Transport
for NSW

Sydney Harbour Bridge Cycleway Northern Access proposal

Response to submissions report

August 2023

NSW GOVERNMENT

transport.nsw.gov.au

Acknowledgement of Country

Transport for NSW acknowledges Cammeraygal people of the Eora Nation the traditional custodians of the land on which the Sydney Harbour Bridge Cycleway Northern Access proposal is proposed. Further, the proposal facilitates movement for the Gadigal, the Wangal and the Cammeraygal people from Country to Country to share resources, knowledge and cultural practice.

We pay our respects to their Elders past and present and celebrate the diversity of Aboriginal people and their ongoing cultures and connections to the lands and waters of NSW.

Many of the transport routes we use today – from rail lines, to roads, to water crossings – follow the traditional Songlines, trade routes and ceremonial paths in Country that our Nation's First Peoples followed for tens of thousands of years.

Transport for NSW is committed to honouring Aboriginal peoples' cultural and spiritual connections to the land, waters and seas and their rich contribution to society.

Connecting with Country Statement

Transport for NSW has taken into consideration the elements of Designing with Country, nature and people. Extensive Aboriginal community consultation has been undertaken alongside consideration of the existing environment. This consultation and research will ensure a design for the proposal that is conscious of all elements of Designing with Country.

Transport for NSW will ensure that Designing with Country remains a priority during all of the design phases through continued consultation with Aboriginal community members and elders. This has been achieved through meetings with Aboriginal elders from Cammeraygal and Gadigal lands, facilitated by Transport for NSW, WSP Australia and Yerrabingin. This engagement will continue throughout the project.

Prepared by Arcadis and Transport for NSW.

Executive summary

The proposal

Transport for New South Wales (Transport) is proposing to upgrade the existing cycleway connection between the Sydney Harbour Bridge cycleway and the bike network in Milsons Point. The cycleway connection would interface with a new cycle path along Alfred Street South (the proposal).

The proposal would consist of an approximately three-metre-wide elevated linear bike ramp that extends about 200 metres from Bradfield Park North, near Burton Street, interfacing with the Sydney Harbour Bridge Cycleway south of the existing stair access. The ramp would connect to a new cycle path which would extend along the east side of Alfred Street South, between Middlemiss Street and Burton Street, and include a new street crossing on Alfred Street South. The two-way cycle path would be 2.5 metres wide and connect to the existing bike network in Milsons Point.

Key features of the proposal, as per the design in the *Sydney Harbour Bridge Cycleway Northern Access Review of Environmental Factors* would include:

- A design-led approach to the integration of new cycling infrastructure with its existing significant open space and heritage setting
- A new elevated linear bike ramp, with deck mostly about three metres wide, and about 200 metres in length between the Sydney Harbour Bridge Cycleway and Bradfield Park North including:
  - Steel ramp structure with deck incorporating Designing with Country motifs, and balustrade with integrated lighting
  - Precast columns carefully sited within Bradfield Park North and Central
  - Provision of a bike riders rest area next to the Sydney Harbour Bridge Cycleway connection
  - A gathering space, lighting, seating and cycle path within Bradfield Park North connecting the elevated linear bike ramp and the proposed Alfred Street South cycle path
- Alfred Street South pedestrian and cycle path upgrade including:
  - New 2.5-metre-wide two-way cycle path on Alfred Street South from the ramp landing, linking to the existing bike network in Middlemiss Street. The cycle path would be located on the east side of Alfred Street South between the ramp landing and the new crossing near 110 Alfred Street South. On the west side of Alfred Street South the cycle path would be located between the new crossing and Lavender Street
  - Replacement of the existing pedestrian refuge crossing at the north end of Alfred Street South with a pedestrian and bike rider crossing located at 110 Alfred Street South and an upgrade to the pedestrian crossing at Lavender Street
  - Low speed shared path and verge widening on the north side of Lavender Street
  - Adjustments to the Lavender Street roundabout
  - New street tree planting, shrub planting and footpath paving
  - Relocation of an existing bus stop on Alfred Street South near Lavender Street about 60 metres to the south of its current location
  - Permanent removal of up to 15 metered parking spaces along Alfred Street South.

The proposal, would also include, but not be limited to:

- Kerb and pavement work, and line marking
- Drainage and utility adjustments
- Street furniture adjustments
- Changes to street parking, parking meter locations and regulatory signage.
- Minor lighting upgrades to Bradfield Park North and in other locations where required to meet safe lighting standards.

Subject to planning approval, technical requirements and weather, construction of the proposal is planned to commence early 2024, which differs from the mid-2023 estimate provided in the REF. The current program would take around 18 months.

Display of the Review of Environmental Factors

Transport prepared a Review of Environmental Factors (REF) to assess the potential environmental impacts of the proposed works. The REF was publicly displayed for 21 days between 28 November 2022 and 19 December 2022 on an interactive online engagement platform with a feedback form and information on how to make a written or email submission about the proposal.

The REF was published on the Sydney Harbour Bridge Cycleway Northern Access Project interactive web portal at https://caportal.com.au/tfnsw/sydney-harbour-bridge-cycleway and made available for download. An invitation to comment and a copy of the REF was also sent directly via electronic direct mail to the project mailing list on 29 November 2022 providing a link to the engagement portal for 2,175 receivers.

Face to face community information sessions were held by Transport to provide further information on the proposal, answer questions from the community and encourage the community to provide a formal submission on the REF.

Figure 0-1 illustrates an overview of the proposal design and delivery process from conception to operation.

Figure 0-1: Flowchart of proposal

Summary of issues and responses

Public display of the REF resulted in receipt of 1042 submissions, of which two were from government agencies, five were from community organisations and 1035 were from the community. Of the community submissions, 69 per cent were in support of the proposal, 28 per cent objected to the proposal and three per cent offered no position on whether they supported or objected to the proposal.

The five main issues raised during display of the REF were:

- Need and options considered
- Dissatisfaction with consultation efforts
- Potential impacts to Non-Aboriginal heritage
- Landscape character and visual impacts
- Potential for conflict between pedestrians and bike riders

Responses to these issues are summarised below.

Need and options considered

About 44 per cent of submissions received commented on the need and options considered for the proposal, particularly with regard to the following:

- Concern that alternative designs to the proposal had not been adequately assessed and would better meet the community's needs
- Concern about the need of and justification of the proposal as it is believed it would not provide value to the local community
- Concern about the benefit of the proposal and whether it would make the Sydney Harbour Bridge cycleway more accessible.

Investigations into options for improving the connectivity, safety and access between the Sydney Harbour Bridge Cycleway and Milsons Point date back as far as 1999. Many attempts to develop an alternative to the existing steps have been made over the years and 30 ramp options have been explored. The use of lifts, travelators and putting bikes back on the main deck of the Sydney Harbour Bridge have also been put forward as an alternative to a ramp solution. Alternative design options for the proposal, including the looped ramp option, were assessed against the proposal objectives. This alternative option was discounted after an extensive design selection process including a comprehensive options assessment (detailed in section 2.5 of the REF), and after community and stakeholder feedback which preferred the linear ramp option. Another alternative option considered was the conversion of lane 8 on the Sydney Harbour Bridge to a dedicated cycleway. As described in section 2.5.1 of the REF, this option was assessed and subsequently discounted due to its poor connectivity and the challenge associated with connecting a cycleway to lane 8.

The proposal was ultimately selected as it most appropriately addresses the proposal objectives. The proposal eliminates the existing bottleneck and queues created by the existing infrastructure, improves accessibility for a wider range of customers to use the Sydney Harbour Bridge cycleway and improves the connectivity between Sydney's Central Business District and the lower north shore.

As identified in section 2.3 of the REF, the existing infrastructure has several limitations. This includes the existing 55 step access to the Sydney Harbour Bridge Cycleway, which is difficult and unsafe to navigate for many customer groups. The step access and its associated safety barrier also only allows a single user at a time, creating a bottleneck where two-way flow is not possible to enter/exit the Sydney Harbour Bridge Cycleway. The proposed ramp and its gentle gradient would improve access to the Sydney Harbour Bridge Cycleway, particularly for less able-bodied people and those with heavier bikes, and would eliminate the existing bottleneck and queues created by the current stairs. By providing better access to the Sydney Harbour Bridge cycleway, a key transport link, the proposed ramp would also support the future growth in the number of bike riders travelling between the lower north shore, North Sydney Central Business District and Sydney's Central Business District.

Consultation

A number of submissions noted dissatisfaction with the consultation process with community members expressed concern that their feedback has not been taken into account. Respondents suggested the timing of the 'Have Your say' period was inappropriate prior to Christmas as many people would have been too busy to submit a response to the proposal. Some respondents expressed dissatisfaction with the level of detail provided during consultation activities.

Transport values feedback received from the community and stakeholders and has incorporated design refinements to address community and stakeholder concerns. These are outlined in Chapter 4 of this submissions report. As detailed in Table 5-7 of the REF, several engagement activities were carried out to spread awareness and seek feedback on the proposal. This included newsletters and reminder to 'Have your say' postcards distributed to letterboxes, signage erected in the local area, door knocking in the local community and businesses, social media geo-targeted advertisements, emails sent to the project stakeholder mailing list and published information on the project website and interactive portal. Two pop-up information events were held at Kirribilli Markets and pop-up information events were held at the existing stairs during peak times to capture sentiment from local community, pedestrians and commuter bikers. Follow up phone calls were also made to local businesses and key stakeholder groups.

Non-Aboriginal Heritage

A number of submissions were concerned by the potential non-Aboriginal heritage impacts of the proposal, including:

- Impacts to the Sydney Harbour Bridge including the vistas of the bridge viaduct, the façade, parapet, approach walls and arch at Burton Street
- Concern that the visual and heritage impacts to the Milsons Point Station entrance were not apparent in the designs shown to the public
- Concern that the proposal would adversely impact the Bradfield Park Heritage Walk.

Transport acknowledges the concerns of community members in relation to potential impacts on the Sydney Harbour Bridge. Since the exhibition of the REF, further design refinements have been made to further minimise impacts on the Sydney Harbour Bridge and other heritage listed items (refer to Chapter 4 of this submissions report). This includes shifting the tie in of the ramp with the Sydney Harbour Bridge to about three metres north from where it was initially proposed, with a reduction of about three to 3.5 metres in the ramp length. These refinements reduce the physical bulk of the infrastructure to minimise impacts to the Sydney Harbour Bridge. Another key change includes the relocation of the parapet, which would be placed in Bradfield Park North adjacent to the ramp landing. The relocated parapet would serve the dual purpose of retaining a key piece of heritage and redirect pedestrians from the plantings and former path footprint to minimise pedestrian and bike rider conflict at this location. These changes would see improved access and amenity for the bridge's users and potentially enhance the ability of the Sydney Harbour Bridge to attract more users and admirers.

As detailed in section 6.2.2 of the REF, Transport notes the aesthetic and historical significance of the Milsons Point Station entrance, including the '1932' cartouche above the entrance to the station. Following exhibition of the proposal, design refinements have been made to increase the ramp gradient to five percent to allow for the cartouche to remain visible from the Milsons Point Station forecourt, as outlined in Chapter 4 of this submissions report.

Transport acknowledges the heritage significance of Bradfield Park and the heritage walk. As described in Chapter 4 of this submissions report, further design refinements have allowed for the retention of the Heritage Walk, existing sandstone heritage inlays and heritage interpretive signage, which will no longer be impacted.

Additionally, the Statement of Heritage Impacts has been updated to reflect design changes since exhibition of the REF (refer to section 5.1 of this submissions report).

Landscape character and visual impact

A number of submissions expressed concern over the potential visual impacts of the proposal on the local area (about 2.9 per cent). In particular, that views of the iconic Sydney Harbour Bridge, Milsons Point Station and Bradfield Park North would be impacted.

While the proposal would result in unavoidable adverse impacts due to the scale and nature of the change, the preferred design was chosen amongst other alternative options as it had the least visual impacts. The proposal would maintain views to the viaduct, bridge and station entry more so than other options considered.

Design refinements, discussed in Chapter 4 of this submissions report have minimised impacts to the Sydney Harbour Bridge, Milsons Point Station and Bradfield Park North. The design has been further developed to fit into the heritage precinct as sensitively as possible, using sympathetic material and sensitive design, while minimising impacts to open space and tree loss. The ramp would incorporate ellipse columns and be aligned parallel to the bridge approach walls, so to not detract from the character and prominence of the Sydney Harbour Bridge. The ramp would also have an original and contemporary character, contrasting in form and detail with the heritage character of the bridge, it will be clearly identifiable as a new element and will not detract from the authenticity of the character of the Sydney Harbour Bridge.

Visual impacts of the proposal on Bradfield Park, Milsons Point Station and the Sydney Harbour Bridge have been addressed in sections 2.3.23, 2.3.24 and 3.6, respectively, of this submissions report. Additionally, an updated Landscape Character and Visual Impact Assessment has been completed since exhibition of the REF to account for subsequent design changes (refer to section 5.2 of this submissions report).

Traffic and transport

A number of submissions expressed concern for parking loss along Alfred Street South during construction and operation of the proposal. Several submissions suggested that the proposal would lead to increased conflict between pedestrians and bike riders.

Transport acknowledges the impacts to parking on Alfred Street South as a result of the proposal, outlined in section 6.4 of the REF. As identified in section 6.4.3 of the REF, on-street parking would be available on adjoining streets such as Lavender Street, Cliff Street, Glen Street, Burton Street and Fitzroy Street. Transport is committed to ongoing consultation with North Sydney Council in relation to parking impacts due to operation of the proposal.

Transport has considered pedestrian and bike rider safety throughout development of the proposal. The risk of potential conflicts between pedestrians and bike riders would be managed through a two-way separated cycle path along Alfred Street South, as outlined in section 3.1.2 of the REF. Design refinements outlined in Chapter 4 of this submissions report have been implemented to further improve the safety of pedestrians and bike riders in the area, such as a two-stage pedestrian crossing at the ramp landing, and appropriate signage in shared zones.

Changes to the proposal

The main design changes in the revised design include:

- The tie in with the Sydney Harbour Bridge would be shifted around three metres north, reducing the length of the ramp slightly. The geometry of the connection separates the ramp from the bridge more distinctly at the connection point. The parapet that would be removed for the connection would be 8.4 metres wide, three metres less than the section previously proposed.
- The elevated linear bike ramp has been offset to the Sydney Harbour Bridge viaduct to minimise impacts to the Sydney Harbour Bridge. Additionally, the gradient of the ramp has been increased to five percent to allow the cartouche to remain visible from Milsons Point Station forecourt. The section of parapet that would be removed would be relocated to a location alongside a new path at the north end of the ramp landing point.
- The design of the bike ramp landing has adopted a curved design to slow down bike riders coming off the ramp and improve safety for pedestrians. The sandstone inlays within Bradfield Park North would be updated in line with most recent surveys. The stone of the inlays at the ramp landing would be lifted and relayed at the correct grading levels of the ramp landing.

- The in-lane bus stop has been removed from the design and replaced with a kerb-side bus stop in the same location. Four parking spots would be removed to accommodate the new kerbside bus stop.
- Due to space constraints on the northern side of Lavender Street, the separated walking and cycling facility would be reverted to a shared path on the northern side of the roundabout. There have also been minor adjustments to the Lavender Street roundabout.

Further detail on these design changes are provided in Chapter 4 of this submissions report.

Environmental assessment of design changes

The following additional investigations have been carried out for the revised design:

- Updated Statement of Heritage Impacts and an Archaeological Research Design
  - An updated Statement of Heritage Impacts and an Archaeological Research Design have been prepared to provide an additional assessment of the archaeological potential and significance of the study area, impacts on listed heritage items and alignment with policies from the Sydney Harbour Bridge Conservation Management Plan.
  - The assessment of heritage significance within the study area in the updated Statement of Heritage Impacts is consistent with that described in section 6.1.2 of the REF.
  - The updated Statement of Heritage Impacts concluded that direct and indirect impacts to listed heritage items would remain consistent with the upper threshold of impacts assessed in the proposed concept design compared to the detailed design.
  - The updated Statement of Heritage Impacts and Archaeological Research Design concluded that overall, there is potential for the works to impact locally significant archaeological resources, though these impacts can be partially mitigated through archaeological management and the implementation of heritage interpretation strategies where appropriate.
  - All excavation works within the Sydney Harbour Bridge curtilage area are subject to the approval granted under Section 60 of the Heritage Act.
  - As detailed in Table 5-5 of this submissions report, a number of environmental safeguards have been edited, removed and added in response to the updated Statement of Heritage Impacts.
- Addendum Landscape Character and Visual Impact Assessment
  - Two additional viewpoints (Viewpoint 8 and 9) have been added in response to the North Sydney Council submission. Viewpoint 8 shows the view northeast from Burton Street to Milsons Point Station forecourt and entrance, and Viewpoint 9 shows the view east to the Burton Street tunnel archway.
  - While there is further detail around the assumptions made in the assessment, and some minor changes, overall, the findings of the Landscape Character and Visual Impact Assessment remain unchanged from the REF.
  - Environmental safeguard LV2 has been revised to align with the addendum Landscape Character and Visual Impact Assessment.
- Addendum Traffic and Transport Impact Assessment
  - An addendum traffic impact assessment has been prepared to assess any potential impacts resulting from the revised design on traffic and transport and to identify environmental safeguards to avoid or minimise these impacts.
  - The traffic survey results and the traffic analysis for existing conditions at the intersection of Alfred Street and Lavender Street indicate that the Lavender Street eastbound approach to the roundabout is currently operating at a low level of service (LOS E) that would reduce to an unsatisfactory level of service (LOS F) in 2024 and would remain LOS F, irrespective of the proposal.
  - The eastern approach to the Lavender Street zebra crossing would experience a near-capacity level of service (LOS D) post proposal in 2034, when considering a conservative scenario with a 100 per cent bike rider crossing utilisation. However, this is expected considering the existing conditions.
  - The traffic analysis demonstrates the proposal would improve active transport connection and accessibility to key cycling corridor and public transport hubs with no major impact on the road network operations.

  - Environmental safeguards TT2, TT9 and TT25 have been edited, and an additional environmental safeguard, TT30, has been added in response to the updated traffic impact assessment.

- Updated Arboricultural Impact Assessment
  - As part of the biodiversity assessment, an updated Arboricultural Impact Assessment has been undertaken to assess the impact of the proposal on trees, and where appropriate, recommend the use of sensitive construction methods and tree protection measures to minimise adverse impacts.
  - The updated Arboricultural Impact Assessment reviewed the 34 trees assessed in the REF as well as seven additional trees added in response to changes in the detailed design.
  - The proposed removal of seven trees remains consistent with section 6.7.3 of the REF.
  - In addition to Trees 1, 21 and 23 proposed for retention and pruning in the REF, the Arboricultural Impact Assessment has identified Tree 26 (Chinese Elm) and Tree 41 (Weeping Bottlebrush) would require pruning to provide clearance to the elevated bike ramp and for access during construction
  - Impacts to biodiversity during operation of the proposal and the conclusion of significance of impacts remain consistent with section 6.7.3 of the REF.
  - Environmental safeguard B8 has been added in response to the updated Arboricultural Impact Assessment to manage works within Tree Protection Zones and pruning of trees.

Next Steps

Transport as the determining authority will consider the information in the REF and this submissions report and make a decision on whether or not to proceed with the proposal.

Transport will inform the community and stakeholders of this decision and where a decision is made to proceed, Transport will continue to consult with the community and stakeholders prior to and during the construction phase.

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1. Introduction and background

1.1 The proposal

Transport for New South Wales (Transport) is proposing to upgrade the existing cycleway connection between the Sydney Harbour Bridge cycleway and the bike network in Milsons Point. The cycleway connection would interface with a new cycle path along Alfred Street South (the proposal) (refer to Figure 1-1 and Figure 1-2).

The proposal aims to:

- Improve access to the Sydney Harbour Bridge Cycleway
- Achieve a high-quality urban design and heritage outcome
- Release latent capacity on the Sydney Harbour Bridge Cycleway
- Improve safety for bike riders, pedestrians and motorists
- Support future growth in bike riders travelling between the Sydney Central Business District (CBD) and the lower north shore
- Provide a cycleway facility that sensitively fits in with the:
  - Context of the location including the potential visibility of the structure
  - Heritage values of the area
  - Architectural qualities of the Sydney Harbour Bridge.

The proposal would consist of an approximately three-metre-wide elevated linear bike ramp that extends about 200 metres from Bradfield Park North, near Burton Street, interfacing with the Sydney Harbour Bridge Cycleway south of the existing stair access. The ramp would connect to a new cycle path which would extend along the east side of Alfred Street South, between Middlemiss Street and Burton Street, and include a new street crossing on Alfred Street South. The two-way cycle path would be 2.5 metres wide and connect to the existing bike network in Milsons Point.

Key features of the proposal, as per the design in the *Sydney Harbour Bridge Cycleway Northern Access Review of Environmental Factors* (Transport for NSW, November 2022) would include:

- A design-led approach to the integration of new cycling infrastructure with its existing significant open space and heritage setting
- A new elevated linear bike ramp, with deck mostly about three metres wide, and about 200 metres in length between the Sydney Harbour Bridge Cycleway and Bradfield Park North including:
  - Steel ramp structure with deck incorporating Designing with Country motifs, and balustrade with integrated lighting
  - Precast columns carefully sited within Bradfield Park North and Central
  - Provision of a bike riders rest area next to the Sydney Harbour Bridge Cycleway connection
  - A gathering space, lighting, seating and cycle path within Bradfield Park North connecting the elevated linear bike ramp and the proposed Alfred Street South cycle path
- Alfred Street South pedestrian and cycle path upgrade including:
  - New 2.5-metre-wide two-way cycle path on Alfred Street South from the ramp landing, linking to the existing bike network in Middlemiss Street. The cycle path would be located on the east side of Alfred Street South between the ramp landing and the new crossing near 110 Alfred Street South. On the west side of Alfred Street South the cycle path would be located between the new crossing and Lavender Street
  - Replacement of the existing pedestrian refuge crossing at the north end of Alfred Street South with a pedestrian and bike rider crossing located at 110 Alfred Street South and an upgrade to the pedestrian crossing at Lavender Street
  - Low speed shared path and verge widening on the north side of Lavender Street

- Adjustments to the Lavender Street roundabout
- New street tree planting, shrub planting and footpath paving
- Relocation of an existing bus stop on Alfred Street South near Lavender Street about 60 metres to the south of its current location
- Permanent removal of up to 15 metered parking spaces along Alfred Street South.

The proposal, would also include, but not be limited to:

- Kerb and pavement work, and line marking
- Drainage and utility adjustments
- Street furniture adjustments
- Changes to street parking, parking meter locations and regulatory signage.
- Minor lighting upgrades to Bradfield Park North and in other locations where required to meet safe lighting standards.

A more detailed description is found in Chapter 3 of the REF. Since the REF was displayed, the design of the proposal has been revised (refer to Chapter 4 of this submissions report for more details).

Figure 1-1: The REF proposal

Figure 1-2: Key features of the REF proposal

1.2 REF display

Transport prepared a REF to assess the potential environmental impacts of the proposed works. The REF was publically displayed for 21 days between 28 November 2022 and 19 December 2022 on an interactive online engagement platform with a feedback form and information on how to make a written or email submission about the proposal, as detailed in Table 1-1. The REF was placed on the Transport project website and made available for download. The display locations and website link were advertised via the following methods:

- Community update delivered to 14,173 properties in surrounding suburbs on 29 November 2022
- Reminder postcard delivered to properties in surrounding suburbs on 12 December 2022
- Two Facebook social media campaigns to drive traffic to the engagement portal:
  - The first campaign ran from 28 November to 6 December 2022 with a reach of 20,529 people
  - The second campaign ran from 12 to 19 December 2022 as a reminder before consultation closed with a reach of 14,309
- Pop-up events held at:
  - Kirribilli Markets, Kirribilli on 4 and 11 December 2022
  - Bottom of the cycleway northern stairs, Milsons Point on 6 and 7 December 2022
  - Greenway Apartments, Greenway Drive, Kirribilli on 15 December 2022
- Door knocks of residents and businesses on 30 November, 2 December and 15 December 2022. Recievers were located on Alfred Street South, Lavender Street, Cliff Street, Glen Street, Ennis Road and Broughton Street
- A poster advertising the pop-up events including a QR code were installed at Milsons Point Wharf and at Milsons Point Station on 7 December 2022.

An invitation to comment and a copy of the REF was also sent directly via electronic direct mail to the project mailing list on 29 November 2022 providing a link to the engagement portal for 2,175 receivers (Appendix A).

Table 1-1: Display locations

Location	
Proposal's website	https://nswroads.work/cycleway
North Sydney Council	200 Miller Street, North Sydney
Transport for NSW office	44 Ennis Road, Milsons Point

1.3 Purpose of this report

This submissions report relates to the REF prepared for the Sydney Harbour Bridge Cycleway Northern Access proposal, 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 raised by the government agencies and community organisations (Chapter 2) and by individuals (Chapter 3). It identifies the design refinements of the proposal (Chapter 4) and details investigations carried out since finalisation of the REF that assess the environmental impact of these refinements (Chapter 5), including an updated Transport Impact Assessment, updated Statement of Heritage Impact (SoHI), Archaeological Research Design (ARD), addendum Landscape Character and Visual Impact Assessment (LCVIA) and Arboricultural Impact Assessment. After consideration of the issues raised in the public submissions, the environmental safeguards for the proposal have been revised (section 6.2 of this submissions report).

2. Response to agency and community organisation issues

2.1 Overview of issues raised

A total of two government agency and five community organisation submissions were received in response to the display of the REF, which have been responded to in the following sections.

These included submissions from:

- Heritage Council of NSW
- North Sydney Council
- Engineering Heritage Sydney
- Bicycle NSW
- Bike North
- Milsons Point Community Group
- Lavender Bay Precinct Committee.

Transport has and will continue to consider any informal feedback provided by government agencies during detailed design and the construction of the proposal.

Each submission has been examined individually to understand the issues being raised. Most submissions have been outlined word for word however, some submissions have been summarised to reduce repetition. Individual responses have been provided specific to each submission.

The most common issues raised by agencies and community organisations are listed in section 2.1.1 to section 2.1.7 of this submissions report.

2.1.1 Heritage Council of NSW

Heritage Council of NSW's submission noted the following:

- The Heritage Council Approvals Committee engagement in and support for the linear ramp option and the design competition process
- The need to balance impacts to State Heritage Register (SHR) values of the Sydney Harbour Bridge and Milsons Point Station within the design and broader requirements of the precinct
- The need to carefully manage impacts to archaeology in Bradfield Park
- The proposal should continue to adopt a place-making approach to design
- The need for continual involvement of the Design Integrity Panel and the competition winning design team to support a design excellence approach
- Approval will be required by the Heritage Council under Section 60 of the *Heritage Act 1977* (Heritage Act).

2.1.2 North Sydney Council

North Sydney Council's submission identified the following key issues:

- Rationale and justification for the proposal
- Consideration of alternative options
- Concerns that the proposal does not meet all the objectives and concerns about cost
- Concerns about visual and social impacts associated with the proposal

- Concerns that the proposal would result in:
  - Impacts to surrounding non-Aboriginal heritage values
  - Impacts to landscape character and visual amenity of Milsons Point
  - Traffic and transport impacts surrounding the proposal
  - Socio-economic and land use impacts
  - Impacts to biodiversity.

2.1.3 Engineering Heritage Sydney

Engineering Heritage Sydney's submission identified the following key issues:

- Concerns that submissions by locals and heritage groups have been ignored during selection and development of the proposal
- Concern over the rejection of the foldback option and Lane 8 / Cahill Expressway Scheme option
- Adverse heritage impacts on the Milsons Point Station Façade and Bradfield Park as the setting of the Sydney Harbour Bridge
- Concern over preference for cyclists' priorities rather than community values and safety.

2.1.4 Bicycle NSW

Bicycle NSW's submission identified the following key issues:

- Support for the proposal as it would improve access to the Sydney Harbour Bridge cycleway for bike riders of all ages and abilities and resolve congestion
- The proposal would encourage an increase in the number of people using active transport
- The proposal is the most suitable option
- Support for the removal of parking spaces.

2.1.5 Bike North

Bike North's submission supported the approach taken to design and consultation undertaken during the design development and requested to be directly involved in ongoing consultation. They also identified some concerns with the safety and accessibility of the existing stair access to the Sydney Harbour Bridge cycleway.

2.1.6 Milsons Point Community Group

Milsons Point Community Group's submission identified the following key issues:

- Concerns that statements made in the REF are incorrect
- Concerns that the proposal does not improve safety compared to the existing infrastructure
- Consideration of the Bradfield Park Central proposal over the proposal due to heritage impacts and vegetation removal
- Concerns that the proposal would result in:
  - Impacts to surrounding non-Aboriginal heritage values
  - Impacts to landscape character and visual amenity of Milsons Point
  - Traffic and transport impacts surrounding the proposal
  - Socio-economic and land use impacts
  - Impacts to biodiversity.

