concept design which identified the variables that are a risk to the proposal including sea level rise, storm surge and extreme rainfall events. A summary of the assessment and potential impacts of the proposal are provided in section 6.13 of the REF. The concept design minimises exposure to these climate change risks, and these risks would be further investigated during detailed design.

2.13 Biodiversity

Submission number(s)

18

Issue description

The respondent had several concerns in relation to biodiversity including:

- the impact of noise and vibrations on wildlife in the water, noting Darling Point is typically where fish and wildlife seek solace and breeding
- safeguards in the land surface and hydrology chapter of the REF (section 6.1.4) do not consider the impact on the wildlife from the physical disturbances to the aquatic environment

- impacts to threatened species (in particular the Little Penguin) and other wildlife that live in the trees. Concern that kookaburras would be impacted by the noise and the removal of the Jacaranda tree
- impacts of increased people as well an erecting a temporary site compound on the biodiversity of the area and the soil quality
- the responsibility for a vast majority of the safeguards listed in the REF are assigned to the contractor. As no contractor has been appointed, the respondent was unable to assess the policies and processes of that contractor and any historical issues with impacts to the environment and construction.

Response

A Biodiversity Assessment Report (BAR) was prepared to support the REF (full report is provided in Appendix D of the REF) and a summary is provided in section 6.3 of the REF. The BAR included a review of existing data, site surveys, a detailed assessment of potential impacts of the proposal and identification of mitigation measures to account for the potential impacts.

The following is noted in regard to the assessment:

- The impacts of underwater noise and vibration, and vessel strike on aquatic biodiversity, are discussed in the section 6.3.3 of the REF and section 4.1.5 of the BAR.
- Safeguards associated with mitigating the impact on wildlife from the physical disturbances to the aquatic environment are outlined in the biodiversity chapter of the REF (section 6.3.4). Safeguards include pre clearance surveys, establishing no go areas and preparing a Seahorse Relocation Plan.
- Assessments of significance (AoS) to determine the significance of impacts to threatened species, populations and/or communities or their habitat have been undertaken (refer Annexure D of Appendix D of the BAR). This included the White's Seahorse and Black Rockcod. The assessments concluded significant impacts on threatened species, populations or ecological communities or their habitats are unlikely as a result of the proposal. Prior to construction an underwater survey would be undertaken by a qualified ecologist and should any relocation of Syngnathid species be required it would be undertaken in accordance with the Syngnathid Relocation Plan prepared in consultation with DPI Fisheries.
- Potential impacts to Little Penguins were assessed as part of the REF (section 6.3) and the seawall would be inspected for presence of Little Penguins prior to commencement of works.
- The Jacaranda tree at the end of Darling Point Road would not be removed as part of the proposal. Following design development five trees have been identified for removal as outlined in Chapter 3. An assessment of this tree removal is provided in Chapter 4.
- Impacts of the compound area (including light and noise) have been considered in the BAR with no significant impacts anticipated. Further assessment on the impacts to the land surface such as accidental spills and erosion and sedimentation is provided in section 6.1.3 of the REF.

The BAR concluded that the proposal is unlikely to significantly impact threatened species, populations or ecological communities or their habitats, within the meaning of the *Biodiversity Conservation Act 2016* (BC Act), *Fisheries Management Act 1994* (FM Act) or the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The concept design for the proposal included a lift, stairs, and an overwater boardwalk which resulted in impacts to seagrass and other aquatic habitat. Following public exhibition of the concept design, changes to the design were made to address community and stakeholder feedback. The proposed boardwalk and associated piles were removed from the design and replaced with a foreshore path

connecting the new waiting area to the lower lift landing area via a suspended bridge structure. The design change reduced impacts to seagrass, aquatic habitat and other aquatic fauna species.

Transport has engaged a suitably qualified contractor to undertake detailed design. Engagement of a construction contractor would occur following completion of detailed design subject to the REF determination. With respect to construction, there are mandatory criteria imposed during the tender process for progression to tender assessment, such as previous maritime construction experience and qualifications and quality assurance baseline requirements and qualifications. Once engaged the contractor would prepare a construction environmental management plan (CEMP) for the project which would include measures for the safeguard and management of biodiversity. The CEMP requires approval from Transport prior to construction to ensure the contractor adequately considers, implements and monitors the efficacy of the biodiversity mitigation measures.

2.14 Other

2.14.1 Cost

Submission number(s)

8, 12, 13

Issue description

Respondents are concerned about the cost of the wharf upgrade.

Response

The primary purpose of the wharf upgrade is to meet accessibility requirements under the DDA and DSAPT, to ensure equitable access is provided for all public transport ferry customers. The wharf is also coming to the end of its design life and requires replacement.

In October 2020, the NSW Government confirmed stimulus funding via the Waterways Fund for wharf accessibility upgrades. The ferry wharves at Double Bay, Darling Point and Greenwich Point are among those being made safer and accessible with a $37 million funding allocation for the three wharves.

2.14.2 Benches

Submission number(s)

4, 9

Issue description

Respondents request that the current bench in Darling Point Reserve be retained and that additional benches be provided.

Response

Seating would be provided in the new waiting area on the wharf. The seating would face outwards to maximise the view while waiting for the ferry.

The existing benches in Darling Point Reserve would be removed during construction and reinstated.

Following feedback received during the REF consultation additional seating would be provided with additional rest and recreational areas along the path to the wharf.

2.14.3 Seawall

Submission number(s)

12, 13, 35

Issue description

Concerns about the impacts to the seawall from the wash of new ferries and a request for a seawall dilapidation report to be undertaken. One respondent notes conditions around the seawall are unstable due to sinkholes. There are concerns that the foundations for the foreshore pathway would be impacted and that use of earth moving equipment would have a negative impact on the seawall.

Response

It is noted that the type, size and frequency of ferries would not change as a result of the proposal.

The seawall is owned and maintained by Council. Specific design details, including stability investigations of the foreshore path, would be carried out during detailed design. Pre and post construction dilapidation surveys of existing properties/structures in close proximity to the works that may be impacted by the work would be undertaken prior to the start of work to record their current condition.

2.14.4 Carbon footprint

Submission number(s)

18

Issue description

Respondent requested for an estimation of the carbon footprint of construction, in particular the carbon used to obtain the materials for construction.

Response

During detailed design a compliant carbon footprinting exercise in accordance with Transport's *Carbon Estimate and Reporting Tool Manual* (Transport, 2019) or other approved modelling tools would be carried out. The carbon footprint would to be used to inform decision making in design and construction. This information is not available at this point in time.

3. Changes to the proposal

During design development and following community feedback, several design changes were identified, along with some early and temporary work that is required to facilitate construction of the proposal. These changes are outlined in Table 3-1, along with the justification for these changes.

The proposed changes are shown in Figure 3-1 and Figure 3-2.

Table 3-1: Changes to the proposal

No.	Change to the proposal	Description	Justification
1	Inclusion of a new accessible pathway in Darling Point Reserve.	The proposed footpath from Darling Point Road to the new lift has been modified to include an accessible pathway over the Weeping Fig tree roots. The end of the accessible pathway would have a level connection with the northern gate of McKell Park. The pathway would have handrails and would be made of material with a low visual impact (for example FRP). The pathway would be suspended to protect the root system of the Weeping Fig. Inclusion of the accessible pathway would require removal of one palm tree: a Kentia Palm (*Howea forsteriana*). Refer section 4.1 for further details.	As part of the detailed design process, the proposed concept design pathway provided in the REF was found to not provide a gradient compliant connection between the road and lift without impacting access to the northern heritage gate at McKell Park. To achieve a level DSAPT compliant connection to the lift without impacting the gate, a pathway with one switchback would be required to obtain the necessary gradients and ensure the pathway was not too steep for safe use.
2	Removal of proposed staircase and upgrade of the existing steps in Darling Point Reserve via a new circular pathway. .	The proposed concrete staircase next to the lift structure would be removed and the existing stairs and informal pathways down to the Darling Point Reserve foreshore would be upgraded instead. The circular pathway would connect the lower end of the accessible pathway (at the northern gate of McKell Park), to the existing steps that lead down to the foreshore. A compliant pathway along the foreshore of the reserve would then connect the steps to the lift. It would be constructed in a semi circular design that would curve around on the western side of Darling Point Reserve and tie into the existing pathway and steps as much as possible. The pathway would Include informal viewing/rest areas with seats, lawn and landscaping, providing a greater	There is an existing pathway and steps in Darling Point Reserve, and the REF proposed an additional staircase next to the lift structure. As there is no need for two sets of stairs within the reserve, and following community feedback on the overall size of structures and visual impact, the proposed staircase has been removed from the design. The existing steps would be upgraded, and the area landscaped which would minimise impacts to the reserve and provide additional areas for recreation.

No.	Change to the proposal	Description	Justification
		opportunity to use areas of Darling Point Reserve for recreation. The pathway would have handrails where the steps are located, and would be made of material with a low visual impact (e.g. FRP). The existing steps would be upgraded to be NCC compliant and be similar in style and colour to the existing steps in Darling Point Reserve. Opportunities for re-use of the sandstone or use of natural materials, and to include Connecting with Country and non-Aboriginal heritage interpretation signage and features in this area would be considered during detailed design.	
3	Reposition of the kiss and ride zone (now a drop off zone).	The kiss and ride zone would be repositioned from the northern to the eastern side of the Darling Point Road cul-de-sac. It would become an informal drop off zone, including a compliant pram ramp that connects to the accessible pathway to the lift.	Following community feedback on traffic impacts in the cul-de-sac the kiss and ride zone has been repositioned and changed it to a drop off zone. The changes ensure a compliant ramp is provided for access, while removing the line markings and formal signage would discourage parking and support traffic movement in cul-de-sac.
4	Relocation of the entry to the waiting area.	The proposed entry to the waiting area of the ferry wharf via the shore bridge would be relocated from the eastern side to the western side of the waiting area, resulting in a reduced length of the foreshore pathway.	Relocation of the entry point to the waiting area would reduce the length of the foreshore pathway and subsequently reduce impacts to the McKell Park foreshore.
5	Sewer protection work in Darling Point Reserve.	Sewer protection is required to ensure the existing Sydney Water sewer line within Darling Point Reserve is not impacted by the proposal. The area around the existing sewer pipe in the vicinity of the new lift structure would be excavated and the pipe would be encased with concrete. Minor stormwater redirection would also be undertaken at this location. This would require trenching and the installation of new pipework and be located within the sewer protection footprint. The sewer protection work would require removal of three trees: a Sydney Red Gum (*Angophora costata*), a Prickly Paperbark (*Melaleuca styphelioides*) and a Small Leaf Lilly Pilly (*Syzygium*	During detailed design investigations an existing Sydney Water sewer line in close proximity to the proposed lift in Darling Point Reserve was uncovered. Work to protect the existing sewer line would be required to ensure it is not impacted by the lift and other proposed structures. This work would be undertaken in accordance with Sydney Water guidelines and requirements.

No.	Change to the proposal	Description	Justification
		luehmannii). Refer section 4.1 for further details.	
6	Upgrade of the existing wharf power supply through McKell Park.	The wharf power supply would need to be upgraded to three phase power. This would require about 40 metres of trenching in the vicinity of Darling Point Road, about 50 metres of trenching within McKell Park and about 20 metres of trenching along the foreshore. The work along the foreshore would require removal of one tree: a Tukeroo (*Cupaniopsis Anarcardioides*). Refer section 4.1 for further details.	During detailed design investigations it was determined that the existing power supply was insufficient to meet the power needs of the upgraded wharf. The existing power line would require an upgrade to enable operation of the lift, lights and hydraulic platform.
7	Potential options for site sheds within Darling Point Reserve and/or McKell Park.	In addition to the compound area nominated in the REF, site sheds may be temporarily erected within Darling Point Reserve, beneath the Weeping Fig and Jacaranda Tree and/or within McKell Park.	Spreading the compounds across multiple areas would reduce the area required in the cul-de-sac for the compounds. This area is in addition to the area identified in REF.

Figure 3-1 Key features of the proposal

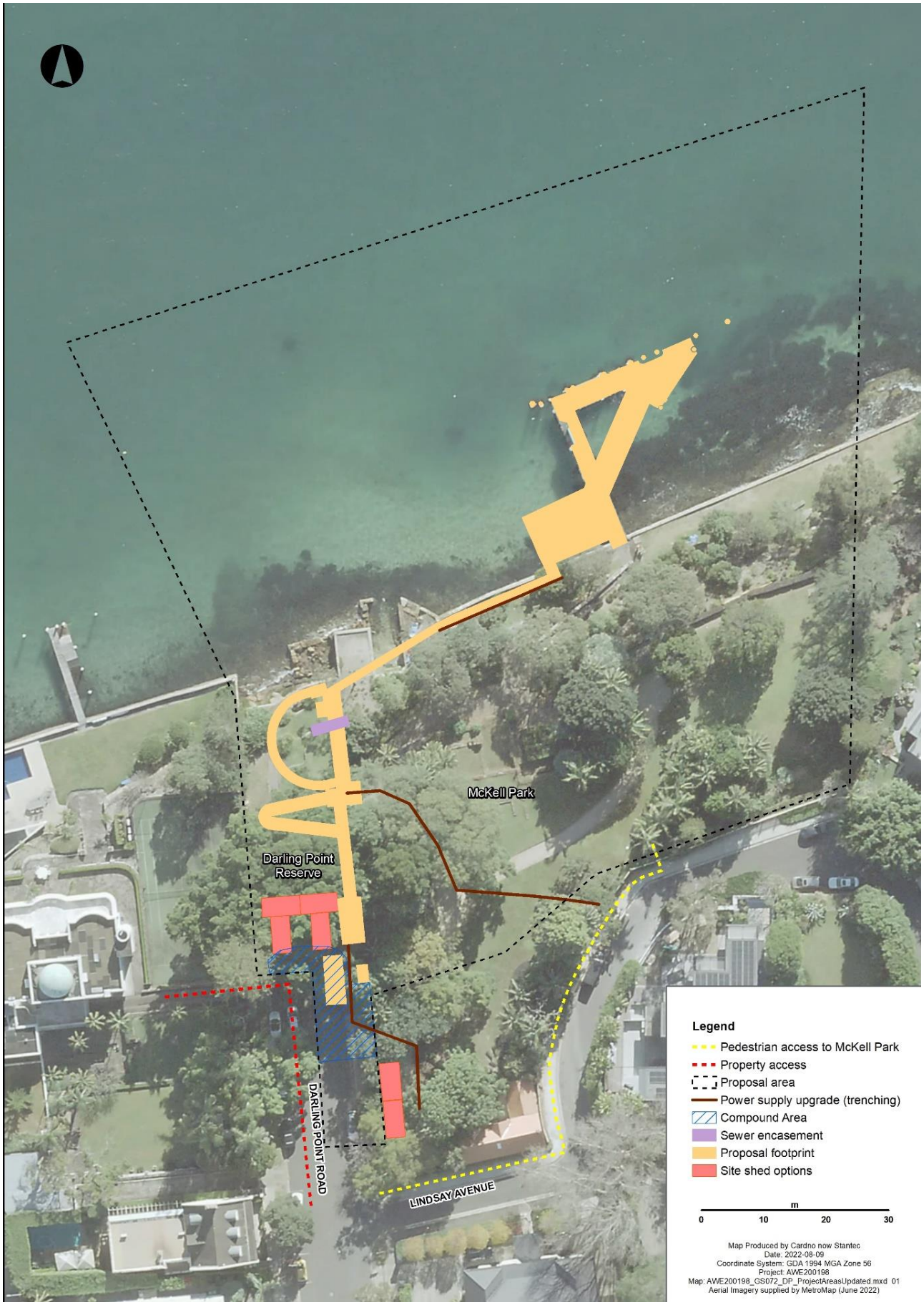

Figure 3-2 Proposal area

4. Environmental assessment

4.1 Biodiversity

A supplementary biodiversity assessment (refer Appendix B) has been prepared to assess the potential impacts of the construction and operation of the design changes on biodiversity values and provide any additional recommendations for mitigation.

The likely impacts of the design changes have been assessed with reference to the findings of the BAR prepared as part of the REF and the Arboricultural Impact Assessment Report (AIAR) (Earthscape Horticultural Services, 2022). This assessment should be read in conjunction with the BAR, REF and AIAR.

4.1.1 Existing environment

Terrestrial vegetation within the proposal footprint consists of native and exotic landscape plantings that are not commensurate with any Plant Community Type (PCT).

This vegetation provides potential foraging, roosting and breeding habitat for several urban, disturbance tolerant native species. No tree hollows or cavities large enough for hollow dependent birds or arboreal mammals occur within the proposal footprint. However, several habitat features, including a nest box recorded in a Moreton Bay Chestnut *(Castanospermum australe)* and small hollows identified within a Hills Weeping Fig *(Ficus macrocarpa var. hillii),* occur within the immediate vicinity of the design changes.

Seven terrestrial threatened fauna species with a moderate to high likelihood of occurrence were identified within the BAR:

- Six microbats listed as vulnerable under the *Biodiversity Conservation Act 2016* (BC Act):
  - Eastern False Pipistrelle (*Falsistrellus tasmaniensis*)
  - Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
  - Little Bent-winged Bat (*Miniopterus australis*)
  - Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
  - Southern Myotis (*Myotis macropus*)
  - Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)
- Grey-headed Flying Fox (*Pteropus poliocephalus*) listed as vulnerable under the BC Act and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

4.1.2 Potential impacts

Construction

As a result of the design changes, five trees and up to an additional 50 square metres of vegetation, consisting of mown lawn and groundcover, would require removal.

The five trees that would require removal, as identified in the AIAR are:

- Tuckeroo (*Cupaniopsis anacardioides*) (T6) to facilitate construction of the foreshore pathway and power supply upgrade

- Sydney Red Gum (*Angophora costata*) (T12), Prickly Paperbark (*Melaleuca stypheloides*) (T13) and Small Leaf Lilly Pilly (*Syzygium leuhmannii*) (T14) to facilitate the sewer protection work
- Kentia Palm (*Howea forsteriana)* (T21) to facilitate the accessible pathway.

Further detail on the trees to be removed, including height, spread and condition are provided in Appendix B.

Vegetation clearing in the study area would temporarily remove foraging habitat for highly mobile, disturbance tolerant fauna. The removal of habitat resources is unlikely to have a substantial impact on native fauna as there is an abundance of similar habitat across the study locality. The retained vegetation would not be damaged or removed, provided the implementation of appropriate mitigation measures.

Due to the vegetation clearing impacts associated with the design changes, AoS for the Grey-headed Flying Fox and two groups of microbats (tree-roosting and cave roosting microbats) were undertaken (refer Appendix B). The AoS concluded the proposal, including design changes, is unlikely to significantly impact the Grey-headed Flying-fox and microbat species.

Construction activities may result in some temporary noise and light disturbance. It is expected that species with a low tolerance to this disturbance would move away from unfavourable conditions and return to the area following the completion of construction activities.

Due to tree removal, the proposed design changes would temporarily trigger two Key Threatening Processes (KTPs):

- Clearing of Native Vegetation (BC Act)
- Land Clearance (EPBC Act).

Although the proposal temporarily triggers this KTP, the native vegetation to be cleared does not constitute remnant vegetation but rather landscape plantings. Replacement plantings would compensate for any losses resulting from the removal of trees.

Operation

As there is not expected to be any change to operational activities around the wharf there is limited potential for any operational impacts to terrestrial biodiversity.

4.1.3 Revised safeguards and management measures

Table 4-1 lists the revised safeguards and management measures to be implemented to account for the potential impacts identified in section 4.1.2. New measures have been *underlined and italicised* and deleted measures, or parts of measures, have been struck out.

Table 4-1: Modified and additional environmental safeguards - biodiversity

ID	Impact	Environmental Safeguard	Responsibility	Timing
B1	All project impacts	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: • Documenting and establishing site clearing limits and including on the sensitive area plans • Establishing no go zones (including the artificial pond and no anchoring in seagrass) and including on the sensitive area plans • Implementing tree protection measures in accordance with the *AIAR (Earthscape Horticultural Services, 2022*) ~~Eco Logical (2019).~~ • Pre-clearing surveys, vegetation removal, weed management and unexpected finds measures in line with the Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects (RTA, 2011).	Contractor	Construction
B16	Noise, light and vibration	Shading and artificial light impacts will be minimised through detailed design. *Where possible, works will be restricted to daylight hours and the use of loud machinery will be minimised.*	Contractor	Detailed design / *Construction*
B18	*Removal of native vegetation*	*Vegetation and habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) and the Transport for NSW Vegetation Management (Protection and Removal) Guideline (2021).*	*Contractor*	*Construction*
B19	*Removal of native vegetation, Landscape and visual impacts*	*Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) and the Transport for NSW Biodiversity Policy (2022). Replacement plantings (species and number) have been outlined in the AIAR (Earthscape Horticultural Services, 2022).*	*Contractor*	*Post Construction*

4.2 Non-Aboriginal heritage

A supplementary non-Aboriginal heritage assessment (refer Appendix C) has been prepared to assess the potential impacts of the construction and operation of the design changes on heritage and provide any additional recommendations for mitigation.

The likely impacts of the design changes have been assessed with reference to the findings of the SoHI prepared as part of the REF. This assessment should be read in conjunction with the SoHI and REF.

4.2.1 Existing environment

Statutory context

There are several pieces of Local, State and Commonwealth legislation that are relevant to the assessment as summarised in section 2 of the SoHI.

A search of all relevant registers was undertaken as part of the SoHI. Whilst the SoHI assessed impacts to all these listed items, this supplementary assessment focuses on the listings which would be directly impacted by the proposal or are in close proximity to the proposal as listed in Table 4-2.

Table 4-2: List of heritage items in the vicinity of the proposal

Item	Address	Significance	Listing	Distance and direction from proposal area
Fence, gates and foundation remains of former house Canonbury, located within McKell Park	159 Darling Point Road, Darling Point	Local	*Woollahra Local Environmental Plan 2014* (LEP) no. 112 and A1	Within
Remains of Bath House and site of jetty	159 Darling Point Road, Darling Point	Local	LEP no. 113 *State Environmental Planning Policy (Biodiversity and Conservation) 2021* no. 46	Within
House and interiors, grounds, gardens	5 Lindsay Avenue, Darling Point	Local	LEP no. 136	Adjacent
Craigend- house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm	86 Darling Point Road, Darling Point	Local	LEP no. 102	Adjacent

Item	Address	Significance	Listing	Distance and direction from proposal area
Lindesay—building and interiors, summer house, grounds, 6 London Plane trees, Hoop Pine	1A Carthona Avenue, Darling Point	State	State Heritage Register (SHR) 00686 LEP no. 80 Register of the National Trust of Australia (RNTA) no. restricted Register of the National Estate (RNE) Place ID 2488	Adjacent

Archaeology

The preliminary archaeological assessment identified that there is potential for archaeological remains of local significance to be present within both the proposal area and the proposal footprint.

The proposal area has generally high potential to contain locally significant archaeological remains associated with the Canonbury house (LEP no. 112 & A1) heritage item. There is also high archaeological potential for locally significant archaeological remains associated with the 'remains of bath house and site of jetty' (LEP no. 113) listing, and low potential for locally significant archaeological remains associated with the former roadways.

4.2.2 Potential impacts

Construction

Direct and potential direct impacts

Fence, gates, and foundation remains of former house Canonbury, located within McKell Park (LEP no. 112 and A1)

Moving the entry to the waiting area of the ferry wharf via the shore bridge from the eastern side to the western side of the waiting area, resulting in a reduced length of the foreshore pathway, would not result in a change of impacts. The impacts from these works would remain minor.

The circular and accessible pathways would be largely located outside of the curtilage of this heritage item, however, the work would enter a small portion of this curtilage on the western side. Whilst this new work would see more excavation in the area than originally proposed, it would not involve any extensive trenching work and would not impact any significant fabric within the heritage item. Therefore, the small portion of the pathways which overlap with the heritage curtilage would not cause any direct impacts.

It is not expected work associated with the sewer protection and stormwater redirection would involve extensive excavation works and would be limited to pre-disturbed land. As such, there are no expected impacts to this heritage item from the work.

The introduction of site sheds would not have any direct impacts on the heritage item, as these sheds are associated with the construction phase of the project and would be temporary in nature.

The upgrade of the existing wharf power supply through McKell Park would see approximately 70 metres of trenching within the heritage curtilage of this item. However, these works are not expected to intersect with any significant elements associated with this heritage item and would result in minor direct localised impacts to the trenched areas.

Overall, the proposed work would result in a minor direct and minor potential direct impact to the 'Canonbury', (LEP no. 112 & A1), which is consistent with the findings of the SoHI.

Remains of bath house and site of jetty (LEP no. 113)

The circular and accessible pathways would be largely located outside of the curtilage of this heritage item, however, the work would enter a small portion of this curtilage on the western side. Whilst this new work would see more excavation in the area than originally proposed, it would not involve any extensive trenching work and would not impact any significant fabric within the heritage item. Therefore, the small portion of the pathways which overlap with the heritage curtilage would not cause any direct impacts.

Overall, the proposed work would result in a minor direct and minor potential direct impact to the 'remains of remains of bath house and site of jetty' (LEP no. 113), which is consistent with the findings of the SoHI.

Other heritage items

The remaining heritage items (namely LEP no.'s 136, 102 and 80) are located outside of the proposal area and there would be no change to the impacts assessed in the SoHI.

Archaeological assessment

A portion of the revised proposal associated with utility work extends into the areas of high and low archaeological potential. These works would be located away from the area of the former residences themselves and would be targeted to existing services routes. It is expected that the excavation of these existing services routes would be in areas which are pre-disturbed as a result of the original installation of these services through the park and road areas. The nature of this disturbance has likely resulted in these services routes having nil potential to contain archaeological remains of local significance. It is expected that these revised works would result in neutral impacts to archaeological remains associated with the former Brackenbury, Lansdowne and Canonbury residences within 'McKell Park' (LEP no. 112 & A1), given the trenching would occur in pre-disturbed areas of McKell Park.

Excavations for the circular pathway, accessible pathway and roadworks would be located within the alignment of Darling Point Road which has low potential for former locally significant road surfaces. Excavations within the area of archaeological potential associated with the former road surfaces however would generally be shallow in nature, and the area has likely been disturbed by previous road upgrades and maintenance works. As a result, if archaeological remains of former road surfaces are present, it is expected that any impact to them would be negligible.

As assessed in the SOHI, the proposed foreshore pathway and piling work may result in a neutral to minor impact to the archaeological remains associated with 'McKell Park' (LEP no. 112 & A1) and the 'remains of bath house and site of jetty' (LEP no. 113).

Overall, it is assessed that the proposed works would result in minor impacts to archaeological remains of local significance.

Operation

Indirect (visual) impacts

Fence, gates, and foundation remains of former house Canonbury, located within McKell Park (LEP no. 112 and A1) and Remains of bath house and site of jetty (LEP no. 113)

The revised proposal would not see a change to the previous impacts assessed regarding the introduction of new visually intrusive elements within sight of the heritage items. These new elements would be partially visible from key viewing points along the north side of McKell Park above the existing wharf, however, they would be obstructed by the dense vegetation that is present along the edge of the heritage items. In addition, significant view lines within the item and to Sydney Harbour from the item are expected to remain intact. In addition, the new wharf has been designed to reduce the visual imprint of the new feature as it has been designed to be relatively small and consistent with the existing wharf structure. As a result, the visual impact from the construction of the new wharf would remain minor.

The circular and accessible pathway work would enter the heritage curtilage (western edge), and the relocated kiss-and-ride zone would be introduced directly west of the heritage items. However, these works would not deviate significantly from the existing aesthetic quality of the heritage items and Darling Point Road streetscape. These works are not expected to cause a visual impact above negligible.

Overall, the proposed work would result in a minor visual impact to the heritage items, which is consistent with the findings of the SoHI.

Craigend (LEP no. 102)

The circular and accessible pathway work, and the relocated kiss-and-ride zone would be introduced directly east of the heritage item. However, these works would be in keeping with the existing aesthetic quality of the heritage item and Darling Point Road streetscape. As such, these works are not expected to cause a visual impact above negligible, which is consistent with the findings of the SoHI

Other heritage items

The proposed work would result in a neutral or negligible visual impact to the remaining heritage items (namely LEP no.'s 136, 80), which is consistent with the findings of the SoHI.

4.2.3 Safeguards and management measures

Table 4-1 lists the revised safeguards and management measures to be implemented to account for the potential impacts identified in section 4.2.2. New measures have been *underlined and italicised* and deleted measures, or parts of measures, have been ~~struck out~~.

Table 4-3: Modified and additional environmental safeguards – non-Aboriginal heritage

ID	Impact	Environmental Safeguard	Responsibility	Timing
H1	Heritage interpretation ~~strategy~~	In accordance with the sustainability requirements for the project, opportunities for the implementation of heritage interpretation will be investigated during detailed design. *Opportunities for re-use of materials and to include heritage interpretation features in the*	Transport for NSW	Detailed design

ID	Impact	Environmental Safeguard	Responsibility	Timing
		area around the proposed foreshore, circular and accessible pathways will be considered.		
H15	*Non-Aboriginal heritage*	*The proposed power supply routes must avoid the areas outlined to contain possible remains of the former residences associated with the 'fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park' (LEP no. 112 & A1) heritage item.* *If these routes require adjustment in future stages of design, an appropriately qualified historical archaeologist must be engaged to review the impacts of the route change.*	*Transport for NSW*	*Detailed design / Pre-construction*
LV4	Landscape and visual, *Non-Aboriginal heritage*	All impacted areas and ground surfaces, *including the trenching work associated with the power supply upgrade,* will be reinstated as near as possible to their original state following the completion of work.	Contractor	Post-construction

4.3 Landscape character and visual impact

The proposed design changes to Darling Point Wharf may have additional impacts on the landscape character and visual amenity of the area compared to those presented in section 6.5 and Appendix F of the REF.

To assess the overall impact of the proposal on landscape character three landscape character zones (LCZ) were identified in the REF: namely LCZ1 – Residential slopes/flats, LCZ2 – Sydney Harbour and LCZ3 – Foreshore parks/beaches. To identify visual impacts on the site and its surrounding five viewpoints were selected in the REF (viewpoints A, B, C, D and E).

The LCZ and viewpoints have been used to identify any additional impacts as a result of the design changes.

Additional photomontages were created from viewpoint A and viewpoint C to assess the visual impact of the proposed design changes. The existing view and photomontages from the REF for viewpoints A and C are provided in Figure 4-1 and Figure 4-3, respectively. The updated photomontages with the proposed design changes from viewpoints A and C are provided in Figure 4-2 and Figure 4-4, respectively.

Figure 4-1 Viewpoint A showing existing viewpoint and photomontage used in the REF (Source: Transport, 2022)

Figure 4-2 Viewpoint A showing updated photomontage with proposed design changes (Transport, 2022)

Figure 4-3 Viewpoint C showing existing viewpoint and photomontage used in the REF (Source: Transport, 2022)

Figure 4-4 Viewpoint C showing updated photomontage with proposed design changes (Source: Urbaine)

Table 4-4 summarises the existing environment as well as the potential impacts from the proposed changes and identifies any additional safeguards that are required to mitigate against these impacts.

Table 4-4: Existing environment and potential impacts – landscape character and visual impact

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
1	Inclusion of a new accessible pathway in Darling Point Reserve.	The main streetscape element of Darling Point Reserve is currently two large trees (Hills Weeping Fig and Jacaranda) which are located at the top of Darling Point Reserve where Darling Point Road ends. The proposed accessible pathway would be located behind these trees (on the waterside) and the length of the path would cover the width of the reserve, crossing from the eastern side of the reserve to the west and then wrapping back around to the eastern side to end at the northern gate to McKell Park. The accessible pathway in Darling Point Reserve would be visible from viewpoints A, C and D, and is categorised as LCZ1 – Residential slopes/flats.	During construction there would be temporary impacts to landscape character and visual impacts from the presence of construction machinery, fencing, disturbed soils and removal of ground cover. As these works are in the general vicinity of the work assessed in the REF additional impacts during construction are not anticipated. Changes to the visual impact from viewpoint C (refer Figure 4-4) would have little to no change as the large trees in Darling Point Reserve define the majority of the visual landscape from the street. Similarly, there would be little to no change to the visual impact of viewpoint A and viewpoint D as the pathway would sit at the top of Darling Point Reserve and so the view from these two points would already be limited based on the angle of sight. One Kentia Palm would be removed to accommodate the new accessible pathway. The palm is not native, approximately 3.5 metres tall and is located in Darling Point Reserve on the fence line with McKell Park. As the palm is not a large part of the visual landscape its removal would not be considered a significant change. The tree would be replaced as outlined in the AIAR. As new structures are already proposed within Darling Point Reserve impacts to the LCZ would be similar to those identified in the REF.	New safeguard B19 (refer Table 4-1) is proposed. Existing safeguards LV1 and LV2 are applicable.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
2	Removal of proposed staircase and upgrade of the existing steps in Darling Point Reserve via a new circular pathway.	Darling Point Reserve is largely vegetated with an existing hardstand pathway and steps that link the northern entry gate to McKell Park to the foreshore. The proposed circular pathway and steps would have a similar placement to the existing pathway however would wrap back at the bottom of the reserve to link up to the lower level lift landing. The circular pathway in Darling Point Reserve would be visible from viewpoints A and D. The pathway is categorised as LCZ1 – Residential slopes/flats and LCZ3 – Foreshore parks/beaches.	During construction there would be temporary impacts to landscape character and visual impacts from the presence of construction machinery, fencing, disturbed soils and removal of ground cover. Given the proximity to the work assessed in the REF additional impacts during construction are not anticipated. Changes to the visual impact at viewpoint A and D would slightly increase with a larger area of hardstand proposed, however, given the existing concrete steps would be removed and replaced by a commensurate pathway in a different format the impact is not likely to be substantially different. Any additional impacts could be ameliorated through low level landscape planting to mitigate hardstand areas. As new structures are already proposed within Darling Point Reserve, impacts to the LCZs would be similar to those addressed in the REF	No additional safeguards proposed. Existing safeguard LV1 is applicable.
3	Reposition of the kiss and ride zone (now a drop off zone).	The northern end of Darling Point Road finishes at Darling Point Reserve. The proposed drop off zone would be on the eastern side of the Darling Point Road cul-de-sac. The drop off zone would be visible from viewpoint C and is categorised as LCZ1 – Residential slopes/flats.	The change to an informal drop off zone means there would be no line markings in the cul-de-sac and 'no standing' signage would be installed. Therefore, it is not anticipated that there would be any additional impacts to viewpoint C or the LCZ.	No additional safeguards proposed.
4	Relocation of the entry to the waiting area.	The foreshore area of McKell Park near the existing wharf is a less vegetated part of the embankment consisting of	Proposed relocation of the entry point would reduce the length of the foreshore pathway. Therefore, the impacts from viewpoint B would be marginally less than	No additional safeguards proposed.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
		a mix of grassed and paved areas. The entry to waiting area on the foreshore would be visible from viewpoint B and is categorised as LCZ3 – Foreshore parks/beaches.	originally proposed as a shorter hardstand pathway would be constructed. As new structures are already proposed along the foreshore, impacts to the LCZ would be similar to those addressed in the REF	
5	Sewer protection work in Darling Point Reserve.	Darling Point Reserve is mostly grassed with two large trees, existing benches and hardstand pathways for public amenity and access. Excavation for sewer protection works is proposed in the vicinity of the new lift structure. The sewer protection work in Darling Point Reserve would be visible from viewpoints A, C and D and is categorised as LCZ3 – Foreshore parks/beaches.	During construction there would be temporary impacts to landscape character and visual impacts from the presence of construction machinery, fencing, disturbed soils and removal of ground cover. Given the proximity to the work assessed in the REF additional impacts during construction are not anticipated. Three trees would be removed to accommodate the sewer protection work. The trees are not native, range in height from 7-9 metres and add to the visual amenity of the area. Whilst removal of these trees would have some negative impacts on the visual amenity given their proximity to the existing background vegetation significant changes are not anticipated. Any additional impacts could be ameliorated through the proposed replacement plantings.	New safeguard B19 (refer Table 4-1) is proposed. Existing safeguards LV2 and LV4 are applicable.
6	Upgrade of the existing wharf power supply through McKell Park.	McKell Park is a vegetated area with existing benches and hardstand pathways for public amenity and access. The power supply upgrades would involve trenching through areas of McKell Park and the road reserve near the end of Darling Point Road.	The proposed design change would result in temporary impacts during the construction period which would include trenching and ground disturbance work within McKell Park. As the park is well-utilised, including for booked events, there is potential for visual amenity impacts to park users during construction.	New safeguard B19 (refer Table 4-1) is proposed. New safeguard LV5 (refer Table 4-3) is proposed. Existing safeguards LV2 and LV4 are applicable.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
		The upgrade work would be visible during construction only.	The trenching along the foreshore of McKell Park requires the removal of one non native tree which is approximately three metres tall. As the tree does not form a large part of the visual landscape its removal would not be considered a significant change. Any additional impacts could be ameliorated through the proposed replacement plantings. The area of trenching and ground disturbance would be reinstated to pre-existing conditions following the upgrade work so a long-term change in landscape character or visual amenity is not anticipated.	
7	Potential options for site sheds within Darling Point Reserve and/or Mc Kell Park.	Darling Point Reserve and McKell Park are vegetated areas with existing benches and hardstand pathways for public amenity and access. The site sheds are proposed to be located at the top of Darling Point Reserve or on the south western edge of McKell Park. The site sheds would be temporary and visible during construction only.	The proposed design change would result in temporary visual impacts during the construction period from the presence of additional site sheds, storage of equipment and materials and hoarding within Darling Point Reserve and/or McKell Park. The number and final position of sheds would be confirmed by the Contractor prior to construction.	No additional safeguards proposed. Existing safeguards LV2, LV3 and LV4 are applicable.

** Summary provided based on section 6.5.2 of the REF*

Table 4-5: Additional environmental safeguard - visual amenity and socio-economic

ID	Impact	Environmental Safeguard	Responsibility	Timing
LV5	*Landscape and visual, socio-economic*	*At the earliest opportunity prior to commencement of construction notify Woollahra Municipal Council of the construction program, timing of work activities and location of the works within McKell Park.*	*Contractor / Transport for NSW*	*Pre-construction*

4.4 Land surface and hydrology

The proposed design changes to Darling Point Wharf may have additional impacts on the land surface and hydrology of the area compared to those presented in section 6.1 of the REF

Table 4-6 summarises the existing environment as well as the potential impacts from the proposed changes and identifies any additional safeguards that are required to mitigate against these impacts.

Table 4-6: Existing environment and potential impacts – land surface and hydrology

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
1	Inclusion of a new accessible pathway in Darling Point Reserve.	The landside portion of the proposal area slopes from approximately 20 mAHD in the south to approximately 4 mAHD in the north at the foreshore. General surface water flow in Darling Point Reserve would be directed toward the harbour. The proposal area sits on Hawkesbury Sandstone which is characterised by medium to coarse grained quartz sandstone. Vey minor shale and laminate lenses. The landside portion of the proposal area is primarily Class 5 acid sulfate soils (ASS) (low risk), with the north-western portion identified as Class 2. Contamination of the landscape of the proposal area is likely due to the historical industrial character of the Sydney Harbour Catchment. Historical activities undertaken in the area that potentially resulted in contamination includes: • Use of fill material from landside levelling and road construction • Surface water runoff from road • Use of machinery for previous construction of wharf • Potential ASS of the proposal area.	During construction earthworks may expose material and soils which could lead to erosion and sedimentation of the stormwater system and/or the harbour. The accessible pathway would result in an additional hardstand area in Darling Point Reserve which is currently predominately landscaped. As the pathway would be a suspended structure significant changes in overland flow are not anticipated.	No additional safeguards proposed. Existing safeguards LS1-LS5, and LS7 are applicable.
2	Removal of proposed staircase and upgrade of the existing steps in Darling Point Reserve via a new circular pathway.		During construction earthworks may expose contaminated material and ASS, and exposed soils could lead to erosion and sedimentation of the stormwater system and/or the harbour. The construction of the new circular pathway and steps would follow the alignment of the existing pathway and steps as such as possible, thereby minimising the area of hardstand. Removal of the proposed staircase would also reduce the area of hardstand in the reserve.	No additional safeguards proposed. Existing safeguards LS1–LS5, and LS7 are applicable.
3	Reposition of the kiss and ride zone (now a drop off zone).		The proposed change in the position of the drop off zone is not anticipated to have an impact on land and surface hydrology.	No additional safeguards proposed.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
4	Relocation of the entry to the waiting area.		Relocation of the entry to the waiting area would reduce the length of the foreshore pathway thereby reducing the amount of earthworks and associated erosion, sedimentation and contamination risks.	No additional safeguards proposed.
5	Sewer protection work in Darling Point Reserve.		The proposed change would involve excavation work and tree removal in the vicinity of the lift structure. As excavation work would already be required at this location additional impacts to land surface and hydrology to those identified in the REF are not anticipated.	No additional safeguards proposed. Existing safeguards LS1-LS5, and LS7 are applicable.
6	Upgrade of the existing wharf power supply through McKell Park.		The proposed change would involve excavation work and tree removal within McKell Park. Excavation may expose contaminated material and lead to erosion and sedimentation of the stormwater system and/or the harbour. These impacts are considered in the REF. The area would be reinstated to pre-existing conditions following the upgrade work so a long-term change in land surface and hydrology is not anticipated.	No additional safeguards proposed. Existing safeguards LS1-LS5, and LS7 are applicable.
7	Potential options for site sheds within Darling Point Reserve and/or Mc Kell Park.		The proposed change is not anticipated to have any additional impacts on land surface and hydrology than those presented in the REF.	No additional safeguards proposed.

** Summary provided based on section 6.1.2 of the REF*

4.5 Transport, traffic and access

The proposed design changes to Darling Point Wharf may have additional impacts on the traffic, transport and access of the area compared to those presented in section 6.8 of the REF

Table 4-7 summarises the existing environment as well as the potential impacts from the proposed changes and identifies any additional safeguards that are required to mitigate against these impacts.