2.1.7 Lavender Bay Precinct Committee

The Lavender Bay Precinct Committee submission identified the following key issues:

- Concerns about the heritage impacts on the Sydney Harbour Bridge and Bradfield Park North
- Concerns about the visual impacts on the Milsons Point station entrance and Bradfield Park North
- Concerns about the loss of amenity in the local area, in particular the loss of open space and trees in Bradfield Park North
- Concerns about the permanent removal of parking spaces
- Concern over cyclist/pedestrian conflicts at the proposed crossing south of the Lavender Street roundabout
- Concerns about the poor connectivity with surrounding cycle routes
- Concern about the adequacy of the business case and lack of cost estimates
- Concern about inadequate consideration of alternative solutions, including the Bradfield Park Central loop option and the Harbour Link proposal.

2.2 Heritage Council of NSW

2.2.1 Impacts to heritage items

Issue description

The Heritage Council noted the following:

- Infrastructure upgrades should not compromise the heritage values of the Bridge and its setting
- The cycleway should balance public access needs whilst minimising heritage impacts to the State Heritage Register item, Milsons Point Station, and the State and national heritage listed Sydney Harbour Bridge
- The proposal will require approval of the Heritage Council of NSW, under Section 60 of the Heritage Act 1977. An Archaeological Research Design should be prepared to support the Section 60 application
- An excavation permit is required when disturbing or excavating any land that is known to contain or suspected to contain a relic, where disturbance or excavation would or is likely to result in a relic being discovered, exposed, moved, damaged or destroyed
- Impacts to historical archaeology outside of the SHR curtilage may be eligible to be managed under an excavation permit exception under section 139 (4) of the Act
- Heritage Council remain committed to continuing consultation and engagement on the Sydney Harbour Bridge Cycleway Northern Access Project to achieve good heritage outcomes.

Response

Potential impacts to the heritage values of the Sydney Harbour Bridge and its setting have been identified in section 6.1 of the REF. Further refinements to the design of the proposal have been implemented to reduce potential heritage impacts and are further detailed in Chapter 4 of this submissions report. The proposal has evolved to incorporate inputs from Heritage NSW. The SoHI prepared for the REF (Artefact, 2022) was updated to assess the impacts of the 70 per cent Detailed Design. The updated SoHI is summarised in section 5.1 of this submissions report and concludes the proposal would not have a 'significant impact' on the National Heritage values of the Sydney Harbour Bridge. The proposal would improve functionality and accessibility, strengthening the Sydney Harbour Bridge's core function as a critical transport link. A number of environmental safeguards have been revised and added (NAH1, NAH2, NAH3, NAH4, NAH5, NAH6, NAH7, NAH8, NAH9, NAH10, NAH11, NAH12, NAH13, NAH14, NAH15, NAH16, NAH17, NAH18, NAH19, NAH20, NAH21 and LV2) (see Table 6-1 of this submissions report) to minimise or avoid impacts to non-Aboriginal heritage.

Section 60 approval for the proposal was granted by the Heritage Council on 13 June 2023. The environmental safeguards for the proposal have been revised to reflect the conditions of the s60 approval, Table 6-1 of this submissions report. Environmental safeguard NAH2 specifies that where there is any contradiction between the Environmental Safeguards and the

Conditions of Approval from the s60 application under the Heritage Act 1977, the latter will prevail over the Environmental Safeguards.

Since the display of the REF, an Archaeological Research Design report (Artefact, 2023) (ARD) has been prepared by a suitably qualified consultant to support the Section 60 application and is included in Appendix B of this submissions report. The ARD provides a historical archaeological research design and methodology for managing potential archaeological remains during excavation works associated with the proposal. As per the additional environmental safeguard NAH10, the management of potential archaeological impacts and excavation methodology for the proposal will be in accordance with the ARD. Transport is committed to maintaining ongoing consultation with the Heritage Council of NSW.

2.2.2 Description of the proposal

Issue description

Heritage Council commended Transport for involving the Design Integrity Panel in the development of the cycleway's design. Heritage Council strongly recommended that:

- The design competition winning team continues to be involved in the detailed design and construction phases, even after the cycleway delivery contractor has been awarded
- Transport's project team and the design team continue to take a place-making approach to integrate any cycleway and public domain works (such as the Alfred Street South cycle path and utility upgrades) into 'the place' beyond the project boundaries, to achieve a positive environmental outcome in the precinct.

Response

As identified in environmental safeguard NAH12 (Table 6-1 of this submissions report), the Design Integrity Panel will have continued involvement throughout construction of the proposal. This includes engagement with heritage and council stakeholders, and collaborative design processes with the design team and subject matter experts. The involvement of the Design Integrity Panel will continue to be in accordance with the design excellence approach adopted for this proposal.

2.3 North Sydney Council

2.3.1 Need and options considered – Project need and justification

Issue description

North Sydney Council questioned the rationale and justification for the proposal including:

- How the proposal addresses regional link shortcomings, given the ramp takes bike riders into busy congested urban environment of Milsons Point
- Acknowledging the proposal provides greater accessibility but does not optimise the cycling link between Sydney CBD and North Sydney CBD
- Believing customer experience has improved for bike riders at the expense of other users
- Doubting there is an existing issue between pedestrian-cycling interactions in the Milsons Point Station forecourt area and when the Kirribilli Markets are in operation.

Response

As noted in Chapter 2 of the REF, the proposal aims to improve safety and access for bike riders and pedestrians and support future growth in the number of bike riders using the Sydney Harbour Bridge cycleway. Delivery of the proposal would support the NSW Government's commitment to cycling as a key mode of city-serving, sustainable infrastructure that provides positive community health, amenity and environmental outcomes by providing an alternative to the existing bottleneck and queues created by the current stair access to the Sydney Harbour Bridge cycleway. The proposal would also cater to increased cycling demand projected for the future and improve accessibility to people of all ages and abilities accessing the Sydney Harbour Bridge cycleway. The bike ramp and cycleway would provide an option for cyclists to pass above the Milsons Point Station forecourt, thereby reducing potential conflicts between bike riders and pedestrians in this location.

As noted in section 2.1 of the REF, operation of the proposal aims to improve safety for bike riders, pedestrians and motorists. The proposal would reduce the risk of pedestrian and bike rider conflicts through a two-way separated cycle path running the length of Alfred Street South, as detailed in section 3.1.2 and Figure 3-3 and Figure 3-4 of the REF. This has been further refined, as detailed in Chapter 4 of this submissions report, to utilise colours to provide a clear delineation between pedestrian and bike rider paths. Chapter 4 of this submissions report also describes how bike rider and pedestrian conflicts would be managed through a two-stage pedestrian crossing within Bradfield Park North in conjunction with a tight turn at the ramp landing to slow bike riders descending the ramp.

In comparison to the proposal, the existing 55 step access to the Sydney Harbour Bridge cycleway presents an increased risk for pedestrian and bike rider conflicts to occur, particularly when the Kirribilli Markets are operating. Operation of the Kirribilli Markets results in an increase in the number of pedestrians along Burton Street, inhibiting the movement of bike riders going up and down the stairs, as well as blocking access to those riding through the Burton Street tunnel. The mixing of a large number pedestrians and bike riders on Burton Street, near the base of the stairs, would result in an increased risk for bike rider and pedestrian conflicts.

2.3.2 Need and options considered – Travel time savings and safety concerns

Issue description

North Sydney Council is of the view that the proposed ramp only saves a few seconds compared to the typical cycle trip across the Sydney Harbour Bridge. Council therefore believes that Transport's claims of bottlenecks being a substantial issue at the stairs is unfounded. Council also expressed the following concerns in relation to the proposal:

- Convenient access for bike riders is achieved, at the expense of pedestrians, vehicles, and park users generally
- The proposal provides a connection to the existing bridge cycleway, however potential safety concerns exist
- The proposal improves the path of travel for bike riders at the expense of pedestrians, other modes of travel and parkland users.

Response

Section 2.3 of the REF details the limitations of the existing infrastructure, including the current capacity limitations. The safety barrier located above the current stairs limits access of the stairs to a single user at a time, resulting in a bottleneck where two-way flow is not possible to enter and exit the Sydney Harbour Bridge cycleway. While necessary to ensure rider safety, the safety barrier presents a significant long-term capacity constraint. Section 2.1 of the REF also highlights safety concerns arising from use of the existing stair access, with one third of incidents reported on the Sydney Harbour Bridge cycleway caused by the bridge stairs in 2019. As the proposal would result in improved access to the Sydney Harbour Bridge cycleway, time savings for bike riders would be expected.

As noted in section 2.1 of the REF, the proposal aims to improve safety for bike riders, pedestrians and motorists. The proposal would improve pedestrian safety through design features and further design refinements detailed in section 2.3.1 above and Chapter 4 of this submissions report. The proposal would also improve traffic impacts on Alfred Street South, as outlined in section 5.3 of this submissions report. The proposal would remove bike riders from the road on Alfred Street South to a dedicated cycle path, minimising potential conflicts between bike riders and motorists. Traffic impacts would also be managed through environmental safeguards proposed in section 6.2 of this submissions report.

Transport has undertaken extensive consultation with the community and stakeholders to refine the design of the proposal to meet the needs of bike riders, as well as pedestrians, users of other modes of transport and park users. This consultation is detailed in section 5.2 of the REF and section 3.4 of this submissions report. Further design refinements have been undertaken to improve the pedestrian and bike rider interactions within Bradfield Park, including a two-stage crossing for pedestrians to cross the cycle path, tight turns at the ramp landing to slow descending bike riders and adequate signage and use of colour to delineate bike rider and pedestrian areas, as detailed in Chapter 4 of this submissions report.

2.3.3 Need and options considered – Project benefits

Issue description

North Sydney Council acknowledged that the proposal may encourage some people to adopt cycling as a form of transportation.

Response

Transport notes North Sydney Council's acknowledgement that the proposal would encourage some people to adopt bike riding as a form of transportation. As detailed in Chapter 2 of the REF, the proposal would address one of the main limitations of the existing infrastructure which is lack of accessibility for bike riders of all ages and abilities. By creating a ramp to the Sydney Harbour Bridge cycleway that is accessible to all, it would encourage an increase in the number of people bike riding as a form of sustainable transportation.

2.3.4 Need and options considered – Alternatives and options considered

Issue description

North Sydney Council noted that they and the community are willing to work together with Transport on what they believe to be a more appropriate design and location. Council noted that they continue to advocate for a dedicated lane for cycling and active transport on Lane 8 of the Sydney Harbour Bridge. Council is of the view that the design selection process was dismissive of other options presented by the community and Council.

Response

As detailed in section 5.2 of the REF and section 3.4 of this submissions report, extensive consultation has been undertaken with the community and stakeholders. Transport has sought regular feedback from North Sydney Council through design development of the proposal, this included:

- Consultation between July 2020 and May 2021, notifying North Sydney Council that the proposal was being revisited, explaining the drivers for the proposal and to provide an overview of alternatives considered and receive feedback on draft requirements and present ramp options
- Input and feedback on linear and looped ramp options was also requested from North Sydney Council and other key stakeholders during the June 2021 'Have your Say' engagement campaign
- Opportunities for the North Sydney Council to attend briefings with the design teams during the competitive design process, provide feedback on the shortlisted designs between 6 December 2021 and 16 January 2022, and provide feedback on detailed design as a part of the Design Integrity Panel.

Transport notes that feedback provided by the community and stakeholders has been appropriately considered, with the design refinements outlined in Chapter 4 of this submissions report, implemented to address community and stakeholder concerns.

An extensive design selection process was undertaken by Transport and is outlined in section 2.5 of the REF. This process included request for feedback on refined linear and loop ramp options via online survey or submission via other methods, with the results leading to a design competition based on the most popular ramp design. Feedback on ramp designs produced during the design competition was also requested, with submissions received via online survey and map as well as via emails.

The proposal was ultimately selected as it most appropriately addresses the proposal objectives by eliminating the existing bottleneck and queues created by the existing infrastructure, increased accessibility for a wider range of customers to use the Sydney Harbour Bridge cycleway and improved the connectivity between the Sydney CBD and lower north shore. Conversion of lane 8 on the Sydney Harbour Bridge to a dedicated cycleway was assessed and discounted, as described in section 2.5.1 of the REF, as lane 8 is significantly higher than the adjacent Cumberland Street on the city-side, making it more difficult to connect a cycleway. There is also poor connectivity from Cumberland Street to both Circular Quay and the western side of the city due to a lack of an east-west connecting street. Further assessment of this option is considered out of scope for the proposal.

Transport is committed to ongoing consultation with North Sydney Council during future design development and construction of the proposal. Transport acknowledges North Sydney Council has provided landowners consent for the proposal.

2.3.5 Need and options considered – Fold-back ramp

Issue description

North Sydney Council stated that if a ramp is to be constructed as an interim measure to the Lane 8 proposal, it needs be built in the right location and cause no harm. Council expressed a preference for Bradfield Park Central as a location and a foldback ramp design, suggesting a lift be built first whilst the design and fabrication of the ramp in Bradfield Park Central is being finalised.

North Sydney Council disagreed with Transports suggestion that a fold-back type ramp would cater to experienced riders only. Council does not agree that the foldback option is non-compliant and does not meet international standards.

Response

Section 2.5.1 of the REF and section 2.3.4 above outlines the justification for discounting conversion of lane 8 on the Sydney Harbour Bridge as a suitable alternative to the proposal. Further assessment of the lane 8 conversion is considered out of scope of the proposal.

The Bradfield Park Central ramp option was addressed and discounted as a suitable option in section 5.2 of the REF because, although it met the requirements in the Austroad guidelines to an 'acceptable' level, it fell short of the 'desirable' standard necessary to accommodate the widest possible range of users. Safety of any new addition is very high on the Transport agenda, which is to strive to obtain the best possible outcome.

The use of lifts in conjunction with the current stair access was explored in section 2.5 of the REF to address accessibility issues for older or less able bike riders, as well as those using heavy bikes. It was found that this alternative would create a bottleneck and increase queuing at the proposed lifts, which would slow down bike trips and cause significant long-term capacity constraints.

2.3.6 Need and options considered – Project cost

Issue description

North Sydney Council is of the view that there is insufficient information to conclude the proposal is delivering a cost-effective solution. Council stated the proposal involves a considerable expense in terms of capital investment and impacts on the public domain, suggesting that the proposal connects new infrastructure to an existing sub-standard cycleway.

Response

The proposal is consistent with Austroads Guidelines and resolving the bottleneck created by the stairs at Milsons Point would increase the capacity of the Sydney Harbour Bridge Cycleway by up to four times. The proposal would provide a long term solution to a major constraint in the cycleway network between the CBD's of Sydney and North Sydney. These benefits are discussed in Section 2.3 of the REF and include eliminating queues created by the current stairs and catering to the projected increase in bike riding demand, greater accessibility for people of all ages and abilities and improved connectivity between the Sydney CBD and lower north shore. There is an importance of optimising the existing infrastructure and promoting behaviour change, for instance, by making public transport, walking, cycling and micro-mobility safer and easier with better pathways, cycleways and connections. The *Future Transport Strategy* supports stronger investment in walking and cycling networks in order to offer the customers convenient alternatives to driving and build a sustainable transport system.

2.3.7 Need and options considered – Project objectives

Issue description

North Sydney Council acknowledged that the proposal meets the objective relating to improving access to the Sydney Harbour Bridge. However, Council noted that the proposal fails to achieve its other objectives.

Response

Table 8-3 of the REF outlines the proposal objectives and provides justification as to how the proposal achieves the stated objectives.

Chapter 4 of this submissions report outlines additional design refinements that have been implemented that would further reinforce the proposal objectives.

2.3.8 Description of proposal – Ramp design

Issue description

North Sydney Council noted that the ramp imposes on, rather than integrates with, the surrounding precinct and noted that the community have raised concerns including:

- The design creates bike rider - pedestrian conflicts at several locations and hinders pedestrian access to Bradfield Park North
- The design would encourage speed and funnel bike riders exiting the ramp at speed in a tight curve at the end of the ramp into the heavily pedestrianised Bradfield Park North, resulting in a high risk to safety of bike riders and pedestrians.

Response

Transport acknowledges that the proposal would have some visual impacts to the surrounding, as outlined in section 6.2 of the REF. The proposal incorporates design features that would minimise the visual bulk and scale of the structure, reducing its prominence. The proposal minimises potential visual impacts to the Sydney Harbour Bridge and Milsons Point Station by implementing a relatively simple alignment that does not detract from the character and prominence of the Sydney Harbour Bridge and parallels the Bridge approach walls and curves away from the Milsons Point Station entry. The ramp alignment would allow for the Milsons Point Station cartouche to remain visible from the station plaza. The proposal would incorporate bronze or stainless steel balustrading that would allow for the minimum volume of material, leading to a high degree of visual transparency, with a lightweight and contemporary design. The material for the balustrade would be selected during further design refinement.

Operation of the proposal would reduce the risk of pedestrian and bike rider conflicts and maintain pedestrian access to Bradfield Park North. Section 6.6 of the REF notes that operation of the proposal would offer safe separation of bike riders and pedestrians using the Alfred Street South cycle path. The proposal would provide users with greater confidence to walk and ride their bike to their destination and allow them to feel safe while using the cycle path. Additional design refinement has been made to further improve the safety of pedestrians and bike riders within Bradfield Park North, as outlined in Chapter 4 of this submissions report. This includes a two-stage crossing for pedestrians walking across the cycle path, clear signage and use of colour to clearly delineate pedestrian and bike rider areas and a tight turn at the ramp landing to slow descending bike riders.

2.3.9 Description of the proposal – Alfred Street South cycle path

Issue description

North Sydney Council observed that the proposal would result in substantial changes to the Alfred Street South road corridor environment including:

- Widening of the footpath corner of Lavender Street and Middlemiss Street intersection, and reducing the size of the roundabout at that intersection
- Provision of a new pedestrian and cycle path crossing and removal of the existing pedestrian refuges
- The relocation of a bus stop and replacement with an in-lane bus stop on Alfred Street South which may create safety issues arising from pedestrian visibility and may restrict residents accessing the building's driveway.

Response

Transport notes that the proposal has undergone design refinements, detailed in Chapter 4 of this submissions report, with traffic impacts associated with the refinements assessed in section 5.3 of this submissions report.

Transport notes that the Lavender Street roundabout would be retained in its current location with kerb adjustments and relocation of the crossing islands to improve lines of sight and accessibility. Upgrades to the pedestrian and bike rider crossing and pedestrian refuge would result in improved safety as the current pedestrian refuge does not comply with current road safety standards, as outlined in section 2.3 of the REF. The proposed upgrades to the pedestrian and bike rider crossing and pedestrian refuge were assessed in section 5.3 of this submissions report, with no traffic impacts likely to occur as a result.

As detailed in section 4.3.2 and Figure 4-4 and Figure 4-5 of this submissions report, the proposed in-lane bus stop would be replaced by a kerbside bus stop in the same location as identified in the REF. The kerbside bus stop would minimise impacts to motorists and traffic flow. Transport acknowledges that the narrower lanes that have prioritised pedestrian movements on the east side of Alfred Street may still result in some impact to northbound motorists when the bus stops. However, visibility to oncoming traffic and pedestrians is good and existing traffic is slow in this location.

Environmental safeguard, TT2, has been revised and requires modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop to be carried out prior to commencement of construction.

2.3.10 Description of the proposal – Pedestrian path

Issue description

North Sydney Council believed that reducing the pedestrian path in Bradfield Park North to 2.25 metres is inadequate for the pedestrian flows experienced and is contrary to the principles of Council's master plan.

Response

The existing park footpath within Bradfield Park North would be realigned to 1.8 metres wide to maintain pedestrian access through the park. The Bradfield Park and Kirribilli Foreshore Master Plan sets out a number of principal features for the preferred Masterplan for Bradfield Park. The proposal would not conflict with the principal features identified in the Master Plan as it would not:

- Conflict or interfere with the major northern gateway in the north-west of the Bradfield Park North. Additional seating would be provided as part of the proposal to provide views to Bradfield Park from this point
- Conflict with the connection to the park through Burton Street to Kirribilli Village, and, once operational, would not alter the location of Kirribilli Markets
- Alter the station palm forecourt structure at Milsons Point Station or alter pedestrian access through this area. The proposal would remove a large number of bike riders from this area, thereby improving pedestrian accessibility
- Conflict with pedestrian accessibility to Bradfield Park North. The design facilitates pedestrian accessibility and allows pedestrians a choice of movement via three separate pathways – one pathway on the western side of Alfred Street South and the two pathways on the eastern side of Alfred Street South.

2.3.11 Description of proposal – Signage

Issue description

North Sydney Council expressed concern about the potential for an increase in signage, pedestrian fencing, and other traffic-associated infrastructure.

Response

Transport have aimed to minimise visual clutter associated with the proposal where possible, with further design refinement to be implemented detailed in Chapter 4 of this submissions report. The use of posted signage has been minimised where feasible, with signage to be located on the ground as much as possible. Line marking and coloured paths would also be used to delineate pedestrian and bike rider areas as opposed to posted signage.

2.3.12 Consultation

Issue description

North Sydney Council stated that they do not believe that the design process was collaborative.

Response

Transport has been committed to consultation with community members and stakeholders. Chapter 5 of the REF and section 3.4 of this submissions report outline the extensive consultation that has occurred to date. Transport is committed to ongoing consultation with North Sydney Council and key stakeholders during further design development and construction.

2.3.13 Environmental assessment – Part 5 process

Issue description

North Sydney Council raised concerns about the assessment of the proposal under Part 5 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). Concerns raised included:

- North Sydney Council believes Transport has misinterpreted the intent of the provisions of the State Environmental Planning Policy (Transport and Infrastructure) 2021 and believes the implications of a high-impact cycle ramp on parkland and public open space are highly concerning.
- North Sydney Council believed that the Part 5 self-assessed approvals process was insufficient given the proposal impacts are significant and warrant a Part 4 application. Council strongly disagreed with Transport's assessment of the impacts in regards to the consideration of section 171 factors, as outlined in Appendix A of the REF. Council expressed particular objection to the concluding impacts for factors a, d, and e.
- North Sydney Council disagreed with Transport's assessment that the level of impact is such that it does not warrant formal referral to the Commonwealth Government under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) provisions.

Response

Section 4.1 of the REF outlines that Section 2.109 of the State Environmental Planning Policy (SEPP) (Transport and Infrastructure) permits development on any land for the purpose of a road or road infrastructure facilities to be carried out by or on behalf of a public authority without consent. Under Section 2.108 of the SEPP (Transport and Infrastructure) road infrastructure facilities include 'road related areas' within the meaning of the *Road Transport Act 2013*. The definition of a road related area under that Act includes 'an area that is open to the public and is designated for use by bike riders'. The proposal involves upgrading the existing cycleway connection between the Sydney Harbour Bridge and the bike network in Milsons Point and as such, meets the definition of 'road infrastructure facility' under the SEPP (Transport and Infrastructure) and 'road related area' under the *Road Transport Act 2013*.

Transport has applied the provisions of the State Environmental Planning Policy (SEPP) (Transport and Infrastructure) appropriately, and has concluded that the proposal is properly characterised as "road infrastructure facility" and is therefore permissible without consent. Being permissible without consent, assessment under Part 4 is not available for the proposal. To the extent that the proposal is likely to have a significant effect on the environment, the proposal could be declared to be

State Significant Infrastructure. However, for the reasons set out in Appendix H, and discussed below, the proposal is not likely to significantly affect the environment.

Factors specified in the Guideline for Division 5.1 assessments (Department of Planning and Environment (DPE), 2022), section 171 of the Environmental Planning and Assessment Regulation 2021 and the Roads and Related Facilities Environmental Impact Statement (EIS) Guideline (DUAP, 1996) are addressed in Chapter 6 of the REF.

The assessment of the proposal against the section 171 requirements under the Environmental Planning and Assessment Regulation 2021 was reviewed during preparation of the submissions report and the updated assessment is included in Appendix H. It is acknowledged that the construction of the proposal would result in impacts on the local community, though these impacts would be managed through the implementation of environmental safeguards identified in section 6.2 of this submissions report. Once operational, the proposal would improve safety, ease of access for a broad range of customer groups and bike riders, including seniors, families, people with disability and lower level of fitness, and decrease congestion due to the existing bottleneck caused by the stairs. The proposal would also enhance amenity of the area and encourage cycling as an alternative form of transport to driving, which would assist in relieving congestion on roads. As such, Section 171 Factor (a), relating to 'environmental impact on the community' has been assessed as being 'short term negative' and 'long term positive', and is consistent with the REF. It is acknowledged that the proposal would lead to a change to the locality through improvements to safety and accessibility for bike riders that would support future growth in the number of bike riders using the Sydney Harbour Bridge Cycleway and also enhance amenity of the area through encouraging cycling as an alternative form of transport to driving, which would assist in relieving congestion on roads. Section 171 Factor (b), relating to 'transformation of the locality' has been assessed to be a 'minor' impact to account for the change that the proposal would bring to the locality.

The construction of the proposal would result in a minor to moderate impact to the heritage fabric of the Sydney Harbour Bridge, which is locally, state, and nationally listed, as well as a moderate impact to the locally listed Bradfield Park. Other direct impacts to heritage listed items would be minor to negligible. The potential for construction works to impact on significant archaeological resources would be moderate due to the limited earthworks requiring shallow excavation. To mitigate the impact on heritage listings, the linear bike ramp has been designed with good contemporary design, locating the ramp close to the concrete bridge approach and graduating the ramp from its connection to the Sydney Harbour Bridge and Bradfield Park. Environmental safeguards are provided in section 6.2 of this submissions report. As such, Section 171 Factor (e), relating to the 'effect on a locality, place or building having aesthetic anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations', has been assessed to have a 'short term negative' impact. However, considering the proposed benefits to the locality once operational, the long-term impact is assessed as positive, aligning with the conclusion in the REF.

All other section 171 factors were assessed to have the same impact level as presented in the REF. See Appendix H for the updated section 171 factors assessment.

Assessment of the proposal's impacts on matters of national environmental significance and the environment of Commonwealth land found that there is unlikely to be a significant impact on relevant matters of national environmental significance or on Commonwealth land, as outlined in section 4.1 of the REF. Transport has already and will continue dialoguing with the Australian Department of Climate Change, Energy, the Environment and Water (DCCEEW) on this proposal to comply with the requirements under the EPBC Act, and to ensure all Commonwealth assessment requirements have been met.

2.3.14 Environmental assessment – Assessment of impacts

Issue description

North Sydney Council believed that the proposal fails to address many key community values, and that the REF does not properly examine the potential environmental impacts of the proposed ramp.

Response

Transport is committed to engaging with the community, with Chapter 5 of the REF outlining consultation carried out by Transport from 2017 to 2021. Outcomes from this consultation include an indication of the key community values, including improving road safety, creating a sustainable city where active transport is safe and enjoyable and preserving the amenity of the open spaces.

As noted in section 6.6.3 of the REF, the proposal would align with community values by improving safety and accessibility for bike riders and pedestrians and supporting future growth in the number of bike riders travelling between the lower north shore, North Sydney CBD and Sydney CBD. Transport has reduced the loss of green open space where reasonable and feasible

to do so, with Chapter 4 of this submissions report detailing additional low-level planting underneath the ramp structure where gravel was previously proposed. Offset planting of five trees along Alfred Street South would also be provided in response to tree removal within Bradfield Park North.

Detailed environmental assessments were undertaken for the proposal and discussed in Chapter 6 of the REF to identify and mitigate potential impacts relating to non-Aboriginal heritage, landscape character and visual amenity, noise and vibration, traffic and transport, contamination and Aboriginal heritage. Additional assessment has been undertaken following exhibition of the REF, as detailed in Chapter 5 of this submissions report.

2.3.15 Non-Aboriginal heritage – Impacts to the Sydney Harbour Bridge

Issue description

North Sydney Council believed that the proposal does not sensitively fit in with the architectural qualities of the Sydney Harbour Bridge and noted that Engineering Heritage agrees with this opinion.

Response

Transport recognises the significance of the Sydney Harbour Bridge and Milsons Point Station Group, through the Design Excellence Strategy (Transport, 2021) and the continuous engagement and involvement of heritage consultants informing the proposal. The Strategy is committed to promoting the highest standard of architectural, urban and landscape design appropriate in the context of the nationally significant Sydney Harbour Bridge. Many measures have been implemented in the design of the proposal to ensure it reflects a contextual response as well as best-practice approach to a new design in the heritage setting. Transport has collaborated with key project stakeholders throughout the design process to conserve, celebrate and enhance the surrounding heritage values.

As detailed in section 2.5 of the REF, the options assessment was carried out in consultation with the community and key stakeholders, including Heritage NSW and Heritage Council of NSW. Following feedback received from the public display of the refined linear and refined loop ramp options in 2021, the linear option was carried forward as the preferred option and presented to the Heritage Council Approvals Committee who voiced support for a linear ramp and the design competition process. The design competition was held and as per the community consultation, Design Jury assessment and tender assessment committee, the concept put forward by Aspect Design Studio was selected for further design development. The Design Jury was comprised of a panel of five design experts and chaired by the NSW Government Architect.

As detailed in Chapter 4 of this submissions report, the design has been further developed to fit into the heritage precinct as sensitively as possible, using sympathetic material and sensitive design, while minimising impacts to open space and tree loss. The ramp would incorporate ellipse columns and be aligned parallel to the bridge approach walls, so to not detract from the character and prominence of the Sydney Harbour Bridge. The ramp would also have an original and contemporary character, contrasting in form and detail with the heritage character of the bridge, it will be clearly identifiable as a new element and will not detract from the authenticity of the bridge character. While it would introduce a new built structure attached to the Sydney Harbour Bridge, the generally linear alignment, original and contemporary character would respect the nature of the bridge features and Milsons Point Station.

Impact on Nationally significant views and setting of the Sydney Harbour Bridge have also been carefully considered and assessed in the REF documentation and the updated SoHI (Artefact, 2023). As part of the design development, the detailed design refined the bike ramp to have minimal intrusion on views to the Sydney Harbour Bridge for park users, residents, commuters and visitors, and to ensure safety. It encompasses the refinement of the bike ramp in relation to its alignment to be generally matched to that of the Sydney Harbour Bridge viaduct, the balustrading along the length of the ramp, its geometry and landing with deference to the heritage of Milsons Point Station and Bradfield Park North setting.

Transport acknowledges that preservation of the heritage values of the Sydney Harbour Bridge is of high importance, with Section 6.1 of the REF identifying potential impacts of the proposal on its heritage values. This includes removal of part of the parapet near the Burton Street stairs along the viaduct, introduction of a new structure within the heritage setting, removal of some landscaping elements and associated excavation, and the introduction of the ramp landing in Bradfield Park North. A number of environmental safeguards have been revised and added (NAH1, NAH2, NAH3, NAH4, NAH5, NAH6, NAH7, NAH8, NAH9, NAH10, NAH11, NAH12, NAH13, NAH14, NAH15, NAH16, NAH17, NAH18, NAH19, NAH20 and NAH21) (see Table 6-1 of this submissions report) to minimise or avoid impacts to non-Aboriginal heritage. This includes:

- Compliance with, and prevalence of the conditions of approval under section 60 of the Heritage Act
- Heritage inductions for staff working on the proposal

- Continued involvement from the Design Integrity Panel
- Consultation and involvement with key stakeholders and heritage architect
- Preparation of a Construction Environmental Management Plan (CEMP)
- Photographic Archival Recording and reporting carried out prior to commencement of construction
- Preparation of a Heritage Interpretation Strategy
- Onsite monitoring during excavations of the area
- Operating plant to adhere to setbacks and clearances, with temporary hoarding and signage to be placed around heritage buildings
- Vibration monitoring to ensure no vibration impacts to heritage items
- Site rehabilitation.

Design refinements have been implemented, as outlined in Chapter 4 of this submissions report, to further reduce the potential impacts of the proposal on the Sydney Harbour Bridge. Section 5.1 of this submissions report outlines the additional assessment conducted regarding potential non-Aboriginal heritage impacts of the proposal. Transport acknowledges the concerns of North Sydney Council and Engineering Heritage Sydney; however, as detailed above, heritage impacts would be managed through design and environmental safeguards. Section 3.3 of this submissions report examines further community concerns regarding description of the proposal.

2.3.16 Non-Aboriginal heritage – Impacts to Bradfield Park

Issue description

North Sydney Council emphasised the heritage significance of the Sydney Harbour Bridge. Council noted that Bradfield Park is included within the listings for its importance in providing curtilage and setting to the Sydney Harbour Bridge and its approaches. Council believed that any 'moderate' impacts to heritage listed items should be avoided.

Response

Transport acknowledges the landscape significance and setting contribution of Bradfield Park, as identified in the REF and technical studies carried out. Tailored measures have been implemented throughout design development and planning for the proposal. Interface with the park and a place-based approach has been employed and highly considered as described in the Sydney Harbour Bridge Cycleway Northern Access Project Detailed Design Report (Aspect, 2023). The measures Transport has taken to minimise impacts on heritage items listed items have been discussed above.

Transport acknowledges the heritage listings of the Sydney Harbour Bridge and Bradfield Park North, including State Heritage Listings, Commonwealth Heritage Listings and listings in the North Sydney Local Environmental Plan (LEP) 2013. Section 6.1 of the REF and the response above outline the potential heritage impacts of the proposal, the environmental safeguards proposed and the design refinements to be implemented.

2.3.17 Non-Aboriginal heritage – Sydney Harbour Bridge Conservation Management Plan

Issue description

North Sydney Council stated that the proposal does not comply with the policies in the Transport for NSW Sydney Harbour Bridge Conservation Management Plan in that does not align with Policies 11 (Maintaining Key Views) and 12 (Retention of Existing Public Space).

Response

Table 8-4 of Appendix D of the REF assessed the proposal against each of the policies of the Sydney Harbour Bridge Conservation Management Plan (GML, 2021) and determined that the proposal is consistent with each of the Conservation Management Plans policies. It is noted that Policies 11 and 12 referred to by North Sydney Council are from the Sydney Harbour Bridge Conservation Management Plan 2007, prepared by Godden Mackay Logan (GML). The Sydney Harbour Bridge Conservation Management Plan was updated by GML in 2021, and this version supersedes the 2007 version. The equivalent for Policies 11 and 12 in the most recent Sydney Harbour Bridge Conservation Management Plan (GML, 2021) are Policy 12

(Maintaining key views of the Sydney harbour Bridge in its setting) and Policy 13 (Retention of existing open space for public use/recreation).

An updated SoHI was prepared for the proposal, outlined in section 5.1 of this submissions report, which considers the policies of the Conservation Management Plan (GML, 2021). Section 8.8 of the updated SoHI (see Appendix C) provides a detailed assessment of the proposal against the relevant policies of the Conservation Management Plan, including Policy 12 and Policy 13. The proposal would not alter the management responsibilities and delegations set out under Policy 13 of the Sydney Harbour Bridge Conservation Management Plan 2021.

As identified in the updated SoHI prepared by Artefact and the LCVIA prepared by Iris, the proposed cycle ramp will alter a key view to the western elevation of the northern approaches, as well as alter the long views south towards the bridge from a number of locations in Bradfield Park. However, the current ramp design has been carefully progressed on balance given the existing context. Alternative options, including the loop option atop the bowling green, within Bradfield Park Central, and the alternative design competition entries, resulted in more severe view impacts and greater intrusion into the park as a result of their form and alignment. Whilst there are some impacts on views, the proposal is consistent with Policy 12 – Maintaining key views of the Sydney Harbour Bridge in its setting as the proposal is located in a relatively discrete location in the context of the Sydney Harbour Bridge in its entirety. The proposal would result in localised view impacts, however they would be ameliorated to some extent through design and configuration of the ramp.

The proposal is consistent with Policy 13 – Retention of existing public space for public use/recreation, as the proposal closely aligns with the viaduct and maximises intrusion into Bradfield Park North. As a result, amenity is maximised and openness to the sky within the park is maintained. The ramp landing has been designed to touch down lightly in Bradfield Park north within an upgraded plaza that will add to the amenity of the park and respect the former alignment of Willoughby Street. Due to the close alignment the ramp follows in relationship to the Sydney Harbour Bridge viaduct (three metres generally then tapering to 1.5 metres north of the station) the overall configuration and layout of Bradfield Park, station entry plaza and Bradfield Park north is maintained. The installation of the elevated linear ramp to some extent detracts from the existing setting, however, the proposal retains the open space and existing use of Bradfield Park and is therefore consistent with Policy 13.

As outlined in Table 6-1 of this submissions report, the proposal will progress in accordance with close regard for the conservation policies and environmental safeguards outlined in the Sydney Harbour Bridge Conservation Management Plan 2021 and the Supplementary Detailed Heritage Framework. A Heritage Interpretation Strategy will also be prepared during progression of detailed design.

2.3.18 Non-Aboriginal heritage – Impacts to Milsons Point Station

Issue description

North Sydney Council expressed concern about the potential impacts of the proposal on the heritage values of Milsons Point Station. Key concerns included:

- Concern that the proposal would partially obscure the Burton Street archway
- Concern the proposal would detract upon the Milsons Point Station entrance, especially on its aesthetic and historic significance.

Response

Transport acknowledges that the proposal would result in minor to negligible visual impacts to the Burton Street archway due to partial obstruction from the proposal, as outlined in Section 6.1.3 of the REF. Section 5.2 of this submissions report and the Addendum LCVIA provides viewpoints to the Burton Street archway from Alfred Street South and a modelled image of the proposal is shown in Figure 2-1. Figure 2-1 shows the proposal with bronze balustrading, however, the selection of either bronze or stainless steel balustrading for the proposal would be made during further design refinement. It is acknowledged that the design would introduce a new element in the already established views of the locality but these are not “postcard” views for which the Sydney Harbour Bridge is re-known for, and this option is the result of a concerted design between main stakeholders and a suite of qualified consultants. Localised impacts to the Burton Street archway are acceptable on balance given the need to progress an overarching design that retains and respects key views to the Sydney Harbour Bridge, as well as remaining consistent with the geometry and original design intent of the infrastructure.

The design of the proposal has been developed to fit into the heritage precinct as sensitively as possible, using sympathetic material and sensitive design. The generally curvilinear alignment, with contemporary and refined character, would minimise adverse visual impacts on the visual setting of the Sydney Harbour Bridge. The design has been carefully crafted by a team of professionals and stakeholders to minimise the impact on views towards the Sydney Harbour Bridge from this location.

Figure 2-1: View east to the Burton Street tunnel archway, modelled image (note that the balustrade modelled shows the bronze finish) (model source: Aurecon)

As detailed in section 6.2.2 of the REF, Transport notes the aesthetic and historical significance of the Milsons Point Station entrance, including the '1932' cartouche above the entrance to the station. Section 5.2 of this submissions report and the Addendum LCVIA provide viewpoints to the Milsons Point Station entrance and cartouche. Following exhibition of the proposal, design refinements have been made to increase the ramp gradient to five percent to allow for the cartouche to remain visible from the Milsons Point Station forecourt, as outlined in Chapter 4 of this submissions report. Moreover, the curvilinear approach involves a setback between the ramp and the station entrance wall, which enables the cartouche to be retained and protected. The setback also allows the cartouche to be appreciated from a closer point of view. In addition to these measures the design has been carefully developed to symmetrically frame the station entrance, with columns placed either side and the cycleway geometry taking the form of a gentle arc as it passes the station entrance to acknowledge its significance. Figure 2-2 shows a modelled image of the entrance to Milsons Point Station with the proposal.

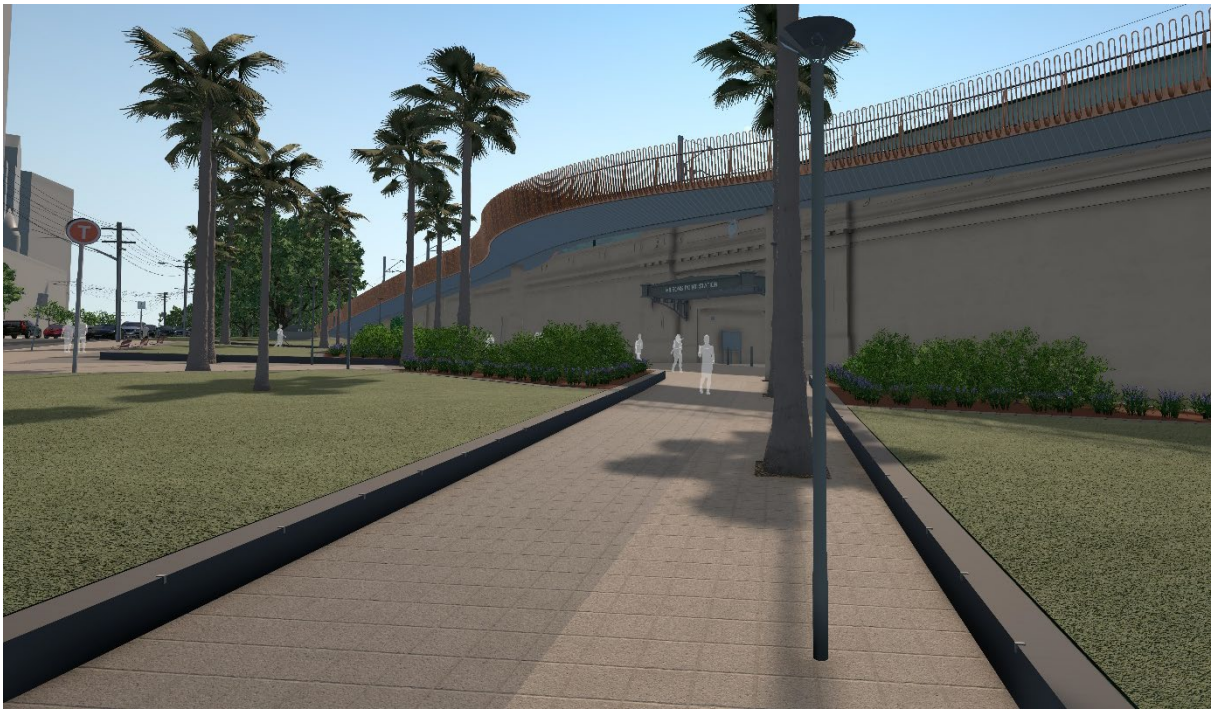


Figure 2-2: View northeast from Burton Street to Milsons Point Station forecourt and entrance, modelled image (note that the balustrade modelled shows the bronze finish) (model source: Aurecon)

Artefact notes that given the impacts to Milsons Point Station have been assessed as moderate, the heritage value would be minimally affected.

The proposal has implemented a contemporary, lightweight design with a high degree of visual transparency to reduce the above impacts in accordance with environmental safeguards in Table 6-1 (LV1 and LV2) of this submissions report. Wall lighting of the Sydney Harbour Bridge viaduct would also be retained. Additional lighting of the proposal has been designed to work in partnership with the lighting of the Sydney Harbour Bridge wall lighting. The proposal would minimise potential impacts to key features of the Milsons Point Station entrance, including its aesthetic and historical significance through design features.

2.3.19 Non-Aboriginal heritage – Impacts to Bradfield Park North

Issue description

North Sydney Council expressed concern regarding the proposal's impacts on Bradfield Park North and its heritage value. Key concerns identified included:

- Concern that the proposed ramp landing in Bradfield Park North works against the master plan for Bradfield Park, removing or substantially diminishing any previous improvement works carried out by North Sydney Council
- Some of the impacts to Bradfield Park identified in the REF are ‘moderate’ or ‘high’ and some would have a ‘direct physical and visual impact’. Any ‘moderate' impacts should be avoided
- Concern that there would be severe detrimental impact on the character and setting of Bradfield Park North which is described as having ‘Exceptional Significance’ for its importance in providing unique and uninterrupted views of the Bridge and its approaches
- Concern that the proposal would detract from the Bradfield Park Heritage Walk
- Disagreement with the self-assessment by Transport that determined the matter does not require formal referral in regard National Heritage under the EPBC Act. The proposal clearly has a significant adverse impact on Bradfield Park North
- Concern that the proposal would obscure ground-based elements associated with the interpretation of the footprints of former houses and businesses that were demolished to build the Sydney Harbour Bridge
- Concern that Transport have gone against the advice of its own heritage report, which identified Bradfield Park Central as the preferred location for a built element.

Response

Transport acknowledges the potential impacts of the proposal to the layout of Bradfield Park North, as outlined in section 6.1 and 6.2 of the REF. As noted in section 2.3.10 of this submissions report, the proposal would not interfere with the key principles of the Bradfield Park and Kirribilli Foreshore Masterplan. Design refinements, as detailed in above responses and Chapter 4 of this submissions report, have been implemented to minimise potential impacts to Bradfield Park North. Design refinements to the proposal have included retention of the Heritage Walk and relocation of the parapet near the ramp landing. Environmental safeguard NAH4 in Table 6-1 of this submissions report has been implemented, including involvement of the Design Integrity Panel and incorporation of heritage, design and Connecting with Country expertise.

Section 8.1 of the REF and section 2.3.7 of this submissions report identify how each of the proposal objectives have been achieved. Transport notes that Bradfield Park (including the northern section) is considered as a heritage item under the North Sydney LEP 2013 and that it forms part of the Sydney Harbour Bridge setting and layout. This will be considered in discussions with the NSW Heritage Council and the DCCEEW. An updated SoHI is summarised in section 5.1 of this submissions report and is included in Appendix C, which concludes that the proposed action on the National Heritage values of the Sydney Harbour Bridge would not result in significant impacts as defined by the Significant Impact Guidelines 1.1 – Matters of National Environmental Significance and the EPBC Act. However, Transport will continue engaging with the DCCEEW to ensure all Commonwealth assessment requirements have been met. Chapter 5 of the REF addresses the consultation that has taken place between Transport and Heritage NSW, the DCCEEW and the National Trust including initial consultation regarding the revisiting of the proposal and requests for feedback on the proposal. As noted in section 2.2 of this submissions report, Heritage NSW has emphasised the importance of minimising impacts to the State Heritage values of the bridge however have not raised any specific objection to the proposal, nor any major concerns with the design and have noted the Heritage Council Approvals Committee's support for the linear ramp option process. Transport is committed to ongoing consultation with DCCEEW and other stakeholders.

As described in Chapter 4 of this submissions report, further design refinements have allowed for the retention of the Heritage Walk, existing sandstone heritage inlays and heritage interpretive signage, which will no longer be impacted.

Alternative design options for the proposal, including the looped ramp option, were assessed against the proposal objectives. This alternative option was discounted after a comprehensive options assessment as detailed in section 2.5 of the REF.

Section 3.7 of the Supplementary Detailed Heritage Framework report (TZG, 2021) states that Bradfield Park Central is located outside the curtilage of the Sydney Harbour Bridge and LEP listing of Bradfield Park and hence could be a potential site for a sympathetic new built element. The report does not, however, indicate a preference for Bradfield Park Central as the location for a built element. The TZG heritage framework was considered throughout the development of the design.

2.3.20 Non-Aboriginal heritage – Heritage impacts

Issue description

In relation to impacts to heritage listed items, North Sydney Council expressed the view that:

- The proposal would result in severe impacts to heritage values of the area
- The proposal does not sensitively fit in with the heritage values of the area
- The proposal fails in respect to protecting cultural heritage
- The proposal substantially diminishes the heritage backdrop and curtilage
- Heritage impacts and the views of the community have been ignored.

Response

Section 6.1 of the REF outlines the potential heritage impacts as a result of the proposal, including impacts to the Sydney Harbour Bridge, Bradfield Park and Milsons Point Station. A number of design refinements have been implemented to minimise the potential heritage impacts from the proposal and are outlined in Chapter 4 of this submissions report. Sections 2.3.15 to 2.3.19 above also outline design refinements and environmental safeguards implemented to mitigate heritage impacts and consider community views.

While the proposal would result in some unavoidable adverse impacts due to the scale and nature of the change, the preferred design has led to the best possible outcomes for the combined heritage values of the area and the safety of cyclists, pedestrians and the general community. In order to come to a solution, Transport adopted a design led approach that applied

a key design principle to sensitively respond to the heritage values, in accordance with expert heritage advice, and consultation with key heritage stakeholders and regulators. Guidance from the design competition jury, Design Integrity Panel and Heritage Council Approvals committee have ensured that the proposal has continued to be refined and improved in response to North Sydney Council's concerns.

2.3.21 Landscape character and visual impact – Urban design

Issue description

North Sydney Council expressed concern about the design of the proposal and its visual impacts:

- Concern the ramp structure creates concealed areas and blocks open sightlines, which is contrary to the principles of Crime Prevention Through Environmental Design (CPTED)
- Concern the built and natural environment is not enhanced by the proposal
- Concern the existing pedestrian amenity is compromised by the proposal and the net result for most of the impacted proposal area is a pedestrian downgrade. In particular, North Sydney Council believes that the cycleway would corral pedestrians between the kerb and the designated cycle path and disrupt the existing pedestrian connection between the heritage interpretation paved area and the pedestrian footpath.

Response

Consideration has been given to the principles of CPTED during development of the proposal through the relocation of the footpath through Bradfield Park North to directly west of the ramp, rather than underneath and the relocation of the parapet next to the ramp landing. Lighting within Bradfield Park is sufficient due to existing street lighting, backlighting from the Sydney Harbour Bridge and wall lighting on the bridge viaduct. Additional accent lighting for the ramp structure would be provided and lighting installed within the handrails. In response to improving passive surveillance of the space between the bridge viaduct and ramp, the abutment will be shortened by about three to 3.5 metres. Opportunities for concealment will be reduced through low level planting and suitable lighting.

Transport acknowledges the potential visual impacts of the proposal, as outlined in section 6.2 of the REF and section 5.2 of this submissions report. However, the current ramp design has been carefully progressed on balance given the existing context. Alternative options, including the loop option atop the bowling green and the alternative design competition entries resulted in more severe view impacts and greater intrusion into the park as a result of their form and alignment. Environmental safeguard LV2 outlines design considerations to minimise the visual impacts of the proposal on the surrounding area, including use of lightweight materials and neutral colour palettes and an alignment that minimises obstruction of visual features. Further design refinements, as detailed in Chapter 4 of this submissions report, have been implemented to reduce the potential visual impacts of the proposal including shortening of the ramp by about three to 3.5 metres to reduce the physical bulk of the structure.

The proposal would enhance the natural and built environment through improvements to the public domain including the provision of new park amenities, such as additional seating and bike hoops. This will provide bike riders and pedestrians space to make a decision whether to stop and gather or continue on their journey north or south along Alfred Street. Five additional trees have been included along Alfred Street South that will provide shade in summer, and sunlight in the winter, enhancing the streetscape.

Operation of the proposal would result in improved pedestrian safety and accessibility by providing safe separation of pedestrians and bike riders along Alfred Street South. The separation and delineation provided on the existing shared path on Alfred Street South would reduce conflicts between bike riders and pedestrians. The pedestrian path is proposed on the road kerb side to allow pedestrians exiting parked cars to utilise the footpath, reducing the risk of unexpectedly entering the path of oncoming bike riders. Section 2.3 of the REF also outlines that the existing pedestrian refuge on Alfred Street would be upgraded to meet current road safety standards. Pedestrians would still have the opportunity to journey through Bradfield Park from the upgraded pedestrian crossing on Alfred Street to the heritage interpretation paved area via upgraded and existing footpaths. Further design refinements, noted in Chapter 4 of this submissions report, improve pedestrian safety through the introduction of a two-stage pedestrian crossing of the Alfred Street South cycle path and clear delineation of pedestrian and bike rider areas using colour.

2.3.22 Landscape character and visual impact – Landscaping impacts

Issue description

North Sydney Council believed that the proposal includes extensive disruptive works to the existing soft and hard landscape elements of the iconic landscape of Bradfield Park North. Council objected to the proposed:

- Removal / disruption of the heritage footprints archaeological interpretation areas
- Removal of the rotunda and widened seating zone which faces the historic church
- Impacts on the existing bridge wall lighting scheme
- Removal of gardens in front of Milsons Point Station and replacement with hard paving
- Loss of grass areas north of the station and replacement of the grass with a concrete pathway.

North Sydney Council noted that the design and location of the ramp would make the establishment and maintenance of the proposed garden areas beneath the ramp difficult, due to the rain shadow effect and constrained spaces.

Response

Transport notes the aesthetic and historical importance of Bradfield Park North and acknowledges that the proposal would result in some changes to the park. Potential impacts to Bradfield Park North are outlined in sections 6.1 and 6.2 of the REF and section 5.1 and section 5.2 of this submissions report.

As outlined in section 6.2 of the REF, the proposal would result in some increases in hard landscaping within Bradfield Park.

As a result of design refinements, as described in Chapter 4 of this submissions report, the following would occur:

- The Heritage Walk and heritage footprints would be retained and reinstated in the new landscape design at the ramp landing
- The rotunda would be removed and new gathering space would be provided with additional seating that would face towards the historic church. Transport will work with North Sydney Council to identify a suitable location for the potential relocation of the rotunda
- Transport acknowledges the importance of the existing lighting to maintain the visual distinctiveness of the local surroundings. The bridge lighting system would not be altered by the proposal. Lighting for the proposal would be integrated into the soffit of the ramp and ramp handrails and has been designed to work in partnership with the illumination of the Sydney Harbour Bridge wall lighting
- The garden beds in front of Milsons Point Station have been retained through design refinement. The width of the garden beds will be reduced to allow suitable clear space for pedestrian movement and also ensure the pathway is open to the sky, to provide a pleasant pedestrian experience
- Additional low level planting is now proposed underneath the ramp structure, where gravel was previously proposed, to increase soft landscaping elements.

Planting of five trees along Alfred Street South is also proposed to assist in offsetting tree removal for the proposal and to provide shading and enhance visual amenity. The likelihood of a rain shadow effect isn't expected to present a significant issue due to the relatively narrow width of the ramp and the angled soffit plates which will increase water penetration to the ground area beneath the ramp. Plant species with lower watering requirements will be considered for selection.

2.3.23 Landscape character and visual impact – Visual amenity

Issue description

North Sydney Council is concerned about the visual impacts of the proposal on the local area and expressed the following about the proposal:

- Concern about the visual impact to the Sydney Harbour Bridge stairs, the Bridge walls and Burton Street Archway, especially when viewed from Bradfield Park North and Alfred Street South.
- Opinion that the proposal would detrimentally impact key spaces and views, noting views of the Milsons Point Station Entrance, Milsons Point Station forecourt, and Burton Street Tunnel Archway would be negatively impacted

- Opinion that the visual impact assessment conducted for the REF is limited, with only a few select viewpoints included and a few 3D renderings of the proposed ramp. North Sydney Council is of the view that the analysis omits key viewpoints critical to an understanding of the proposal impacts
- Concern that the animated 3D digital design developed for the proposal was omitted from the REF and would like to receive the 3D walk-throughs along key pedestrian pathways and of critically affected viewpoints, to inform them and the community as to the full extent of impacts of the proposal.
- Concern that the visual assessment omits Bradfield Park North, which is a defined National Heritage Place under the EPBC Act.

Response

Transport notes that the proposal would result in visual impacts to Milsons Point Station and it's setting as outlined in section 6.1.3 and section 6.2.3 of the REF, with visual impacts ranging from low beneficial visual impacts to moderate adverse visual impacts.

As noted above, while the proposal would result in unavoidable adverse impacts due to the scale and nature of the change, the preferred design was chosen amongst other alternative options as it had the least visual impacts. For example, the loop option situated in the bowling green would have severe and obtrusive visual impacts, particularly on key views of the Sydney Harbour Bridge and the Milsons Point Station entrance to the south from Alfred Street South. The proposal closely aligns to the viaduct and delivers the most discrete outcome from a landscape character and visual impact perspective.

Environmental safeguards and design refinements have been identified above in sections 2.3.15 to section 2.3.20 of this submissions report. Transport notes concerns regarding views to Milsons Point Station and the Burton Street tunnel archway. Design refinements, discussed in Chapter 4 of this submissions report have minimised impacts to these aspects. An Addendum LCVIA, detailed in section 5.2 of this submissions report, provides additional viewpoints facing northeast from Burton Street to Milsons Point Station forecourt and entrance and facing east to the Burton Street tunnel archway. The viewpoints were selected as they were identified as critical viewpoints where impacts would be most significantly felt as described in section 7.2 of the REF LCVIA. In addition to these representative viewpoints, an assessment of the proposal on the 'postcard' views to the Sydney Harbour Bridge has been undertaken.

Transport acknowledges the ramp structure would be located in close proximity to the Sydney Harbour Bridge approach wall, however only partial obstruction of the wall and stair features would be noticeable from certain viewpoints. For example, viewpoint 7, facing northeast along Alfred Street South, shows that the upper section of the existing stair access would be partially obstructed by the proposal. As such the proposal has been assessed as mostly having low to moderate visual impacts during operation.

Environmental safeguards have been implemented to minimise potential visual impacts and are outlined in Table 6-1 (LV1, LV2 and LV5) of this submissions report.

Chapter 4 of this submissions report and Chapter 4 of the Sydney Harbour Bridge Cycleway Northern Access Project Detailed Design Report (Aspect, 2023) provides a number of drawings of the detailed design for the proposal. The LCVIA, summarised in section 5.2 of this submissions report, also provides 3D renders for each viewpoint assessed. The level 3D imagery provided is considered appropriate for the scale of the proposal. Transport is committed to ongoing consultation with North Sydney Council in relation to the 3D model of the proposal.

Impacts to Bradfield Park North were considered in section 6.2 of the REF and the LCVIA (Appendix C to the REF). Bradfield Park (including the northern section) is considered as a heritage item under the North Sydney LEP 2013 but is not listed under the EPBC National Heritage List or the State Heritage Register. The potential impacts to views from Bradfield Park North were assessed in the LCVIA (Viewpoint 3) (Appendix C to the REF), which acknowledges that there would be a moderate visual impact on Bradfield Park North. The updated SoHI (see section 5.1 of this submission report) concluded that the impacts to the heritage values of Bradfield Park North would be moderate. However, while public amenity of the park would be altered due to the landing of the bike ramp, Bradfield Park North would also see a positive impact as general mobility of bike riders and pedestrians would be improved, relieving the congestion of Burton Street stairs and surrounds. The Addendum LCVIA concluded that while the proposal would reduce visibility of the National Heritage listed approach walls of the Sydney Harbour Bridge, the generally curvilinear alignment, refined design character, and retainment of the tree canopy would minimise impacts to the character of the park and Sydney Harbour Bridge setting.

2.3.24 Landscape character and visual impact – Landscape character

Issue description

North Sydney Council expressed concern about the visual impact on landscape character and expressed the following about the proposal:

- Belief that the REF substantially downplays the levels of impact
- Belief that the REF figures should have shown the proposed changes in more detail
- Concern over the impacts that the proposed ramp would have on the landscape character of the area, noting that the proposal would not sensitively fit in with the context of the location, would have substantial negative impacts, and includes substantial negative changes and additions to existing structures
- Concern that the landscape character assessment does not respond to the nuances of the Bradfield Park landscape as it combines the entirety of Bradfield Park into one character zone rather than three: North, Central and South.