Table 4-7: Existing environment and potential impacts – transport, traffic and access

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
1	Inclusion of a new accessible pathway in Darling Point Reserve.	Darling Point Wharf is located on the northern extent of Darling Point and is accessed via Darling Point Road which terminates in the cul-de-sac. Darling Point Road connects to the broader road network via New South Head Road. Parking along Darling Point Road is quite restricted with limited opportunity for short term parking. There is currently no accessible parking or kiss and ride drop off zones at the end of Darling Point Road. The nearest bus stop if located 300 metres away at the intersection of the Darling Point Road and Thornton Street. As of January 2022, only one bus route services this stop, route 328 – Bondi Junction to Darling Point via Edgecliff. Darling Point Wharf currently services the F7 Double Bay ferry route which services Circular Quay Darling Point and Double Bay. Charter boats and recreational vessel are also able to use the existing wharf.	As the proposed work would be undertaken within Darling Point Reserve, restricted access to the area during construction was already considered in the REF. Inclusion of the accessible pathway would not have any material change to the traffic, transport and access impacts identified in the REF. The change would in fact result in improved accessibility to McKell Park via the northern gate.	No additional safeguards proposed. Existing safeguards T1 and T2 are applicable.
2	Removal of proposed staircase and upgrade of the existing steps in Darling Point Reserve via a new circular pathway.		As the proposed work would be undertaken within Darling Point Reserve, restricted access to the area during construction was already considered in the REF. Inclusion of the circular pathway would not have any material change to the traffic, transport and access impacts identified in the REF. The proposed change would provide greater access to the Darling Point foreshore for recreation.	No additional safeguards proposed. Existing safeguards T1 and T3 are applicable.
3	Reposition of the kiss and ride zone (now a drop off zone).		During construction, work required within the Darling Point Road cul-de-sac would be slightly reduced as the area would become an informal drop off zone with no line markings.	No additional safeguards proposed. Existing safeguards T1 and T2 are applicable.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
			Repositioning the drop off zone to the eastern side of the Darling Point Road cul-de-sac would support traffic movement and removing the line markings and formal signage would discourage parking. .	
4	Relocation of the entry to the waiting area.		The length of the foreshore pathway would be reduced resulting in shorter travel distance between the wharf entrance at Darling Point Road and entry to the waiting area.	No additional safeguards proposed.
5	Sewer protection work in Darling Point Reserve.		As the proposed work would be undertaken within Darling Point Reserve, restricted access to the area during construction was already considered in the REF. The sewer protection work would not result in a material change to the traffic, transport and access impacts identified in the REF.	No additional safeguards proposed. Existing safeguards T1 and T2 are applicable.
6	Upgrade of the existing wharf power supply through McKell Park.		The power supply upgrade would require temporary restricted pedestrian access to new areas within McKell Park during construction. Land exclusion zones would be placed along the trenching area. The restricted areas would be kept to a minimum and represent a small proportion of the overall construction timeframe. No long term impacts to access are anticipated.	No additional safeguards proposed. Existing safeguards T1 and T2 are applicable.
7	Potential options for site sheds within Darling Point Reserve and/or Mc Kell Park.		Impacts associated with the site sheds would be temporary in nature. Should the preferred location of the site sheds be within Darling Point Reserve, no material changes to the traffic, transport and access impacts	No additional safeguards proposed. Existing safeguards T1 and T2 are applicable.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
			to those identified in the REF are anticipated. Should the preferred location for the site sheds be within McKell Park additional traffic and access impacts at the southern gate of McKell Park are possible.	

** Summary provided based on section 6.8.2 of the REF*

4.6 Socio-economic

The proposed design changes to Darling Point Wharf may have additional impacts on the socio-economic factors of the area compared to those presented in section 6.9 of the REF

Table 4-8 summarises the existing environment as well as the potential impacts from the proposed changes and identifies any additional safeguards that are required to mitigate against these impacts.

The proposed design changes would not alter the proposed eight month construction program, weather and maritime conditions permitting.

Table 4-8: Existing environment and potential impacts – socio-economic

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
1	Inclusion of a new accessible pathway in Darling Point Reserve.	The proposal is located within the Woollahra local government area in the state suburb of Darling Point. The study area has an estimated residential population of about 4190 people with a median age of 48. Transport methods utilised by residents in the area were predominately by car as a driver or passenger (40%) and by public transport (31%). Darling Point Wharf is located within a low-density residential area so only a few local businesses are located within close proximity to the proposal including: *Canonbury* Cottage - This is a historic Federation house located within McKell Park. This is available to hire for	There would be restricted access to Darling Point Reserve during construction as assessed in the REF. The accessible pathway would improve accessibility to McKell Park via the northern gate. The slightly higher area of hardstand may impact on the amenity of the area for residents and recreational users however would be made of FRP therefore allowing natural landscape to penetrate.	No additional safeguards. Existing safeguards SE1 and SE2 are applicable.
2	Removal of proposed staircase and upgrade of the existing steps in Darling Point Reserve via a new circular pathway.		There would be restricted access to Darling Point Reserve during construction as assessed in the REF. Inclusion of the circular pathway would provide greater access to the Darling	No additional safeguards. Existing safeguards SE1 and SE2 are applicable.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
		social gatherings and weddings National Trust of Australia's *Lindesay* House – This is a heritage listed site. This was the first house built on Darling Point and is open for weddings and events, as well as guided tours. Darling Point Reserve and McKell Park are enjoyed by local residents, recreational fishing enthusiasts and by the broader community. The values of McKell Park and/or Darling Point Reserve, which are valued by the local residents, include open grassed areas, views to and from the harbour and through the park, the memorial pond on the foreshore, garden beds, shrubs and trees. McKell Park is often used for special events and social gatherings such as wedding as it has superb harbour views and manicured gardens surrounded by mature trees.	Point foreshore and greater opportunities for recreation.	
3	Reposition of the kiss and ride zone (now a drop off zone).		Repositioning the drop off zone to the eastern side of the Darling Point Road cul-de-sac would support traffic movement and removing the line markings and formal signage would discourage parking.	No additional safeguards. Existing safeguards SE1 and SE2 are applicable.
4	Relocation of the entry to the waiting area.		The length of the foreshore pathway would be reduced resulting in shorter travel distance between the wharf entrance at Darling Point Road and entry to the waiting area.	No additional safeguards proposed.
5	Sewer protection work in Darling Point Reserve.		There would be restricted access to Darling Point Reserve during construction as assessed in the REF. Three trees would be removed to accommodate the sewer protection work. Whilst these trees contribute to the amenity of users of Darling Point Reserve and McKell Park, given the proximity to the existing background vegetation significant changes are not anticipated.	No additional safeguards proposed. Existing safeguards SE1 and SE2 are applicable.
6	Upgrade of the existing wharf power supply through McKell Park.		Pedestrian access to parts of McKell Park would be restricted during trenching work. Land exclusion zones would be required. As the park is well-utilised, including for booked events, there is potential for amenity (visual, noise, access) impacts to park users during construction. Trenching work would be located closer to the Canonbury Cottage, which is commonly used for weddings and events.	New safeguard LV5 (refer Table 4-3) is proposed. Existing safeguards SE1, SE2 and SE6 are applicable.

No.	Change to the proposal	Existing environment*	Potential impacts	Safeguards (if any additional)
			The area of trenching would be reinstated to pre-existing conditions following the upgrade work so a long-term change in amenity is not anticipated.	
7	Potential options for site sheds within Darling Point Reserve and/or Mc Kell Park.		Potential impacts would be temporary during the construction phase. Additional site shed locations would increase the overall footprint of the construction area and associated amenity impacts. Should the preferred location for the site sheds be within McKell Park there is potential for access restrictions to Canonbury Cottage. Once construction has finished the site sheds would be dismantled and the area restored back to its pre-existing condition.	No additional safeguards proposed. Existing safeguards SE1, SE2 and SE6 are applicable.

** Summary provided based on section 6.9.2 of the REF*

4.7 Other impacts

The proposed design changes to Darling Point Wharf may have additional impacts on the other environmental factors of the area compared to those presented in the REF

Table 4-9 summarises the existing environment as well as the potential impacts from the proposed changes and identifies any additional safeguards that are required to mitigate against these impacts.

Table 4-9: Existing environment and potential impacts – other impacts

Environmental aspect	Existing environment	Potential impacts	Safeguards (if any additional)
Water quality	Darling Point is in the Port Jackson catchment. Stormwater discharge and surface water runoff are considered to be the main sources of contamination to the estuary. A pit was observed to the south of Darling Point Road, with a storm water drainage pipe network diverting water to the north. It is	The proposed changes would further disturb soils within Darling Point Reserve and McKell Park as they would involve earthworks including trenching. Disturbed sediments have the potential to impact on water quality if they are transported into the nearby waterway.	No additional safeguards proposed. Existing safeguards LS1, LS7, WQ1, WQ2 and WQ4-WQ6 are applicable.

Environmental aspect	Existing environment	Potential impacts	Safeguards (if any additional)
	anticipated that overland flow along Darling Point Road is collected in the pits and pipe network and directed into Sydney Harbour. Stormwater outlets were observed along the seawall in the proposal area.	There is potential for spills and leaks from construction machinery and equipment being used for construction work. The proposed changes are not anticipated to have any additional impacts on water quality to those presented in the REF.	
Noise and vibration	The existing acoustic environment is generally dominated by intermittent local road traffic and nearby waterway vessels. The noise sensitive receivers surrounding the proposal area are mostly residential, however some non-residential noise sensitive receivers including users of McKell Park are also present.	The landside construction scenario assessed in the REF is considered to generally represent the activities and equipment that would be required to construct the design changes. It is noted however that work would be undertaken in new locations namely the upper level of McKell Park for the power supply upgrade work and the site sheds within McKell Park. These new locations would bring works closer to recreational users of McKell Park and Canonbury House.	No additional safeguards proposed. Existing safeguards NV1-NV9 are applicable.
Aboriginal cultural heritage	Results from a search of the Aboriginal Heritage Information Management System (AHIMS) indicate that no Aboriginal objects or places were identified within the immediate proposal area. The study area does not contain landscape features that indicate the presence of Aboriginal objects and the potential for Aboriginal cultural heritage items in McKell Park has been reduced as a result of landscaping in the park.	It is unlikely that the proposed changes would have any additional impacts on Aboriginal heritage to those identified in the REF.	No additional safeguards proposed.
Air quality	The exiting air quality at the closest monitoring station is assessed as being good. The primary influences of air quality within the proposal area and surrounding environment would be from motor vehicles and residential activities.	The proposed changes would lead to increased earthwork in Darling Point Reserve and McKell Park during construction. Earthworks have the potential to create dust and the operation of plant, machinery and trucks may lead to increased exhaust emissions.	No additional safeguards proposed. Existing safeguards AQ1 and AQ2 are applicable.

Environmental aspect	Existing environment	Potential impacts	Safeguards (if any additional)
		However, these impacts are expected to be short term, localised and be managed through identified safeguard and management measures.	
Waste management	Public waste in the area is managed by bins which are located at the existing wharf, and there is potential for litter to enter Sydney Harbour from existing wharf activities and recreational fishing.	Construction activities generate waste streams that need to be managed and disposed of as outlined in the REF. The proposed changes may result in the following waste streams: • excess spoil from the earthworks associated with the new accessible pathway and the circular pathway and steps • green waste from vegetation removal • concrete and sandstone steps from removal of the existing pathway and steps in Darling Point Reserve. Excavated material and the existing sandstone steps shall be re-used wherever possible to minimise waste.	New measure WM4 (refer Table4-8) is proposed Existing safeguards WM1 and LS2 are applicable.
Hazards and utilities	A preliminary assessment identified that the following services are present in the vicinity of Darling Point Wharf (Aurecon, 2019): • Submarine cable • Optic fibre/cable (NBN) • Underground communication cable (Telstra) • Sewer main, water main and maintenance hole • Electrical LV cables (Ausgrid)	The proposed changes that include an additional footprint to that assessed in the REF: namely the accessible pathway, the circular pathway and steps and the power supply upgrade work have the potential to impact existing utilities. The remainder of the proposed changes are not anticipated to have any additional hazards or impacts on utilities to those identified in the REF.	No additional safeguards proposed. Existing safeguards HR1-HR3 are applicable.

Environmental aspect	Existing environment	Potential impacts	Safeguards (if any additional)
	• Gas services (Jemena). There is potential for unknown services to exist within the proposal footprint.		
Climate Change and Greenhouse Gas	Climate change predictions for Sydney include higher than average temperatures, increase in the number of hot days, decrease in rainfall in spring and winter, increase in rainfall in summer and autumn and an increase in fire weather.	The proposed changes are not anticipated to have any additional impact on climate change and greenhouse gas to those identified in the REF	No additional safeguards proposed. Existing safeguards CC1, CC2 and CC3 are applicable.
Sustainability	Transport is committed to minimising the impact on the natural environment using the *Sustainable Design Guidelines (SDG) v4.0 rating tool* (Transport, 2017) to measure and drive sustainability. The SDG rating tool sets targets across the following key areas: • Climate change adaptation and resilience • Energy management • Waste and recycling • Materials • Waste conservation • Supply chain management • Community benefit.	The proposed changes would be designed based on the principles of sustainability and would form part of the proposal to be considered during preparation of the Sustainability Management Plan.	No additional safeguards proposed. Existing safeguards S1, S2 and S3 are applicable.
Cumulative Impacts	The proposal is part of a broader program of work to upgrade the commuter ferry wharves in Sydney. There are several present and future projects that may contribute to cumulative impacts due to their timing, scale and/or proximity to the proposal.	The proposed changes are not anticipated to have any additional cumulative impacts to those identified in the REF.	No additional safeguards proposed. Existing safeguard C1 is applicable.

Table 4-10: Additional environmental safeguard - waste

ID	Impact	Environmental Safeguard	Responsibility	Timing
WM4	*Waste*	*Any removed sandstone blocks from the steps in Darling Point Reserve would be re-used or given back to Woollahra Municipal Council for re-use as appropriate.*	*Contractor*	*Construction*

5. Environmental management

The REF for the Darling Point 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, the safeguard and management measures have been revised to mitigate potential impacts.

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

5.1 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 would be prepared prior to construction of the proposal and must be reviewed and certified by the Transport Environment Officer prior to the commencement of any on-site work. The CEMP will be a working document, subject to ongoing change and updated as necessary to respond to specific requirements.

5.2 Summary of safeguards and management measures

The REF for the Darling Point 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 management measures for the proposal (refer to Chapter 7 of the REF) have been revised. Should the proposal proceed, the environmental management measures in Table 5-1 will guide the subsequent phases of the proposal.

Additional and/or modified environmental safeguards and management measures to those presented in the REF have been *underlined and italicised* and deleted measures, or parts of measures, have been struck out.

Table 5-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Responsibility	Timing
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Environment Manager prior to commencement of the activity. As a minimum, the CEMP will address the following: • 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. The endorsed CEMP will be implemented during the undertaking of the activity.	Transport for NSW / Contractor	Pre-construction
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 seven calendar days prior to commencement of the activity.	Transport for NSW / Contractor	Pre-construction
GEN3	General – environmental awareness	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. Site-specific training will be provided to personnel engaged in activities or areas of higher risk. These include: • Areas of non-Aboriginal heritage sensitivity • Seagrass meadows and threatened species habitat • Areas of moderate/high archaeological potential • Adjoining residential areas requiring particular noise management measures.	Transport for NSW / Contractor	Pre-construction / Detailed design
LS1	Soil and water	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	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		erosion and water pollution and describe how these risks will be addressed during construction.		
LS2	Soil and water / Waste	Any excavated sediments or soil that require disposal will be sampled, tested and classified in accordance with the EPA's W*aste Classification Guidelines: Part 1 Classifying Waste* (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 Protection of the Environment Operations (Waste) Regulation 2014 prior to off-site disposal.	Contractor	Construction
LS3	Soil and water	Clean and suitable topsoil will be stockpiled and reused on site where appropriate.	Contractor	Construction
LS4	Contaminated land	Landside soils will be analysed for ASS for waste classification. This can be undertaken in-situ prior to excavation to inform any design implications or following excavation if the materials are stockpiled on-site. If in-situ sampling is undertaken, samples must be taken to the depth of excavation. All sampling should be conducted by a suitably qualified contaminated land specialist.	Transport for NSW / Contractor	Detailed design / Pre-construction / Construction
LS5	Contaminated land	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
LS6	Contaminated land	The piling activity shall mitigate the risk of sediment dispersal by applying industry best practice of minimising sediment disturbance during construction using pilling methods or any other seabed interference.	Contractor	Construction
LS7	Erosion and sedimentation	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 *Housing Managing Urban Stormwater, Soils and Construction Guidelines*, the Blue Book) to: • 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 • Minimise the amount of material transported from site to surrounding pavement surfaces • Divert clean water around the site.	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
LS8	Erosion and sedimentation / Aquatic impacts	Prior to commencement of construction activities, sediment control device (such as sediment boom and curtain) will be installed around the site 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 should 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. 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 carried out following storm events. Prior to removing the sediment control device, conditions within the curtain should be assessed visually and with a field instrument to verify that sediment has settled resulting in similar water turbidity to that outside the curtain.	Contractor	Construction
LS9	Erosion and sedimentation	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. 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.	Contractor	Construction
LS10	Erosion and scour / Removal of marine vegetation and habitat / Maritime archaeology - Anchoring	The number of barge anchor points will be minimised where possible. Anchoring locations should be selected to avoid areas of sensitive habitat and moderate/high archaeological potential.	Contractor	Construction
LS11	Erosion and scour / Aquatic impacts	Works associated with positioning barges, drilling and pile driving will occur during calm conditions to prevent excessive scouring and other impacts.	Contractor	Construction
LS12	Design changes	If there are significant changes to the design or layout of piles then further delineation assessment of the known contamination should be undertaken to evaluate the vertical and lateral extent of sediment impact prior to work commencement.	Contractor	Detailed design

No.	Impact	Environmental safeguards	Responsibility	Timing
WQ1	Accidental spill / Aquatic impacts	• A spill management plan will be developed as part of the CEMP and communicated to all staff working on site. • 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 site. • All workers will be advised of the location of the spill kit and trained in its use.	Contractor	Pre-construction / Construction
WQ2	Accidental spill	If an incident (e.g. spill) occurs, the Transport for NSW *Environmental Incident Classification and Reporting Procedure* is to be followed and the Transport for NSW Contract Manager notified as soon as practicable.	Contractor	Construction
WQ3	Accidental spill	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 *NSW State Waters Marine Oil and Chemical Spill Contingency Plan* (RMS, 2016c).	Contractor	Construction
WQ4	Accidental spill	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	Accidental spill	Vehicles, vessels and plant must be properly maintained and regularly inspected for fluid leaks.	Contractor	Construction
WQ6	Accidental spill	No vehicle or vessel wash-down or re-fuelling will occur on site.	Contractor	Construction
WQ7	Accidental spill	Any chemicals or fuels stored at the site or equipment barges will be stored in a bunded area.	Contractor	Construction
WQ8	Pollution	An environmental work method statement (EWMS) will be developed for the removal of the existing wharf elements (e.g. jetty, piles and pontoon) to minimise the risk of pollutants and debris entering the waterway and/or disturbing the seabed. The EWMS must be approved by Transport for NSW prior to the demolition works.	Contractor	Pre-construction
B1	All project impacts	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: • Documenting and establishing site clearing limits and including on the sensitive area plans	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		• Establishing no go zones (including the artificial pond and no anchoring in seagrass) and including on the sensitive area plans • Implementing tree protection measures in accordance with *AIAR (Earthscape Horticultural Services, 2022)* ~~Eco Logical (2019)~~ • Pre-clearing surveys, vegetation removal, weed management and unexpected finds measures in line with the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011).		
B2	Removal of threatened species habitat and habitat features	Pre-clearing surveys will be undertaken by a suitably qualified ecologist / fauna spotter/catcher in accordance with Guide 1: Pre-clearing process of the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011). Any roosting microbats in the wharf structures to be removed and the seawall to be impacted/disturbed will be captured and relocated to similar or higher condition habitat. Release will only be done at dusk and roosting individuals should be kept in a secure, dark and warm location until then. Injured individuals or unfurred juveniles are to be transported to a veterinarian. Seawalls will also be inspected for Little Penguins.	Contractor	Pre-construction
B3	Disturbance of threatened species habitat and habitat features	The unexpected species finds procedure is to be followed under *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011) if threatened ecological communities, not assessed in the biodiversity assessment, are identified on site.	Contractor	Construction
B4	Removal of marine vegetation and habitat	Considerations during detailed design to promote colonisation of habitat-forming species could include the installation of structures (e.g. piles and pontoons) which provide habitat complexity (e.g. designs available as part of the Living Seawalls Project). Consideration to the use of perforated materials for the gangway and waiting area to minimise shading impacts on marine vegetation and habitat.	Transport for NSW and Contractor	Detailed design
B6	Removal of marine vegetation and habitat	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 will be encouraged to move away from the study area prior to silt curtain installation and White's Seahorse will be captured and relocated to nearby similar habitat using methods approved by DPI Fisheries. A White's Seahorse relocation plan will be developed in consultation with DPI Fisheries to dictate this activity. These activities are to be completed by a qualified marine ecologist.	Contractor	Pre- construction