Response

The proposal has been assessed through the alternatives and options assessment and design refinement as the option that would result in the least amount of impact to the overall landscape. The proposal would maintain views to the viaduct, Sydney Harbour Bridge and Milsons Point Station entry more so than other options considered. The proposal would achieve this while also delivering on transport requirements including rideability, safety and accessibility. Transport acknowledges that while the proposal would still result in some impacts to the local landscape, the proposal would deliver the best possible outcomes for the park out of the options considered. Transport notes that specialists were consulted with to provide an accurate assessment of the potential impacts to landscape character and visual amenity as a result of the proposal and to prepare a LCVIA, included as Appendix C of the REF. An Addendum LCVIA was prepared and summarised in section 5.2 of this submissions report following design refinements and to provide additional viewpoints. The Addendum LCVIA is included as Appendix D of this submissions report.

Visual impacts associated with the proposal, as assessed in section 6.2 of the REF and Chapter 4 of this submissions report, would include the presence of a new structure within Bradfield Park and Milsons Point Station plaza. Environmental safeguards proposed in Table 6-1 (LV2) of this submissions report would be implemented to ensure that the ramp design was of a lightweight, contemporary design and followed the general alignment of the Sydney Harbour Bridge approach walls. Chapter 4 of this submissions report outlines design refinements implemented to minimise potential visual impacts, including increasing the ramp gradient to five percent to improve visibility to the Milsons Point Station cartouche that was previously to be partially obstructed, and shortening the ramp by about three to 3.5 metres.

Transport notes that the LCVIA clearly defines Bradfield Park in three distinct sections: Bradfield North, Bradfield Central and Bradfield South. As Bradfield Park North is an important location for the community, design refinements have been implemented to minimise visual impacts where possible. Within the forecourt area of Milsons Point Station the existing trees and overall plaza geometry will be retained. New pavement features, such as light and dark pavement zones and stone inlays, have been incorporated with respect to the existing geometry to provide a seamless extension of existing elements. Direct impacts to Bradfield Park Central and Bradfield Park South would be minimal.

2.3.25 Traffic and transport – Loss of parking

Issue description

North Sydney Council expressed concern in relation to the permanent removal of 15 parking spaces, noting that this would negatively impact businesses and local residents.

Response

Transport acknowledges the impacts to parking on Alfred Street South as a result of the proposal, outlined in section 6.4 of the REF. Four parking spots would be removed to accommodate the new kerbside bus stop as outlined in section 4.3.2 of this submissions report. However, the maximum total number of parking spaces to be permanently removed will remain as 15, as consistent with the REF.

As identified in section 6.4.3 of the REF, on-street parking would be available on adjoining streets such as Lavender Street, Cliff Street, Glen Street, Burton Street and Fitzroy Street. There is also an off-street parking area located at the southern end of

Alfred Street South. Transport is committed to ongoing consultation with North Sydney Council in relation to parking impacts due to operation of the proposal (Environmental safeguard TT28).

2.3.26 Traffic and transport – Impacts to Alfred Street South

Issue description

North Sydney Council observed that the proposal would result in substantial changes to the Alfred Street South road corridor including:

- A new bi-directional cycle path on Alfred Street South immediately adjacent to Bradfield Park North
- Narrowing sections of the traffic and parking lanes, noting that the existing street environment is already tightly constrained.

Response

Transport acknowledges the potential traffic impacts due to narrowing of Alfred Street South to accommodate a bi-directional cycle path in section 6.4 of the REF. A review of the road-space reallocation was carried out with the intent of identifying the most appropriate widths to be applied between the cycleway ramp landing point in Bradfield Park North and the proposed raised crossing of Alfred Street South toward the Lavender Street roundabout. The review identified that the refined proposal, which includes a 2.4 metre wide cycleway, 2.6 metre wide footpath and roadway widths of 3.2 metres wide lane with a 2.1 metre wide parallel parking lane in each direction. The proposal is an improvement on the existing shared path width on Alfred Street South and would provide separation and delineation to reduce conflicts between the bike riders and pedestrians. It is noted that lane widths of 3.2 metres have been confirmed by the State Transit Authority as meeting the minimum requirements for bus movements. The pedestrian path is proposed on the road kerb side to allow pedestrians exiting parked cars to utilise the footpath, reducing the risk of unexpectedly entering the path of oncoming bike riders. This allocation of road space meets the proposal objectives and maintains street parking, as raised as a matter of concern, above.

Transport notes the proposal aims to encourage increased uptake of bike riders commuting using the Sydney Harbour Bridge cycleway and as such, reallocation of road space is required. An updated traffic impact assessment, that considers impacts of the proposal on the surrounding road network is summarised in section 5.3 of this submissions report and included as Appendix E and concludes that the proposal would not decrease the level of service at intersections on Alfred Street South.

2.3.27 Traffic and transport – Pedestrian safety

Issue description

North Sydney Council expressed concern over the impacts the proposal may have on pedestrians and park users. Council expressed concern that:

- Aside from the proposed pedestrian crossing, the proposal disadvantages pedestrians
- Pedestrians would be forced to negotiate the cycleway access and egress lanes, compromising safety and amenity
- The proposal potentially induces pedestrian and bike rider conflict, particularly at the ramp landing in Bradfield Park North
- The proposal would force bike riders heading east via Kirribilli to travel back to the Burton Street Tunnel underpass via the Alfred Street South traffic lane, the Bridge stairs, or the Alfred Street South footpath, which would bring bike riders into conflict with pedestrians travelling south. Cyclists heading east via Kirribilli would be forced to double back via Alfred Street South footpath into the Burton Street Shared Zone
- The proposed ramp would create concealed areas beside and under the ramp, impacting pedestrian safety
- Blind spots would be created at the station and tunnel footpath corners due to the pathway being moved against the Bridge wall
- The existing heritage walk pathway would be disrupted.

A marked-up image outlining North Sydney Council's concerns above is provided in Appendix G.

Response

As described in section 2.3 of the REF, pedestrians and cyclists currently share access on Alfred Street South, increasing the risk of pedestrian and bike rider conflicts. Operation of the proposal would improve pedestrian safety by providing a dedicated pedestrian area on the new Alfred Street South cycle path. Following exhibition of the proposal, further design refinements have been made to the proposal, outlined in Chapter 4 of this submissions report. This includes the relocated parapet to redirect pedestrians from the ramp landing and relocated seating to stop pedestrians walking onto the cycle path. Further design refinements made in relation to reducing pedestrian and bike rider conflicts are detailed below.

Concerns relating to bike rider speed when descending the ramp have been addressed by the incorporation of a tight turn at the base of the ramp, acting as a measure to slow down bike riders. This tight turn works in conjunction with a two-stage pedestrian crossing at the ramp landing, allowing pedestrians to safely cross the cycle path. The Alfred Street South cycle path also clearly delineates pedestrian and bike rider areas of the cycle path using ground signage and colour to delineate the paths to be travelled by bike riders.

Bike riders travelling east via Kirribilli from the ramp would be directed through clear signage, developed as described in Chapter 4 of this submissions report. This includes posted and ground signage as well as coloured paving to delineate the paths to be travelled by bike riders. Realignment of the ramp would also encourage the movement of bike riders from the ramp landing onto Alfred Street South cycle path, where they can travel to Kirribilli under the Burton Street Archway. The shared path connecting the ramp landing zone to the Burton Street Shared Zone would include clear signage to advise bike riders to slow down on approach to shared zones with pedestrians. This would prepare bike rider traffic for interactions with pedestrians in the park to minimise collisions.

The design will significantly reduce interactions between bike riders, vehicles and pedestrians at Milsons Point Station and Burton Street. This is because a significant proportion of cyclists who travel northward will be able to use the proposed ramp, allowing them to bypass the station precinct, reducing the likelihood for pedestrian interactions. The bike landing in Bradfield Park North has been extensively reviewed by designers and engineers to assess the likely interactions between bike riders and pedestrians. The progressed design has been developed to reduce possible conflicts between these modes.

Concealed areas have been managed through consideration of CPTED, including low level planting, proposed and retained lighting and shortening of the abutment by about three to 3.5 metres, as detailed in section 2.3.21 of this submissions report.

The Milsons Point Station forecourt would require the reduction in the width of two garden beds, adjacent to the Sydney Harbour Bridge viaduct, to allow suitable clear space for pedestrian movement below the cycleway ramp and adjacent ramp columns. This would also ensure the footpath is open to the sky to provide a pleasant pedestrian experience. Given that the garden beds would not be removed, just reduced in width, the footpath would still be offset from the Sydney Harbour Bridge walls rather than directly against it. Impacts to sightlines at the entry to the Station and entry to the Burton Street tunnel would therefore remain largely consistent with existing conditions.

Transport notes that the Bradfield Park Heritage Walk has been retained as a result of design refinement, discussed in Chapter 4 of this submissions report.

2.3.28 Traffic and transport – Public and active transport

Issue description

North Sydney Council believed that the demonstrated importance of the Sydney Harbour Bridge as a key regional link for cycling reinforces the need for best practice cycling infrastructure.

Response

Transport agrees with North Sydney Council's statement that the Sydney Harbour Bridge is a key regional link for bikes and reinforces the need for best practice bike riding infrastructure. Chapter 2 of the REF outlines the key objectives of the proposal, one of which being to improve bike riding infrastructure and support future growth in the number of bike riders. Transport notes that the proposal is compliant with all technical, safety and design standards.

2.3.29 Traffic and transport – Surrounding road network

Issue description

North Sydney Council expressed concern about the impact of the proposal on traffic in Milsons Point area. Council suggested that the proposal may increase congestion on Alfred Street South and its road network, noting congestion is already an issue during peak times.

Response

Transport acknowledges potential traffic and transport impacts associated with the proposal, including traffic impacts in the Milsons Point area outlined in section 6.4 of the REF. Further traffic modelling was conducted to confirm the impacts of the raised pedestrian and bike rider priority crossing on Alfred Street South to the wider road network, outlined in section 5.3 of this submissions report and the updated traffic impact assessment (see Appendix E). Traffic modelling assessing impacts of the Lavender and Alfred Street South crossings found that upgrading of the Alfred Street South crossing would not impact the performance of the Lavender Street roundabout. Table 5-1 of the updated traffic impact assessment identified that the eastbound approach on Lavender Street would experience a level of service F for both no project and 40 percent crossing utilisation scenarios at opening year and 10 year scenarios. Average queue back distances were determined to be less under the 40 percent crossing utilisation scenario in comparison to the no project scenario.

Environmental safeguard, TT2, has been revised and requires modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop to be carried out prior to commencement of construction.

2.3.30 Socio-economic and land use – Loss of open space

Issue description

North Sydney Council expressed concern that the proposed ramp and cycleway would cause unacceptable impacts to the open space in the Milsons Point area.

Response

Transport acknowledges potential impacts to open space, detailed in section 6.6 of the REF, including some loss of open and green space within Bradfield Park North due to the introduction of the elevated linear bike ramp within and above the park. Efforts have been made to further minimise potential impacts to open space as a result of the proposal, with Addendum LCVIA and section 4.1 of this submissions report identifying that the ramp has been shortened as much as possible to reduce open space and heritage impacts while still ensuring that the ramp gradient is accessible to a wide range of bike riders.

Although some loss of open space would occur, the proposal would improve accessibility and safety of pedestrians and bike riders and support future growth in the number of bike riders travelling between the lower north shore, North Sydney CBD and Sydney CBD. The proposal would provide users of the proposal with greater confidence to walk or cycle to their destination and allow them to feel safe when using the cycle path. The upgrades to pavement and landscaping would also enhance the amenity along Alfred Street South for park users. As noted in section 2.3.19, the proposal retains the open space and existing use of Bradfield Park. Further design of the proposal will progress in accordance with the Sydney Harbour Bridge Conservation Management Plan prepared by GML (2021) and the Supplementary Detailed Heritage Framework (draft) prepared by TZG (2021) (environmental safeguard NAH3).

Transport is committed to maintaining the operation of Kirribilli Markets on weekends during the construction period. As described in in section 2.3.32 of this submissions report, Transport has been involved in ongoing discussions with Kirribilli Neighbourhood Centre (KNC) and North Sydney Council to ensure options considered for the relocation of Kirribilli Markets are feasible. Transport is committed to coordination with North Sydney Council and key stakeholders, including the Kirribilli markets operator, which will be undertaken to minimise impacts on major events, in accordance with environmental safeguard SE3.

Efforts have been made to engage with Loreto Kirribilli and St Aloysius School to ensure the impact on the school use of the south bowling green would be minimised. Contact has also been made with the Boules Club in November 2022. The Boules Club advised that the Coal Loader site would be appropriate for them to use during the construction period, with the option to use the Waverton Bowling Club, if needed.

2.3.31 Socio-economic and land use – Social infrastructure

Issue description

North Sydney Council objected to the proposal due to concerns that the proposal would have unacceptable community impacts on Bradfield Park North. Council considers that the proposal would:

- Benefit wheeled active transport users at the expense of the street environment, local businesses and users of Bradfield Park North
- Diminish key place values
- Work against the North Sydney Council's adopted master plan for Bradfield Park North
- Impede pedestrian activity
- Fragment the Bradfield Park heritage walk
- Force pedestrians having to cross the cycle path at critical points and limit the access pedestrians have to Bradfield Park North
- Be inconsistent with the place-based design language approach that exists in Bradfield Park, which has been developed in accordance with North Sydney Council's Public Domain manual and master plan for Bradfield Park.

Response

As noted in Chapter 2 of the REF, one of the key proposal objectives is to improve safety and accessibility for both bike riders and pedestrians. Transport has been committed to extensive consultation with the community throughout options assessment, with consideration given to their concerns raised during design development. As noted in above responses the proposal would result in the safe separation of pedestrians and bike riders, reducing the risk of potential pedestrian and bike rider conflicts along Alfred Street South.

Further design refinements, outlined in Chapter 4 of this submissions report and above responses also consider other park users, including signage and colour to delineate pedestrian and bike rider areas, a two-stage pedestrian crossing across the cycle path and a tight turn at the ramp landing to slow bike riders entering Bradfield Park North. Section 6.6 of the REF also concluded that operation of the proposal may result in some minor increases to the patronage of businesses in the area through potential increases in bike rider and pedestrian trips and visitors seeking to use the Sydney Harbour Bridge cycleway for sightseeing and recreation.

Impacts to key places surrounding the proposal have been addressed in the responses to community submissions in section 3.11.1 to section 3.11.5 of this submissions report.

As noted in section 2.3.10 of this submissions report, the proposal would not conflict with the key principles of the Bradfield Park and Kirribilli Foreshore Master Plan. The proposal would improve pedestrian access to Milsons Point Station by removing a large number bike riders from the ground plane at this location. The design refinements, outlined in Chapter 4 of this submissions report, have resulted in more avoidance of impacts to the Heritage Walk and interpretive signage within Bradfield Park and would not disturb work completed by North Sydney Council in the north-western entry to the park.

The interface with Bradfield Park and a place-based approach has been employed and highly considered as described in the Sydney Harbour Bridge Cycleway Northern Access Project Detailed Design Report (Aspect, 2023). This is consistent with North Sydney Council's Public Domain Style Manual & Design Codes (July 2022).

The proposal would improve safety and accessibility for pedestrians and bike riders and support future growth in the number of people travelling by active transport. The upgrades would improve pedestrian and bike rider confidence and feelings of safety along the Alfred Street South cycle path, as discussed in section 2.3.30 of this submissions report.

On the straight section of pathway adjacent to Bradfield Park North there would be clear sightlines to and from the park, which would enable pedestrians to freely and easily move between the path and the park.

As outlined in section 2.2 of the REF, the proposal aligns with place-based integrated service design. The proposal would also contribute towards a more sustainable and better quality of life for the community and integrate access between active transport links that can be used by a wider range of customers that were previously deterred by the stair access. By improving connectivity between the Sydney CBD and North Sydney CBD, the proposal would make Milsons Point a great place to work, live and visit.

2.3.32 Socio-economic and land use – Kirribilli Markets

Issue description

North Sydney Council is concerned that the weekend markets would be significantly disrupted by construction of the ramp. Council requested that the function of events such as weekend markets are maintained, and that Transport consider potential new uses for the area.

Response

Kirribilli Markets would continue to operate on weekends during the construction period. Ongoing collaboration with KNC market operations since 2022 has kept KNC updated on design features, operational impacts and mitigation measures to allow the markets to continue running with as minimal impact as possible. North Sydney Council are involved in meetings with KNC to ensure options considered are feasible and in line with Council expectations.

As noted in section 6.4 of the REF, Transport acknowledges that the Kirribilli Markets would need to be relocated during construction of the proposal. The temporary market location is currently being discussed with North Sydney Council and KNC. The new location would remain accessible by bus and train services, with Transport committed to targeted consultation with affected stakeholders to minimise potential impacts. As per environmental safeguard SE3, Transport is committed to coordinating with North Sydney Council and key stakeholders to minimise impacts to the operation of major events.

2.3.33 Socio-economic and land use – Equity and active transport access

Issue description

North Sydney Council supported the improvement and expansion of cycling facilities to provide equitable access.

Response

Transport acknowledges North Sydney Council's agreement about the need to improve and expand bike riding infrastructure and to provide more equitable access to active transportation routes. As noted in section 2 of the REF, the proposal would result in more equitable access to the Sydney Harbour Bridge cycleway for people of all ages and abilities.

2.3.34 Socio-economic and land use – Amenity

Issue description

North Sydney Council expressed the view that the proposal would have unacceptable impacts on the public domain and open space amenity of the Milsons Point area, particularly on the amenity of Bradfield Park North and Alfred Street South.

Response

Transport acknowledges the potential impacts to public domain and open space, as outlined in section 6.2 and section 6.6 of the REF. It is noted however that potential impacts on amenity are expected to be minor due to the short duration and limited intensity of works required to complete the proposal. Efforts have been made to further minimise potential impacts to open space by shortening the ramp as much as possible, as stated in the Addendum LCVIA and section 4.1 of this submissions report. This reduction in the ramp length would reduce open space and heritage impacts while still ensuring that the ramp gradient is accessible to a wide range of bike riders.

Section 6.8 of the REF acknowledges the importance of public amenity to the surrounding community. The impacts on amenity would primarily affect nearby residents and frequent users engaged in formal and informal recreational activities in the area. Construction-related impacts, such as increased noise (see section 6.3 of the REF), air quality (see section 6.12.2 of the REF) and visual disruption (see section 6.2 of the REF) may temporarily affect social infrastructure facilities located near the proposal. However, these potential impacts are considered minor due to the short duration and limited intensity of works required.

Operation of the proposal would enhance amenity through the introduction of the new Alfred Street South cycle path and streetscape features, including new pavement and plantings. As outlined in above responses, the proposal would result in improvements to safety and accessibility for pedestrians and bike riders, facilitating increased travel between the lower north

shore, North Sydney CBD and Sydney CBD. The upgrades would improve pedestrian and bike rider confidence and feelings of safety along the Alfred Street South cycle path, as discussed in section 2.3.30 of this submissions report.

The environmental safeguards included in section 6.2 of this submissions report have been developed to minimise amenity impacts during construction and operation of the proposal. Specifically, a Noise and Vibration Management Plan (NVMP) will be prepared and implemented as part of the CEMP (environmental safeguard NV1), this will include noise and vibration mitigation measures (environmental safeguards NV2 and NV3). Visual impacts will be minimised through the use of visually light weight, neutral materials as to not detract from the landscape character of the bridge and surrounds (environmental safeguard LV2). Where tree removal is necessary, efforts would be made to avoid removing trees that contribute to the symmetry of the station entrance (environmental safeguard LV2). Transport is committed to coordination with North Sydney Council and key stakeholders to minimise impacts to major events during construction (SE3).

2.3.35 Socio-economic and land use – Property and land use

Issue description

North Sydney Council noted that landholder consent has not been granted to Transport. In addition, owner's consent has not been provided for application to NSW Heritage under Section 60 of the Heritage Act. North Sydney Council have expressed that Transport have separately advised that they intend to compulsorily acquire the parkland to undertake the development, which would be upsetting to the community. If Transport is willing to work with North Sydney Council on a better solution for stakeholders, compulsory acquisition would not be required.

Response

Transport notes that on 1 March 2023, North Sydney Council provided landowner's consent to enable the lodgement of an application under Section 60 of the Heritage Act 1977 to progress the proposal on the condition that, with the community front of mind and to support further amenity, active transport and open space outcomes, Transport provides North Sydney Council with a contribution of $2.5 million towards Council's planned improvements to Bradfield Park. Transport is committed to ongoing consultation with North Sydney Council during future design development and construction of the proposal.

2.3.36 Biodiversity

Issue description

North Sydney Council expressed concern that the arborist report included in the REF appendices is marked 'preliminary' and does not support the removal of trees associated with the proposal for the following reasons:

- The poplar trees along the heritage walk provide an important visual buffer from the residences on the west side of Alfred Street to the railway and Bradfield Highway to the east. These trees also ameliorate the view from the train-line of the wall of buildings fronting the west side of Alfred Street
- The palm tree within the Lavender Street roundabout is much loved as a landmark by the local community
- The fig tree (trimming only) on the corner of Burton Street and Alfred Street South provides shade, and its canopy embraces the corner of the Burton Street Shared Zone, framing the view of the Bridge heritage features beyond.
- The Chinese Elms (trimming only) provide much needed shade and amenity for park users.

Response

Transport notes that, as detailed in updated Arboricultural Impact Assessment (refer to Chapter 5.4 of this submissions report), no further tree removal other than that proposed in the REF would be required during construction and operation of the proposal. Section 6.7 of the REF identifies the trees required for removal as five Simons Poplar, an Ornamental Pear Cultivars and one Canary Island Date Palm.

It is noted that the poplars to be removed have previously experienced significant reduction pruning to provide clearance for the Sydney Harbour Bridge viaduct and as such have reduced foliage structure. Screening for residences on the west side of Alfred Street would still remain, with mature elms located next to the affected poplars.

The updated Arboricultural Impact Assessment has identified two trees (one Chinese Elm and one Weeping Bottlebrush) to be pruned in addition to the one Fig tree and two Chinese Elms identified in the REF, though these works would be minor and are not expected to impact the usual life expectancy of the trees. As per environmental safeguard B3, tree pruning and works

within Tree Protection Zones will be carried out in accordance with recommendations of the updated Preliminary Arboricultural Impact Assessment and/or in consultation with a qualified arborist (TreeiQ, 2023).

The proposal would minimise potential impacts to visual amenity through offset planting of five trees along Alfred Street South to maintain green space within the community. Additional planting within Bradfield Park North is not proposed, at the request of North Sydney Council.

2.3.37 Out of scope

Issue description

North Sydney Council raised the following issues that are outside the scope of the proposal:

- North Sydney Council expressed the belief that regional bike riders are best served by maintaining an on-grade route alongside the existing Warringah Freeway corridor. Cyclists who wish to access North Sydney CBD and surrounding local suburbs are thence best served by the east-west connections off the regional route to the local cycleway network
- North Sydney Council expressed the belief that the proposal fails to consider the opportunities afforded by the current infrastructure projects throughout North Sydney
- North Sydney Council acknowledged that the ramp may be universally accessible, however notes that connections to the north and south of Milsons Point are not.

Response

Transport notes North Sydney Council's comments above, however they are considered out of the scope of this proposal and as such have not been further addressed in this submissions report. Transport acknowledges North Sydney Council's suggestions, with consideration given to future works on upgrading cycleway infrastructure through North Sydney CBD and Sydney CBD.

2.4 Engineering Heritage Sydney

2.4.1 Need and options considered

Issue description

Engineering Heritage Sydney (EHS) expressed the belief that submissions by locals and heritage groups have been ignored in the selection and development of the linear ramp proposal. They noted that North Sydney Council proposed a fold-back ramp, near the current stairs and removed from the key heritage areas of the Sydney Harbour Bridge and Milsons Point Station. EHS noted their support for this proposal and consider that it would provide improvement to bike riders using the Sydney Harbour Bridge.

EHS stated that the fold-back ramp may not be suitable for all bike riders, but suggested it would be a workable solution. EHS suggested that while North Sydney Council and other groups supported this option, Transport did not consult on it. EHS strongly recommended that other options should be workshopped with the local community. EHS expressed the belief that the fold-back ramp option would have a reduced heritage impact on the Sydney Harbour Bridge and its approaches, which is a key concern of EHS.

EHS suggested that the current REF should be shelved, and serious consideration given to available options, including workshopping these with the community and other relevant groups.

Response

Transport are committed to ongoing consultation with the community and stakeholders, as identified in Chapter 5 of the REF. Community and stakeholder consultation carried out for the proposal is outlined in section 2.3.12 of this submissions report.

As detailed in section 5.2.1 of the REF, a meeting was held with Transport, proponents and the architect of the scheme on 10 February 2022. An independent assessment of the community proposal to be located within Bradfield Park Central (the foldback ramp) was undertaken.

Transport acknowledges the effort the community has put into preparing the community proposal (refer to section 5.2.1 of the REF). As detailed in section 2.5.1 and 5.2.1 of the REF, serious consideration was given to North Sydney Council's foldback ramp alternative and conversion of lane 8 into a cycleway respectively.

Transport provided a comprehensive response to the community submission in March 2022 and Arcadis also provided a technical review of the community proposal. Transport appointed specific technical specialists from Arcadis with years of experience in infrastructure and transport planning, to assess the community proposal due to their technical expertise. . The community proposal was assessed against the Six Design Principles of the Transport for NSW Cycleway Design Toolbox and global best practice.

Transport acknowledges that North Sydney Council is in support of the community proposal, however, the community proposal was discounted for a number of reasons. Though the proposal met acceptable bike rider guidelines, it fell short of 'desirable' standard necessary to accommodate the widest possible range of bike riders. Verification was provided by the Arcadis' Sustainable Mobility Advisor, which indicated that the scheme did not meet wide accessibility requirements. It should be noted that aspiring to meet the current Austroads Guide to Road Design does not necessarily lead to a safe and comfortable solution for users of all ages (and abilities). The community proposal also had visual and heritage impacts of its own, blocking views south to the Sydney Harbour Bridge from Alfred Street South, which are identified on the National Heritage listing. The bulk and scale of the structure of the proposed ramps worked against, rather than with, the geometry, form and original design intent of the Sydney Harbour Bridge. The community proposal has similar physical impacts to the Sydney Harbour Bridge structure compared to the linear option, while not being able to deliver the desirable standards of rideability, safety and accessibility. Heritage NSW, the Design Integrity Panel and the expert heritage advisor, Design 5, have provided strong support for the linear option aligned with the viaduct for these reasons.

2.4.2 Need and options considered – Lane 8 option

Issue description

EHS stated that North Sydney Council proposed converting lane 8 into the cycleway and taking it across Circular Quay Station, with closure of the Cahill Expressway.

EHS strongly supported this proposal, as:

- Use of Lane 8 does not impact on the engineering and architectural heritage of the Sydney Harbour Bridge and Milsons Point Station
- It provides much better access for bike riders, and allows for increased usage
- Opening the Cahill Expressway to bike riders and pedestrians would improve the overall environment in the Circular Quay area.

Response

Justification for discounting conversion of Lane 8 on the Sydney Harbour bridge to a dedicated cycleway is discussed in sections 2.3.4 and 2.3.5 of this submissions report.

2.4.3 Non-Aboriginal heritage – Impacts to the Sydney Harbour Bridge

Issue description

EHS acknowledged that the Sydney Harbour Bridge is listed on the State Heritage Register and the Engineers Australia Engineering Heritage Register. EHS emphasised the significance of the Sydney Harbour Bridges due to its architectural and engineering heritage, noting that they believe this should be preserved as much as possible in its original state. EHS suggested the proposed linear cycle ramp would detract from the heritage value of the Sydney Harbour Bridge.

Response

Preserving the heritage value of the Sydney Harbour Bridge and managing potential heritage impacts has been a key consideration throughout design development. As detailed in section 2.3.15 of this submissions report, a design excellence approach has been carried out throughout design development to ensure the highest standard of architectural, urban and landscape design for the proposal. Guidance from the design competition jury, Design Integrity Panel and Heritage Council Approvals committee have led to the selection of the linear ramp option. Whilst without any impact, the linear option

represents the best possible outcome for the heritage values of the site and has been further developed to respond to each heritage consideration within the design itself.

Potential impacts to the heritage values of the Sydney Harbour Bridge have been identified in section 6.1 of the REF, as detailed in section 2.2.1 of this submissions report. Due to the importance of preserving the heritage value of the Sydney Harbour Bridge, further refinements to the proposal have been implemented and are detailed in Chapter 4 of this submissions report. Operation of the proposal would support the ongoing and continued use of the Sydney Harbour Bridge as a major transport link, a use which is intrinsic to the item's heritage value. A Section 60 application has been lodged and was independently assessed by Heritage NSW and approved by the Heritage Council of NSW on 13 June 2023. Chapter 5 of this submissions report identifies additional assessments conducted for the proposal.

Concerns regarding impacts to the architectural heritage of the Sydney Harbour Bridge have been responded to in section 2.3.15 of this submissions report.

2.4.4 Non-Aboriginal heritage – Impacts to Milsons Point Station

Issue description

EHS noted that one of the key objections to the linear ramp is its impact on the northern viaduct and the entrance to Milsons Point Station. EHS suggested a linear cycle ramp across this façade would seriously detract from the view and ruin this key heritage element of the Sydney Harbour Bridge.

Response

As detailed in section 6.2.2 of the REF and section 2.3.18 of this submissions report, Transport notes the aesthetic and historical significance of the Milsons Point Station entrance, including the '1932' cartouche above the entrance to the station. Section 5.2 of this submissions report and the Addendum LCVIA provide viewpoints to the Milsons Point Station entrance and cartouche.

Following exhibition of the proposal, design refinements have been made to increase the ramp gradient to five percent to allow for the cartouche to remain visible from the Milsons Point Station forecourt, as outlined in Chapter 4 of this submissions report. Impacts to Milsons Point Station have been minimised through including a setback between the ramp and the cartouche, which enables the cartouche to be retained and protected. The setback also allows the cartouche to be appreciated from a closer point of view. In addition to these measures the design has been carefully developed to symmetrically frame the station entrance, with columns placed either side and the cycleway geometry taking the form of a gentle arc as it passes the station entrance to acknowledge its significance.

The Addendum LCVIA concludes that, while the sightlines to the curved approach span of the Sydney Harbour Bridge are not directly impacted, there would be low-moderate to moderate adverse impacts on views to the constructed approaches to the Sydney Harbour Bridge, including Milsons Point Station, which are of National Heritage value. Figure 2-1 and Figure 2-2 show a modelled image of the proposal at this point. The updated SoHI (see section 5.1 of this submissions report) concludes that the proposal would not compromise the visual prominence of the Sydney Harbour Bridge itself and would have a minor adverse impact on views to the bridge.

2.4.5 Non-Aboriginal heritage – Impacts to Milsons Point Station and Bradfield Park

Issue description

EHS also considered it essential to retain as much as possible of the original setting of the Sydney Harbour Bridge and Milsons Point Station, for these are also important to view the Sydney Harbour Bridge in its environment.

EHS noted that the radial layout of the station entrance forecourt still retains the landscape features designed by Dr J.J.C. Bradfield. EHS believe that alterations to this layout and its plantings will only detract from its aesthetic and heritage significance and should be avoided.

Response

Efforts have been made, through detailed design, to minimise impacts to Milsons Point station plaza and the original radial layout of the station entrance, such as carefully locating the columns to minimise visual clutter and impacts to the garden beds, and raising the height of the ramp to preserve viewpoints onto the "1932" cartouche sitting above the station entrance. Further design considerations include increasing the ramp gradient to five percent, the curvilinear approach of the ramp

allowing a setback between the ramp and cartouche, and the implementation of a contemporary, lightweight design with a high degree of visual transparency to reduce visual impacts. Further detail on design refinements is provided above in section 2.4.4 of this submissions report.

It is however acknowledged by Transport that, as detailed in section 6.2.3 of the REF, construction and operation of the proposal would have moderate to high and moderate landscape character impacts, respectively, on the Sydney Harbour Bridge and Milsons Point Station. Additionally, construction and operation of the proposal would have moderate and low to moderate landscape character impacts respectively on Bradfield Park North. Environmental safeguards identified in Table 6-1 (NAH3, NAH4, NAH5, NAH6, NAH7, NAH8, NAH9, NAH10, NAH11, NAH12, LV1 and LV2) of this submissions report will be implemented to minimise and avoid potential impacts to Milsons Point Station and Bradfield Park North, with additional design refinements proposed in Chapter 4 of this submissions report.

A Section 60 application, an independent pathway from the REF process managed by Heritage Council of NSW, has been approved on 13 June 2023. Chapter 5 of this submissions report identifies additional assessments conducted for the proposal.

2.4.6 Socio-economic and land use

Issue description

EHS expressed their disagreement with the concepts behind this REF and the conclusions it reaches. EHS suggested the linear ramp proposal has significant adverse impacts on the engineering and architectural heritage of the Sydney Harbour Bridge and Milsons Point Station. EHS expressed the belief that the linear ramp has adverse community impacts which have been overlooked or disregarded.

EHS suggested that the proposal favours bike riders over the local community, and commuters, as it would be far better if the ramp landing was located well clear of this busy pedestrian area of Milsons Point.

Response

Reducing potential impacts to heritage is of high importance to Transport, as identified in the responses provided above to mitigate heritage impacts on the Sydney Harbour Bridge, Milsons Point Station and Bradfield Park North. Transport has adopted a design led approach to sensitively respond to the heritage values, closely informed by expert heritage advice and widely consulted with key heritage stakeholders and regulators. Guidance from the design competition jury, Design Integrity Panel and Heritage Council Approvals committee have led to the selection of the linear ramp option. Whilst not without any impact, the linear ramp option represents the best possible outcome for the heritage values of the site and has been further developed to respond to each heritage consideration within the design itself.

An independent, updated SoHI, has been completed in accordance with legislative requirements, which concluded that impacts to the Sydney Harbour Bridge and Milsons Point Station would not be 'significant adverse', see section 5.1 and Appendix C of this submissions report.

As noted in Chapter 2 of the REF, one of the key proposal objectives is to improve safety and accessibility for both bike riders and pedestrians. Transport has been committed to extensive consultation with the community throughout options assessment, with consideration given to their concerns raised during design development.

The potential adverse impacts on the community resulting from the proposal were addressed in section 6.6 of the REF. Environmental safeguards have been developed to minimise or avoid these negative impacts and are included in section 6.2 of this submissions report. The design has also been refined to reduce some of the community impacts including reducing loss of green space where reasonable and feasible to do so. Refer to Chapter 4 of this submissions report for further details on design refinement.

Section 6.6.3 of the REF identifies the positive impacts the proposal would have on the community including improving access and safety for both pedestrians and bike riders, improving amenity, and supporting future growth within Milsons Point and enhancing amenity along Alfred Street South for park users.

Transport has undertaken design refinements of the proposal, outlined in Chapter 4 of this submissions report, to reduce the risk of pedestrian and bike rider conflicts at the ramp landing. This includes the introduction of a tight turn at the base of the ramp landing, reducing the speed of bike riders descending the ramp prior to them entering a pedestrianised area. Bike rider and pedestrian areas on the Alfred Street South cycle path would be clearly delineated using posted and ground signage and coloured paths. Potential conflicts would also be reduced through the introduction of a two-stage pedestrian crossing of the Alfred Street South cycle path, near the ramp landing.

2.5 Bicycle NSW

2.5.1 Need and options considered – Project need and justification

Issue description

Bicycle NSW consider that the proposal would have the following benefits:

- The proposal would fill a critical gap in the cycling network.
- Bicycle NSW note that once complete, the proposal would enable access to the Sydney Harbour Bridge to those who previously have not been able to negotiate the stair access.
- Bicycle NSW suggest in connecting riders travelling between the lower north shore, North Sydney and Sydney's CBD, the Sydney Harbour Bridge ramp would align a number of place-making and future-proofing strategies, frameworks and policies.
- Bicycle NSW agrees that 'the benefits of the proposal outweigh the expected impacts on the environment.' Bicycle NSW suggest impacts would mostly be felt during the construction phase, and these will be minimised by a largely off-site fabrication process.
- Bicycle NSW believe the ramp would become a new architectural icon for Sydney.

Bicycle NSW acknowledged Transport's commitment to the following:

- Consultation – Bicycle NSW noted that Transport have conducted Q&A sessions and seminars, published its proposals and results, and called for comment. Bicycle NSW believe Transport have responsibly addressed community concerns and invited feedback.
- Integrity of Bradfield Park North – Bicycle NSW believe the design of the proposal would upgrade the amenity of Bradfield Park and ensure bike riders are well separated from pedestrians.
- Tree preservation – Bicycle NSW note that minimal trees will be removed (and replaced) for the proposal in comparison to the Warringah Freeway Upgrade project.

Response

Transport acknowledges Bicycle NSW's support for the proposal. The proposal, as identified in Chapter 2 of the REF, would result in increased accessibility to the Sydney Harbour Bridge cycleway from Milsons Point for bike riders of all skills levels and support future growth in the number of bike riders travelling between the Sydney CBD and lower north shore. The proposal would also support bike riders using heavier bikes, such as e-bikes, recumbents and cargo bikes. The proposal would support the NSW Government's commitment to cycling as a key mode of city-serving, sustainable infrastructure and address continued access and safety constraints to greater uptake of bike riding as a way to move across the city.

The preferred design incorporates design elements that minimise impacts to Bradfield Park North where possible, considering potential heritage, landscape, visual amenity and traffic impacts. Further design refinements have been implemented to further minimise impacts to Bradfield Park North and the Sydney Harbour Bridge, as detailed in Chapter 4 of this submissions report.

The proposal would be part of a suite of projects that aim to make it easier for people to access and use the Sydney Harbour Bridge, with proposals including upgrades to the Sydney Harbour Bridge's southern cycleway access and the recently completed (2018) pedestrian access lift on the northern and southern side of the Sydney Harbour Bridges pedestrian pathway.

Transport acknowledges Bicycle NSW's support for the proposal in regard to the consultation undertaken and environmental safeguards proposed to address potential impacts to heritage and biodiversity, as seen in Table 6-1 of this submissions report.

Section 6.7 of the REF and section 5.4 of this submissions report have identified that five Simons Poplar trees, an Ornamental Pear Cultivars and a Canary Island Date Palm would be removed to allow for construction of the proposal. Five new street trees would be planted along the Alfred Street South cycle path, with no additional trees proposed within Bradfield Park North at the request of North Sydney Council. The updated Arboricultural Impact Assessment has identified two trees (one Chinese Elm and one Weeping Bottlebrush) to be pruned in addition to the one Fig tree and two Chinese Elms identified in the REF, though these works would be minor and are not expected to impact the usual life expectancy of the trees. Tree pruning and works within Tree Protection Zones will be carried out in accordance with recommendations of the Preliminary Arboricultural Report and/or in consultation with a qualified arborist (TreeiQ, 2023) (Environmental safeguard B3).

2.5.2 Need and options considered – Options assessment

Issue description

Bicycle NSW consider that the spiral ramp (looped ramp option), in comparison to the linear ramp - to be unsafe, difficult to negotiate and ignores the stated objective of solving pedestrian, vehicular and bike rider congestion at the foot of the 55 steps and Burton Street, site of the Kirribilli Markets.

Response

As above, Transport acknowledges Bicycle NSW's support for the proposal and the assessment of alternative options.

As identified in section 5.2.1 of the REF, the North Sydney community proposal was independently assessed by an active transport expert. It was determined that although the North Sydney community proposal would meet 'acceptable' design requirements in regard to the Austroad guidelines and suitable for commuter bike riders, it would fall short of the 'desirable' standard necessary to accommodate the widest possible range of bike riders.

2.5.3 Traffic and transport

Issue description

Bicycle NSW supported the removal of 15 parking spaces to make way for the Alfred St cycleway and expressed support for further road space reallocation if necessary to optimise the configuration of Alfred Street for all vulnerable road users. Bicycle NSW suggest the narrower vehicle lanes would slow traffic, reduce noise and improve safety for all road users.

Response

As detailed in section 6.4.3 of the REF, operation of the proposal would result in the permanent removal of up to 15 car parking spaces. The updated traffic impact assessment and section 5.3 of this submissions report also identifies the location and number of parking spaces to be permanently removed following operation of the proposal.

2.5.4 Description of the proposal – speed limit

Issue description

Bicycle NSW requested that the speed limit is reduced to 30 kilometres per hour on Alfred Street and other local roads in North Sydney CBD. Bicycle NSW suggests that a speed limit of 30 kilometres per hour is an optimal speed limit to allow people driving and cycling to share the road safely and is becoming a standard speed limit in many parts of the world.

Response

Reduction in the road speed limits on Alfred Street South and the local roads within North Sydney to 30 kilometres per hour during operation of the proposal is out of the scope of this proposal and has not been planned for Alfred Street South.

2.5.5 Description of the proposal – Ramp design

Issue description

Bicycle NSW requested that the cycleway be inclusive and accommodate riders of all ages and abilities.

Response

As detailed in Chapter 2 of the REF, the proposal aims to improve safety and accessibility to the Sydney Harbour Bridge cycleway for bike riders of all ages and skill levels. For this reason, the linear ramp option was preferred over the looped ramp option.

2.5.6 Out of scope

Issue description

Bicycle NSW requested the following:

- That the Warringah Freeway and Western Harbour Tunnel projects leave a legacy of vastly improved active transport infrastructure.
- That Transport reconfigures the Pacific Highway as an urban boulevard with separated bicycle paths. Integrating this project with the North Sydney to CBD section of the strategic cycleway corridors will maximise its socio-economic benefits.

Response

Transport acknowledges Bicycle NSW's request for the Western Harbour Tunnel and Warringah Freeway Upgrade project to leave a legacy of vastly improved active transport infrastructure, however as this is out of the scope of the proposal it has not been considered further. This feedback has been passed onto the Warringah Freeway Upgrade team.

As detailed in Chapter 2 of the REF, the proposal aims to improve safety and accessibility to the Sydney Harbour Bridge cycleway and support the future growth in the number of bike riders travelling between the lower north shore, North Sydney CBD and Sydney's CBD. As a result, extension of cycle paths beyond the proposal are outside the scope of the proposal. The proposal aligns with Transports Strategic Cycleway Corridors – Eastern Harbour City program which outlines a key opportunity for a safe connection between Milsons Point, North Sydney and St Leonards, improving access to the Sydney Harbour Bridge and supporting forecast growth.

Transport for NSW has consulted with Bike NSW, Bike North, North Sydney and Willoughby City Council as part of the Active Transport Network Review for North Sydney and surrounds. The network review identified the priority walking and cycling opportunities to improve in North Sydney and the surrounding area. The stakeholders were unanimous in their feedback, with six priorities identified for further development.

Two of these opportunities included the missing cycling links between Lavender Street and Blue Street and between Blue Street and St Leonards along the Pacific Highway. Transport for NSW is seeking funding to progress design options and environmental assessments for these links.

2.6 Bike North

2.6.1 Need and options considered – Project need and justification

Issue description

Bike North believed that the current northern access to the Sydney Harbour Bridge cycleway is unacceptable, noting that the 55 steps are completely inaccessible to a large proportion of the community including older riders, riders with disabilities, e-bike riders, commercial cargo bike riders, and families with bikes and trailers. Bike North stated that it is unacceptable to exclude these groups from this important transport link and valuable transport mode.

Response

Transport acknowledges Bike North's support for the proposal. As identified in section 2.3 of the REF, the 55 stairs are a barrier to safe and equitable access to the Sydney Harbour Bridge cycleway and is limited in capacity. Additionally, the existing infrastructure on Alfred Street South does not comply with technical standards or Transport modal hierarchy for walkers and riders, and the existing pedestrian refuge crossing on Alfred Street south near Lavender Street requires an upgrade to meet current road safety standards. A key objective of the proposal, as identified in section 2.4.1 of the REF, is to improve access to the Sydney Harbour Bridge Cycleway whilst improving safety for bike riders, pedestrians and motorists.

2.6.2 Need and options considered – Project benefits

Issue description

Bike North believed that the existing steps are a safety hazard, even for more able-bodied riders. Bike North stated that there are regular accidents on these steps.

Response

As above, Transport acknowledges that the existing stairs are difficult to navigate and pose safety hazards, even for able-bodied riders. Section 2.3 of the REF outlines the limitations of the existing infrastructure.

2.6.3 Need and options considered – Project objectives

Issue description

Bike North believed that the existing stairs are a choke point and reduce the capacity of an important transport link.

Response

As identified in section 2.3 of the REF, it is acknowledged that the existing stair access to the Sydney Harbour Bridge cycleway has limited capacity. The proposal aims to alleviate the bottleneck at the existing stairs with the provision of ramp access to the Sydney Harbour Bridge cycleway.

2.6.4 Description of the proposal

Issue description

Bike North was pleased with the approach taken to design, with input from a range of experts, and overseen by the Government Architect NSW, Heritage NSW, and the Heritage Council Approvals Committee. Bike North appreciated the project team's approach to developing the best design for the circumstance.

Response

Transport acknowledges that extensive and lengthy consultation with stakeholders, including experts, the Government Architect NSW, Heritage NSW and the Heritage Council Approvals Committee has taken place from the early design process. As identified in Chapter 5 of the REF, regular consultation with key stakeholders and the community was carried out throughout the assessment of options to determine the most suitable design for the proposal.

2.6.5 General support

Issue description

Bike North expressed support of the Alfred Street South cycle path to be delivered as part of the overall northern access to the Sydney Harbour Bridge and surrounds. Bike North also expressed support of Transport getting the proposal to this phase.

Response

The Alfred Street South cycle path, as described in section 3.1.2 of the REF, would allow for safe and accessible travel for bike riders as a part of the broader Sydney Harbour Bridge Cycleway Northern Access proposal.

Transport acknowledges that development of a ramp to the Sydney Harbour Bridge cycleway has been under consideration since 1999. As identified in section 2.5 of the REF, many attempts to develop an alternative to the existing steps have been made over the years and 30 ramp options have been explored. The proposal is the result of an extensive options assessment process which involved collating valuable community feedback on their needs and preferences for this piece of transport infrastructure.

2.6.6 Consultation

Issue description

Bike North commended Transport on their consultation during the design development process, noting that this has facilitated a solution that best addresses community concerns and needs.

Bike North indicated their interest in being directly involved with the ongoing consultation process, noting their strong support for the proposal.

Response

As above, extensive and lengthy consultation has taken place throughout design development. Since 2021 Bike North have been briefed on concept design, ramp options and detailed design, with feedback on ramp typology, safety features, accessibility and other design features all considered during the design phase. Details on the consultation process carried out to date is provided in Chapter 5 of the REF.

Bike user groups will have continued involvement by having their concerns, recommendations and feedback considered by Transport throughout the detailed design and delivery phases of the project. Transport will provide updates and hold meetings with bike user groups to provide up to date information on how any public input has been considered and potentially influenced decisions made.

2.7 Milsons Point Community Group

2.7.1 Need and options considered – Bike rider counts

Issue description

Milsons Point Community Group questioned the time savings stated in the REF for bike riders and believes that the assertion of 2,000 bike rider trips is not supported by Transport's data, with bike rider numbers peaking in 2013 at 1,932 bike trips and has steadily fallen since.

Response

Transport used bicycle counters at select locations between 2007 and 2019, including on the Sydney Harbour Bridge. The capturing of daily data in the context of overall cycleway usage tracked for over a decade has been used to validate the accuracy of the projected demand.

Data from these counters show that the ten-year average number of weekday trips is just below 2000 per day. It also shows that the highest 365-day rolling weekday average occurred in March 2014 (2,350) and that Tuesdays and Wednesdays are the busiest day of the week. This suggests that most bike trips over the Sydney Harbour Bridge are journeys to work.

It is correct that the data also shows that the number of bike trips over the Sydney Harbour Bridge has been declining since 2014. However, demand data from the City of Sydney, bike sales data, Journey to Work information, and Transport's own customer research all demonstrate that the popularity of, and interest in, cycling is growing strongly. On this basis, Transport has concluded that demand for cross-bridge bike trips is suppressed and that improved access would be met with increased use, providing access for a broader range of bike riders.

2.7.2 Need and options considered – Retention of the existing stairs

Issue description

Milsons Point Community Group believed that the proposal would not improve safety when compared to retaining the existing infrastructure.

Response

Operation of the proposal would reduce the risk of pedestrian and bike rider conflicts and maintain pedestrian access to Bradfield Park. Section 6.6 of the REF notes that operation of the proposal would provide safe separation of bikes riders and pedestrians using the Alfred Street South cycle path. Further discussion on the safety improvements resulting from the proposal can be found in in section 2.3.8 of this submissions report. The proposal would allow bike riders to access the Sydney Harbour Bridge cycleway, where they were previously deterred by potential safety concerns going up or down the current stair access.

2.7.3 Need and options considered – Bradfield Park Central proposal

Issue description

Milsons Point Community Group response suggested that the proposal has not been guided by the precautionary principle, with the Bradfield Park Central solution having significantly less heritage impacts and would not require the removal of vegetation.

Response

The principles of ecologically sustainable development have been an integral consideration throughout the development of the proposal, including the precautionary principle, as in section 8.2.1 of the REF. Section 2.3.5 of this submissions report provides justification as to why the Bradfield Park Central design was discounted. The proposal has minimised heritage impacts, visual impacts and vegetation removal through design refinements outlined in Chapter 4 and the environmental managements measures outlined in section 6.2 of this submissions report.

2.7.4 Non-Aboriginal heritage – Impacts to the Sydney Harbour Bridge

Issue description

Milsons Point Community Group raised concerns that the proposal would result in impacts to the architectural values of the Sydney Harbour Bridge, including the northern approach walls, bridge stairs, Burton Street tunnel archway and façade of Milsons Point Station

Response

As noted in section 6.1 of the REF, Transport has considered the potential impacts to the Sydney Harbour Bridge throughout development of the proposal. Concerns regarding the proposal impacts on the architectural values of the Sydney Harbour Bridge and Milsons Point Station have been responded to in section 2.3.15 and 2.3.18, respectively, of this submissions report.

2.7.5 Non-Aboriginal heritage – Impacts to Bradfield Park

Issue description

Milsons Point Community Group expressed concern that the proposal would adversely impact Bradfield Park, including the Bradfield Park Heritage Walk.

Response

Impacts to Bradfield Park as a result of the proposal have been considered in section 6.1 of the REF. Section 2.3.19 of this submissions report outlines design refinements and environmental safeguards that would be incorporated to reduce potential impacts to Bradfield Park North. Transport notes that the Bradfield Park Heritage Walk would be retained following design refinements listed in Chapter 4 of this submissions report.

2.7.6 Non-Aboriginal heritage impact – Heritage impacts

Issue description

Milsons Point Community Group believed the linear ramp will have significant adverse impacts on the heritage value of the Sydney Harbour Bridge and express a lack of support for the proposal due to potential heritage impacts including impacts to the Sydney Harbour Bridge, Bradfield Park North, and Milsons Point Station.

Response

Transport acknowledges the high importance of preserving the heritage values of the Sydney Harbour Bridge, with section 6.1 of the REF identifying potential impacts of the proposal on its heritage values. Section 2.3.15 of this submissions report responds to concerns regarding the impact the proposal would have on the Sydney Harbour Bridge. Sections 2.3.16 and 2.3.18 of this submissions report respond to concerns regarding Bradfield Park North and Milsons Point Station, respectively, outlining design refinements and environmental safeguards that would be incorporated to reduce potential impacts.

2.7.7 Landscape character and visual impacts – Landscape character and visual impact

Issue description

Milsons Point Community Group raised concerns that the proposal would impact on the visual and landscape character of Bradfield Park North and Milsons Point Station.

Response

Transport acknowledges that the proposal would result in some impacts to landscape character, as outlined in section 6.2 of the REF. Section 2.3.24 of this submissions report contains further discussion of the impacts the proposal would have on visual and landscape character of Bradfield Park North and Milsons Point Station, and outlines design refinements and environmental safeguards implemented to reduce potential impacts to landscape character.

2.7.8 Landscape character and visual impact – Urban design

Issue description

Milsons Point Community Group noted that there are many pedestrians that frequent the area, including the elderly and school children and that this number is expected to rise due to projected growth in the area. Community members raised concerns about pedestrian safety as a result of the proposal. The response raised concerns around security and safety of pedestrians in Bradfield Park due to the potential for creation of shadowing, caused by the ramp.

Response

Transport has considered the principles of CPTED to reduce shadowing caused by the ramp structure, such as shortening the ramp by about three to 3.5 metres to reduce the physical bulk of the structure. Section 2.3.21 of this submissions report contains further discussion on the security and safety of pedestrians in Bradfield Park North, detailing the opportunities Transport has undertaken to incorporate the principles of CPTED in the design.

2.7.9 Traffic and transport - Surrounding road network impacts during construction

Issue

Milsons Point Community Group raised concerns that construction of the proposal would increase queuing on Alfred Street South, the Harbour Bridge exit and onto the Pacific Highway and pose a safety risk.

Response

Transport has considered the impacts of the proposal regarding road networks and safety impacts, as noted in section 6.4 of the REF. An updated traffic impact assessment was prepared and summarised in section 5.3 of this submissions report following design refinements to include additional traffic modelling. The traffic modelling results indicate there would be no potential queuing impact onto the Warringah Freeway with the introduction of the proposal, including at the Alfred Street South pedestrian and bike rider crossing. The updated traffic impact assessment is included as Appendix E of this submissions report.

2.7.10 Traffic and transport – Pedestrian/bike rider safety

Issue description

Milsons Point Community Group disagreed with the statement that pedestrian demand is not expected to increase as residential/commercial growth is not forecasted for the immediate area. The respondent states this is incorrect as two buildings are currently being converted to residential, which would add a further 350 apartments to the densely populated Alfred Street South.

Response

Transport acknowledges that future growth in pedestrian traffic in Milsons Point is expected to occur with population growth in the local area from about 4,670 people in 2023 to about 5,390 in 2036 (New South Wales Travel Zone Projections (TZP22), Transport for NSW).

Pedestrian growth within the local area has been considered as part of the proposal, with section 5.3 of this submissions report showing that modelling and analysis used in the updated traffic impact assessment assumed an increase in pedestrian growth of 1.5 percent per annum.

2.7.11 Traffic and transport – Surrounding road network

Issue description

Milsons Point Community Group raised concerns about the impact of the proposal on the surrounding road network.

Response

Section 5.3 of this submissions report outlines the modelling, analysis and findings carried out in the updated traffic impact assessment, which indicated that operation of the proposal would not result in increased traffic congestion.

2.7.12 Traffic and transport – Relocation of the bus stop

Issue description

Milsons Point Community Group raised concerns about changes to traffic as a result of the proposed bus stop relocation to an in-lane bus stop.

Response

Transport has undertaken design refinements of the proposal, outlined Chapter 4 of this submissions report, which have resulted in the previously proposed in-lane bus stop being replaced by a kerbside bus stop. As noted in the REF, bus stop 206123 on Alfred Street South, near Burton Street would be retained. Design refinements have meant that the in-lane bus stop previously proposed to replace the existing bus stop number 206128, would be replaced by a kerbside bus stop in the same location as the proposed in-lane bus stop. Four parking spots would be removed to accommodate the new kerbside bus stop. It is anticipated that the kerbside bus stop would not result in a change to traffic from the existing condition.

Environmental safeguard TT2, has been revised to require modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop to be carried out prior to commencement of construction. This would be confirmed with an updated traffic impact assessment that will be carried out as part of the next stage of design, and will be presented to the North Sydney Council Traffic Committee. As also outlined in the revised environmental safeguard TT2, Transport will continue to work with the relevant stakeholders as part of the implementation of a traffic solution for the bus stop relocation.

2.7.13 Traffic and transport – Bike rider and pedestrian safety

Issue description

Milsons Point Community Group raised concerns about the safety of the proposal for bike riders and pedestrians. The group raised concerns about increased risk of collisions between bike riders and pedestrians at the ramp landing, which they consider is unsafe, and concerns about speeding on the ramp.

Response

Transport has undertaken design refinements of the proposal, outlined Chapter 4 of this submissions report, to reduce the risk of pedestrian and bike rider conflicts at the ramp landing. This includes the introduction of a tight turn at the base of the ramp landing, reducing the speed of bike riders descending the ramp prior to them entering a pedestrianised area. Bike rider and pedestrian areas on the Alfred Street South cycle path would be clearly delineated using posted and ground signage and coloured paths. Potential conflicts would also be reduced through the introduction of a two-stage pedestrian crossing of the Alfred Street South cycle path, near the ramp landing.

2.7.14 Traffic and transport – Road safety

Issue description

Milsons Point Community Group raised concerns that the proposal would result in reduced road safety due to:

- Locating a pedestrian/bike rider crossing close to the exit lane from the high-speed Bradfield Highway
- Reducing the size of the Lavender Street roundabout.

Response

Transport has considered the safety of road users throughout development of the proposal, noting the proposals proximity to the Bradfield Highway exit. Under the current arrangement, bike riders travelling from Middlemiss Street would be required to enter the Lavender Street roundabout where they would be at risk of cars travelling at high speeds exiting the Bradfield Highway. The proposal would improve the safety of bike riders and motorists as bike riders would be required to travel along the Alfred Street South cycle path, where they would cross Lavender Street on the west side of the roundabout, further from the Bradfield Highway exit. Pedestrian and bike rider safety is discussed further in section 2.3.27 of this submissions report.

Following further design refinements, as detailed in Chapter 4 of this submissions report, the Lavender Street roundabout would be retained in its current location and would be a mountable roundabout five meters in diameter.

2.7.15 Traffic and transport – Loss of parking

Issue description

Milsons Point Community Group raised concerns about the loss of parking during both construction and operation of the proposal. Particular concern was raised regarding the loss of the remaining available parking spaces to construction workforce vehicles.

Response

Transport acknowledges the impacts to parking on Alfred Street South as a result of the proposal, as outlined in section 6.4 of the REF. As identified in section 6.4.3 of the REF and section 2.3.25 of this submissions report, on-street parking would be available on adjoining streets such as Lavender Street, Cliff Street, Glen Street, Burton Street and Fitzroy Street. As described in the REF works on Alfred Street South would be staged, with works carried out on one side of the street at a time to minimise the loss of parking at any one time. Parking for construction vehicles would be provided within the ancillary facility, reducing parking impacts due to additional construction vehicles.