No.	Impact	Environmental safeguards	Responsibility	Timing
B7	Removal of marine vegetation and habitat	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. Relocation may be undertaken by a pre-qualified permit holder.	Contractor	Pre-construction
B8	Aquatic impacts	Aquatic habitat will be protected in accordance with Guide 10: Aquatic habitats and riparian zones of the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011) and Section 3.3.2 Standard precautions and mitigation measures of the *Policy and Guidelines for Fish Habitat Conservation and Management* (DPI, 2013).	Contractor	Construction
B9	Aquatic impacts	Piling to stop if marine mammals, reptiles or Little Penguin are observed within approximately 100 metres of the site and only to recommence once they have moved beyond 100 metres of the site or are not seen for at least 20 minutes.	Contractor	Construction
B10	Changes to coastal processes	The detailed design will aim to avoid/minimise any impact to coastal processes and hydrology.	Contractor	Detailed design
B11	Injury and mortality of fauna	Fauna will be managed in accordance with Guide 9: Fauna handling of the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011).	Contractor	Construction
B12	Invasion and spread of weeds, pests and diseases	Weed species will be managed in accordance with Guide 6: Weed management of the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011).	Contractor	Construction
B13	Invasion and spread of weeds, pests and diseases	Pathogens will be managed in accordance with Guide 2: Exclusion zones of the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011).	Contractor	Construction
B14	Invasion and spread of weeds, pests and diseases	Water-based equipment and vessels to be sourced from local suppliers where possible. Equipment and vessels must be cleaned and inspected prior to entering the site.	Contractor	Construction
B15	Invasion and spread of weeds, pests and diseases	Occurrence of any marine pests must be reported to DPI Fisheries.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
B16	Noise, light and vibration	Shading and artificial light impacts will be minimised through detailed design. *Where possible, works will be restricted to daylight hours and the use of loud machinery would be minimised.*	Contractor	Detailed design / *Construction*
B17	Tree protection	An Arboricultural impact assessment will be prepared to ensure trees on site are not adversely impacted and to outline tree protection measures to be implemented during construction.	Transport for NSW	Detailed design
B18	*Removal of native vegetation*	*Vegetation and habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) and the Transport for NSW Vegetation Management (Protection and Removal) Guideline (2021).*	*Contractor*	*Construction*
B19	*Removal of native vegetation, Landscape and visual impacts*	*Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) and the Transport for NSW Biodiversity Policy (2022). Replacement plantings (species and number) have been outlined in the AIAR (Earthscape Horticultural Services, 2022).*	*Contractor*	*Post Construction*
NV1	Noise and vibration	Preparation of a Construction Noise and Vibration Management Plan (CNVMP) based on recommendations provided within the 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: • Plant controls: – Use of noise attenuating controls at the source, such as mufflers, acoustic screens, etc. – Maintain plant and equipment in good working order to prevent excess noise generation. – Locate static sources of noise such as the generators as remotely as possible from noise sensitive receivers – Use of broadband reversing alarms, or 'quackers' (instead of standard tonal alarms), 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 will be determined during preparation of the CNVMP when more information regarding the proposed plant to be used for each construction scenario is available	Contractor	Pre-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		– 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 will be investigated for stationery plant within the site once a detailed schedule of works and plant is available. • Management and behavioural controls: – 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. • Conducting noise monitoring during landside, piling and out of hours construction 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 work activities where noise or vibration is found to cause unacceptable impact. • Implementation of additional mitigation measures in accordance with the CNVG as reasonable and feasible.		
NV2	Noise and vibration	• Carrying out works within standard daytime hours as follows: – 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. • 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.	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		• All reasonable and feasible efforts will be undertaken to ensure noise levels will not exceed the ICNG noise management levels by carrying out night-works with reduced numbers of plant for example.		
NV3	Noise and vibration	• 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 seven 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.	Contractor	Pre-construction
NV5	Vibration impact to heritage structures	• Determine safe working distances based on proposed plant and where possible, smallest plant able to carry out required work should be utilised to minimise potential impacts. Where works are proposed within the safe working distances, for the heritage structures, specialist advice will be sought from an appropriately qualified structural engineer who is familiar with heritage structures to assess if vibrations associated with the proposed works will potentially result in impacts to heritage structures. • A vibration monitoring plan will be prepared as part of the CNVMP (where works are proposed within safe working distances) and implemented to confirm vibration levels prior to construction commencement. Where exceedances are recorded, works will be modified in consultation with the identified specialist to reduce vibration levels.	Contractor	Pre-construction
NV6	Vibration impact to heritage structures	Assessment and monitoring of vibration impacts to heritage items within the safe working distances will adhere to: • 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	Vibration impact to heritage structures	Where heritage structures are located within the safe working distance, pre and post construction dilapidation surveys will be carried out.	Contractor	Pre-construction / Construction / Post-construction

No.	Impact	Environmental safeguards	Responsibility	Timing
NV8	Vibration	Where structures are located within the safe work distance (non heritage structure), pre-construction sampling 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
NV9	Vibration impact to heritage structures	Where structures are located within the safe work distance (heritage structure), pre-construction sampling vibration monitoring will be carried out to ensure compliance with the required criteria. If exceedances are recorded, alternative construction methodology may be required, and/or restrictions applied on the type of plant that can be used.	Contractor	Pre-construction / Construction
LV1	Landscape and visual	Urban design principles will be integrated throughout the detailed design and construction of the proposal and include: • Consideration of tinted and less reflective glazing for the lift structure rather than light and highly reflective clear panels • Judicious use of materials and finishes to minimise reflectivity and maximise transparency of the new structures. Consideration of contemporary design practices and lightweight materials and muted finishes • Consideration of colours that blend into the landscape (as viewed from the Harbour) and that complement the materiality and heritage listing of McKell Park elements (e.g. sandstone etc). In particular the balustrade to the suspended bridge structure and foreshore pathway, and lighting poles. Darker colours would blend into the landscape more than white, light colours and/or or silver/metal materials • Incorporate landscaping elements, such as green walls and suitable shrubs which can also ameliorate impacts of these structures.	Transport for NSW	Detailed design
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, *Non-Aboriginal heritage*	All impacted areas and ground surfaces, *including the trenching work associated with the power supply upgrade,* will be reinstated as near as possible to their original state following the completion of work.	Contractor	Post-construction
LV5	*Landscape and visual, socio-economic*	*At the earliest opportunity prior to commencement of construction notify Woollahra Municipal Council of the construction program, timing of work activities and location of the works within McKell Park.*	*Contractor / Transport for NSW*	*Pre-construction*

No.	Impact	Environmental safeguards	Responsibility	Timing
H1	Heritage Interpretation ~~Strategy~~	In accordance with the sustainability requirements for the project, opportunities for the implementation of heritage interpretation will be investigated during detailed design. *Opportunities for re-use of materials and to include heritage interpretation features in the area around the proposed foreshore, circular and accessible pathways will be considered.*	Transport for NSW	Detailed design
H2	Photographic Archival Recording	A Photographic Archival Recording will be undertaken of Fence, gates, and foundation remains of former house *Canonbury*, located within McKell Park (LEP no. 112 and A1) and Remains of bath house and site of jetty (LEP no. 113) to document their current visual setting prior to any impacts and modifications. Recording should be prepared in accordance with the guideline for *Photographic Recording of Heritage Items Using Film or Digital Data Capture* (Heritage Council, 2006).	Contractor	Pre-construction
H3	Non-Aboriginal heritage	A sensitive area plan (SAP), identifying all heritage items (including maritime archaeology) in close proximity to the works, will be prepared under the CEMP.	Contractor	Pre-construction
H4	Non-Aboriginal heritage (including maritime)	A heritage induction will be provided to workers prior to construction, informing them of the SAP and identifying the location and significance of known heritage items and the implementation of the unexpected finds protocols if unanticipated heritage items or deposits are located during construction.	Contractor	Pre-construction
H5	McKell Park seawall	A work method statement will be prepared to guide the modification of the seawall within McKell Park (LEP no. 112 and A1) for the pathway to the covered waiting area.	Contractor	Pre-construction
H6	McKell Park seawall	Where the sandstone seawall within McKell Park (LEP no. 112 and A1) and Remains of the bath house and site of jetty (LEP no. 113) is modified, then the sandstone blocks to be removed would be salvaged and handed to Woollahra Municipal Council for re-use as appropriate.	Contractor	Pre-construction
H7	Unexpected finds	Terrestrial archaeological remains will be managed under the *Unexpected Heritage Items Procedure* (RMS, 2015) if unanticipated heritage items or depositions are located during construction.	Contractor	Construction
H8	Archaeological significance	If unexpected 'relics' are encountered during excavation, a section 146 relics notification under the *Heritage Act 1977* will be forwarded to Heritage NSW, DPC. 'Relics' cannot be impacted without appropriate approvals under the *Heritage Act 1977*.	Contractor / Transport for NSW	Construction
H9	Archaeological significance	If significant archaeological remains are encountered during excavation, works will cease and design options for avoiding impacts to the significant archaeological remains	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		will be considered where practicable and opportunities will be investigated for the implementation of heritage interpretation.		
H10	Non-Aboriginal heritage	Impacts to the sandstone seawall and all impacted road and footpath surfaces must be made good and reinstated as near as possible to their original state following the completion of works.	Contractor	Post-construction
H11	Vibration impact to heritage structures	If vibration monitors are attached to the heritage items, they must not be attached with permanent fixings. They will be removable without causing damage. Bees wax may be a suitable attachment method	Contractor	Construction
H12	Design change	Any project redesign resulting in new ground/seabed disturbance, vegetation removal, or new features must be assessed in an addendum or consistency assessment to the SoHI and/or MASoHI as required.	Transport for NSW	Detailed design / Pre-construction
H13	Maritime archaeology	An application for an exception under section 139(4) of the *Heritage Act 1977* should be submitted to the Heritage NSW, DPC prior to the works commencing.	Contractor	Pre-construction
H14	Maritime archaeology Unexpected finds	An Unexpected Finds Protocol will be prepared by a suitably qualified maritime archaeologist and implemented for all maritime works. This document will include: • Unexpected finds, stop work triggers and notification protocols • Heritage induction for contractors • Recording methods and procedures • Artefact collection and retention policies.	Contractor	Pre-construction
H15	*Non-Aboriginal heritage*	*The proposed power supply routes must avoid the areas outlined to contain possible remains of the former residences associated with the 'fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park' (LEP no. 112 & A1) heritage item.* *If these routes require adjustment in future stages of design, an appropriately qualified historical archaeologist must be engaged to review the impacts of the route change.*	*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
AH2	Unexpected heritage finds	The *Unexpected Heritage Items Procedure* (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	Contractor	Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		disturbance (apart from the procedure) is not in place. Work will only restart once the requirements of that procedure have been satisfied.		
T1	Land transport and parking	A TMP will be prepared and will include the following: • 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 Woollahra Municipal Council requirements and prevents parking on footpaths and grassed areas adjacent the site • Plans to maintain access to adjoining properties.	Contractor	Pre-construction
T2	Land transport and parking	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	Land transport and parking	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 Darling Point Road. This will include updates to the ferry timetable indicating closure during construction at the wharf.	Transport for NSW	Pre-construction / Construction
T4	Water transport	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. In addition, the proposal will: • 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. Any variation to the above will be agreed in advance with the Harbourmaster.	Contractor	Pre-construction / Construction
T5	Water transport	• 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
T6	Water 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

No.	Impact	Environmental safeguards	Responsibility	Timing
SE1	Socio-economic	A Communications and Stakeholder Engagement Plan will be developed prior to the commencement of construction and will be implemented during construction to provide timely and accurate information to stakeholders during construction. It will include (as a minimum): • 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. The Plan will be prepared in accordance with the *Community Involvement and Communications Resource Manual* (RTA, 2008).	Contractor	Pre-construction / Construction
SE2	Socio-economic	• A webpage and free-call number will be established for enquiries regarding the project 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.	Transport for NSW / Contractor	Pre-construction / Construction
SE3	Sustainability	Investigate opportunities to encourage the Contractor to purchase goods and services locally.	Transport for NSW	Pre-construction / Construction
SE4	Sustainability	Investigate opportunities to incorporate community health and wellbeing initiatives in the design and construction of the project.	Transport for NSW	Detailed design / Construction
SE5	Land transport and parking	Explore opportunities to provide alternative transport during construction.	Transport for NSW	Pre-construction
SE6	Local businesses	Discussions will be held with nearby local businesses who may be indirectly impacted by the project, including *Canonbury* Cottage and *Lindesay* House to seek opportunities to minimise the impact of the project during the construction phase.	Transport for NSW	Pre-construction
AQ1	Air quality	Air quality during construction will be considered and addressed within the CEMP and will include methods to manage work during strong winds or other adverse weather conditions as required. As a minimum, the following measures will be included: • Covering all loaded trucks and vessels • Machinery to be turned off rather than left to idle when not in use • 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	Contractor	Pre-construction / Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
		• Maintenance of all plant and equipment to ensure good operating conditions and exhaust emissions comply with the PoEO Act • 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	Sustainability	During construction, the 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 *Air Emissions Workbook - DMS-FT-439*.	Contractor	Construction
WM1	Waste	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: • 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	Resource use	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).	Contractor	Detailed design
WM3	Sustainability	During construction, the Contractor is to monitor waste and recycling quantities using Transport for NSW *Waste Data Collection Workbook – DMS-FT-436* to support compulsory requirement 4 of the Transport for NSW *Sustainable Design Guidelines version 4.0* (TfNSW, 2017a).	Contractor	Construction
WM4	*Waste*	*Any removed sandstone blocks from the steps in Darling Point Reserve would be re-used or given back to Woollahra Municipal Council for re-use as appropriate.*	*Contractor*	*Construction*
HR1	Hazards and risks	Weather forecasts will be monitored during construction. In the unlikely event of a major weather 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 investigations and assessment of impacts to local utilities will be undertaken.	Contractor	Detailed design

No.	Impact	Environmental safeguards	Responsibility	Timing
HR3	Hazards and risks	Onsite service location will be carried out prior to undertaking any excavation or piling works to identify any additional cables not identified during design.	Contractor	Pre-construction
CC1	Climate change	During detailed design undertake a compliant carbon footprinting exercise in accordance with the Transport for NSW *Carbon Estimate and Reporting Tool Manual* (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 *Climate Risk Assessment Guidelines – DMS-SD-081.*	Contractor	Detailed design
CC3	Climate change	The detailed design process will consider adaptation measures for climate change, including the following: • 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 (SMP).	Contractor	Detailed design / Construction
S2	Sustainability	Prior to commencement of construction, a SMP shall be endorsed by Transport for NSW. The SMP will be provided prior to construction and include the following minimum components: • A completed electronic checklist demonstrating compliance with Transport for NSW's *NSW Sustainable Design Guidelines Version 4.0* (7TP-ST-114) • The Contractors sustainability goals and targets, internal procedures, and implementation strategy.	Contractor	Detailed design / Pre-construction
S3	Sustainability	The Contractor must comply with the Transport for NSW *Sustainable Design Guidelines version 4.0* (TfNSW, 2017a).	Contractor	Detailed design / Construction

No.	Impact	Environmental safeguards	Responsibility	Timing
C1	Cumulative construction impacts	Consultation will include notification prior to the start of the works. Updates on any delays or changes to the construction period will also be communicated.	Transport for NSW / Contractor	Pre-construction / Construction
C2	Cumulative construction impacts	Alternative transport options to be investigated should the Darling Point and Double Bay Wharf construction programs overlap.	Transport for NSW	Pre-construction
D1	Design	*During detailed design:* • *slightly lower the lift height to minimise visual impacts* • *provide additional seating for customer comfort.*	Transport for NSW	Detailed design

5.3 Licensing and approvals

A summary of the licences and approvals required for the proposal is provided in Table 3-2.

Table 5-2: Summary of licensing and approval required

Instrument	Requirement	Timing
Fisheries Management Act 1994	A permit under section 37 of the FM Act is required to relocate seahorses if present. Relocation may be undertaken by a pre-qualified permit holder.	Prior to start of the activity.
Roads Act 1993	Consultation with Woollahra Municipal Council is required for works on Darling Point Road.	Prior to start of the activity.
Heritage Act 1977	An application for an exception under section 139(4) of the *Heritage Act 1977* should be submitted to the Heritage NSW, Department of Premier and Cabinet.	Prior to start of the activity.
Ports and Maritime Administration Regulations 2021	Written permission from the Harbour Master is required to disturb sediment in Sydney Harbour	Prior to start of the activity.

6. References

Aurecon (2019) *Darling Point Wharf Interchange. Concept Design Report.* Prepared by Aurecon Australasia Pty Ltd on behalf of Roads and Maritime Services, July 2019.

DECCW (2010) *Due Diligence Code of Practice for the Protection of Aboriginal objects in NSW*. Department of Environment, Climate Change and Water, September 2010.

Earthscape Horticultural Services (2022) Arboricultural Impact Assessment Report: Proposed Wharf Upgrade. Darling Point Wharf Darling Point Road, Darling Point. Prepared by Earthscape Horticultural Services on behalf of Transport for NSW, July 2022.

Marler (2013) *McKell Park and Darling Point Reserve Plan of Management*. Prepared on behalf of Department of Primary Industries and Woollahra Municipal Council.

RMS (2011) *Procedure for Aboriginal Heritage Cultural Heritage Consultation and Investigation* (PACHCI). Roads and Maritime Services, November 2011.

RMS (2015) *Unexpected Heritage Items. Heritage Procedure 02.* Roads and Maritime Services, November 2015.

RMS (2016) *Construction Noise and Vibration Guideline*. Roads and Maritime Services, August 2016.

Transport (2017) *Sustainability Design Guidelines (SDG) version 4.0.* Transport for NSW, May 2017.

Transport (2019) *Carbon Estimate and Reporting Tool Manual.* Transport for NSW, NSW Government, November 2019.

Transport (2022) *Darling Point Wharf Upgrade. Review of Environmental Factors.* Prepared by Cardno (NSW/ACT) Pty Ltd on behalf of Transport for NSW, April 2022.

WMC (2021) *Draft Generic Plan of Management for Crown Land Reserves Categorised as Park, Sportsground, General Community Use and Natural Area – Foreshore*. Woollahra Municipal Council, June 2021.

Appendix A

Darling Point Wharf Upgrade, Review of Environmental Factors, April 2022

Available online:

https://roads-waterways.transport.nsw.gov.au/projects/01documents/darling-point-wharf-upgrade/darling-point-ref-main-report.pdf

Appendix B

Supplementary Biodiversity Assessment

Cardno now Stantec

Memo

To:	Lisa Monaghan Senior Development Manager Transport for NSW	From:	Cardno now Stantec
File:	Darling Point Wharf Upgrade – Supplementary Biodiversity Assessment	Date:	15 August 2022

DARLING POINT WHARF UPGRADE – SUPPLEMENTARY BIODIVERSITY ASSESSMENT

1. BACKGROUND

Transport for NSW proposes to construct a new wharf interchange at Darling Point (the proposal) as part of the NSW Government's Transport Access Program (TAP). A Biodiversity Assessment Report (BAR) was prepared by Cardno, now Stantec in April 2022 to support the Review of Environmental Factors (REF) for the proposal. The BAR described the existing environment within the study area and assessed impacts to biodiversity as a result of construction and operation of the proposal.

During design development, several design changes were identified, along with some early and temporary work that is required to facilitate construction of the proposal. The design changes would increase the area to be directly impacted by the proposed works (proposal footprint). As the footprint and features of the design changes were not assessed within the BAR, an assessment of the impacts of the design changes on biodiversity values is required to identify any additional impacts and provide recommendations for additional safeguards or mitigations, where required.

This technical memorandum provides an assessment of the biodiversity values within the footprint of the design changes (additional footprint) and potential impacts of the construction and operation of the design changes on biodiversity values, including any additional recommendations for mitigation. The likely impacts of the design changes have been assessed with reference to the findings of the BAR and the Arboricultural Impact Assessment Report: Darling Point Wharf Darling Point Road, Darling Point (AIAR) (Earthscape Horticultural Services, 2022). This technical memorandum should be read in conjunction with the REF, BAR and AIAR.

2. SUMMARY OF DESIGN CHANGES

Design changes to the proposal include changes to key features of the proposal, along with some early and temporary work that is required to facilitate construction of the proposal. The design changes relate to the terrestrial footprint of the proposal and are outlined below:

1. Inclusion of a new switchback pathway in Darling Point Reserve.
2. Removal of proposed staircase and upgrade of the existing steps in Darling Point Reserve via a new circular pathway.
3. Reposition of the kiss and ride zone (now a drop off zone).
4. Relocation of the entry to the waiting area.
5. Sewer protection work in Darling Point Reserve.
6. Upgrade of the existing wharf power supply through McKell Park.
7. Potential options for site sheds within Darling Point Reserve and/or McKell Park.