2.7.16 Socio-economic and land use – Economic impacts during construction

Issue

Milsons Point Community Group raised concern that the 18-month construction period will have severe adverse impacts on businesses. Concerns raised included:

- The multiple road closures along Bradfield Park South will significantly impact loading and deliveries to businesses
- That relocating the Kirribilli Markets to Ennis Road will adversely impact the operation of the markets, the Kirribilli Neighbourhood Centre revenues and the services it provides.

Response

As noted in section 6.6 of the REF, construction of the proposal would take around 18 months to reach operation. Transport has considered the potential economic impacts to local businesses during construction of the proposal, as detailed in section 3.11.2 of this submissions report. Several mitigation measures have been identified to minimise the potential impacts to businesses during and after construction. This includes notifying all businesses, residential properties and other key stakeholders affected by the activity at least five days prior to the commencement of the construction (GEN2) and advising properties and store owners impacted during construction to schedule deliveries outside of work hours (TT23).

Transport notes in section 6.6.3 of the REF that the proposal is not anticipated to impact loading and delivery services to restaurants, food retail storefronts and other businesses, with the exception of La Capannina Restaurant. Access for loading and delivery services to La Capannina would be provided through the bowling greens, off Alfred Street South, as described in section 6.4.3 of the REF and in accordance with environmental safeguard TT12.

KNC has been consulted by Transport throughout the concept design and detailed design stages of the proposal, and will receive ongoing direct communication ahead of construction to address project impacts to market operations. Transport is committed to minimise impacts where possible and support the changes required to market operations. Kirribilli Markets will be able to continue to operate on planned dates as scheduled.

Kirribilli Markets would remain accessible by bus and train services, with Transport committed to targeted consultation with affected stakeholders to minimise potential impacts. As described in section 2.3.32 of this submissions report impacts to the Kirribilli Markets would be managed through environmental safeguards (see section 6.2 of this submissions report).

2.7.17 Socio-economic and land use – Economic impacts during operation

Issue description

Milsons Point Community Group raised concerns that the plans outlined in the REF will have severe and permanent impacts on business in Milsons Point, with similar impacts witnessed on George Street during construction of the State Government's light rail plan.

Response

Transport acknowledges in section 6.6.3 of the REF that the removal of up to 15 parking spaces on Alfred Street South may impact businesses who rely on customers parking close by to use their business. As described in section 2.7.15 of this submissions report, on-street parking would be available on adjoining streets such as Lavender Street, Cliff Street, Glen Street, Burton Street and Fitzroy Street. There is also an off-street parking area located at the southern end of Alfred Street South. Due to the availability of alternative parking spots impacts are expected to be minor.

Construction activities would have the potential to affect local amenity however, impacts would be temporary and limited to the construction phase. All businesses, residential properties and other key stakeholders affected by the activity will be notified at least five days prior to commencement of the construction in accordance with environmental safeguard GEN2. Further design development and construction planning will aim to minimise the area needed for construction. Construction works will be staged to minimise the area required for construction at any one time and minimise impacts to open space in Bradfield Park, as per environmental safeguard GEN4. Operation of the proposal may result in increase to the patronage of businesses in the area through potential increases in bike rider and pedestrian through trips.

2.7.18 Socio-economic and land use – Social infrastructure

Issue description

Milsons Point Community group suggested that the location of the ancillary facility would impact schools which use Bradfield Park Central as their playing fields as well as other large events such as the annual Marathon, 7-Bridges Walk and New Years Eve.

Response

As noted in section 3.3.11 of this submissions report, the duration of construction would be relatively short taking around 18 months. Transport notes in section 6.6.3 of the REF that access to the south bowling green would be maintained for use for school related activities during the week. The project team has had ongoing engagement with Loreto Kirribilli and St Aloysius' College to ensure impact on school use is minimised as much as possible. The reconstruction works at Anderson Park have reached completion, and schools are now able to resume use of this area.

2.7.19 Socio-economic and land use – Access to Bradfield Park North

Issue description

Milsons Point Community Group suggested that pedestrians would be corralled between the kerb and the designated cycle path on Alfred Street South and would reduce accessibility to the northern end of Bradfield Park North.

Response

As detailed in Chapter 3 of the REF, Alfred Street South would separate pedestrians and bike riders, reducing potential conflicts. As discussed in section 2.3.19 of this submissions report, access to the northern end of Bradfield Park would be maintained, with design refinements in Chapter 4 of this submissions report outlining that the Bradfield Park Heritage Walk would be retained. Pedestrians would be able to safely cross the Alfred Street South cycle path at a designated two-stage crossing near the ramp landing.

2.7.20 Socio-economic – Amenity

Issue description

Milsons Point Community Group raised concerns that the proposal would impact on the amenity of Milsons Point.

Response

Transport acknowledges the potential impacts to amenity of Milsons Point, as outlined in section 6.2 and section 6.6 of the REF. Potential impacts to amenity may involve noise impacts during construction, changes to the landscape character during construction and operation and changes in access to social infrastructure during construction as discussed in section 2.3.34 of this submissions report. As outlined in section 6.3 of the REF, construction of the proposal would result in exceedances of noise management levels in some residential areas within proximity to the proposal during certain activities. These noise exceedances would be limited to the construction period, anticipated to be about 18 months, subject to planning approval, technical requirements and weather. The environmental safeguards included in section 6.2 of this submissions report have been developed to minimise amenity impacts during construction and operation of the proposal. Specifically, a NVMP will be prepared and implemented as part of the CEMP (environmental safeguard NV1), this would include noise and vibration mitigation measures (environmental safeguards NV2 and NV3). Visual impacts would be minimised through the use of visually light weight, neutral materials as to not detract from the landscape character of the bridge and surrounds (environmental safeguard LV2). Additionally, tree removal would be avoided where possible and where vegetation removal is necessary, the removal of trees that contribute to the symmetry of the station entrance would be avoided (environmental safeguard LV2).

Transport acknowledges that the relocation Kirribilli Markets during the construction of the proposal may impact local amenity. As outlined in section 2.3.32 of this submissions report, the temporary market location is currently being discussed with North Sydney Council and KNC. Transport is committed to coordination with North Sydney Council and key stakeholders to minimise impacts to major events during construction as per environmental safeguard SE3.

As noted in section 6.6.3 of the REF the proposal would promote a positive impact on the amenity of the area given that the mobility of bike riders and pedestrians would be improved. The proposal would improve amenity and accessibility of the

Sydney Harbour Bridge and potentially attract more users and tourists to Milsons Point and Kirribilli. The creation of gathering space including seating and space for meeting, resting and pedestrian movement aims to add to the amenity of the Milsons Point area.

2.7.21 Biodiversity – Tree removal

Issue description

Milsons Point Community Group raised concerns that the proposal would result in currently vegetated areas being replaced with concrete.

Response

Transport acknowledges that the proposal would result in the removal of five Simons Poplar, an Ornamental Pear Cultivars and one Canary Island Date Palm, as outlined in section 6.7 of the REF. Design refinements, discussed in Chapter 4 of this submissions report, have been incorporated into the design the of the proposal to reduce loss of green space where reasonable and feasible to do so. This has included the addition of low-level planting underneath the ramp structure where gravel was previously proposed.

2.8 Lavender Bay Precinct Committee

Minutes of the meeting of the Lavender Bay Precinct Committee from 24 November 2022 were provided in response to the exhibition of the REF.

2.8.1 Need and options considered – Project cost

Issue description

The Lavender Bay Precinct Committee believed the proposal has an inadequate business case, that provides no estimate of costs.

Response

The construction cost of the proposal would be confirmed once a contract for delivery has been awarded.

The purpose of this report is to address submissions to the REF. The business case for the proposal is part of a separate process which has been independently reviewed. However, the REF does address the benefits of the proposal which would broadly relate to improved accessibility for the many bike riders who cross the harbour, including in the future, a wider range of ages and abilities than is currently the case. Specifically, all of these bike riders would benefit from time savings, greater convenience and better health outcomes.

The proposal would improve the capacity of the existing Sydney Harbour Bridge Cycleway and promote behaviour change by making cycling and micro-mobility safer and easier. the *Future Transport Strategy* supports stronger investment in walking and cycling networks in order to offer customers convenient alternatives to driving and build a sustainable transport system. Section 2.3 of the REF further identifies the strategic benefits of the proposal.

2.8.2 Need and options considered – alternatives considered

Issue description

The Lavender Bay Precinct Committee suggested there has been inadequate consideration of alternatives, including the looped ramp option and the Harbour Link proposal.

Response

Section 2.5.1 of the REF states that the linear option and loop option were identified and placed on public display for community feedback and consultation. The community and stakeholder feedback revealed a preference for the linear ramp due to its benefits over the loop ramp option. As such, Transport moved forward with the linear ramp option. The Harbour Link proposal, involving the reallocation of traffic lanes of the Sydney Harbour Bridge for cycle use, was considered as a part of

the strategic assessment. The conversion of lane 1 on the Sydney Harbour Bridge to a cycleway was discounted as lane 1 could only be used in tandem with the existing cycleway. Lane 1 is not wide enough to allow for two-way flow of bike riders once appropriate safety measures are in place. Similarly, the conversion of lane 8 of the Sydney Harbour Bridge to a cycleway was discounted, and is described in sections 2.3.4 and 2.3.5 of this submissions report.

2.8.3 Non-Aboriginal Heritage – Heritage impacts

Issue description

The Lavender Bay Precinct Committee expressed concern about the following:

- Heritage impacts to the Sydney Harbour Bridge and Bradfield Park North
- Visual impacts on the Milsons Point station entrance and Bradfield Park North.

Response

As outlined in section 2.3.15 of this submissions report, Transport acknowledges that preservation of the heritage values of the Sydney Harbour Bridge is of high importance, with section 6.1 of the REF identifying potential impacts of the proposal on its heritage values. This includes removal of part of the parapet near the Burton Street stairs along the viaduct, introduction of a new structure within the heritage setting, removal of some landscaping elements with associated excavation, and the introduction of the ramp landing in Bradfield Park North. After consideration of the issues raised in the public submissions, the environmental safeguards for the proposal (refer to section 7 of the REF) have been revised. Should the proposal proceed, the environmental safeguards in Table 6-1 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 deleted measures, or parts of measures, have been struck out. Environmental safeguards in Table 6-1 (NAH1, NAH2, NAH3, NAH4, NAH5, NAH6, NAH7, NAH8, NAH9, NAH10, NAH11, NAH12, NAH13, NAH14, NAH15, NAH16, NAH17, NAH18, NAH19, NAH20 and NAH21) will be implemented to minimise those impacts where possible.

Concerns about the impacts to the heritage of Bradfield Park North and the setting of the Sydney Harbour Bridge have been addressed in sections 2.3.15, 2.3.16 and 2.3.19 of this submissions report. Environmental safeguard NAH12 in Table 6-1 of this submissions report has been implemented, including involvement of the Design Integrity Panel and incorporation of heritage, design and Connecting with Country expertise to further minimise impacts to the heritage values of these items.

Transport notes concerns regarding views to Milsons Point Station and the Burton Street tunnel archway. Design refinements, discussed in Chapter 4 of this submissions report have minimised impacts to these aspects. The LCVIA, detailed in section 6.2 of the REF, selected and assessed seven critical viewpoints, which reflect the areas where visual impacts would be most significantly felt in the proposal site. An Addendum LCVIA, detailed in section 5.2 of this submissions report, provides additional viewpoints facing northeast from Burton Street to Milsons Point Station forecourt and entrance and facing east to the Burton Street tunnel archway in response to stakeholder concerns. Environmental safeguards have been identified section 6.2 of this submissions report and will be implemented to further reduce heritage impacts of the proposal.

2.8.4 Landscape character and visual impact – landscaping impacts

Issue description

The Lavender Bay Precinct Committee expressed concern over the loss of open space and trees in Bradfield Park North.

Response

Transport recognises that preservation of open spaces and trees are highly valued by the community surrounding the proposal, as noted in section 6.6.5 of the REF. Efforts have been made to further minimise potential impacts to open space as a result of the proposal, with the Addendum LCVIA and sections 4.2 and 5.2 of this submissions report identifying that the ramp has been shortened as much as possible to reduce open space and heritage impacts while still ensuring that the ramp gradient is accessible to a wide range of bike riders. Low level planting would be provided underneath the ramp structure to replace gravel, which was previously proposed, as noted in the updated Urban Design Plan.

2.8.5 Traffic and transport – Loss of parking

Issue description

The Lavender Bay Precinct Committee expressed concern over the permanent removal of up to 15 parking spaces in Alfred Street South.

Response

Section 6.4.1 of the REF states that up to 15 parking spaces along Alfred Street South would be removed, noting that the removal of parking would provide substantial improvements to the safety of active transport users and contribute to encouraging people to use the proposed bike rider connection. It would also ensure compliance with required setbacks for pedestrian and bike crossings and traffic signals. As noted in section 2.3.25 of this submissions report, alternative parking is available in the local area.

2.8.6 Traffic and transport – Pedestrian/bike rider safety

Issue description

The Lavender Bay Precinct Committee expressed concern that the proposed new crossing south of the Lavender Street roundabout would lead to conflict between pedestrians, bicycle riders and vehicles.

Response

As identified in section 2.3 of the REF, the existing pedestrian crossing on Alfred Street South near Lavender Street requires an upgrade to meet current road safety standards. As outlined in Chapter 4 of this submissions report, design refinements have been made to now retain the roundabout in its current location. Kerb adjustments and the relocation of crossing islands are proposed to improve lines of sight and accessibility, and to allow for adjustments to the pedestrian crossing across Lavender Street. To best address pedestrian and bike rider desire lines, the crossing is located as close as possible to the roundabout. These upgrades provide a more intuitive connection for bike riders between the Lavender Street shared path and Middlemiss Street cycle path. Line marking, pavement marking and signage would be provided to delineate between the pedestrian and bike paths to minimise the potential for collisions between the two.

2.8.7 Traffic and transport – Connection to cycleways

Issue description

The Lavender Bay Precinct Committee express concern that the proposal has poor connectivity to the surrounding cycle routes.

Response

Section 2.3 of the REF identifies the strategic benefits of the proposal, which include eliminating the existing bottleneck and queues created by the current stairs accessing the Sydney Harbour Bridge Cycleway and catering to projected increase in bike riding demand, greater accessibility for people of all ages and abilities and improved connectivity between the Sydney CBD and lower north shore.

3. Response to community issues

Transport received 1,040 submissions, accepted up until the 19 December 2022. Given the high volume of submissions received from individual respondents (1,035), allocated author numbers for individual respondents can be found in Appendix A. Appendix A also indicates where the issues from each submission have been addressed in Chapter 1 of this submissions report.

3.1 Overview of issues raised

A total of 1040 submissions were received in response to the display of the REF. This included submissions from two government agencies, five submissions from community organisations and 1035 from the community.

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

Of the 1035 submissions received from the community, sentiment towards the proposal was:

- 715 submissions in support
- 31 submissions did not offer a position
- 289 submissions not in support.

Figure 3-1 below provides a breakdown of the submission categories observed during extraction and collation of the submissions received.

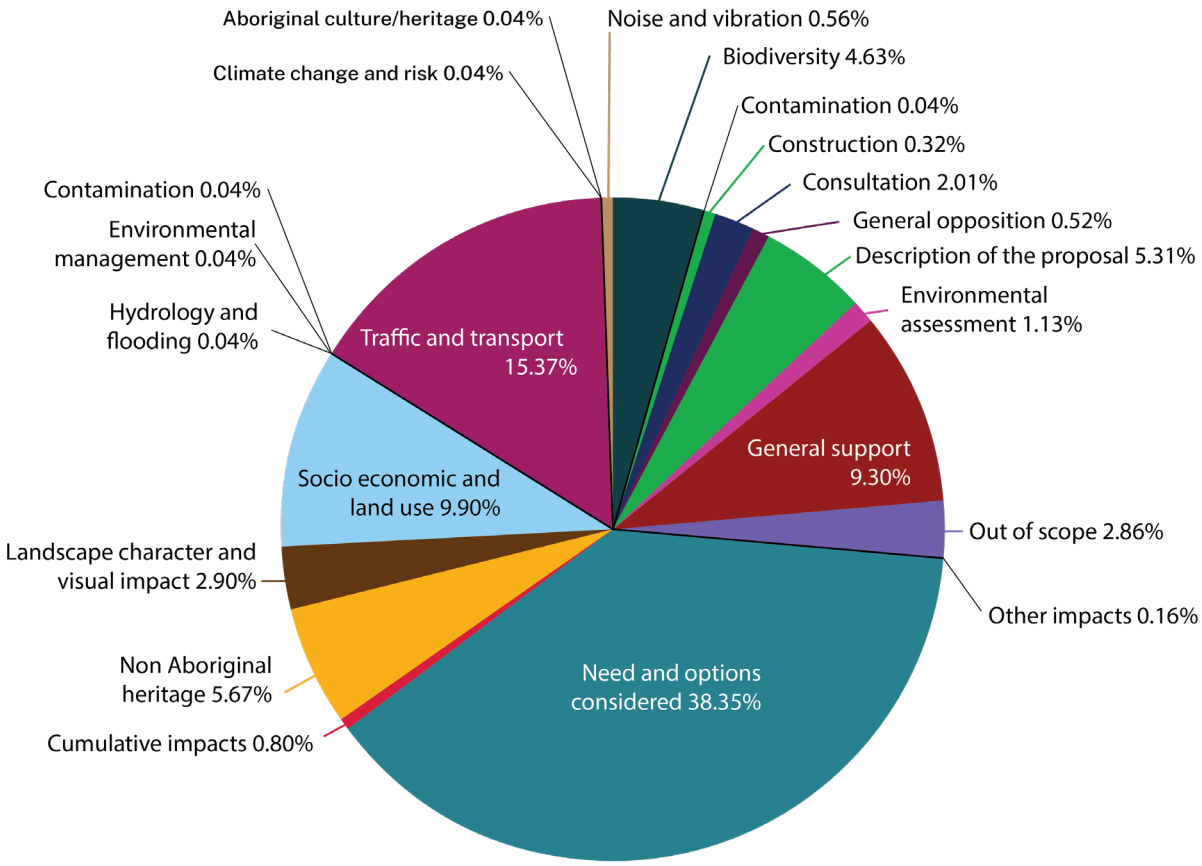


Figure 3-1: Summary of submission categories received

3.1.1 Individuals and community organisations

Section 3.2 to 3.19 documents the submissions received from individuals and community representatives and responses from Transport.

In summary, the issues raised by individuals and community organisations generally relate to the following topics detailed in Table 3-1. Referencing of where responses are for each individual author are provided in Appendix A.

Table 3-1 Categories of topics raised and where addressed

Category of issue raised	Section number where addressed
Need and options considered	3.2
Description of the proposal	3.3
Consultation	3.4
Environmental assessment	3.5
Non-Aboriginal heritage	3.6
Landscape character and visual impacts	3.7
Noise and vibration	3.8
Traffic and transport	3.9
Contamination	3.10
Socio-economic and land use	3.11
Biodiversity	3.12
Hydrology and flooding	3.13
Aboriginal heritage	3.14
Climate change and risk	3.15
Other impacts	3.16
Cumulative impacts	3.17
General	3.18
Out of scope	3.19

3.2 Issue 1: Need and options considered

3.2.1 Project need and justification

Issue description

Community members raised concerns about the need and justification for the proposal. Key concerns included:

- Concern that the proposal does not provide value or benefit to the local community.
- Belief that the number of bike riders using the Sydney Harbour Bridge cycleway as stated in the REF are much lower than presented in the REF. One community member believes that bike rider numbers are decreasing, and children do not wish to ride bikes. They conclude that the proposal is therefore not justified
- Belief that the stairs are adequate, and the proposal is not required
- Concern that the proposal is inconsistent with the intended use of Bradfield Park, which was to be protected as green space.

Response

As identified in section 2.3 of the REF, the proposal would provide a number of strategic benefits to the local community by addressing the limitations of the existing infrastructure. The existing 55 step staircase makes access to the Sydney Harbour Bridge cycleway difficult and prevents many customer groups from using the facility, including younger and older bike riders and cargo bike users. In 2019, one third of incidents reported on the Sydney Harbour Bridge cycleway were caused by the bridge stairs (Transport for NSW, 2021). Usage has decreased over time despite a significant growth in bike purchases and uptake in the recent years, and the step access and associated safety barriers create a bottleneck that would prevent the cycleway from meeting projected demand.

Since the preparation of the REF further design refinements have been made in response to stakeholder and community concerns. As detailed in Chapter 4 of this submissions report, some key design refinements include changing the in-lane bus stop to a kerb-side bus stop, redesigning the ramp landing as a curve to slow down bike riders, and incorporating Aboriginal artwork within the bike ramp design.

To collect bike rider data, Transport used bicycle counters at select locations between 2007 and 2019. Transport collected additional counts in 2022 at eight locations within the vicinity of the Sydney Harbour Bridge Cycleway and Milsons Point Station. The capturing of daily data in the context of overall cycleway usage tracked for over a decade has been used to validate the accuracy of the projected demand. Further detail on cycling demand, congestion and projections is provided in section 2.3 of the REF.

Transport acknowledges that the proposal would have potential impacts on Bradfield Park North. Sections 6.1 and 6.2 of the REF and section 5.2 of this submissions report acknowledge that the proposed ramp would result in moderate physical and visual impacts to the setting of Bradfield Park North. Construction of the proposal would see a direct physical impact to the park layout and a disturbance to the landscape features of Bradfield Park North. This change would see the existing wayfinding altered and the visual appeal of the park as an open, public space partially obstructed. As identified in section 6.6 of the REF, construction of the proposal would also require the relocation of the existing table tennis table in Bradfield Park North and the removal or relocation, if possible, of the existing rotunda.

While the public amenity of the park would be altered due to the landing, it would also see a positive impact as general mobility of bike riders and pedestrians would be improved, relieving the congestion of Burton Street stairs and surrounds. The upgrades would provide users of the proposal with greater confidence to walk or cycle to their destination and allow them to feel safe when using the cycle path. The proposal would also provide users of Bradfield Park North with new seating options, new landscaping and include new opportunities for non-Aboriginal heritage interpretation and Aboriginal artwork.

Further design refinements would also aid in minimising impacts to Bradfield Park North. These include minimising new works, including paving, within Bradfield Park to retain the landscape character of the park, retaining and protecting the existing "Willoughby Road" heritage interpretation inlay, which was previously proposed to be relocated, and minimising new signage poles in the park, opting instead for ground markings wherever possible to minimise visual impacts. Design refinements have also been made to the proposed ramp to minimise its visual impacts. Refinements include shortening the ramp abutment, incorporating decorative steel plates at the base of the ramp columns, relocating the ramp column adjacent to the northern bowling green, and reducing the width of the ramp near its connection to the Sydney Harbour Bridge. The existing Sydney Harbour Bridge parapet has also been proposed to be relocated to Bradfield Park in order to enable interpretation of the historic bridge fabric. Chapter 4 of this submissions report provides further details of the design refinements to the proposal.

3.2.2 Benefits of the proposal

Issue description

Community members questioned whether:

- The cycleway would make the Sydney Harbour Bridge cycleway more accessible
- The cycleway will attract more bike riders
- The benefits of the proposal would be recognised as there is no cycleway to the north and the proposal will increase the number of bike riders accessing the narrow Sydney Harbour Bridge cycleway
- The time savings stated in the REF for bike riders would be realised
- The ramp will encourage less able-bodied people to cycle or lead to an increase in bike riders

- The statement made in the REF that travelling by private vehicle to Milsons Point is not essential is valid and therefore whether the loss of parking can be justified.

Other community members were supportive of the proposal and highlighted that the proposal will:

- Improve accessibility
- Attract more bike riders and bike riders of varying levels of ability and mobility
- Encourage use by bike riders who have not previously been able to access the Sydney Harbour Bridge cycleway due to the stairs
- Have a positive impact on cycle tourism
- Encourage a reduction in cars on the road and provide environmental benefits, including reductions in greenhouse gas emissions and facilitation of healthier lifestyles
- Improve a critical north-south strategic link in the cycling network
- Facilitate a culture of physical activity and healthy lifestyles, leading to physical and mental health benefits for the community
- Be important to people who commute long distances
- Be a safer option than the spiral ramp (Bradifeld Park Central looped approach) and will resolve issues of congestion for pedestrians, bike riders and motor vehicles
- Provide wider social, community and health benefits that will outweigh any inconvenience to motorists, disturbance to the environment and heritage impacts
- Prevent bike riders from having to queue on the stairs
- Improve access to the Sydney Harbour Bridge cycleway and the ramp. Improvements to the crossing at Lavender Street were commended as for their improvements to safety for bike riders and motorists
- Be sympathetic to the environmental, amenity and heritage concerns and would also address the safety concerns of bike riders and pedestrians.
- Separate pedestrian and bike rider traffic in front of Milsons Point station and therefore improve safety
- Encourage cycling and assist people with rising cost of living
- Reduce conflict between pedestrians, particularly during the markets
- Increase support for local business due to the increase in bike riders using the proposal
- Remove the hazard posed by the existing stairs.

Response

As identified in section 2.3 of the REF, the existing infrastructure has several limitations. This includes the existing 55 step access to the Sydney Harbour Bridge Cycleway, which is difficult and unsafe to navigate for many customer groups. The step access and its associated safety barrier also only allows a single user at a time, creating a bottleneck where two-way flow is not possible to enter/exit the Sydney Harbour Bridge Cycleway. The proposed ramp and its gentle gradient would improve access to the Sydney Harbour Bridge Cycleway, particularly for less able-bodied people and those with heavier bikes, and would eliminate the existing bottleneck and queues created by the current stairs. By providing better access to the Sydney Harbour Bridge Cycleway, a key transport link, the proposed ramp would also support the future growth in the number of bike riders travelling between the lower north shore, North Sydney CBD and Sydney's CBD. Improving access by providing an alternative to the existing stair access to the Sydney Harbour Bridge cycleway would also result in time savings for bike riders.

Transport acknowledges that travel via private vehicle accounts for 25 per cent of the primary mode of transport to work for residents of North Sydney, though travel via public transport accounts for about 43 per cent (refer to section 6.4.2 of the REF). As identified in section 2.2 of the REF, the NSW Government is committed to cycling as an important mode of city-serving infrastructure. For example, the *Future Transport Strategy* has a response to support car-free, active, sustainable transport options and the *NSW State Infrastructure Strategy 2022 - 2042* recommends the development of off-road cycling networks connecting public transport and popular destinations and the proposal would help achieve both these objectives.

There is an importance of optimising the existing infrastructure and promoting behaviour change, for instance, by making public transport, walking, cycling and micro-mobility safer and easier with better pathways, cycleways and connections. As

such, the *Future Transport Strategy* supports stronger investment in walking and cycling networks in order to offer the customers convenient alternatives to driving and build a sustainable transport system.

The proposed cycleway's objectives are aligned with the strategy as it would:

- Optimise the existing cycling link between Sydney CBD and North Sydney CBD and connect these key centres and regional communities
- Promote cycling as an alternative and sustainable mode of transport and encourage a wider range of customers to pursue active transport as an effective mode of transportation, which could lead to potential opportunities for decreased congestion on surrounding road networks
- Promote a healthier lifestyle by encouraging people to adopt cycling as a form of transportation
- Improve safety for bike riders of all ages and abilities by providing greater accessibility to the Sydney Harbour Bridge cycleway, by eliminating the bottleneck created by the existing stairway access, which poses a potential safety risk and a barrier to a wide range of customers.

Transport acknowledges the support of community members for the proposal. As noted above and detailed in Chapter 2 of the REF, the proposal would address a number of limitations of the existing infrastructure.

The removal of the existing stairs is not a part of the proposal as it would remain safe for able-bodied users. Retaining the staircase would allow users the choice to continue accessing the Sydney Harbour Bridge cycleway from this path, particularly for riders travelling east towards Kirribilli via Burton Street. Additionally, the staircase is a part of the heritage fabric of the Sydney Harbour Bridge and therefore, its removal would significantly impact the heritage value of the Sydney Harbour Bridge.

3.2.3 Alternatives and options considered for the elevated linear bike ramp

Issue description

Community members expressed dissatisfaction with the elevated linear bike ramp and believe an alternative solution would better meet the project needs. Community members indicated support for several alternatives to the existing stairs including:

- Lifts
- Installation of a travelator
- Construction of a bike lane along the Warringah Freeway and over the Sydney Harbour Bridge
- Installation of the ramp on the eastern side of the Sydney Harbour Bridge
- A ramp attached to the Sydney Harbour Bridge and starting further to the south
- Converting the existing stairs to a ramp
- Extending ramp to Middlemiss Street to improve safety and would be a simple addition to the design.

Community members expressed concern about consideration of the alternatives and the level of collaboration between State and Local Council in selecting the proposal.