The repositioning of the kiss and ride zone would occur within the Darling Point Road cul de sac and would not impact any biodiversity values. This design change has not been considered further within this assessment.

3. BIODIVERSITY VALUES WITHIN THE EXISTING ENVIRONMENT

The terrestrial portion of the BAR study area included the majority of McKell Park and the areas to the west along Darling Point Road, extending from Darling Point Reserve to Lindsay Avenue. The additional footprint is encompassed within the BAR study area, which was previously surveyed in April 2020.

3.1 Terrestrial Vegetation

As per the findings of the BAR, there is no remnant native vegetation within the study area, and therefore vegetation within the study area is not commensurate with any Plant Community Type (PCT) or Threatened Ecological Community (TEC). The vegetation within the study area consists of native and exotic landscape plantings.

3.2 Terrestrial Fauna Habitat

Native and exotic plantings within the study area provide potential habitat for several urban, disturbance tolerant native species. The study area is likely to provide:

- Foraging habitat for birds and arboreal and aerial mammals, particularly while in bloom/fruiting
- Roosting habitat for birds and arboreal mammals
- Breeding habitat for birds common to urban areas
- Foraging habitat for fruit bats and microchiropteran bats (microbats).

No tree hollows or cavities large enough for hollow dependent birds or arboreal mammals occur within the study area, however a nest box was recorded in a Moreton Bay Chestnut *(Castanospermum australe)* near the Darling Point Road entrance of McKell Park. Within the terrestrial study area, microbats may roost in small hollows identified within a Hills Weeping Fig *(Ficus macrocarpa var. hillii)* in Darling Point Reserve, during the day.

3.3 Threatened Species and Populations

The vegetation in the study area provides potential habitat for a number of urban, disturbance tolerant native species. These habitat features also form potential habitat for twelve threatened fauna species with a moderate to high likelihood of occurrence. Seven of these species may utilise the terrestrial habitat:

- Six microbats listed as vulnerable under the *Biodiversity Conservation Act 2016* (BC Act):
    - Eastern False Pipistrelle (*Falsistrellus tasmaniensis*)
    - Eastern Coastal Free-tailed Bat (*Micronomus norfolkensis*)
    - Little Bent-winged Bat (*Miniopterus australis*)
    - Large Bent-winged Bat (*Miniopterus orianae oceanensis*)
    - Southern Myotis (*Myotis macropus*)
    - Yellow-bellied Sheathtail-bat (*Saccolaimus flaviventris*)
- Grey-headed Flying Fox (*Pteropus poliocephalus*) listed as vulnerable under the BC Act and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

The additional five threatened fauna species afforded a moderate to high likelihood of occurrence result due to the presence of suitable marine or aquatic habitat. These species would not utilise habitat within the additional footprint and therefore have not been considered in the impact assessment.

4. ADDITIONAL POTENTIAL IMPACTS

4.1 Terrestrial Vegetation

The design changes have resulted in an increase in the proposal footprint. The design change has also reduced the footprint along the foreshore path and staircase. The additional footprint is comprised of a mix of existing hardstand and native and exotic landscape plantings. The proposed placement of the site sheds within McKell Park would occur on existing hardstand and therefore no clearing would be associated with this work. As a result of the design changes, five trees and up to an additional 50 square metres of vegetation, consisting of mown lawn and groundcover, would require removal.

The five trees that would require removal, as identified in the AIAR are:

- Tuckeroo *(Cupaniopsis anacardioides)* (T6) to facilitate the construction of the foreshore pathway and power supply upgrade
- Sydney Red Gum *(Angophora costata)*(T12), Prickly Paperbark *(Melaleuca stypheloides)* (T13) and Small Leaf Lilly Pilly *(Syzygium leuhmannii)* (T14) to facilitate the sewer protection work
- Kentia Palm (*Howea forsteriana*) (T21) to facilitate the switchback pathway.

The details and conditions of these trees have been provided in Table 1: Details and conditions of trees to be removed (Earthscape Horticultural Services, 2022)

Table 1: Details and conditions of trees to be removed (Earthscape Horticultural Services, 2022)

Tree ID Number	Species	Height (m)	Spread (m)	Trunk Diameter (mm)	Condition	Retention Value
T6	*Cupaniopsis Anarcardioides* (Tuckeroo)	3	3	110	Stable with poor branching structure. Prominent lean to the north.	Low
T12	*Angophora costata* (Sydney Red Gum)	8	7	274	Appears stable with poor branching structure. Exhibits a large basal gall. Grown on steep bank. Partially exposed root crown due surface soil erosion. Prominent lean to the north-west.	Low
T13	*Melaleuca styphelioides* (Prickly Paperbark)	7	6	217	Appears stable with poor branching structure. Crown suppressed on south side due to crowding. Exhibits substantial dieback with 40% deadwood.	Very Low
T14	*Syzygium luehmannii* (Small-leaf Lillypilly)	9	6.5	344	Appears stable with fair branching structure.	Moderate
T21	*Howea forsteriana* (Kentia Palm)	3.5	4	180	Appears stable with sound branching structure.	Moderate

The removal of vegetation (trees and shrubs) was not previously assessed in the BAR. Vegetation to be removed does not form any remnant PCTs but does form potential habitat for some highly mobile, disturbance tolerant native fauna (see **Section 4.2)**. The proposed site sheds would be placed within the dripline of a Hills Weeping Fig. There is currently a concrete footpath in a portion of the Hills Weeping Fig drip zone. Retained vegetation in close proximity to construction activities would not be damaged or removed, provided the mitigation measures identified in the AIAR (Earthscape Horticultural Services, 2022) are implemented.

Disturbance of vegetation may result in the spread/introduction of weeds and diseases and the potential for erosion and sediment mobilisation. These risks have not substantially changed from those presented in the BAR and would be managed during construction in accordance with the relevant Transport for NSW guidelines.

4.2 Terrestrial Fauna Habitat

The removal of vegetation as a result of the proposal would remove potential habitat for native fauna, predominately highly mobile, disturbance tolerant species. No major habitat features were identified within the trees identified for removal and they are more likely to provide suitable foraging habitat for species, rather than breeding or roosting habitat.

The overstorey and groundcover species to be removed form only a small portion of similar habitat along the fragmented and highly urbanised foreshores of Darling Point. Additionally, should replacement plantings be implemented in accordance with the AIAR (Earthscape Horticultural Services, 2022) and the Transport for NSW *Vegetation Offset Guideline* (2019), impacts on foraging habitat would be temporary and the availability of foraging habitat would be increased in the long-term (see **Section 5**). The removal of habitat resources is unlikely to have a substantial impact on native fauna as there is an abundance of similar habitat across the study locality.

The proposal may result in some temporary noise and light disturbance, reducing fauna utility of habitat within the area. Resident fauna are expected to be tolerant to an ambient level of noise and artificial light from existing use of the area. Less tolerant species may move away from unfavorable conditions, however these species are also likely to recolonise the area following the decommissioning of the site sheds and return to pre-construction noise and light levels.

4.3 Threatened Species and Populations

As outlined in Section 3.3, seven threatened fauna species are considered to have potential habitat within the additional footprint.

No potential breeding or roosting habitat for microbats occurs within the additional footprint. Darling Point Reserve and McKell Park form potential foraging habitat, albeit suboptimal, for microbat species. The proposal has the potential to remove and temporarily disturb foraging habitat for the Eastern False Pipistrelle, Eastern Coastal Free-tailed Bat, Little Bent-winged Bat, Large Bent-winged Bat, and Yellow-bellied Sheathtail-bat. However, the area of removal is considered suboptimal and forms a very small proportion of the available habitat for these species. It is not expected to reduce species' range, disrupt breeding or reduce population sizes. Assessments of Significance (AoS) for two groups of these species (tree-roosting and cave roosting microbats) were provided in the BAR. These have been adapted to consider the additional impacts to vegetation and have been provided in **Attachment A**.

The closest roosting camp for the Grey-headed Flying Fox is located in the Royal Botanic Garden Sydney (RBG), about two kilometres west of the study area. Individuals are likely to disperse from this camp, and others, and forage on flowering and fruiting shrubs and trees in the study area. As the proposed work assessed in the BAR did not include the removal of any terrestrial vegetation (trees or shrubs), impacts to

the Grey-headed Flying Fox were expected to be limited to some temporary noise and light disturbance. There is an ambient level of noise and light disturbance in and around the study area, thus foraging individuals are likely to be adapted to these conditions. Due to the additional vegetation clearing impacts associated with the design changes, an AoS for the Grey-headed Flying Fox has been provided in **Attachment A.** Given the relative widespread nature of similar planted vegetation in the locality and abundance of higher quality foraging habitat within the feeding range of regional populations, the proposal is not expected to adversely affect habitat critical to the survival of the species.

The proposal is unlikely to significantly impact threatened species. Disturbances to potential habitat would largely be temporary and constitute a very small proportion of available habitat. The proposal would not fragment or isolate threatened species, populations or substantially impact any species' lifecycle.

4.4 Key Threatening Processes

The BAR identified six Key Threatening Processes (KTPs) with the potential to be triggered by the proposal. These KPTs relevant to the terrestrial work were:

- Invasion and Establishment of Exotic Vines and Scramblers (BC Act)
- Invasion of Native Plant Communities by Exotic Perennial Grasses (BC Act)
- Loss and Degradation of Native Plant and Animal Habitat by Invasion of Escaped Garden Plants, Including Aquatic Plants (EPBC Act)
- Novel Biota and Their Impact on Biodiversity (EPBC Act).

Despite the additional vegetation removal, including the removal of trees and shrubs, associated with the design changes, these KTP are still considered unlikely to be triggered or further exacerbated by the proposal as controls would be implemented to avoid the introduction/ spread of exotic species during construction.

Two additional KTPs have been identified due to the removal of five trees as a result of the design changes. These are:

- Clearing of Native Vegetation (BC Act)
- Land Clearance (EPBC Act).

The proposal would include the clearing of native vegetation, although none are remnant native vegetation but rather landscape plantings. In accordance with the AIAR (Earthscape Horticultural Services, 2022), replacement plantings would compensate for any losses resulting from the removal of trees (see **Section 5**). Although the proposal temporarily triggers this KTP, the native vegetation to be cleared does not constitute remnant vegetation. There are currently no Threat Abatement Plans (TAPs) for these KTPs, however recovery actions have been identified. These surround community and stakeholder liaison and awareness, legislative development and implementation, eradication and control and research and monitoring. The proposal would not interfere with any of these actions or further exacerbate this KTP.

5. ADDITIONAL SAFEGUARDS AND MITIGATION MEASURES

A series of relevant safeguard and management measures were outlined within the BAR. As per the BAR, disturbance of vegetation may result in the spread/introduction of weeds and diseases and the potential for erosion and sediment mobilisation. These risks would be managed during construction in accordance with the relevant Transport for NSW guidelines.

Additional potential impacts due to the design changes are associated with the removal of trees. As such, the additional and/or modified mitigation measures to those presented in the BAR have been outlined in **Table 2.** New measures have been *underlined and italicised* and deleted measures, or parts of measures, have been struck out.

Table 2: Modified and Additional Environmental Safeguards and Mitigation Measures

No.	Impact	Environmental Safeguards	Responsibility	Timing
B1	All project impacts	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: • Documenting and establishing site clearing limits and including on the sensitive area plans • Establishing no go zones (including the artificial pond and no anchoring in seagrass) and including on the sensitive area plans • Implementing tree protection measures in accordance with the *AIAR (Earthscape Horticultural Services, 2022)* ~~Eco Logical (2019).~~ • Pre-clearing surveys, vegetation removal, weed management and unexpected finds measures in line with the *Biodiversity Guidelines: Protecting and Managing Biodiversity on RTA Projects* (RTA, 2011).	Contractor	Construction
B16	Noise, light and vibration	Shading and artificial light impacts will be minimised through detailed design. *Where possible, works will be restricted to daylight hours and the use of loud machinery will be minimized.*	Contractor	Detailed Design *Construction*
B18	*Removal of native vegetation*	*Vegetation and habitat removal will be undertaken in accordance with Guide 4: Clearing of vegetation and removal of bushrock of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) and the*	*Contractor*	*Construction*

No.	Impact	Environmental Safeguards	Responsibility	Timing
		Transport for NSW Vegetation Management (Protection and Removal) Guideline (2021).		
B19	*Removal of native vegetation*	*Native vegetation will be re-established in accordance with Guide 3: Re-establishment of native vegetation of the Biodiversity Guidelines: Protecting and managing biodiversity on RTA projects (RTA, 2011) and the Transport for NSW Biodiversity Policy (2022). Replacement plantings (species and number) have been outlined in the AIAR (Earthscape Horticultural Services, 2022).*	*Contractor*	*Post Construction*

6. CONCLUSION

This technical memorandum provides an assessment of the potential impacts of proposed design changes, relating to the construction of a new wharf interchange at Darling Point, on biodiversity values. The existing environment within the additional footprint consists of areas of hardstand and native and exotic plantings. Habitat values within the area may provide habitat for urban, disturbance tolerant native species, however no habitat considered critical to the survival of threatened species is present within the additional footprint. The proposal is unlikely to significantly impact threatened species and disturbances to potential habitat would largely be temporary and impact areas which are generally considered suboptimal habitat and proportionally small to that available in the wider locality. Considering the above and assuming controls (i.e. mitigation measures) are implemented, the proposal is unlikely to significantly impact threatened species, populations, ecological communities or migratory species, within the meaning of the BC Act and EPBC Act.

Regards,

Annabelle McTaggart
Environmental Scientist
for Cardno, now Stantec

Approved by: **Kevin Roberts**
Technical Director - Environment
for Cardno, now Stantec

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ATTACHMENT A

ASSESSMENTS OF SIGNIFICANCE

Under the BC Act, a 5-part test of significance is applied to determine whether an activity is likely to have a significant impact on listed threatened species, ecological communities, or their habitats, or will be carried out in a declared area of outstanding biodiversity value. The test of significance is set out in section 7.3 of the BC Act.

For the species listing under the EPBC Act, a significance assessment has been completed in accordance with the Matters of National Environmental Significance: Significant Impact Guidelines 1.1 (DoE, 2013). Whether or not an action is likely to have a significant impact depends upon the sensitivity, value, and quality of the environment that is affected, and upon the intensity, duration, magnitude and geographic extent of the impacts (DoE, 2013). Importantly, for a 'significant impact' to be 'likely', it is not necessary for a significant impact to have a greater than 50 per cent chance of happening. it is sufficient if a significant impact on the environment is a real or not remote chance or possibility (DoE, 2013).

Species listed under the BC Act/FM Act and the EPBC Act have been assessed using the corresponding assessment guidelines separately. Species with similar life stage/habitat requirements (i.e. tree-roosting and cave-roosting microbats) have been assessed together.

BC Act

Tree-roosting Microbats (Eastern Coastal Free-Tailed Bat (Micronomus Norfolkensis) and Greater Broad-Nosed Bat (Scoteanax Rueppellii))

The factors to be considered when determining whether an action, development or activity is likely to significantly affect threatened species or their habitats are outlined below:

1. In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Eastern False Pipistrelles prefer hollows in Eucalypts usually over 20 m tall in wet sclerophyll forest and coastal mallee (Atlas of Living Australia, 2020a). Eastern Coastal Free-tailed Bats are known to roost and breed in dry Eucalypt Forest, wet sclerophyll forest and riparian habitat (Atlas of Living Australia, 2020b). Breeding habitat has also been recorded for this species in mangrove forests. Yellow-bellied Sheathtailed-bat can occupy a range of habitat but the latter are most frequently found in tall wet forests (NSW DPIE, 2017b; Atlas of Living Australia, 2020c). All three species have preference to roost in tree hollows but would also inhabit man-made structures including under wharf/bridges and in rooves, which occur within the study area. They may roost in colonies but can also be solitary. There are no known maternity sites in or next to the study area.

The proposed works would require the removal of the existing wharf structure. ~~There would be no removal of trees or shrubs.~~ **The proposed works would require the removal of five landscape trees and areas of lawn and groundcover. The removal of five trees has the potential to remove roosting habitat for local populations, however the trees to be removed are unlikely to form major habitat value for these species as no suitable crevices or decorticating bark were noted within these trees during the site visit.** Other areas of potential roosting habitat in the study area include existing areas underneath the jetty and in the scuppers and crevices in the seawall. The fissures in the sandstone escarpment could also provide potential roosting habitat. These areas are not considered optimal roosting/breeding habitat for these species as the surrounding vegetation does not form part of the native forests preferred by these species. **The temporary removal of the lawn areas would remove some foraging habitat. The**

temporary removal of the lawn areas is unlikely to affect foraging for these species as they are purely aerial. Their nocturnal foraging times are unlikely to coincide with land-based construction during the day however, any roosting individuals would need to be removed prior to removal of wharf structures and disturbance to the escarpment. Thus, the proposal is unlikely to adversely affect the life cycle of these species such that a viable local population of these species is likely to be placed at risk of extinction.

2. In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   (a) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

   (b) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

Not applicable.

3. In relation to the habitat of a threatened species or ecological community:
   (a) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and
   (b) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and
   (c) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

The proposal would remove the existing wharf structures which forms potential roosting habitat however, similar habitat would be reinstated when the new structures are installed. **Additionally, the project would remove a small area of potential foraging and roosting habitat. The vegetation in the study area forms part of a fragmented landscape of urban, landscaped/modified vegetation. The removal of this area of vegetation is not predicted to further fragment or isolate habitat for these species, particularly if replacement plantings are implemented.** As discussed in (1), the habitat to be removed is not considered optimal for the roosting or breeding of these species. The proposal is also not going to substantially affect the foraging habitat for these species during construction (see (1)). Thus, the project is unlikely to modify, fragment or isolate habitat important to the long-term survival of these species in the locality.

4. Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

There are no Areas of Outstanding Biodiversity Value (AOBVs) listed for these species. This question is not applicable, as no AOBVs have been listed for these species.

5. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

A Key Threatening Process (KTP) is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population or ecological community.

Of the KTPs listed under the BC Act, *Clearing of native vegetation* has the greatest potential to impact potential foraging habitat and suboptimal roosting habitat for these microbat species but is considered to impose only minimal impact on the total extent of potential habitat in the locality. Furthermore, the native vegetation to be cleared are landscaped vegetation and no remnant native vegetation would be impacted by the project. Vegetation in the study area is currently ornamental and maintained as part of McKell Park or Darling Point Reserve.

Invasion and establishment of exotic vines and scramblers and *Invasion of native plant communities by exotic perennial grasses* are likely to occur as a result of the project if weed controls are not implemented during and after the construction. However, weed invasion is likely to be limited to groundcover grass and herbaceous weeds and these weeds are unlikely to greatly impact on these species.

Conclusion

While there is potential foraging and suboptimal roosting habitat for the three tree-roosting microbats throughout the study area, this habitat is widespread and suboptimal for these species. **The project would remove potential roosting habitat for these species however, the trees to be removed did not exhibit features optimal for microbat roosts and are considered suboptimal habitat.** The project would also remove potential foraging habitat for these species. However, this was not considered to substantially impact these species due to their nocturnal foraging preference and being purely aerial during that time. Based on this, the project is unlikely to significantly impact these species and a species impact statement (SIS) is not required.

The proposal would temporarily remove potential roosting habitat for these species however, similar habitat would be reinstated with the installation of new wharf structures. Any individuals roosting in the wharf structures to be removed would be relocated prior to construction. Based on this, the proposal is unlikely to significantly impact these species and a species impact statement (SIS) or entry into the Biodiversity Offsets Scheme is not required.

Cave-Roosting Microbats (Large Bent-Winged Bat (Miniopterus Orianae Oceanensis), Little Bent-Winged Bat (Miniopterus Australis), Southern Myotis (Myotis Macropus)

The factors to be considered when determining whether an action, development or activity is likely to significantly affect threatened species or their habitats are outlined below:

1. In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

Little and Large Bent-winged Bats have known maternity sites in caves across south-eastern Australian spanning from the NSW/Queensland border to South Australia (Dwyer & Hamilton-Smith, 1965). These sites are not in the Sydney region and in most cases, have specific temperature and humidity characteristics. There are no known breeding locations for the Southern Myotis but roosting habitat include under bridges/wharves and in rooves. The study area does not occur within or next to any known maternity sites for these species thus, the proposal is unlikely to interfere for breeding. **Southern Myotis may also roost in hollow bearing trees. The proposed works would require the removal of five landscape trees and areas of lawn and groundcover. The removal of five trees has the potential to remove roosting habitat for local populations, however the trees to be removed are unlikely to form major habitat value for these species as no suitable crevices or decorticating bark were noted within these trees during the site visit. The removal of the vegetation would temporarily remove some foraging habitat but is unlikely to affect foraging for these species as they are purely aerial. Furthermore, their nocturnal foraging times are unlikely to coincide with land-based construction during the day and there is potential for these areas to be reinstated as better condition landscaped vegetation following construction completion.** The proposal would remove some potential roosting habitat by removing the existing wharf structures. Individuals may roost underneath the jetty and in the scuppers and crevices in the seawall however, new wharf structures are likely to provide similar habitat to those being removed and any roosting individuals would be relocated prior to demolition. Furthermore, their nocturnal foraging times are unlikely to coincide with land-based construction during the day. The proposal would create some disturbance over the water during water-based construction activities which would render this foraging habitat unavailable for the Southern Myotis during construction. However, the proposal would not substantially modify this foraging resource to permanently preclude it from the species foraging territory and upon completion of construction, this area would be once again available as foraging territory for the Southern Myotis. Furthermore, the proportion of potential habitat to be impacted by the proposal is very small compared to what is available in the wider locality. Thus, the proposal is unlikely to adversely affect the life cycle of these species such that a viable local population of the species is likely to be placed at risk of extinction. **The removal of vegetation is unlikely to affect foraging for these species as they are purely aerial.**

2. In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

   (a) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

   (b) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

Not applicable.