Response

Section 2.5 of the REF details the options assessment process carried out for the proposal and discusses the alternative options considered. The options raised were not progressed as the preferred option for the proposal for the following reasons:

- Lift and travellator options were considered as a part of the options assessment. This included a set of travelators linking from the Sydney Harbour Bridge Cycleway and landing south of Burton Street, and an elevator option located immediately adjacent to the existing stairs. Both options were assessed to provide access for heavy bikes, and older or less able bike riders. However, both options would create a bottleneck which would increase queueing, slowing down the journey and presenting a significant long-term capacity constraint. The installation of three lifts with a capacity of six riders each would not be able to achieve 1000 bike riders in peak hour (the current upper capacity limit of the cycleway). The installation of three travelators could achieve the 1000 bike riders in peak hours but would still create compounding delays with bike riders having to dismount and stand still whilst on the travelator. Both options also still create substantial heritage and visual impacts to the Sydney Harbour Bridge and Bradfield Park. These options were

discounted as they were unable to meet the capacity requirements and would negatively impact on the overall cycleway capacity

- The reallocation of traffic lanes of the Sydney Harbour Bridge for cycle use was considered as a part of the strategic assessment. The conversion of lane 1 on the Sydney Harbour Bridge to a cycleway was discounted as lane 1 could only be used in tandem with the existing cycleway. Lane 1 is not wide enough to allow for two-way flow of bike riders once appropriate safety measures are in place. Similarly, the conversion of lane 8 of the Sydney Harbour Bridge to a cycleway was discounted, and is described in sections 2.3.4 and 2.3.5 of this submissions report
- Construction of a bike lane along the Warringah Freeway is out of scope for this proposal as the proposal focuses on improving access to the Sydney Harbour Bridge cycleway by addressing the bottleneck issues created by the existing stairs. The provision of active transport along the Warringah Freeway would be considered by the Warringah Freeway Upgrade Project team
- The installation of a ramp on the eastern side of the Sydney Harbour Bridge is out of scope as the aim of the proposal is to provide access to the existing Sydney Harbour Bridge cycleway
- The conversion of the existing stairs to a ramp would inhibit access. Given the existing stairs have a high gradient, the conversion of the existing stairs would particularly inhibit access for active transport users with mobility issues and for those using heavy bikes
- Given the limited space, the extension of the bike ramp to Middlemiss Street would not be feasible. Extending the ramp to Middlemiss Street would also have significant impacts on Bradfield Park North and existing trees given that construction of additional columns would be required to support the larger ramp. The proposed cycle path limits impacts to Bradfield Park North

Transport has been holding regular meetings with North Sydney Council since 2021 to brief and consult on cycleway design and potential construction impacts. Council has been briefed on preliminary design concepts, detailed design features and early investigation work activities. Transport continues to collaborate with Council and hold meetings where necessary to update on the progress of the proposals design, community consultation, key stakeholders' needs identified and how Transport are managing stakeholder relationships. In February 2023 North Sydney Council provided landowners consent for the proposal to submit an application for Section 60 approval under the Heritage Act. North Sydney Council provided a submission to the REF during the submissions period in 2022 and responses to the issues raised are provided in section 2.3 of this submissions report.

3.2.4 Alternatives and options for the Alfred Street cycle path

Issue description

Community members suggested the following alternative options for the Alfred Street cycle path:

- One lane of Alfred Street South is removed for the cycle path
- To locate the entirety of the Alfred Street cycle path on the eastern side of Alfred Street South
- An overpass ramp over the roundabout at the intersection of Lavender, Middlemiss and Alfred South streets to prevent conflict between bike riders and road traffic
- Running a shared bike and pedestrian track through Bradfield Park North, potentially removing parking to accommodate this
- To locate the path on Ennis Road, as it is barely used and would not impact parking on Alfred Street South
- Community members requested that the cycle path be separated from pedestrians.

Response

As identified in section 6.4.2 of the REF, Alfred Street South is a two-lane and two-way street that is classified as a local road and extends from Lavender Street in the north to Olympic Drive in the south. Reducing Alfred Street South to a one-way street would have significant traffic impacts, including impacts to public transport access.

An options assessment was carried out for the Alfred Street South in section 2.5.2 of the REF, including the option to include a two-way cycle path located on the eastern side of Alfred Street South. This option proposed the relocation of the roundabout to the east and the removal of the slip lane from the Warringah Freeway to ensure road safety. However, this was discounted as the removal of the slip lane would have adverse impacts to the existing road traffic operation.

A cycle path on Ennis Road would not meet the proposal objectives as Ennis Street is located on the eastern side of the Sydney Harbour Bridge and would not connect readily to the Sydney Harbour Bridge cycleway.

As noted in the response above, the extension of the bike ramp to Middlemiss Street would not be feasible and would have significant impacts on Bradfield Park North given that construction of additional columns would be required to support the larger ramp.

3.2.5 Community proposal

Issue description

Community members raised the following issues in relation to the community proposal as described in section 5.2 of the REF:

- Some expressed their preference for the community proposal over the linear cycle ramp
- Some expressed preference for the proposal over the community proposal
- Some stated the community proposal was rejected due to turning radii and gradient, however the proposal has similar gradient and radii.

Response

As described in section 5.2 of the REF, members of the local community submitted a proposal for an alternative ramp design within Bradfield Park Central, which comprised a ramp with a series of reverse curves with a gradient of five per cent. Transport provided a comprehensive response to this submission in March 2022 and Arcadis also provided a technical review of the community proposal.

It is acknowledged that some members of the community prefer the community proposal to the linear cycle ramp. However, as described in section 2.5.1 of the REF, a loop option, which is separate to the community option, was placed on public display for community feedback and consultation, along with a linear ramp option in June 2021. The community and stakeholder feedback revealed a preference for the linear ramp due to its benefits over a loop ramp option. As such, Transport moved forward with a linear ramp option.

Though the community proposal met acceptable bike rider guidelines, it fell short of the 'desirable' standard necessary to accommodate the widest possible range of bike riders. Verification was provided by the Arcadis' Sustainable Mobility Advisor, which indicated that the scheme did not meet wide accessibility requirements. The analysis considered many aspects of accessibility, including turning radii and gradient, and concluded the community proposed would continue to disadvantage bike riders who currently find the steps a barrier to cycling. It was noted that aspiring to meet the current Austroads Guide to Road Design does not necessarily lead to a safe and comfortable solution for users of all ages (and abilities).

3.2.6 Parking loss

Issue description

Community members expressed support for the removal of street parking and requested further parking reductions and conversion of this to community space.

Response

Transport acknowledges the support of community members for the removal of parking spaces.

Section 6.4.1 of the REF states that up to 15 parking spaces along Alfred Street South would be removed, noting that the removal of parking would provide substantial improvements to safety of active transport users and contribute to encouraging people to use the proposed bike rider connection. It would also ensure compliance with required setbacks for pedestrian and bike riders crossings and traffic signals.

3.2.7 Project cost

Issue description

Community members enquired how much construction of the cycleway would cost.

Community members expressed concern that the project cost is not justified and expressed the beliefs that:

- It is unfair to spend taxpayers' money on infrastructure that does not benefit all and there was concern that the proposal would attract unskilled bike riders which they believe is not a benefit and therefore not a good investment
- The proposal is not good value for money and is a waste of taxpayer money
- The Lavender Street roundabout and pedestrian crossing only recently upgraded, and its redevelopment was considered a waste of money.

Community members suggested alternate areas where the money for delivery of the proposal could be spent.

Response

As stated in section 2.8.1 of this submissions report, the construction cost of the proposal would be confirmed once a contract for delivery has been awarded. .

The proposal is consistent with Austroads Guidelines and resolving the bottleneck created by the stairs at Milsons Point would increase the capacity of the Sydney Harbour Bridge Cycleway by up to four times. The proposal would provide a long term solution to a major constraint in the cycleway network between the CBD's of Sydney and North Sydney. These benefits are discussed in Section 2.3 of the REF and include eliminating queues created by the current stairs and catering to the projected increase in bike riding demand, greater accessibility for people of all ages and abilities and improved connectivity between the Sydney CBD and lower north shore.

In addition, the proposal is expected to also provide the following benefits:

- increases in social value resulting from improved infrastructure provision for active transport users
- environmental value in the form of increased viability for low-carbon transportation modes,
- environmental value through supporting City of Sydney CBD modal access targets for bike riders
- customer value in the form of improved modal choice for commuting and recreation
- value to private residents of improvements to Bradfield Park precinct as a result of a new architectural landmark.

As outlined in section 2.1 of the REF, a key aim of the proposal is to improve active transport infrastructure, including pedestrian access and safety. Once operational, the proposal would have a number of strategic benefits for the community through improving safety for bike riders, pedestrians and motorists.

As identified in section 2.4 of the REF, the proposed ramp aims to ensure all rider types and abilities, including children, can experience riding over the Sydney Harbour Bridge with a high level of customer satisfaction and comfort. The proposal would do so by eliminating the bottleneck created by the existing stairway access, which poses a potential safety risk and a barrier to a wide range of customers. Implementation of the proposal would support the future growth in the number of bike riders travelling between the lower north shore, North Sydney CBD, and Sydney's CBD.

As identified in section 2.2 of the REF, the proposal would address a number of strategic plans and policy documents. Delivery of the proposal would support the NSW Government's commitment to cycling as a key mode of city-serving, sustainable infrastructure that provides positive community health, amenity and environmental outcomes. Implementation of the proposal would eliminate the existing bottleneck and queues created by the current stairs and cater to increased cycling demand projected for the future, improve accessibility to people of all ages and abilities and improve connectivity between Sydney CBD and the lower north shore. Environmental safeguards for the proposal include GGCC1 which requires the proposal to demonstrate value for money. Environmental safeguard GGCC1 has been refined to include the reuse of spoil generated by the proposal and environmental safeguard C2 has been updated to make reference to *The excavated public road material order 2014,* which allows for the reuse of public road materials when certain criteria are met, to encourage the reuse of materials and minimise proposal costs associated with waste disposal.

Upgrades to the Lavender Street roundabout have been proposed to maximise available space at this location to allow for adjustments to the pedestrian crossing across Lavender Street. To best address pedestrian and bike rider desire lines, the

crossing would be located as close as possible to the roundabout. These upgrades would provide a more intuitive connection for bike riders between the Lavender Street shared path and Middlemiss Street.

As outlined in Chapter 4 of this submissions report, design refinements have been made to retain the roundabout in its current location. Kerb adjustments and the relocation of crossing islands are proposed to improve lines of sight and accessibility.

3.3 Issue 2: Description of the proposal

3.3.1 Alfred Street south cycle path

Issue description

Community members raised a number of concerns about the design of the Alfred Street cycle path and made suggestions for improvements to the proposal. These included:

- Request for additional traffic lights to be installed on Alfred Street South, opposite 84 Alfred Street South, to give bike riders the right of way
- Questioned whether the 2.5 metre width of the shared cycle path includes the existing overhead utility poles and request that the proposed 2.5 metre width for the cycle path on Alfred Street South is widened to three metres to accommodate the potential increase in cycling
- Concern that the difference in travel speed between bike riders and pedestrians would discourage bike riders from using the cycle path and request that a dedicated cycle path be included for the length of the cycle path
- Question how the proposed cycle path will connect to the rest of the bike network in North Sydney, noting that there is no provision for a cycle paths along Lavender Street or onto the Pacific Highway and does not connect to offroad cycle paths
- Question the purpose of adding a new cycle path on the western side of Alfred Street South when the existing cycle path on Middlemiss Street connects directly to the shared pathway on Alfred Street South
- Concern that bike riders would need to cross an additional road to access the cycle path, noting that this would increase the risk of accidents
- Concern that the proposal would force pedestrians to cross the cycle path and walk down Alfred Street South alongside traffic, which may cause conflict between bike riders and pedestrians
- Concern about the narrowing of Alfred Street and proposed in-lane bus stop.

Response

The proposed crossing of Alfred Street South would be in front of 110-116 Alfred Street South, approximately 150 metres to the north of the crossing location proposed by the community members. An additional, signalised crossing in such proximity to the proposed crossing is likely to result in unacceptable impacts to the traffic network and has therefore not been considered as part of the proposal. The location of utility poles would be confirmed during detailed design and would take into account safety considerations.

Since the preparation of the REF, further detail on path widths has been provided (refer to Chapter 4 of this submissions report). South of the new pedestrian crossing, the two-way cycle path would be about 2.4 metres wide on the eastern side of Alfred Street South. North of the new pedestrian crossing, the two-way cycle path would be about 2.5 metres wide on the western side of Alfred Street South.

The proposed 2.4-2.5 metre width for the shared cycle pathway on Alfred Street South is considered to be the acceptable minimum for both commuting and mixed-use scenarios as per the *Austroads, Guide to Road Design, Part 6A: Paths for Walking and Cycling* (AGRD6A-21). Though an increase in width to three metres does not go against the AGRD6A-21, this would further encroach upon Bradfield Park North and the Alfred Street South. As such, a 2.4-2.5 metre width for the shared cycle pathway would balance the objective to provide safe and accessible cycling infrastructure whilst minimising impacts to the existing environment. Although Alfred Street would be narrowed as a result of the proposal, swept path analyses have determined that all vehicle types, including 19 metre articulated buses and 14.5 metre rigid buses, would still be able to access the road.

As detailed in section 2.5.2 of the REF, a robust options assessment was carried out for the Alfred Street South cycle path by North Sydney Council and Transport. Community and stakeholder feedback received in December 2021 indicated a preference

for separating bikes and pedestrians along Alfred Street South. The options assessment details that one-way cycle paths would require the removal of trees and reduction of the footpath width on the west side of Alfred Street South, and there were safety concerns related to motorist and bike rider conflicts for the two-way cycle path on the west side of Alfred Street South. Community feedback identified the two-way cycle path located on the eastern side of Alfred Street South as the preferred option.

The Alfred Street South cycle path would be dedicated for bike rider use, whilst the adjacent footpath would be dedicated for pedestrian use. The proposed crossings on Alfred Street South, Lavender Street and Middlemiss Street would be shared path crossings. Line marking, pavement marking, and signage would be provided to delineate between the pedestrian and bike paths to minimise the potential for collisions between the two.

The Alfred Street South cycle path, as described in section 3.1.2 of the REF, would allow for safe and accessible travel for bike riders as a part of the broader Sydney Harbour Bridge Cycleway Northern Access proposal. The proposed ramp connection to the Sydney Harbour Bridge would provide a link between the existing cycleway and the proposed cycle path on Alfred Street South. It should be noted that the Sydney Harbour Bridge, as the only cycle connection across the harbour east of the Gladesville Bridge, is critical for bike riders trying to travel between Sydney's CBD and Eastern Suburbs and the lower north short, upper north shore and northern beaches. The Alfred Street South cycle path would provide a connection to the existing cycle path on Middlemiss Street. The extension of cycle paths beyond the proposal are outside the scope of the proposal.

In the existing environment, bike riders travelling from Middlemiss Street travel across the Lavender Street roundabout to Alfred Street South. The dedicated cycle path on the western side of Alfred Street South, delineated with line marking, pavement markings and signage, would provide bike riders with a safer alternative to cycling on the road alongside other vehicles. The cycle path would transition to a shared path on the southern side of the Lavender Street crossing (refer to Chapter 4 of this submissions report). The delineation between the dedicated cycle path and shared paths would minimise collisions between pedestrians and bike riders.

As identified in Chapter 4 of this submissions report, further design refinements include the provision of a curved bend at the bike ramp landing, which is designed to slow down bike riders travelling towards Alfred Street from the ramp. The landing transitions to a shared pedestrian and bike rider zone, introduced to slow down bike riders and prepare them for interactions with pedestrians in the park. The unique shared path paving, accompanying signs and line marking provides a clear indicator to both bike riders and pedestrians on where the shared zone is, and provides a delineation between dedicated bike rider and pedestrian paths to minimise collisions. The path route at this point is separated by landscaped medians to reduce the risk of northbound and southbound bike riders colliding. The separated cycleway commences once pedestrians and bike riders are clear of the park area and travelling parallel to Alfred Street South. Landscaping would be provided at the north-eastern corner of Alfred Street South and adjacent to the zip merge treatment on the north-eastern side of the street that would further deter pedestrians from entering the traffic lane.

As noted in the REF, bus stop 206123 on Alfred Street South, near Burton Street would be retained.

Design refinements have meant that the in-lane bus stop previously proposed to replace the existing bus stop number 206128, would be replaced by a kerbside bus stop in the same location as the proposed in-lane bus stop. Four parking spots would be removed to accommodate the new kerbside bus stop.

Environmental safeguard, TT2, has been revised to require modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop to be carried out prior to commencement of construction.

3.3.2 Alfred Street south cycle path and pedestrian upgrade – roundabout

Issue description

Community members raised concerns about the proposed arrangement for the roundabout at Lavender Street, Middlemiss Street and Alfred Street South. Concerns and suggestions included:

- Community members express doubt that bike riders will use the proposed pedestrian crossings on Middlemiss Street and Lavender Street, noting that bike riders would more likely directly cross the roundabout on Lavender Street with no incentive for bike riders to slow down whilst approaching the roundabout.
- Some community members suggest that a fence be erected on the eastern side of Alfred Street South to prevent pedestrians from crossing the roundabout at intersection with Middlemiss, Lavender and Alfred Street South
- Removal of the left turn slip lane at the Lavender Street roundabout, suggesting that this lane is incorporated into the roundabout to calm traffic

- Reducing the size of the Lavender Street roundabout may increase collisions and would limit the size of vehicles that can safely use the roundabout.

Response

The objective of the proposal is to provide access to all bike riders, including those who do not feel safe cycling on the road, by providing safe access to the Sydney Harbour Bridge cycleway. Signage, line marking and pavement markings are proposed to clearly indicate cycle paths available for bike rider use.

There are currently issues with pedestrians crossing on the eastern side of the Lavender Street roundabout due to the undesirable location of the existing crossing. Shifting the crossing on Lavender Street closer to the roundabout improves the existing desire lines, and encourage people to use the formal crossings rather than crossing on the eastern side of the roundabout or by road (Aurecon, 2022).

As identified in Chapter 4 of this submissions report, the following are proposed to discourage pedestrians crossing the Alfred Street roundabout leg:

- Removing the existing kerb ramp and footpath on the eastern side of Alfred Street and replacing this with soft landscaping (vegetation)
- Infilling the pedestrian refuge on the median separating the Bradfield Highway roundabout entry and Alfred Street slip lane
- Removing the pedestrian kerb ramp on the western side of Alfred Street.

Similarly, to discourage pedestrians crossing the Bradfield Highway leg of the roundabout, a hedge would be installed on the north-eastern corner of the roundabout and vegetation would be installed on the Alfred Street South side of the roundabout.

An options assessment was carried out for the Alfred Street South in section 2.5.2 of the REF, including the option to include a two-way cycle path located on the eastern side of Alfred Street South. This option proposed the relocation of the roundabout to the east and the removal of the slip lane from the Warringah Freeway to ensure road safety. However, this was discounted as the removal of the slip lane would have adverse impacts to the existing road traffic operation.

As identified in Chapter 4 of this submissions report, the design of the Lavender Street roundabout has been further refined. The central roundabout structure and tree of the Lavender Street roundabout would be removed and replaced with a mountable central median in the current roundabout location, to allow large vehicles turning right to mount the roundabout. Maintaining the Alfred Street South slip lane island is also important to define the movement and provide the required separation between buses turning right from Lavender Street and buses or heavy vehicles using the slip lane into Alfred Street South.

3.3.3 Alfred Street south cycle path and pedestrian upgrade – pedestrian crossings

Issue description

One community member expressed support of the proposed pedestrian crossing on Alfred Street South and noted that the existing crossing is too close to the Lavender Street roundabout. However other community members express concern regarding the proposed pedestrian crossing on Alfred Street South, questioning the following:

- Why the proposed pedestrian crossing at Alfred Street South is required, given there is already an existing crossing
- Whether the crossing would become a choke point and potential hazard for bike riders given the 90 degree-angled corners of the crossing and the inevitable conflict with pedestrians
- Whether the crossing interrupts the momentum bike riders who would need to navigate onto Lavender and Middlemiss Streets
- Whether locating the pedestrian crossing close to the exit lane from the Bradfield Highway may pose safety risks for motorists, bike riders and pedestrians.

Response

As identified in section 2.3 of the REF, the existing pedestrian crossing on Alfred Street South near Lavender Street requires an upgrade to meet current road safety standards. The proposed shared crossing is positioned to tie into the existing park

landscaping features on the eastern side of Alfred Street South and provide prioritised pedestrian crossing for the northern area of Bradfield Park.

The bend on the eastern approach to the new Alfred Street South crossing aligns with the existing park landscaping and acts to slow down bike riders on approach to the crossing. As such, the bend serves as both a visual and safety purpose. Transport appreciates that directing riders across the road to the west side of Alfred Street South is not in keeping with the 'directness' typically sought in bike path design. However, this is necessary so riders can then safely cross Lavender Street and join the bike path on Middlemiss Street.

Continuing the cycle path all the way to Lavender Street on the east side of Alfred Street South, thereby avoiding the need for a crossing, would bring it into direct conflict with the Sydney Harbour Bridge slip road and as such, is not a feasible option.

The proposed crossing on Alfred Street South would be located about 45 metres south of the existing crossing on Alfred Street South, providing additional distance from the exit lane from the Bradfield Highway and improving safety for pedestrians and cyclists wishing to cross Alfred Street South.

3.3.4 Support for the elevated linear ramp design

Issue description

Community members expressed satisfaction with the proposed design, noting the following:

- The ramp will make it easier for bike riders to use the Sydney Harbour Bridge Cycleway
- A linear ramp is ideal as a spiral ramp would pose safety issues
- The lift option would not be used by bike riders as it would be inefficient
- The proposed design is practical, beautiful and carefully considered
- The ramp will offer rain shelter and shade for ground level pedestrians
- The proposal has carefully considered minimising impacts to heritage, landscape, visual amenity, traffic and tree removal
- Curving of the ramp over Milsons Point Station will minimise impacts
- The input of a range of experts has been taken into consideration during design development
- The ramp will provide safe access to the Milsons Point area
- Lighting has been carefully directed to the ramp so that existing uplighting of the bridge is not impacted
- Removal of the parking spaces will make way for a dedicated cycleway along Alfred Street which would provide convenience, comfort and safety for thousands of pedestrians and bike riders.

Response

Transport acknowledges that the proposal would provide the above benefits.

3.3.5 Opposition to the elevated linear bike ramp design

Issue description

Community members expressed dissatisfaction with the ramp design, noting the following:

- Proposed design is too large and oppressive
- Design should be simple, practical and functional to keep costs down
- Concern about unwelcoming, dark spaces below the ramp columns and undercroft
- Concern that the ramp does not complement the heritage value of the Sydney Harbour Bridge or entrance of Milsons Point Station

- The ramp creates a claustrophobic effect at the entrance of Milsons Point Station and question why the proposed ramp cannot line up directly with the top of the existing stairs, go directly over the Milsons Point Station access awning or be attached to the wall of the Milsons Point Station, rather than curve around
- Concern about the visual impact of the columns, and obstruction of the use of Bradfield Park North
- Removal of garden beds close to the viaduct would negatively affect drainage, pedestrian safety and the environment
- Rest area at the top of the ramp is unnecessary, noting it would either not be used or could become an area of congestion or hazardous bike riders having to cross over the path to access it.
- The existing railing design would catch the handlebars of bicycles, which would cause bike riders to lose control and crash
- Suggestion that more greenery and art is added to the design of the ramp to increase its aesthetic value and reduce its environmental impact. Suggestions include the installation of a vertical garden with native grasses, plants and flowers, and garden boxes, and the inclusion of art including painted murals and Indigenous art and sculptures
- Ramp should commence as close as possible to the northern end of Bradfield Park, noting that this would enable bike riders to enter the ramp sooner and reduce traffic on the shared cycle path on Alfred Street South. This would prevent the loss of car parking spaces, minimise traffic impacts, and bike riders would receive the benefits of having a ramp.
- Concerns were raised about the gradient of the ramp, with some concerned that the ramp is too long due to the gentle gradient and that a five per cent gradient on a cycle ramp is preferable for the ramp. Others expressed concern that the gradient of the cycleway is steeper than some of the other designs and this may discourage bike riders travelling south and may result in bike riders speeding heading north. A suggestion was made that moving the ramp closer to the Sydney Harbour Bridge would allow for a more gentle slope between Fitzroy Street and Burton Street.
- Community members believe that the proposal would double the distance required for bike riders to access Kirribilli. They also question whether access for bike riders coming from Mosman has been considered, noting that the proposed linear design is unsatisfactory.

Response

As outlined in Chapter 3 of the REF, the proposal incorporates lightweight materials, with a high degree of visual transparency. Changes to the proposal, identified in Chapter 4 of this submissions report, include the shortening of the ramp by three to 3.5 metres and shifting the ramp's connection to the Sydney Harbour Bridge further north. This would result in reduced bulk of the structure due to the decrease in materials required.

Transport acknowledges that the proposed ramp would have partial shading impacts, however, the ramp would be of sufficient height to allow solar access beneath the ramp. Lighting would be incorporated into the underside of the ramp handrail and into the soffit of the ramp to provide lighting for pedestrians, bike riders, road users and closed-circuit television (CCTV) surveillance. The soffit feature lighting would illuminate the underside of the bike ramp and allow for subtle animated effects to be provided to the underside of the cycleway, thereby minimising the creation of unwelcome dark spaces. Three pole lights would also be installed at the Bradfield Park North ramp landing standard with North Sydney Council requirements, with one pole light having a CCTV camera fixed to it. Lighting in the ramp landing area would be integrated with the nearby upgraded streetlighting.

Transport acknowledges that preservation of the heritage values of the Sydney Harbour Bridge and Milsons Point Station are of high importance, with section 6.1 of the REF and section 5.1 of this submissions report identifying potential impacts of the proposal. Environmental safeguards were proposed in section 6.2 of this submissions report to minimise those impacts where possible. Further detail on impacts to heritage is provided in responses in section 3.6 of this submissions report.

Potential design alternatives were assessed in section 2.5 of the REF, with attaching the ramp to the existing stairs not considered due to the heritage impacts associated with removing the existing stairs. The retention of the stairs allows users the choice to use either the stairs or the proposed ramp. Similarly, attaching the ramp to the wall of Milsons Point Station was not considered as a suitable solution due to the significant and permanent visual and heritage impacts this solution would have generated.

Visual impacts relating to the ramp columns are acknowledged in section 6.2 of the REF, and section 5.2 and Appendix D of this submissions report. Two additional viewpoints have been added since exhibition of the REF in response to the submissions received from North Sydney Council. The additional viewpoints include Viewpoint 8 (view east to the Burton Street tunnel archway) (see Figure 2-1) and Viewpoint 9 (view northeast from Burton Street to Milsons Point Station forecourt and entrance) (see Figure 2-2). These viewpoints are expected to be moderately impacted, however, a number of

environmental safeguards will be in place to minimise visual impacts (refer to section 5.2 and 6.2 of this submissions report). Design refinements have also been made to the column design to reduce visual clutter. The ramp columns would be tapered ellipse shaped columns, slightly thinner in profile, with a ribbed, off-form concrete finish, slightly reducing their prominence in this view. Further detail on visual impacts is provided in responses in section 3.7 of this submissions report.

As outlined in the proposal objectives in section 2.4.1 of the REF, operation of the proposal would improve pedestrian and bike rider accessibility and safety. This would include pedestrian access to Bradfield Park North, with section 6.6.3 of the REF identifying that upgrades to the Alfred Street South cycle path would give pedestrians and bike riders greater confidence to walk or cycle to their destination.

Integration of a rest area at the top of the elevated linear bike ramp would provide riders an opportunity to rest before making their way onto the Sydney Harbour Bridge cycleway. This is needed as there is no place for riders to stop once on the cycleway. Table 2-8 of the REF also identifies that an island would be provided to separate north bound and south bound bike riders.

The safety of bike riders has been considered in the ramp design. The ramp design includes a continuous deflection rail intended to enable users to deflect off the rail in the event of a collision, avoiding the balustrade and preventing the handlebars from being caught against the components of the bike ramp.

Landscaping treatments would be applied, including planting of indigenous and currently existing plant species in areas such as the gathering space and at the ramp landing. Further details on where planting is proposed would be detailed in further design development. Indigenous elements have also been incorporated in the design where feasible, including the integration of indigenous artwork into the ramp pavement and the use of bush tucker plants. The artwork would incorporate a pattern showing inter-connected and overlapping eels. The relocated Sydney Harbour Bridge parapet would also be subject to heritage interpretation.

The proposal maintains a five percent gradient between the ramp landing and the ramps arc around Milsons Point Station entrance. The proposal then levels as it passes the heritage awning, allowing unobstructed views of the station entrance. The gradient adopted for northern portion of bike ramp was selected to reduce impacts on Bradfield Park, while maintaining a high level of the ramp to provide unobstructed views of Milsons Point Station and its cartouche from the plaza.

The proposal's location has been selected and refined to avoid visual and heritage impacts. The alignment of the ramp has been offset from the viaduct to minimise visual and heritage impacts to the Sydney Harbour Bridge.

Finally, bicycle counts undertaken throughout the earlier stages of the proposal development have reported that the majority of bike rider traffic was shown to originate from the north, with those riding from Kirribilli able to ride north on Alfred Street South to reach the ramp landing. Additionally, the current stair access would remain open during operation of the proposal for those still wishing to push their bikes up / wheel their bikes down the stairs for more direct access to and from Kirribilli.

3.3.6 Clarification of proposal description

Issue description

Community members requested clarification on the proposed ramp location, and what the distances are between Milsons Point Station and the parapet, to the ramp landing location.