3. In relation to the habitat of a threatened species or ecological community:

   (a) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(b) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(c) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

The proposal would remove some potential roosting habitat. The existing wharf structures **and vegetation in the study area** form part of a fragmented landscape of urban, landscaped/modified vegetation and structures. The removal of **vegetation and** existing wharf structures is not predicted to further fragment or isolate habitat for these species. Furthermore, similar wharf structures would be installed rendering this disturbance to be temporary. **There is also the potential to restore landscaped habitat following construction.** As discussed in (1), water-based activities may render potential foraging habitat for the Southern Myotis unavailable during construction. However, this is not expected to be a surmountable impact to the species foraging range. Thus, the proposal is not going to substantially affect the foraging habitat for these species during construction and is unlikely to modify, fragment or isolate habitat important to the long-term survival of these species in the locality.

4. Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

This question is not applicable, as no AOBVs have been listed for these species.

5. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

A KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population or ecological community.

Of the KTPs listed under the BC Act, *Clearing of native vegetation* has the greatest potential to impact potential foraging habitat and suboptimal roosting habitat for these microbat species but is considered to impose only minimal impact on the total extent of potential habitat in the locality.

Invasion and establishment of exotic vines and scramblers and *Invasion of native plant communities by exotic perennial grasses* are likely to occur as a result of the proposal if weed controls are not implemented during and after the construction. Weed control would be implemented as part of the proposal thus, this KTP is unlikely to be exacerbated.

Conclusion

While there is potential foraging habitat for these three species throughout the study area, this habitat is widespread and suboptimal. The proposal would remove potential roosting habitat for these species by removing existing wharf structures and temporarily render the estuarine area unsuitable for foraging for the Southern Myotis during construction. However, this was not considered to substantially impact these species as the proposal would reinstate the removed wharf structures and estuarine habitat would be available as a foraging resource upon completion of water-based construction activities. Any individuals roosting in these structures would be relocated prior to demolition. Based on this, the proposal is unlikely to significantly impact these three species and a SIS or entry into the Biodiversity Offsets Scheme is not required.

Grey-headed Flying-fox (Pteropus poliocephalus)

The factors to be considered when determining whether an action, development or activity is likely to significantly affect threatened species or their habitats are outlined below:

1. In the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

The Grey-headed Flying-fox (*Pteropus poliocephalus*) occurs in subtropical and temperate rainforests, tall sclerophyll forests and woodlands, heaths and swamps as well as urban gardens and cultivated fruit crops. Roosting camps are generally located within 20 kilometres of a regular food source and are commonly found in gullies, close to water, in vegetation with a dense canopy. Annual mating commences in January and conception occurs in April or May; a single young is born in October or November.

There are no roost camps located within the study area. As such, the impacts of the proposal to the Grey-headed Flying-fox will be limited to loss of potential feeding habitat caused by clearing during the construction phase. The proposal would remove three trees which could constitute potential foraging habitat while in bloom/fruiting. Foraging habitat mainly comprises nectar resources from native trees and shrubs as well as fruit resources. The impact to potential foraging habitat would represent a very small percentage of the total extent of foraging vegetation present in the locality. The proposal is unlikely to reduce the population size of the Grey-headed Flying-fox or decrease the reproductive success of this species.

Given the relative widespread nature of similar planted vegetation in the locality and abundance of higher quality foraging habitat within the feeding range of the camps located near the study area, the proposal is not expected to significantly affect the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction.

2. In the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(a) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(b) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction.

Not applicable.

3. In relation to the habitat of a threatened species or ecological community:

(a) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and

(b) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and

(c) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality.

The potential habitat of the Grey-headed Flying-fox within the study area is limited to foraging habitat. The extent of habitat for the Grey-headed Flying-fox will be reduced by three trees. This amount of habitat removal is small when the amount of available foraging habitat in the locality is considered. Furthermore,

other feeding trees in the area will be retained and will continue to provide foraging habitat for the species during construction and operation.

Importantly, the proposal will not result in fragmentation of habitat for the Grey-headed Flying-fox. This species is highly mobile and will freely fly long distances (up to 50 kilometre) over open areas including urbanised city centres to move between roost camps and foraging sites. The proposal will not affect the movement of the Grey-headed Flying-fox between habitat patches. The proposal will not impact on the most important habitats for Grey-headed Flying-fox within the locality, which are roosting camps outside of the study area. Considering this, the proposal is unlikely to modify, fragment or isolate habitat important to the long-term survival of this species in the locality.

4. Whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly).

There are no AOBVs listed for this species. This question is not applicable, as no AOBVs have been listed for this species.

5. Whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.

A KTP is a process that threatens, or may have the capability to threaten, the survival or evolutionary development of species, population or ecological community.

Of the KTPs listed under the BC Act, *Clearing of native vegetation* has the greatest potential to impact potential foraging habitat for the Grey-headed Flying-fox but is considered to impose only minimal impact on the total extent of potential habitat in the locality. Furthermore, the native vegetation to be cleared do not form part of a PCT and no remnant native vegetation would be impacted by the proposal.

Invasion and establishment of exotic vines and scramblers and *Invasion of native plant communities by exotic perennial grasses* are likely to occur as a result of the proposal if weed controls are not implemented during and after the construction. Weed control would be implemented as part of the proposal thus, this KTP is unlikely to be exacerbated.

Conclusion

The Grey-headed Flying-fox will experience a small reduction in the extent of potential foraging habitat as a result of the proposal. No roosting camps or other important habitat will be impacted. The proposal is unlikely to reduce the population size of the Grey-headed Flying-fox or decrease the reproductive success of this species. Thus, the proposal is unlikely to significantly impact the Grey-headed Flying-fox and a SIS is not required.

EPBC Act

Grey-headed Flying-fox (Pteropus poliocephalus)

An action is likely to have a significant impact on a vulnerable species if there is a real chance or possibility that it will:

(a) lead to a long-term decrease in the size of an important population of a species

There have been no roosting camps currently identified in the study area thus, the proposal would not directly affect any known breeding site of the Grey-headed Flying-fox. Therefore, the impacts of the proposal would be confined to loss of foraging habitat caused by direct clearing during the construction phase.

The proposal would remove three trees within the Myrtaceae family, which form potential foraging habitat. Foraging habitat mainly comprises nectar resources from native trees as well as fruits of some exotic trees. This area of habitat may be defined as a portion of the potential area of occupancy for feeding lifecycle attributes of important populations. The affected area of foraging habitat would represent a small percentage of the total extent of important foraging vegetation types present within a 50 kilometre radius of the study area. Given the relative widespread nature of similar planted vegetation in the locality and abundance of higher quality foraging habitat within the feeding range of populations in the region, the proposal is not expected to lead to a long-term decrease in the size of an important population of the Grey-headed Flying-fox.

(b) reduce the area of occupancy of an important population

See (a). The proposal will reduce the area of foraging habitat available to the species however, the area occupied by this species will remain the same and vegetation may be reinstated.

(c) fragment an existing important population into two or more populations

There is currently a high degree of habitat fragmentation across the wide locality. Highly mobile species, such as Grey-headed Flying-foxes, are expected to be less impacted by fragmentation and this species is particularly well adapted to accessing widely spaced habitat resources given its mobility and preference for seasonal fruits and blossom. Thus, the proposal would not fragment an important population of the Grey-headed Flying-fox.

(d) adversely affect habitat critical to the survival of a species

Habitat critical to the survival of a species refers to areas that are necessary for activities such as:

- foraging, breeding, roosting, or dispersal
- for the long-term maintenance of the species including the maintenance of other species essential to the survival of the species, such as pollinators
- to maintain genetic diversity and long-term evolutionary development
- for the reintroduction of populations or recovery of the species.

The proposed area of habitat loss represents a very small proportion of potential foraging habitat for the Grey-headed Flying-fox within a 50 kilometre radius of the study area and known roosting camps in the region. This species typically exhibits very large home ranges and Grey-headed Flying-foxes are known to travel distances of at least 50 kilometres from roost sites to access seasonal foraging resources (Eby, 1996). No evidence of a Grey-headed Flying-fox camp has been identified in or next to the study area.

The draft recovery plan for the Grey-headed Flying-fox (Department of the Environment and Energy, 2017) identifies trees of the Myrtaceae family as important foraging habitat for this species. The proposal would require the removal of three of these trees however, the affected area of foraging habitat represents a small proportion of the total extent of important foraging vegetation types present within a 50 kilometre radius of the study area. Given the relative widespread nature of similar planted vegetation in the locality and abundance of higher quality foraging habitat within the feeding range of regional populations, the proposal is not expected to adversely affect habitat critical to the survival of the species.

(e) disrupt the breeding cycle of an important population

As stated above there would be a minor impact on foraging habitat identified as important during the breeding cycle of the species. The proposal would not directly affect a known roosting camp/breeding site.

(f) modify, destroy, remove or isolate or decrease the availability or quality of habitat to the extent that the species is likely to decline

As stated above, no evidence of a roosting camp has been identified in or next to the study area and there would be a relatively minor impact on critical foraging habitat. Thus, the proposal is not expected to lead to a decline of populations of this species.

(g) result in invasive species that are harmful to a vulnerable species becoming established in the vulnerable species' habitat

The potential for weed invasion was considered possible with a proposal of this nature and appropriate controls would be implemented during construction and operation to reduce this threat.

(h) introduce disease that may cause the species to decline, or

There are no known disease issues affecting this species in relation to the proposal. The proposal would be unlikely to increase feral animal abundance or the potential for significant disease vectors to affect local populations.

(i) interfere substantially with the recovery of the species.

The Draft Recovery Plan for the Grey-headed Flying-fox (*Pteropus poliocephalus*) (Department of the Environment and Energy, 2017) outlines the following actions:

- identify, protect and enhance native foraging habitat critical to the survival of Grey-headed Flying-foxes.
- identify, protect and enhance roosting habitat of Grey-headed Flying-foxes camps.
- determine population trends in Grey-headed Flying-foxes so as to monitor species' national distribution and conservation status.
- build community capacity to coexist with flying-foxes and minimise the impacts on urban settlements from existing camps without resorting to dispersal.
- increase public awareness and understanding of Grey-headed Flying-foxes and the recovery program, and involve the community in the recovery program where appropriate.
- improve the management of Grey-headed Flying-fox camps in sensitive areas.
- significantly reduce levels of deliberate Grey-headed Flying-fox destruction associated with commercial horticulture.
- support research activities that will improve the conservation status and management of Grey-headed Flying-foxes.
- assess and reduce the impact on Grey-headed Flying-foxes of electrocution on power lines, and entanglement in netting and on barbed-wire.

The recovery actions listed above are largely not applicable to the proposal as they focus on priority conservation lands that are outside of the study area, community awareness and research and development. In addressing action 1, given the relative widespread nature of similar planted vegetation in the locality and abundance of higher quality foraging habitat within the feeding range of regional populations, the proposal is not expected to interfere substantially with this recovery action by removing a very small proportion of a foraging resource.

Conclusion

The Grey-headed Flying-fox will suffer a small reduction in extent of suitable foraging habitat from the proposal. No roosting/breeding camps or other important habitat will be impacted. The proposal is unlikely to reduce the population size of the Grey-headed Flying-fox or decrease the reproductive success of this species. The proposal will not interfere with the recovery of the Grey-headed Flying-fox and will not contribute to the key threats to this species. Thus, the proposal is unlikely to significantly impact the Grey-headed Flying-fox and a referral is not required.

Appendix C

Supplementary Heritage Assessment

31 August 2022

Belinda Crichton
Principal – Environment
Cardno
Via email: belinda.crichton@cardno.com.au

Dear Belinda,

Re: Ferry Wharf Upgrade Program 3, Darling Point Wharf – Addendum SOHI

Project background

Transport for New South Wales (Transport for NSW) is proposing to upgrade Darling Point Wharf as part of Ferry Wharf Upgrade Program 3 (FWUP3). FWUP3 is part of the Transport Access Program (TAP), aimed at providing a better experience for public transport customers by delivering accessible, modern, secure and integrated transport infrastructure. FWUP3 focusses on wharf interchanges within Sydney Harbour which do not currently provide equitable access to ferry services and as such do not meet the *Disability Standards for Accessible Public Transport* 2002 (DSAPT) or *Disability Discrimination Act 1992* (DDA) requirements.

Cardno, on behalf of Transport for NSW (TfNSW), prepared a Review of Environmental Factors (REF) for this wharf upgrade. The REF for Darling Point Wharf was on display for community comment until 6th to 29th May 2022. Following the public display period, TfNSW have identified some minor design changes in the detailed design stage of the project which has triggered the requirement for an Addendum SOHI to support the REF. These design changes were as a result of detailed design and community feedback to the project about accessibility to and from the wharf. Therefore, in line with the recommendations in the REF and the concept design Statement of Heritage Impact (REF SOHI, Artefact 2022), additional assessment is required in the form of an Addendum SOHI. [1]

This Addendum SOHI provides a summary of the relevant design changes and identifies if there is a change to original impact assessed in the SOHI.

Authorship

This addendum SoHI has been prepared by Jess Mauger (Senior Heritage Consultant) and reviewed by Scott MacArthur (Principal).

[1] Artefact Heritage, April 2022. *Ferry Wharf Upgrade Program 3, Darling Point Wharf: Statement of Heritage Impact*. Report prepared for Cardno.

PROPOSAL CHANGES

For the purposes of the REF and this Addendum SOHI, the proposal area includes a portion of Darling Point Road and Darling Point Wharf, at Darling Point Road, within the suburb of Darling Point. The proposal area is also partially located within McKell Park, Lot 1553 DP752011 and Lot 7051 DP93654 and is overlooked by McKell Park, Darling Point. The proposal area is located within the Woollahra Municipal Council Local Government Area (Woollahra LGA), within the Country of Cumberland and the Parish of Alexandria.

In addition to the proposal footprint, a visual buffer zone including the surrounding area between Double Bay, Kettle Bay, and part of Sydney Harbour has been assessed for visual impacts associated with the proposed works at Darling Point Wharf. The extent of the visual buffer zone has been based on a visibility analysis prepared by Cardno for the proposal (refer to Section 1.4.3 of the REF SOHI). However, it is noted for the purposes of this Addendum SOHI, the heritage items captured in this visual buffer are not re-assessed given the level of impact is not expected to change from the previous assessment.

The location of the proposal footprint is illustrated in Figure 1. The proposal footprint and proposal are located adjacent to and will intersect with four locally listed heritage items and one State listed item, which are shown on Figure 2. The key design changes between the concept design stage of the project and the detailed design stage are noted as follows:

Inclusion of a new pathway in Darling Point Reserve:

- The proposed footpath from Darling Point Road to the new lift has been modified to include a pathway over the tree roots. The end of the pathway would have a level connection with the northern gate of McKell Park.
- The pathway would have handrails and would be made of material with a low visual impact (for example fibre reinforced plastic (FRP)). The pathway would be suspended to protect the root system of the Weeping Fig.
- Inclusion of the pathway would require removal of one tree: a Kentia Palm (*Howea forsteriana*).

Removal of proposed staircase adjacent to the lift and upgrade of the existing steps in Darling Point Reserve via a new semi-circular pathway:

- The proposed concrete staircase next to the lift structure would be removed and the existing stairs and informal pathways down to the Darling Point Reserve foreshore would be upgraded instead.
- The pathway would connect the lower end of the pathway (at the northern gate at McKell Park), to the existing steps that lead down to the foreshore.
- It would be constructed in a semi-circular design that would curve around on the western side of Darling Point Reserve and tie into the existing pathway and steps as much as possible. The pathway would include informal viewing/rest areas with seats, lawn and landscaping, providing a greater opportunity to use areas of Darling Point Reserve for recreation.

- The pathway would have handrails where the steps are located, and would be made of material with a low visual impact (e.g. FRP). The existing steps would be upgraded and be similar in style and colour to the existing steps in Darling Point Reserve.
- Opportunities for re-use of the sandstone or use of natural materials, and to include connecting with country and non-Aboriginal heritage interpretation signage and features in this area would be considered during detailed design.

Reposition of the kiss and ride zone:

- The kiss and ride zone would be repositioned from the northern to the eastern side of the Darling Point Road cul de sac. It would be an informal drop off zone, including a compliant pram ramp connecting to the compliant ramp down to the pathway.

Relocation of the entry to the waiting area:

- The proposed entry to the waiting area of the ferry wharf via the shore bridge would be relocated from the eastern side to the western side of the waiting area, resulting in a reduced length of the foreshore pathway.

Sewer protection work in Darling Point Reserve:

- Sewer protection is required to ensure the existing Sydney Water sewer line within Darling Point Reserve is not impacted by the proposal. The area around the existing sewer pipe in the vicinity of the new lift structure would be excavated and the pipe would be encased with concrete. Minor stormwater redirection would also be undertaken at this location. This would require trenching and the installation of new pipework and be located within the sewer protection footprint.
- The sewer protection work would require removal of three trees: a Sydney Red Gum (*Angophora costata*), a Prickly Paperbark (*Melaleuca styphelioides*) and a Small Leaf Lily Pily (*Syzygium luehmannii*).

Upgrade of the existing wharf power supply through McKell Park:

- The wharf power supply would need to be upgraded to three phase power. This would require about 40 metres of trenching in the vicinity of Darling Point Road, about 50 metres of trenching within McKell Park and about 20 metres of trenching along the foreshore.
- The work along the foreshore would require removal of one tree: a Tukeroo (*Cupaniopsis Anarcardioides*).

Potential options for site sheds within Darling Point Reserve and/or McKell Park:

- In addition to the compound area nominated in the REF, site sheds may be temporarily erected within Darling Point Reserve, beneath the Weeping Fig and Jacaranda Tree and/or within McKell Park.

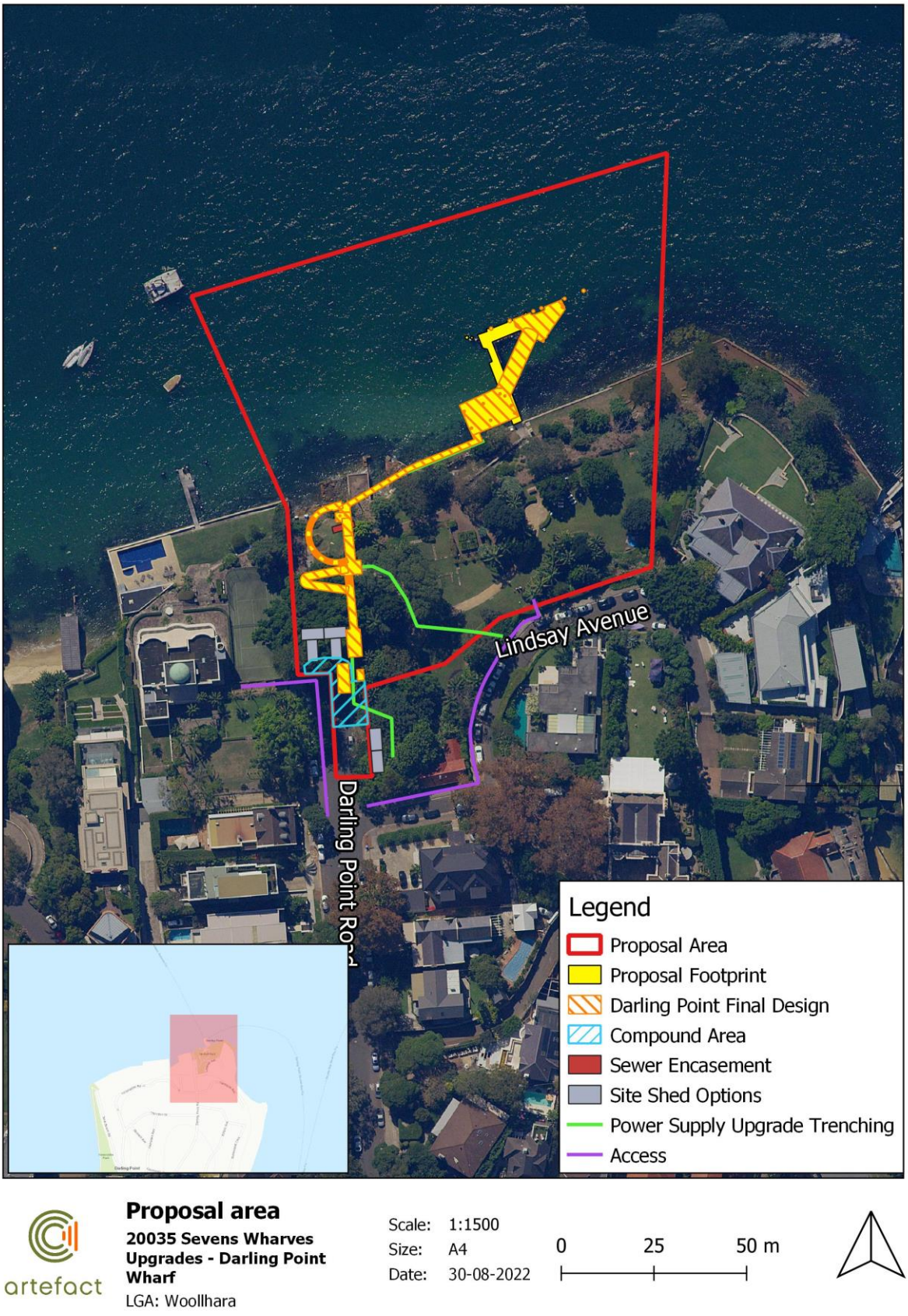

Figure 1: Proposal area, footprint and key features of the proposal. Source: Artefact 2022

STATUTORY CONTEXT

There are several items of Local and State legislation that are relevant to the current study. A summary of these Acts and the potential legislative implications are summarised in Section 2 of the REF SOHI.

A search of all relevant registers was undertaken on 11 February 2021 as part of the REF SOHI. The results are displayed below in Table 1. A map of the curtilages of the relevant heritage items is provided in Figure 2.

Whilst the REF SOHI has assessed impacts to all of these listed items below, this Addendum SOHI will focus on the listings which would be directly impacted by the proposal or are within close proximity to the proposal i.e. the items highlighted in **grey** below.

Table 1: Heritage listed items within the proposal footprint and the visual buffer zone

Item	Address	Significance	Listing	Distance from proposal area
Fence, gates and foundation remains of former house 'Canonbury', located within McKell Park	159 Darling Point Road, Darling Point	Local	Woollahra LEP 2014 no. 112 & A1	Within
Remains of Bath House and site of jetty	159 Darling Point Road, Darling Point	Local	Woollahra LEP 2014 no. 113 State Environmental Planning Policy (Biodiversity and Conservation) 2021 no. 46	Within
House and interiors, grounds, gardens	5 Lindsay Avenue, Darling Point	Local	Woollahra LEP 2014 no. 136	Adjacent
Craigend'- house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm	86 Darling Point Road, Darling Point	Local	Woollahra LEP 2014 no. 102	Adjacent
"Lindesay"—building and interiors, summer house, grounds, 6 London Plane trees, Hoop Pine	1A Carthona Avenue, Darling Point	State	SHR 00686 Woollahra LEP 2014 no. 80 NTR no. restricted RNE Place ID 2488	Adjacent
House, interiors and front fence, sandstone walls to Beverley Lane, sandstone terracing and steps	99 Yarranabbe Road, Darling Point	Local	Woollahra LEP 2014 no. 194	60m south-west
"Neidpath"—house, interiors and grounds	2 Carthona Avenue, Darling Point	Local	Woollahra LEP 2014 no. 81	65m south
Stone boundary wall to Carthona Avenue	155 Darling Point Road, Darling Point	Local	Woollahra LEP 2014 no. 111	35m south

Item	Address	Significance	Listing	Distance from proposal area
Entrance gateposts to Carthona Avenue, corner of Darling Point Road	Carthona Avenue, Darling Point	Local	Woollahra LEP 2014 no. 83	55m south
Stone boundary wall to Carthona Avenue	153 Darling Point Road, Darling Point	Local	Woollahra LEP 2014 no. 110	55m south
Etham Avenue Heritage Conservation Area	Darling Point	Local	Woollahra LEP 2014 no. C4	90m south
Elizabeth and Rushcutters Bays Conservation Area	Elizabeth and Rushcutters Bays	Local	Sydney LEP 2012 no. C20	Visual buffer zone (900m south-west)
Sydney Harbour Naval Precinct	Cowper Wharf Roadway, Garden Island	State	SHR 01705	Visual buffer zone (900m west)
Edgerley / House 'Ramona' including interior and grounds	18-18a Billyard Avenue, Elizabeth Bay	State	SHR 00671 Sydney LEP 2012 no. I572 NTR no. 7377	Visual buffer zone (1000m south-west)

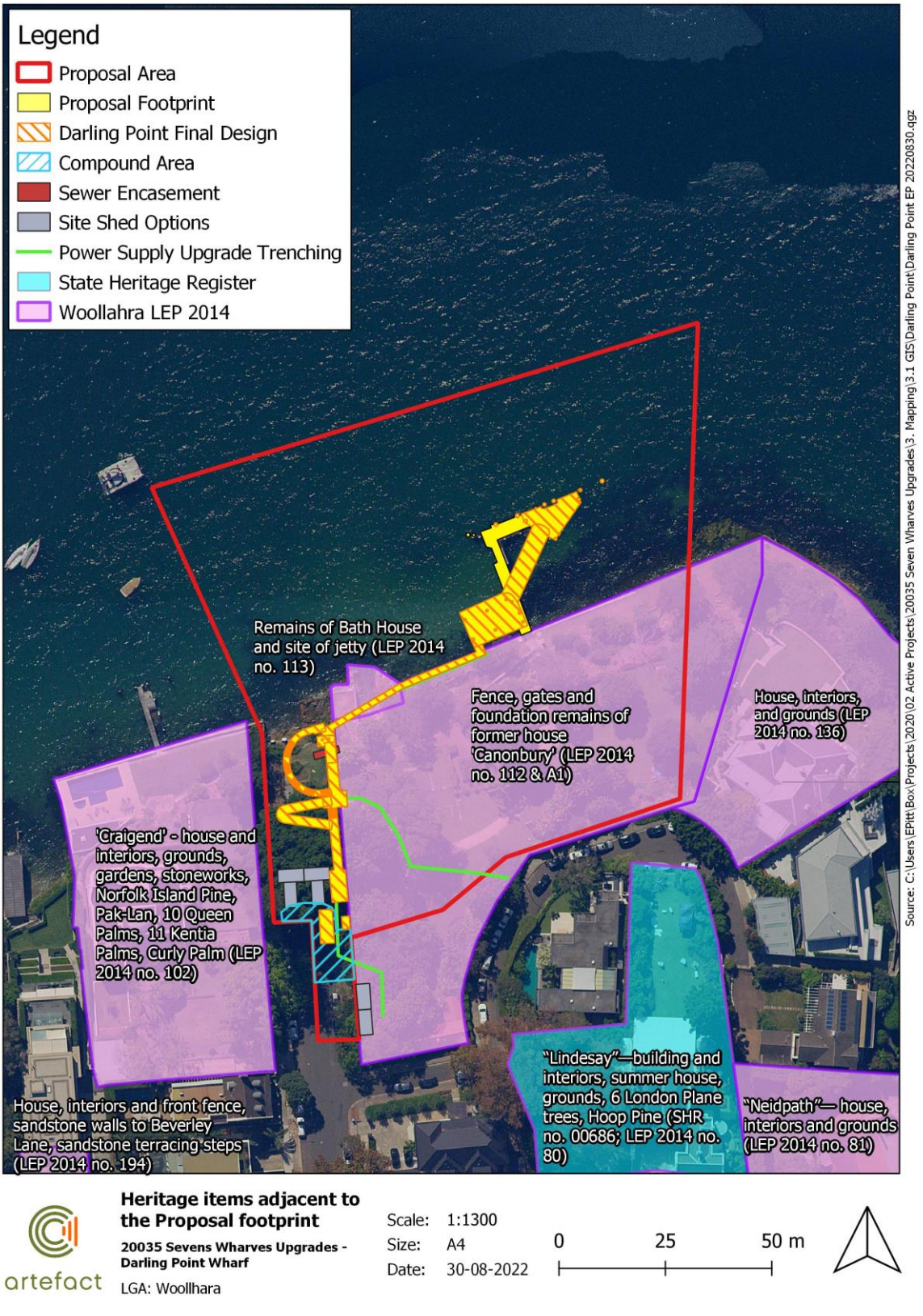

Figure 2: Heritage listings within and in close proximity to the construction footprint. Source Artefact

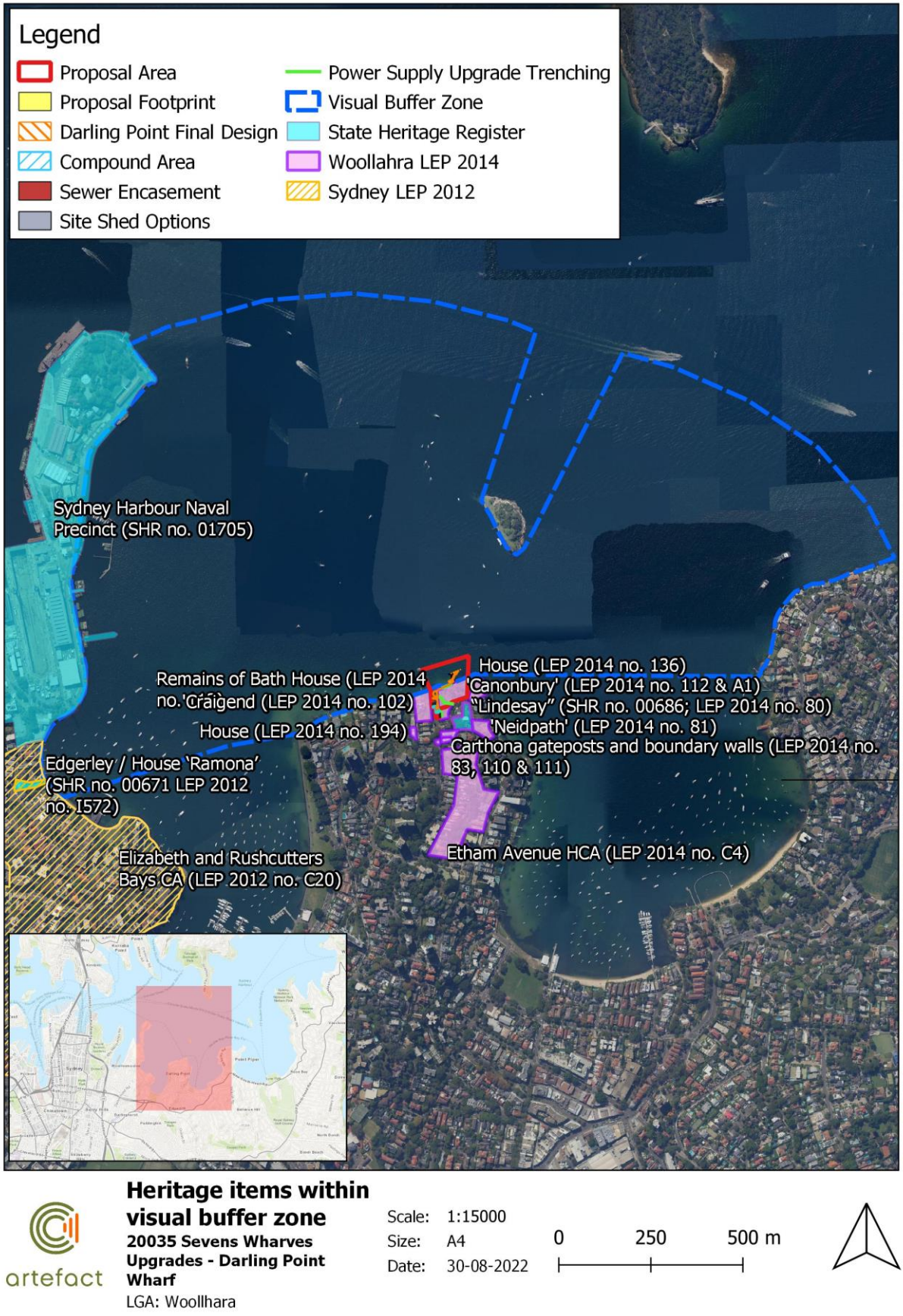

Figure 3: Heritage listings within the visual buffer zone. Source: Artefact

HERITAGE IMPACT ASSESSMENT

This Addendum SOHI will focus on assessing the heritage impacts of the revised proposal on the listings which would be directly impacted by the proposal or are within proximity to the proposal. For detailed heritage impacts to all listed items summarised in Table 1, see Section 5 of the REF SOHI. A summary of heritage impacts and their consistency against the previous assessment for all listed items are summarised in Table 2.

Fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park (LEP no. 112 & A1)

Statement of significance

Fence, gates and foundation remains of former house 'Canonbury', located within McKell Park (LEP no. 112 & A1) is of local heritage significance.

The SHI entry for the heritage item does not contain a statement of significance.[2] As a result, a statement of significance has been prepared by Artefact Heritage as part of this SoHI:

> Fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park are of historic and aesthetic significance as the remains of a substantial Gothic style Federation residence along the Darling Point foreshore. The item is of social significance for local commuters and residents who frequent the park for recreational and transport reasons. The remains maintain research potential, rarity and representativeness significance as an aesthetic and informative element within McKell Park which provides information contributing to our understanding of nineteenth and twentieth century residential living of Sydney's 'elite' class along the Darling Point foreshore.

Impact assessment

Direct and potential direct (physical) heritage impacts

The 'fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park' (LEP no. 112 & A1) is located within proposal area. Most of the proposed activities within the item are largely temporary in nature for site access during works, with the new foreshore pathway being the main component of the proposal footprint located within the heritage curtilage of the item.

The revised proposal would not see a change to the previous impacts assessed regarding the demolition of the existing wharf or the foreshore pathway proposed from the from the lift to the covered waiting area, which would require the modification of the sandstone seawall (which is part of the heritage item). Whilst the revised proposal includes moving the entry to the waiting area of the ferry wharf via the shore bridge from the eastern side to the western side of the waiting area, resulting in a reduced length of the foreshore pathway, it would not result in a change of impacts. The impacts from these works would remain **minor**.

The revised proposal now includes a semi-circular pathway up to the lift area which would replace the existing concrete set of stairs. The revised proposal also includes a pathway which would have a

[2] Heritage NSW, DCP, n.d. 'Fence, gates and foundation remains of former house Canonbury, located within McKell Park'. *State Heritage Inventory.* Accessed online 10 March 2021, https://apps.environment.nsw.gov.au/dpcheritageapp/ViewHeritageItemDetails.aspx?ID=2711091

level connection with the northern gate of McKell Park. These works are all located on Darling Point Road and would enter a small portion of western side of the heritage curtilage but would be largely located outside of the curtilage. This is one of the main changes from the original proposal which proposed a set of stairs to the lift area. Whilst these new works would see more excavation to this area than originally proposed, they would not involve any extensive trenching works and would not impact any significant fabric within the heritage item, being located within the road on Darling Point Road. Therefore, the small portion of the footpaths which overlap with the heritage curtilage would not cause any direct impacts. Also, the semi-circular pathway would include informal viewing/rest areas with seats, lawn and landscaping, providing a greater opportunity to use areas of Darling Point Reserve for recreation.

The revised proposal would involve sewer protection to ensure the existing Sydney Water sewer line within Darling Point Reserve is not impacted by the proposal. The area around the existing sewer pipe in the vicinity of the new lift structure would be excavated and the pipe would be encased with concrete. Minor stormwater redirection would also be undertaken at this location. It is not expected that these works would involve extensive excavation works and would be limited to pre-disturbed land within the road area. There are no expected impacts to this heritage item from these sewer protection works.

The introduction of site sheds in the revised proposal would not have any direct impacts on the heritage item, as these sheds are associated with the construction phase of the project and would be temporary in nature.

The revised proposal would also include the upgrade of the existing wharf power supply through McKell Park, which would require about 40 metres of trenching in the vicinity of Darling Point Road, and about 50 metres of trenching within McKell Park and about 20 metres along the foreshore. These works would see roughly 70 metres of trenching within the heritage curtilage of this item. However these works are not expected to intersect with any significant elements associated with this heritage item and would result in **minor** direct localised impacts to the trenched areas.

The proposed works would still involve piling and the use of other vibration intensive plant near this heritage item. These works would be located within the minimum safe working distance for cosmetic damage to heritage fabric, which is identified in the 2016 Roads and Maritime *Construction Noise and Vibration Guideline* as being within 41m of vibration intensive plant (Table 3). It is expected that the potential impacts could be largely mitigated through the implementation of appropriate control measures (see mitigation measures and recommendations in Section 9.0 of the REF SOHI). Therefore, potential direct impacts resulting from vibrations would remain **minor** and would be subject to controls and monitoring.

Overall, the proposed works would result in a **minor** direct and **minor** potential direct impact to the ‘fence, gates, and foundation remains of former house ‘Canonbury’, located within McKell Park’ (LEP no. 112 & A1), which is consistent with the findings of the REF SOHI (Artefact 2021).

Indirect (visual) heritage impacts

The revised proposal would not see a change to the previous impacts assessed regarding the introduction of new visually intrusive elements within sight of the heritage item. These new elements would be partially visible from key viewing points along the north side of McKell Park above the existing wharf, however, in several places views to the new elements from the north side of the park would be obstructed by the dense vegetation that is present along the edge of the heritage item. In addition, significant view lines within the item and to Sydney Harbour from the item are expected to remain intact as the wharf would be constructed at a level lower than the existing structure. In addition, the new wharf has been designed to reduce the visual imprint of the new feature. It has

been designed to be relatively small and consistent with the existing wharf structure. As a result, the visual impact from the construction of the new wharf would remain **minor**.

The revised pedestrian footpath works including the new semi-circular footpath and footpath would enter the heritage curtilage (western edge), and the relocated kiss-and-ride zone would be introduced directly west of the heritage item. However, these works would not deviate significantly from the existing aesthetic quality of the heritage item and Darling Point Road streetscape. These works are not expected to cause a visual impact above **negligible**.

The proposed works would result in a **minor** visual impact to the 'fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park' (LEP no. 112 & A1), which is consistent with the findings of the REF SOHI (Artefact 2021).

Remains of Bath House and site of jetty (LEP no. 113)

Statement of significance

Remains of Bath House and site of jetty (LEP no. 113) is of local heritage significance.

The SHI entry for the heritage item does not contain a statement of significance.[3] As a result, a statement of significance has been prepared by Artefact Heritage as part of this SoHI:

> *The remains of bath house and site of jetty maintain historic significance as remnants of public transport within Sydney Harbour and of recreational activities undertaken by Sydney's 'elite' class during the mid to late nineteenth century. The remains are of aesthetic significance as substantial sandstone remnants expressing a long period of use, aesthetically consistent within the surrounding character of Darling Point. The remains are of social significance for local residents and history groups within the local area who can observe an example of Europeans early introduction to seaside recreation.*
>
> *The remains of bath house and site of jetty are of research potential, rarity and representativeness significance as one of a few intact set of remains contributing to our understanding of early local attempts to interact with the seashore.*

Impact assessment

Direct and potential direct (physical) heritage impacts

The 'remains of bath house and site of jetty' (LEP no. 113) heritage item is located within the proposal area. This item partially shares the same curtilage as McKell Park (LEP no. 112 & A1), including the sandstone seawall which would be impacted for the construction of the proposed pathway. As noted above, the revised proposal would not see a change to the previous impacts assessed regarding the demolition of the existing wharf or the foreshore pathway proposed from the from the lift to the covered waiting area, requiring the modification of the sandstone seawall. The revised proposal would not result in a change of impacts. The impacts from these works would remain **minor**.

The revised proposal now includes a semi-circular pathway up to the lift area which would replace the existing concrete set of stairs. The revised proposal also includes a pathway which would have a

[3] Heritage NSW, DCP, n.d. 'Remains of Bath House and site of jetty'. *State Heritage Inventory.* Accessed online 10 March 2021, https://apps.environment.nsw.gov.au/dpcheritageapp/ViewHeritageItemDetails.aspx?ID=19746

level connection with the northern gate of McKell Park. These works are all located on Darling Point Road and would enter a small portion of western side of the heritage curtilage but would be largely located outside of the curtilage. Whilst these new works would see more excavation to this area than originally proposed, they would not involve any extensive trenching works and would not impact any significant fabric within the heritage item, being located within the road on Darling Point Road. Therefore, the small portion of the footpaths which overlap with the heritage curtilage would not cause any direct impacts. Also, the semi-circular pathway would include informal viewing/rest areas with seats, lawn and landscaping, providing a greater opportunity to use areas of Darling Point Reserve for recreation.

The proposed works would involve piling and the use of other vibration intensive plant, which may result in potential direct impacts. The proposed piling for the foreshore pathway would be located immediately adjacent to the extant structural remains of the sandstone boathouse and bath house, and the remaining piles would all be located within the recommended safe working distance. Vibrations associated with the piling and additional plant may cause potential direct impacts to the sandstone structural elements. Although the piling works would be localised, it is noted that the two piles for the pathway would be drilled into the sandstone bedrock which the structural remains also appear to be founded on. Some of the sandstone footings also do not appear to feature any mortar bonding and may be more susceptible to vibrations. However, it is expected that the potential impacts could be largely mitigated through the implementation of appropriate control measures (see mitigation measures and recommendations in Section 9.0 of the REF SOHI). It is expected that any potential direct impacts resulting from vibrations would remain **minor** and would be subject to controls and monitoring.

Overall, the proposed works would result in a **minor** direct and **minor** potential direct impact to the 'remains of bath house and site of jetty' (LEP no. 113), which is consistent with the findings of the REF SOHI (Artefact 2021).

Indirect (visual) heritage impacts

The revised proposal would not see a change to the previous impacts assessed regarding the introduction of new visually intrusive elements within sight of the heritage item. These new elements would be partially visible from key viewing points along the north side of the park above the existing wharf, however they would be obstructed by the dense vegetation that is present along the edge of the heritage item. In addition, significant view lines within the item and to Sydney Harbour from the item are expected to remain intact. In addition, the new wharf has been designed to reduce the visual imprint of the new feature as it has been designed to be relatively small and consistent with the existing wharf structure. As a result, the visual impact from the construction of the new wharf would remain **minor**.

The revised pedestrian footpath works including the new semi-circular footpath and footpath would enter the heritage curtilage (western edge), and the relocated kiss-and-ride zone would be introduced directly west of the heritage item. However, these works would not deviate significantly from the existing aesthetic quality of the heritage item and Darling Point Road streetscape. These works are not expected to cause a visual impact above **negligible**.

Overall, the proposed works would result in a **minor** visual impact to the 'remains of remains of bath house and site of jetty' (LEP no. 113), which is consistent with the findings of the REF SOHI (Artefact 2021).

House and interiors, grounds, gardens (LEP no. 136)

Statement of significance

House and interiors, grounds, gardens (LEP no. 136) is of local heritage significance.

The following statement of significance has been extracted, and edited where relevant, from the SHI entry for the heritage item:

> *Glanworth is constructed in the North American classically inspired 'Ante-Bellum' style and has high historic and social significance as, at one time being, the home of Samuel Henry Erwin, art collector and benefactor, as well as being the home of other important local personalities. The house has aesthetic significance as one of the many large residences to be built in the area. It has aesthetic significance for the strong contribution it makes to the character of the harbour foreshores. The building has high aesthetic significance as probably the only residence in this style to be constructed in Sydney, possibly even Australia. It is a very fine and rare example of an American 'Plantation Style' inspired residence constructed in Australia in the early years of the twentieth century.*

Impact assessment

Direct and potential direct (physical) heritage impacts

The 'house and interiors, grounds, gardens heritage item' (LEP no. 136) is located outside of the proposal area. There would be no change to the impacts assessed in the previous REF SOHI.

The proposed works would result in a **neutral** direct and **neutral** potential direct impact to the 'house and interiors, grounds, gardens' (LEP no. 136), which is consistent with the findings of the REF SOHI (Artefact 2021).

Indirect (visual) heritage impacts

The upgrade of the Darling Point Wharf would still introduce new visually intrusive elements within sight of the 'house and interiors, grounds, gardens' (LEP no. 136) heritage item, namely the replacement of the wharf. However, these new elements have been designed to be less obtrusive and would only be visible from a very small portion of the much larger heritage item.

The proposed works would result in a **negligible** visual impact to 'house and interiors, grounds, gardens' (LEP no. 136), which is consistent with the findings of the REF SOHI (Artefact 2021).

‘Craigend’ – house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm (LEP no. 102)

Statement of significance

‘Craigend’- house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm (LEP no. 102) is of local heritage significance.

The SHI entry for ‘Craigend’ (LEP no. 102) does not contain a statement of significance for the item.[4] As a result, a statement of significance has been prepared by Artefact Heritage as part of this SoHI:

> *Craigend, constructed in 1935, maintains historical, associative, and aesthetic significance as a substantial ‘Moorish’ and ‘Art Deco’ architectural style residence retaining a prominent position along the Darling Point foreshore. The residence was constructed around a pair of ancient mosque doors obtained in Zanzibar for first resident and owner, Captain James Patrick. Craigend is socially significant for former residents of the residence and those within wider Darling Point. It holds research potential, rarity and representativeness as an Art Deco residence with Moorish influence within the Sydney area.*

Impact assessment

Direct and potential direct (physical) heritage impacts

The proposed works are located outside of the curtilage of ‘‘Craigend’ – house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm’ (LEP no. 102). There would be no direct impact to the heritage item. There would be no change to the impacts assessed in the previous REF SOHI.

The proposed works would result in a **neutral** direct and **negligible** potential direct impact to ‘‘Craigend’ – house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm’ (LEP no. 102), which is consistent with the findings of the REF SOHI (Artefact 2021).

Indirect (visual) heritage impacts

The upgrade of the Darling Point Wharf would still introduce new visually intrusive elements within sight of the ‘‘Craigend’ – house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm’ (LEP no. 102) heritage item, namely the replacement of the wharf and the introduction of the pathway, stairs, lift, and associated infrastructure. However, these new elements have been designed to be less obtrusive and would only be visible from a very small portion of the much larger heritage item, with the dense vegetation and steep landform context bordering McKell Park minimising direct views to the new elements from the residence.

Pedestrian semi-circular and footpath works, and the relocated kiss-and-ride zone would be introduced directly east of the heritage item. However, these works would be in keeping with the

[4] Heritage NSW, DCP, n.d. ‘Craigend - house’. *State Heritage Inventory.* Accessed online 9 March 2021, https://www.environment.nsw.gov.au/heritageapp/ViewHeritageItemDetails.aspx?ID=2711243.

existing aesthetic quality of the heritage item and Darling Point Road streetscape. As such, these works are not expected to cause a visual impact above **negligible**.

Overall, the proposed works would result in a **negligible** visual impact to 'Craigend'- house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm (LEP no. 102), which is consistent with the findings of the REF SOHI (Artefact 2021).

'Lindesay' – building and interiors, summer house, grounds, 6 London Plane Trees, Hoop Pine (SHR 00686)

Statement of significance

'Lindesay' - building and interiors, summer house grounds, 6 London Plane Trees, Hoop Pine (SHR 00686) is of State heritage significance. The SHI entry for 'Lindesay' (SHR 00686) contains the following statement of significance for the item.[5]

> *Lindesay is historically significant as the first major house to be constructed on Darling Point following its subdivision in the 1830s. The subsequent changes to the house and grounds reflect historical events over more than 150 years. Lindesay has important associations with its owners and occupants, many of whom have played a significant part in the history of NSW.*
>
> *The house is aesthetically significant as the earliest example of the domestic Gothic style in Sydney and contains a distinctive set of reception rooms with notable early features including a Louis XIV chimney piece. The collection of moveable heritage and furnishings at Lindesay, assembled by the National Trust of Australia, includes some items with direct association to former occupants, and some important pieces of Australian colonial furniture. Lindesay established a benchmark in 1963 for the restoration and use of a furnished historic house to recreate and interpret the past. Areas which retain high archaeological potential have been identified in some of the upstairs rooms in the main house and also in the rear courtyard at the south of the main building, in addition to those already excavated. It is likely that additional surviving archaeological material present at this site would be able to contribute evidence not available from other sources, which, when analysed in conjunction with documentary evidence, will provide additional information about the occupation of Lindesay.*
>
> *The place is of cultural significance as Australia's first picturesque Gothic Villa of the type advocated by contemporary English taste in the 1820s. The drawing room chimney piece is probably the earliest surviving example of Louis Revival style in Australian domestic architecture. It was the first house to be built on Darling Point after the subdivision into suburban allotments in 1833 and is associated with people prominent in Australia's history including C.D. Riddell, Sir Thomas Mitchell, Sir Charles Nicholson, William Bradley and John Macintosh.*
>
> *The place is also significant as it is a good example of the pattern book design method of the pre-Victorian period and possibly the oldest suburban villa architectural type surviving in NSW. It is reasonably intact and contains numerous*

[5] Heritage NSW, DCP, n.d. 'Lindesay'. *State Heritage Inventory.* Accessed online 9 March 2021, https://apps.environment.nsw.gov.au/dpcheritageapp/ViewHeritageItemDetails.aspx?ID=5045228.

features and details which demonstrate the architectural taste and social customs of the time it was built. It contains one of the finest suites of reception rooms in Australia, arranged in what at the time was an informal and novel way. It is one of the few surviving houses that were landmarks around Sydney Harbour in the 1830s and 1840s that can still be viewed from the harbour and it contains a rare example of a colonial basement kitchen and offices which were still used up until 1914.

Impact assessment

Direct and potential direct (physical) heritage impacts

‘‘Lindesay’ – building and interiors, summer house, grounds, 6 London Plane trees, Hoop Pine’ (SHR 00686) is located outside of the proposal area. As a result, there would be no direct impact to the heritage item.

The proposed works would result in a **neutral** direct and **neutral** potential direct impact to ‘Lindesay’ (SHR 00686), which is consistent with the findings of the REF SOHI (Artefact 2021).

Indirect (visual) heritage impacts

The upgrade of the Darling Point Wharf would still introduce new visually intrusive elements within 45m of the ‘‘Lindesay’ – building and interiors, summer house, grounds, 6 London Plane trees, Hoop Pine’ (SHR 00686) heritage item. However, these new elements would not be visible from the heritage item due to the dense vegetation and steep landform context bordering McKell Park. The aesthetic significance of the heritage item would not be impacted, and existing significant view lines would remain intact.

The proposed works would result in a **neutral** visual impact to ‘Lindesay’ (SHR 00686), which is consistent with the findings of the REF SOHI (Artefact 2021).

Revised archaeological assessment

The revised proposal would require limited earthworks including trenching and piling work, which is expected to disturb a small amount of seabed, excavations for the lift and staircase, and shallow excavations for the proposed pathways, trenching works to locate existing services routes, and street modifications including parking and footpath regrading.

The preliminary archaeological assessment identified that there is potential for archaeological remains of local significance to be present within both the proposal area and the proposal footprint. The proposal area has generally high potential to contain locally significant archaeological remains associated with the 'fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park' (LEP no. 112 & A1) heritage item. There is also high archaeological potential for locally significant archaeological remains associated with the 'remains of bath house and site of jetty' (LEP no. 113) listing, and low potential for locally significant archaeological remains associated with the former roadways. Figure 4 illustrates these areas of archaeological potential.

A portion of the revised proposal associated with utility works extends into the area of high and low archaeological potential. The wharf power supply would need to be upgraded to three phase power which would require about 40 metres of trenching in the vicinity of Darling Point Road, about 50 metres of trenching within McKell Park and about 20 metres of trenching along the foreshore. These works would be located away from the area of the former residences themselves (see Figure 4) and would be targeted to existing services routes. It is expected that the excavation of these existing services routes would be in areas which are pre-disturbed as a result from the original installation of these services through the park and road areas. The nature of this disturbance has likely resulted in these services routes having nil potential to contain archaeological remains of local significance. It is expected that these revised works would result in **neutral** impacts to archaeological remains associated with the former Brackenbury and Lansdowne (Phase 2) and Canonbury (Phase 3) residences within 'McKell Park' (LEP no. 112 & A1), given the trenching would occur in pre-disturbed areas of McKell Park.

It is noted that these power supply routes extend beyond the proposal footprint (see Figure 4). The revised proposal did not extend the proposal footprint to encompass these power supply routes however it can be assumed that the level of archaeological potential in these areas outside of the proposal footprint would be similar to those assessed within the proposal footprint. Therefore the impacts assessed above are likely to apply to these areas outside of the footprint.

Excavations for the lift, semi-circular pathway, a new pathway and roadworks would be located within the alignment of Darling Point Road which has low potential for former locally significant road surfaces. Excavations within the area of archaeological potential associated with the former road surfaces however would generally be shallow in nature, and the area has likely been disturbed by previous road upgrades and maintenance works. As a result, if archaeological remains of former road surfaces are present, it is expected that any impact to them would be **negligible**. However, these remains would be classified as archaeological 'works'.

The proposed foreshore pathway would cross over the remains of the former maritime structures at the end of Darling Point Road in the heritage curtilages of 'McKell Park' (LEP no. 112 & A1) and the 'remains of bath house and site of jetty' (LEP no. 113). These items include visible archaeological remains in the form of sandstone footings and may also feature additional underwater remains or material buried beneath the soil immediately behind the seawall. Earthworks for the pathway would involve the excavation of a trench measuring about 1200mm wide and 300mm deep through the footprint of these former structures. Although the excavations would pass through the historical structures, due to the shallow nature of the excavations it is not expected that any archaeological

remains would be impacted by the pathway excavations. As a result, the archaeological impacts associated with the pathway excavations is expected to be **neutral**.

The proposed piling works remain unchanged and would be undertaken in close proximity to the extant structural remains of the former maritime structures. As a result, the archaeological remains may be subject to potential direct impacts caused by vibrations. This could potentially dislodge some of the sandstone footings, resulting in a **minor** impact to the archaeological remains associated with 'McKell Park' (LEP no. 112 & A1) and the 'remains of bath house and site of jetty' (LEP no. 113), as was previously assessed.

Overall, it is assessed that the proposed works would result in **minor** impacts to archaeological remains of local significance. However, it is anticipated that the impacts would be limited to archaeological 'works' and would not cause impacts to archaeological 'relics'.

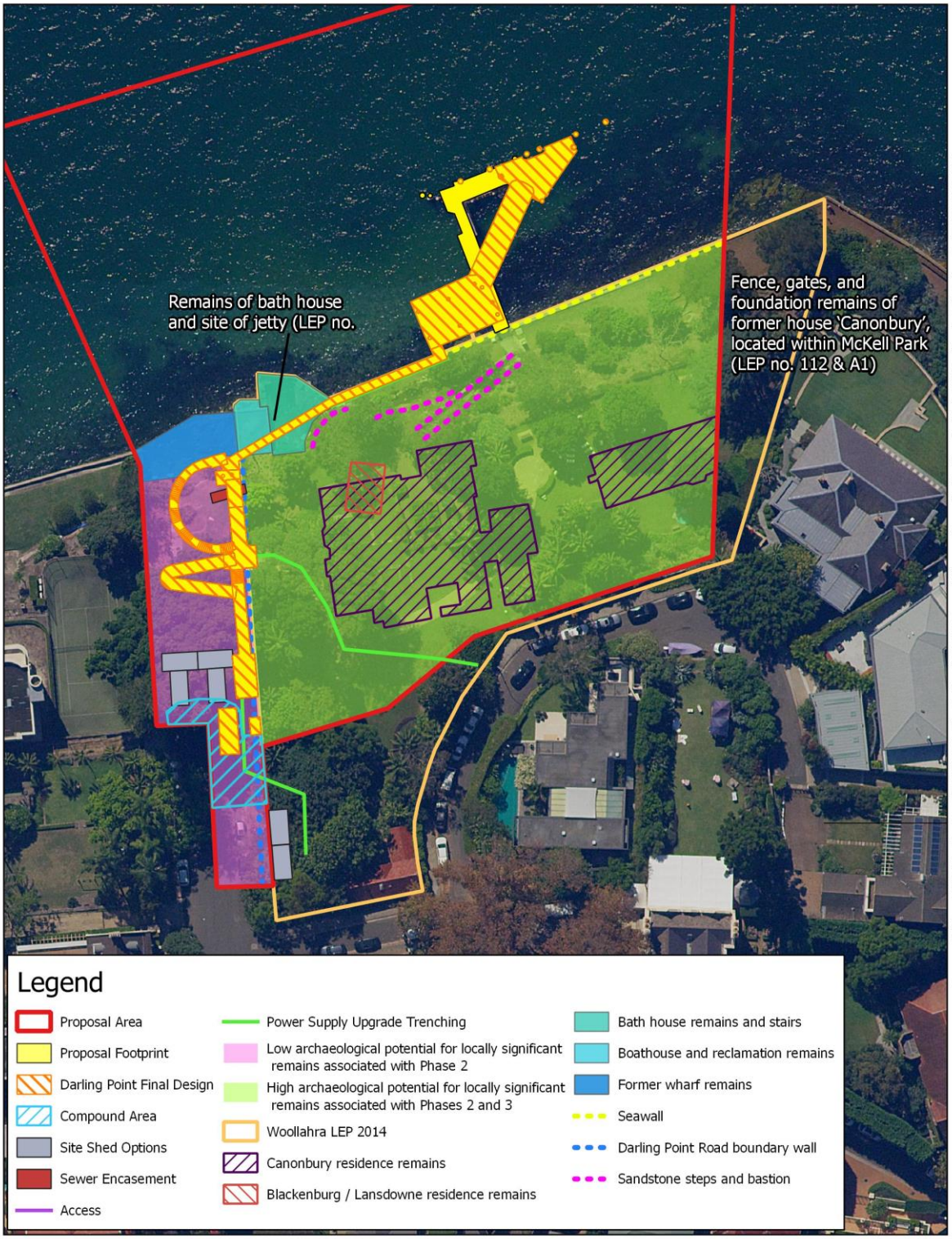

Figure 4: Potential archaeological remains overlaid with the Proposal and ground disturbing works

SUMMARY OF IMPACTS TO HERITAGE ITEMS

A summary of impacts to relevant heritage items is provided in Table 2.

Table 2: Summary of impacts to heritage items

Heritage item	Direct	Potential direct	Indirect (visual)	Archaeological	Consistent with REF SOHI (Artefact 2021) Y/N
Fence, gates and foundation remains of former house 'Canonbury', located within McKell Park	Minor	Minor	Minor	Minor	Yes
Remains of Bath House and site of jetty	Minor	Minor	Minor	Minor	Yes
House, interiors, and grounds	Neutral	Neutral	Negligible	Neutral	Yes
'Craigend'- house and interiors, grounds, gardens, stoneworks, Norfolk Island Pine, Pak-Lan, 10 Queen Palms, 11 Kentia Palms, Curly Palm	Neutral	Negligible	Negligible	Neutral	Yes
'Lindesay'- building and interiors, summer house, grounds, 6 London Plane trees, Hoop Pine	Neutral	Neutral	Neutral	Neutral	Yes
House, interiors and front fence, sandstone walls to Beverley Lane, sandstone terracing and steps	Neutral	Neutral	Neutral	Neutral	Yes
"Neidpath"—house, interiors and grounds	Neutral	Neutral	Neutral	Neutral	Yes
Stone boundary wall to Carthona Avenue	Neutral	Neutral	Neutral	Neutral	Yes
Entrance gateposts to Carthona Avenue, corner of Darling Point Road	Neutral	Neutral	Neutral	Neutral	Yes
Stone boundary wall to Carthona Avenue	Neutral	Neutral	Neutral	Neutral	Yes

Heritage item	Direct	Potential direct	Indirect (visual)	Archaeological	Consistent with REF SOHI (Artefact 2021) Y/N
Etham Avenue Heritage Conservation Area	Neutral	Neutral	Neutral	Neutral	Yes
Elizabeth and Rushcutters Bays Conservation Area	Neutral	Neutral	Neutral	Neutral	Yes
Sydney Harbour Naval Precinct	Neutral	Neutral	Neutral	Neutral	Yes
Edgerley / House 'Ramona' including interior and grounds	Neutral	Neutral	Neutral	Neutral	Yes

CONCLUSION AND RECOMMENDATIONS

This Addendum SOHI has found that there are no changes in impacts to those assessed within the SOHI prepared for the REF for this project.

It is noted that the previous assessment concluded that consultation with local council was not required under Section 20 of the *State Environmental Planning Policy (Infrastructure) 2007* (ISEPP). However, since the REF SOHI was drafted, ISEPP was superseded by the *State Environmental Planning Policy (Transport and Infrastructure) 2021* (Transport and Infrastructure SEPP). The proposed works would not result in greater than minor impacts to any locally listed heritage items. Pursuant of Clause 2.11 of the Transport and Infrastructure SEPP, the proposal is consistent with the general requirements for development without consent and consultation with Woollahra Municipal Council is not required. However, a copy of this report should be submitted to Woollahra Municipal Council for their records.

Three new recommendations and mitigation measures are proposed as part of this Addendum SOHI:

- The proposed power supply routes must avoid the areas outlined to contained possible remains of the former residences associated with the 'fence, gates, and foundation remains of former house 'Canonbury', located within McKell Park' (LEP no. 112 & A1) heritage item. If these routes require adjustment in future stages of design, an appropriately qualified historical archaeologist must be engaged to review the impacts of the route change. The project must also implement the Unexpected Heritage Item Procedure (TfNSW 2021) if unanticipated heritage items or deposits are located during construction, as noted in the REF SOHI.
- Trenching works associated with the proposed power supply lines should be reinstated as near as possible to their original state and made good following the works.
- Opportunities for re-use of materials and to include heritage interpretation features in the area around the proposed foreshore, semi-circular and other new pathways should be considered during detailed design in the form of a Heritage Interpretation Strategy, as per the mitigation measure outlined in the REF SOHI.

The existing recommendations and mitigations under Section 9.0 of the REF SOHI must be continued to be followed by the project.

Kind regards,

Jess Mauger

MHerit.Cons | BLAS (Hons)
Senior Heritage Consultant – Built Heritage
ARTEFACT
Cultural Heritage Management | Archaeology | Heritage Interpretation