Response

The ramp landing is about 85 metres north of Milsons Point Station entrance. As outlined in Chapter 4 of this submissions report, the parapet would be relocated in line with the new cycle path at the end of the landing point and would be subject to heritage interpretation (Figure 4-4).

3.3.7 Design jury members

Issue description

Community members expressed concern that the design jury did not include any bike riders and believed that there has been inadequate consultation with bike riders to inform the design.

Response

Early stakeholder engagement for the proposal involved Bicycle NSW and Bike North, both of which are community cycling groups (refer to section 5.2.1 of the REF). Issues raised by various cycling groups are summarised in Table 5-4 of the REF, including references to sections of the REF which address the issues raised.

From 7 – 28 June 2021, Transport sought input and feedback from stakeholders and the community on two options for the ramp and their level of support for the proposed Alfred Street South separated cycle path and the Burton Street shared zone. Some key stakeholders include Bicycle NSW, Bike East, Bike North, Sydney Cycling Club, and Sydney East Riders.

Bicycle NSW and Bike North were also engaged during the design competition process (between 6 December 2021 to 16 January 2022). Feedback received from the cycling groups have been summarised in Table 5-6 of the REF.

As outlined in section 5.6.1 of the REF, Transport continued to consult key stakeholders and community organisations during concept design development. Stakeholder consultation since April 2022 is summarised in Table 5-6 of the REF.

To secure important community and user input to the design development process, Transport established a Community and Bike User Group (CBUG) to provide input during the design development phase (refer to section 5.6.3 of the REF). The CBUG comprises 14 randomly selected members of the local community and within the cycling catchment of approximately 7.5 kilometres from the proposal boundary, covering a range of ages and bike riding experience. The CBUG worked with Transport and the winning design team to ensure community and rider perspectives influence the development of the ramp and bike path design.

Transport is committed to ongoing consultation with bike rider groups, including Bicycle NSW and Bike North during further design developments.

3.3.8 Elevated linear ramp – requested design refinements

Issue description

Community members requested that the following are considered for the proposed ramp:

- Ramp needs a bigger landing area for bike riders
- Inclusion of non-slippery flooring even during wet conditions (preferably not pebblecrete),
- Good lighting
- Security considerations like cameras
- There is enough space for security guards and maintenance workers
- Railing design is suitable for bicycle handlebars and takes into consideration the height of users on bikes
- Balustrade is streamlined, and sandstone is applied to the west façade to better blend to ramp into the existing Sydney Harbour Bridge structure
- Inclusion of an area with bicycle parking and lockers close to Milsons Point Station and Milsons Point Wharf, with a potential end of trip facility provided
- Façade made for bike riders with racks for bikes
- Ramp be accompanied by safe cycleways at the landing
- Ramp be enclosed in a cage-like design to prevent items being thrown onto the train tracks
- All aspects of the proposed cycleway including path width, turning paths, dropped kerbs, ramps and the design of the modal filters are designed to accommodates bike riders of all ages and abilities and all types of bikes including cargo bikes, tricycles and non-standard bikes (e.g., hand cycles, recumbents and wheelchair bikes)

- Space underneath the ramp is used as a walkway in Bradfield Park North
- Recommendation that Transport for NSW reach out to TAD Australia as they are currently designing bicycles for people with disabilities, and the National Disability Insurance Scheme and may provide further recommendations to make the ramp accessible.

Response

The ramp landing within Bradfield Park North provides adequate space to safely accommodate bike riders entering and exiting from the ramp. The ramp landing also incorporates a bend to slow bike riders coming down the ramp. As described in Chapter 4 of this submissions report, the gathering area has been moved from the ramp landing to minimise conflicts between bike riders wishing to travel through and those wishing to rest.

The concrete for the ramp deck has been designed with the correct slip resistance to ensure safety of users during wet conditions.

Adequate lighting would be provided by lighting integrated into the underside of the deflection rail and into the soffit of the ramp. The use of high efficiency, long-life LED light sources with precision optics for all proposed lighting would minimise glare and obtrusive light into the surrounding environment. Three pole lights would also be installed at the Bradfield Park North ramp landing standard with North Sydney Council requirements, with one pole light having a CCTV camera fixed to it. Lighting in the ramp landing area would be integrated with the nearby upgraded streetlighting.

Adequate space would be provided for maintenance to occur, with maintenance within Bradfield Park being completed in consultation with North Sydney Council. Signage would be provided at the ramp landing and base of the current stair access, prohibiting pedestrians from accessing the cycleway. This would avoid the need for security guards to be placed at the ramp landing.

The ramp design includes a continuous deflection rail intended to enable users to deflect off the rail in the event of a collision, avoiding the balustrade and preventing the handlebars from being caught against the components of the bridge. The balustrading incorporates a lightweight design that provides a high degree of visual transparency. It also provides a high degree of legibility between the old and new design. Seating and bike racks would be provided directly west of the ramp landing.

Improved access to the Sydney Harbour Bridge cycleway has the potential to result in increased uptake of active transport, including bike riding. This would have a positive economic benefit on surrounding businesses due to increased travel through the area.

The ramp landing would transition to a shared zone, designed to slow down bike rider traffic and prepare them for interactions with pedestrians in the park. The path route at this point is separated by landscaped medians to reduce the risk of northbound and southbound bike riders colliding. The unique shared path paving provides a delineation between dedicated bike riding and pedestrian paths to minimise collisions. The shared zone is then met by the new Alfred Street South cycle path, providing safe separation of bikes and cars north along Alfred Street South to the bike lane on Middlemiss Street.

The proposal would not be enclosed as this would increase the bulk of the structure and associated visual impacts within Bradfield Park and Milsons Point Station plaza. Throw screens were considered as a safety measure to limit projectiles from the bike ramp towards the rail corridor and illegal access to rail corridor from the bike ramp. However the minimum offset of three metres where the ramp is level with the viaduct cornice was deemed to be sufficient to mitigate the need for throw screens. The offset from the viaduct tapers to 1.5 metres where throw screens are not a consideration.

As shown in Viewpoint 3 in the Addendum LCVIA, the pathway would be located directly west of the ramp, rather than underneath, in response to CPTED and line of sight considerations. In addition, the path could not be located under the ramp due to inadequate head room north of the Milsons Point Station plaza.

The proposal has incorporated many design features to ensure the elevated linear bike ramp is accessible to everyone including to those using e-bikes and other heavier bikes.

3.3.9 Signage

Issue description

Community members requested that clear signage is provided to ensure:

- Cyclists and pedestrians know how to use the shared cycle pathways
- There is clear delineation between shared paths and pedestrian-only paths
- It is clear that pedestrians have right of way at landings
- Cyclists know the direction from Milson's Point Station to the cycleway
- The safety of pedestrians and bike riders
- The vehicles stop and give way to bike riders at the proposed pedestrian crossings at Lavender Street and Middlemiss Street.

Response

Clear signage would be provided by way a combination of sign posting and ground markings. Sign posting would include signage prohibiting pedestrians from walking up the elevated linear bike ramp. Ground marking would also be provided to direct bike riders and pedestrians. Differentiated material selections for the footpath and cycle path would also be used to clearly delineate where pedestrians and bike riders are meant to be. For shared areas, existing shared treatments would be retained, which are a combination of signage, which indicates a shared path, and unit paving.

A two-stage crossing would be provided near the ramp landing to provide pedestrians safe and adequate time to cross the cycle path. Pedestrians would be required to wait for a safe gap to cross the cycle path. As described above, plantings would be used, as well as signage, to discourage pedestrians from accessing areas where they are not authorised.

The proposed pedestrian and bike rider crossings on Alfred Street South and Lavender Street would require motorists to give way to pedestrians and bike riders as they cross the street.

3.3.10 Construction impacts

Issue description

Community members believed that further work could be done to reduce construction impacts.

Response

A CEMP will be prepared to set out the measures to minimise environmental impacts during construction, in accordance with environmental safeguard GEN1. As a minimum, the CEMP will address any requirements associated with statutory approvals, details of how the proposal will implement the identified environmental safeguards outlined in the REF, issue- specific environmental management plans, and roles and responsibilities. Further detail on environmental safeguard GEN1 is provided in section 6.2 of this submissions report.

3.3.11 Construction program and staging

Issue description

Community members noted their concern regarding the length of construction.

Response

As identified in Table 3-1 of the REF, construction of the proposal was expected to commence mid-2023. It is now expected that works will start in early 2024 and take about 18 months, subject to planning approval, technical requirements and weather. Construction of the proposal is expected to be carried out in four phases. Indicative timing for each phase of construction is provided below:

- Phase 1 (Site establishment and enabling work) – approximately one month
- Phase 2 (Ramp construction) – approximately 12-15 months

- Phase 3 (Groundwork, cycleway and utility adjustment) – approximately 12-15 months
- Phase 4 (Landscaping and demobilisation) – approximately two months.

Further detail on each phase of construction is provided in section 3.3.1 of the REF. As noted in section 3.3.1 of the REF, many elements of the proposal, including the columns and beams for the bike ramp, would be precast concrete and formed offsite to reduce on site formwork and associated long construction times.

3.4 Issue 3: Consultation

3.4.1 Satisfaction with consultation

Issue description

Community members expressed satisfaction with the consultation process, noting that Transport for NSW has sufficiently addressed community concerns and feedback and have prepared solutions that benefit most members of the community as a result. One community member desired the proposal to be delivered in a timely manner.

Response

Transport acknowledges the support for the consultation process. Transport greatly values the opinions of the local community and stakeholders, and have carried out extensive community consultation to ensure the proposal best fits with the interests and amenity of the local area. Chapter 5 of the REF details the consultation process throughout design development.

As mentioned above, construction of the proposal is now expected to commence in early 2024 and will take about 18 months, subject to planning approval, technical requirements, and weather. Indicative timing for each phase of construction is detailed in section 3.3.1 of the REF and section 3.3.11 above in this submissions report.

3.4.2 Dissatisfactions with consultation before REF exhibition

Issue description

Community members expressed dissatisfaction with the consultation process, with community members expressing concern that Transport is not listening to the opinions of the community. Areas of concern included:

- Some community members believed that the proposal has already commenced, without considering community concerns
- Dissatisfaction with Transport for scheduling the Have Your Say period before Christmas as many people would have been too busy or away to submit their response to the proposal
- Failure to receive notification material Transport indicated was provided, or receiving the notification after the REF display period had ended
- Queries whether community groups, such as the boules players, were consulted
- Concerns about the accuracy of statements within the REF document and made by Transport during meetings
- Uncertainty about where to access the REF and provide feedback
- Community members were not satisfied that Transport adequately considered the community proposal to use North Bradfield Park for a ramp and concerned that only linear options were considered in the design competition
- Concern about representations made by the Project team to the Milsons Point Community Group and belief that Transport has misrepresented the interaction between Transport and the Milsons Point Community Group in the REF.

Response

Transport acknowledges that environmental assessments, which are integral to the REF, have been carried out for the proposal. As detailed in section 3.5.2 of this submissions report, community notices were distributed to the local community, impacted residents and businesses to notify the community about site investigations. It should be noted that these were investigative works carried out to inform the design development, rather than a commencement of construction. Construction

has not yet commenced given that works described in the REF cannot commence without having received all environmental approvals prior.

Transport greatly values the opinions of the community and stakeholders. As such, extensive consultation has been carried out with the community and stakeholders throughout design development, as detailed in section 5.2 of the REF.

As detailed in Table 5-7 of the REF, several engagement activities were carried out to spread awareness and seek feedback on the proposal REF on the week commencing Monday 28 November 2022. This included newsletters and reminder to 'Have your say' postcards distributed to letterboxes, signage erected in the local area, social media geo-targeted advertisements, emails sent to the project stakeholder mailing list and published information on the project website and interactive portal. The local community and businesses were door knocked during December to advise of the REF period and as a follow up reminder to make a submission prior to the date of close. Properties on Alfred Street South, Ennis Road, Cliff Street, Glen Street and Lavender Street were Door Knocked. Two pop up information events were held at Kirribilli Markets on the 4th and 11th of December, and on the week commencing Monday 5 December pop up information events were held at the existing stairs during peak times to capture sentiment from local community, pedestrians and commuter bikers. Follow up phone calls were also made to local businesses and key stakeholder groups. On the week commencing Monday 12 December, follow up door knocks of Milsons Point residents and businesses were carried out, reminder emails were sent to the project stakeholder mailing list and social media geo targeted advertisements went live. As noted above, the REF was on public display and open for comment until 19 December 2022.

The local community was able to provide feedback on the REF through a feedback form on the project website and were also given the opportunity to submit written and email submissions. Details on how to do so were published on the project website and included in printed project materials when the REF went on display.

Transport notes that there was direct contact with a Boules Club representative in November 2022. During this interaction the Boules Club representative advised that the Coal Loader site would be appropriate for them to use during the construction period, with the option to use the Waverton Bowling Club, if needed.

Transport used bicycle counters at select locations between 2007 and 2019, including on the Sydney Harbour Bridge. The capturing of daily data in the context of overall cycleway usage tracked for over a decade has been used to validate the accuracy of the projected demand. Data collected and presented in the REF has been reviewed and validated and were understood to be accurate at the time of publication of the REF. All information provided in the REF has been consolidated by environmental specialists in accordance with relevant provisions of the EP&A Regulation 2021 and with regard to DPE guidelines for REF documents.

An extensive design selection process was undertaken by Transport and is outlined in section 2.5.1 of the REF. This process included involved the identification of 30 ramp options for the northern connection to the Sydney Harbour Bridge which were then consolidated to 14 options. Of the 14 options, four were shortlisted and a more detailed assessment of these options was carried out against movement, heritage and place proposal objectives. The result of this assessment was the selection of two shortlisted options – north-south linear ramp and looped ramp, which were then placed on public display for three weeks, between 7 and 28 June 2021. Feedback from the local community and key stakeholders (i.e. Heritage NSW, North Sydney Council, community organisations and bicycle groups) indicated that a strong preference for the linear ramp over the loop back ramp.

The linear ramp option was therefore carried forward to the competitive design competition, where three linear options were developed through the competition process (refer to Table 2-4 of the REF). The proposal was ultimately selected as it most appropriately addressed the proposal objectives by eliminating the existing bottleneck and queues created by the existing infrastructure, increased accessibility for a wider range of customers to use the Sydney Harbour Bridge cycleway and improved the connectivity between the Sydney CBD and lower north shore. Transport presented the preferred option to the Heritage Council Approvals Committee on 3 August 2021 who voiced support for the linear ramp and the design competition process.

As identified in section 5.2 of the REF, Milsons Point Community Group have been involved throughout the optioneering process and their opinions have been integral in the selection of the preferred option. It is acknowledged in section 5.2.1 of the REF that Transport received a submission prepared by the Milsons Point Community Group on 17 January 2022. Transport provided a comprehensive response to this submission in March 2022 and Arcadis also provided a technical review of the community proposal. A meeting was held with Transport and the Milsons Point Community Group on 10 February 2022 during which Transport acknowledged that an error had been made in the assessment of the length of the loop option and the community design. At this point in time the linear option had been identified as the preferred option, based on the outcomes of the community engagement carried out between 7 and 28 June 2021 and was therefore progressed.

Feedback provided by the community and stakeholders has been appropriately considered, with the design refinements outlined in Chapter 4 of this submissions report, implemented to address community and stakeholder concerns. Transport is

committed to ongoing consultation with the local community and identified stakeholders about relevant activities and other proposal updates including a number of engagement channels as identified in section 5.8 of the REF.

3.4.3 Consultation during REF exhibition period

Issue description

Community members raised concerns about consultation during the exhibition of the REF and handling of feedback during this process. Key concerns raised were:

- Concern that consultation considered the opinions of bike riders and interest groups from outside the local area and does not reflect the negative sentiment of the local community.
- Concerns that bike riders were given more consideration than non-bike riders
- Concern that Transport is requesting comment only on the environmental impact of the proposal and feels all other previous concerns of residents have been rejected
- Concern about the level of information provided during consultation activities. Community members were concerned about lack of photomontages included in information pamphlets and considered that they did not adequately portray the proposal.
- Renters believed that they do not have a right to lodge an objection, specifically to the proposed tree removal.

Response

Transport has been committed to consultation with community members and stakeholders. Section 5.2 of the REF and section 3.4.2 above outline the extensive consultation that has occurred to date. Transport acknowledges that bike rider groups were also consulted with as a key stakeholder, however, the concerns of the local community were also thoroughly considered.

To address community and stakeholder concerns, further design refinements have been carried out as detailed in Chapter 4 of this submissions report. This includes designing the ramp landing as a curve to slow down bike riders travelling down the ramp, retaining the existing bus stop, and refinements to the ramp design to minimise impacts to views to the Sydney Harbour Bridge for park users, residents, commuters and visitors.

Transport is committed to ongoing consultation with the community and key stakeholders during further design development and construction. As identified in section 5.8 of the REF, engagement channels include website updates, social media and electronic direct mail, Community Update newsletters, briefings with impacted stakeholders and groups, stakeholder meetings, and notifications to impacted property owners, residents, businesses and user groups. A Community Liaison Plan would be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. As outlined in section 6.2 of this submissions report, several environmental safeguards will be put in place to encourage continued consultation, including LV5, TT18, TT25, TT28, CI2 and CI3.

Feedback was sought from the local community and stakeholders on a number of factors and not only the environmental impacts of the proposal were considered. Feedback received from the community, including feedback on the design, need for the proposal, environmental impacts and suggestions for alternative solutions are summarised in Chapter 1 of this submissions report. Environmental impacts of the proposal also encompass a wide range of factors and does not include what is traditionally seen as the environment. These factors include concerns regarding safety, accessibility, socio-economic impacts, and heritage impacts.

Transport has provided 4-5 visuals in information pamphlets previously distributed to the community and stakeholders to show the key design changes proposed. As shown in the Addendum LCVIA (Appendix D) and Figure 2-1 and Figure 2-2 of this submissions report, these modelled images have subsequently been updated to reflect design refinements outlined in Chapter 4 of this submissions report. To support the release of this submissions report, the community will be updated via notification.

All tenants were able to provide their opinion on the elevated linear bike ramp and Alfred Street South cycle path and on specific environmental matters through the submission forms provided to be considered as part of exhibition of the REF for proposal.

3.4.4 Consultation post-REF approval

Issue description

Community members noted they would like to see further consultation with the local community on the final design given the importance of Bradfield Park North to the community.

Response

Transport is committed to ongoing consultation with the local community and key stakeholders. As identified in section 5.8 of the REF, Transport would continue to update the local community and identified stakeholders about relevant activities and other proposal updates using a number of engagement channels.

A Community Liaison Plan will be prepared as part of the CEMP to help provide timely and accurate information to the community during construction (Safeguard SE2). This would include mechanisms to provide details and timing of proposed activities to affected residents and include a contact name and number for complaints.

3.5 Issue 4: Environmental assessment

3.5.1 Assessment process

Issue description

Community members raised concerns about the environmental assessment process, including:

- Concern that the proposal is proceeding despite opposition from the local community and the environmental impacts
- Belief that the community has no power to affect the outcome of the proposal
- Concern that the environmental assessment process has been rushed
- Concerns that the REF report and the SoHI are written by Arcadis and Artefact who regularly work for Transport and therefore are not independent
- Belief that the environmental assessment process is flawed as the REF findings were not consistent with the outcomes of the report commissioned by the community
- Belief that the representation of the preferred design options are inaccurate and did not describe tree removal
- Concern that the REF omits any information on the privacy impact the proposal may have on residents living across from the proposed ramp
- Concern that the REF does not accurately report the options analysis process and unfairly dismissed the Community proposal
- Belief that the REF, including its appendices, does not accurately represent the likely impacts and portrays the proposal more favourably, rather than providing an independent review of the proposal
- Concern that the value and importance of Bradfield Park has not been recognised in the environmental assessments.

Response

Transport greatly values the opinions of the community and therefore has involved the community and key stakeholders in the design development since the conception of the proposal. Section 2.5 of the REF identifies the extensive consultation undertaken by Transport regarding alternatives and refinement of the preferred option. Chapter 5 of the REF and section 3.4 above outline the consultation that has occurred to date. Transport is committed to ongoing consultation with the local community and key stakeholders, and Transport will continue to provide updates about relevant activities and other proposal updates using a number of engagement channels.

Further design refinements have been undertaken in consideration of stakeholder and community feedback. As detailed in Chapter 4 of this submissions report, design refinements include the removal of the in-lane bus stop and refinements to the ramp design to minimise impacts to views to the Sydney Harbour Bridge for park users, residents, commuters and visitors. To reduce the potential for pedestrian and bike rider conflict, design refinements also include a two-stage crossing for

pedestrians to cross the cycle path, tight turns at the ramp landing to slow descending bike riders and adequate signage and use of colour to delineate bike rider and pedestrian areas.

The SoHI and REF have been prepared by suitably qualified environmental practitioners on behalf of Transport in accordance with relevant provisions of the 2021 EP&A Regulation and with regard to DPE guidelines for REF documents. It is the obligation of environmental practitioners to objectively assess potential environmental impacts of a proposed development.

Chapter 6 of the REF details the comprehensive environmental assessments that have been carried out to minimise impacts to the local environment, including impacts to non-aboriginal heritage, landscape character and visual impact, noise and vibration, traffic and transport, and biodiversity. Further environmental assessments have also been carried out to address design refinements (refer to Chapter 5 of this submissions report).

Transport acknowledges the effort the community has put into preparing the community proposal (refer to section 5.2.1 of the REF). Concern in relation to the options analysis process, specifically on the loop option are addressed in section 2.4.1 of this submissions report.

Tree removal as a result of the proposal was discussed in the environmental assessment chapter of the REF (refer to Chapter 6 of the REF). The trees proposed to be removed as a result of the proposal and suggested ratios to offset tree loss are also provided in section 6.7 of the REF.

Section 8.4 of the LCVIA (refer to Appendix C of the REF) and section 4.6 of the Addendum LCVIA (Appendix D) assessed the impacts of views from private dwellings. The assessment identified that the most sensitive dwellings would be those apartments directly opposite to the proposal site, in the lower levels of these multistorey buildings. However, the visual impacts from these properties were deemed to be low.

Transport acknowledges support of the community proposal, however, the community proposal was discounted for a number of reasons. A loop option, similar to the community option, was considered in 2021, however public feedback was in favour of the linear design, hence this option was progressed instead. Though the community proposal met acceptable bike rider guidelines, it fell short of 'desirable' standard necessary to accommodate the widest possible range of bike riders. Verification was provided by the Arcadis' Sustainable Mobility Advisor, which indicated that the scheme did not meet wide accessibility requirements. It should be noted that aspiring to meet the current Austroads Guide to Road Design does not necessarily lead to a safe and comfortable solution for users of all ages (and abilities). As described in section 2.4.1 of this submissions report, the community proposal and loop option would have significant impacts on the views south towards the Sydney Harbour Bridge due to the bulk and scale of the proposed structures, which work against rather than with the geometry and form of the Sydney Harbour Bridge and impact its heritage values. Heritage NSW, the Design Integrity Panel and expert heritage advisor, Design 5, all recommended the linear ramp option over the loop option and community proposal for these reasons. The direct physical impacts to the Sydney Harbour Bridge for the community option and the loop option and the community proposal would be consistent with those of the proposal; however, they would not have achieved the same level of rideability as the proposal.

Transport acknowledges the value and importance of Bradfield Park. Minimising impacts to Bradfield Park North have been a key consideration since the beginning of design development for the proposal (refer to section 6.1 of the REF). As identified in section 2.4 of the REF, a key proposal objective is to provide a cycleway facility that sensitively fits in with the heritage values of the area. Sections 2.3.16, 2.3.24, 2.3.31 and 2.3.34 of this submissions report provide further detail on how impacts to Bradfield Park North have been minimised.

3.5.2 Concurrent investigation works

Issue description

Concerns were raised about inspection and drilling activities on Alfred Street South, Burton and Lavender Streets during the exhibition period for the REF and the belief that Transport for NSW are going forward with the proposal prior to approval of the REF.

Response

Three community notices were distributed to the local community, impacted residents and businesses as well as emailed to the project mailing list in November 2022, notifying the community about the Kirribilli Markets relocation, REF exhibition period and site investigations. Directly impacted residents and businesses were contacted individually about the site investigations and respite offers were made, where needed. Door knocks to nearby properties were carried out in November and December to support the REF exhibition and upcoming site investigations. Residents were advised that the nature of the

work was to inform the detailed design of the project. Another community notice was exhibited for site investigations from February to March 2023.

Transport acknowledges that the site investigation notice issued in November 2022 indicated that site investigations, survey and utility location work would be carried out on Burton, Lavender and Alfred Streets in Milson Point. These works were exempt development under the EP&A Act and approved through Transport's Exempt Development Checklist procedure. The proposed works were undertaken from Monday 28 November to Friday 23 December and Transport acknowledges that these works included night work. Further investigation works were carried out from Monday 20 February to 7 March 2023 on Lavender, Burton and Alfred streets in Milsons Point and included geotechnical investigation and core sampling to assess soil and ground conditions, and service investigations to determine the location of underground utilities. However, these were investigative works carried out to inform the design development, rather than a commencement of construction.

Both the findings of the REF and the submissions report would be taken into consideration by Transport and a decision would be made whether or not to proceed with the proposal. Should the proposal proceed to construction, Transport will inform the community and stakeholders of this decision and where a decision is made to proceed will continue to consult with the community and stakeholders prior to and during the construction phase.

3.5.3 Approval pathway

Issue description

Concerns were raised about the selection of the REF approval pathway as the proponent (Transport for NSW) is also the determining authority and questions the independence of the approval process.

There is also concern that the proposal will have significant, irreversible impacts on a Matter of National Environmental Significance, and should be referred to the Commonwealth Department of the Environment for an independent assessment as to whether it should be a 'controlled action' under the EPBC Act.

Response

As noted above in section 3.5.1, environmental specialists have been engaged by Transport to provide an independent assessment of the proposal's potential impacts. Additional environmental assessment has been carried out in Chapter 5 of this submissions report.

Chapter 4 of the REF and section 2.3.13 of this submissions report includes discussion of the proposal approval pathway. As the proposal is considered road infrastructure facilities under the SEPP (Transport and Infrastructure), it can be assessed under Part 5, Division 5.1 of the Environmental Planning and Assessment Act 1979.

Transport has examined and taken into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed activity (refer to section 4.3.1 of the REF). The assessments concluded that, with the development and implementation of the environmental safeguards identified in this submissions report, the proposal would be unlikely to cause a significant impact on the environment, and it is therefore not necessary for an EIS to be prepared and approval to be sought from the Minister for Planning and Public Spaces under Division 5.2 of the EP&A Act.

Matters that are listed on the World Heritage Register or the National Heritage List are considered Matters of National Environmental Significance under the EPBC Act. The proposal is not expected to impact on world heritage values. On 28 June 2007 the Sydney Opera House and buffer zone (including part of Sydney Harbour and the Sydney Harbour Bridge) was included on the UNESCO World Heritage List under the World Heritage Convention. The Sydney Harbour Bridge is not listed on the World Heritage List, but the bridge is within the visual catchment (buffer zone) of the World Heritage listed Sydney Opera House. As the proposal itself is outside the buffer zone, a referral under the EPBC Act is not required for these impacts.

The Sydney Harbour Bridge is listed on the National Heritage List and is therefore a Matter of National Environmental Significance. The proposed actions on the National Heritage values of the Sydney Harbour Bridge were assessed in the SoHI and not considered to be resulting in significant impacts as defined by the Significant Impact Guidelines – 1 – Matters of National Environmental Significance and EPBC Act. As noted in section 2.3.19 of this submissions report, Transport will continue engaging with the DCCEEW to ensure all Commonwealth assessment requirements have been met.

3.6 Issue 5: Non-Aboriginal heritage

3.6.1 General heritage impacts

Issue description

Community members raised concerns about potential heritage impacts particularly to the Sydney Harbour Bridge, Bradfield Park North, and Milsons Point Station.

Response

Transport acknowledges the value of heritage listed items to the local community. Non-Aboriginal heritage is a key consideration in the proposal development, beginning as a part of the initial options assessment and continuing into the concept design and REF stage. It should be noted that heritage listing does not preclude changes to a site. Sensitive change to listed places are expected over time and Transport has worked diligently to ensure these changes are best managed from a heritage perspective to retain the heritage values of Australia's most iconic bridge. Concerns in relation to potential heritage impacts of the proposal are addressed in section 2.3.20 of this submissions report.

3.6.2 Minimisation of heritage impacts

Issue description

Community members noted that the proposed design is sympathetic to the heritage of Sydney Harbour Bridge, Milsons Point Station and Bradfield Park North.

Response

Transport acknowledges the community members' support for the proposal. The proposal has been designed with the heritage-listed items in mind throughout design development.

The technical achievement of the Sydney Harbour Bridge's design and its status as an iconic cultural landmark would be respected and not diminished by the proposal. The proposal would improve accessibility and amenity for commuters and visitors to the Sydney Harbour Bridge and would enhance and strengthen the core function of the Sydney Harbour Bridge as an iconic and critical transport link, as well as have a positive impact on its National Heritage values.

3.6.3 Impacts to the Sydney Harbour Bridge

Issue description

Community members raised concerns about the impact of the proposal on the Sydney Harbour Bridge and its heritage values. Key concerns included:

- Community members are concerned about the impact on the iconic and historic Sydney Harbour Bridge including the vistas of the bridge viaduct, the façade, parapet, approach walls and arch at Burton Street.
- Concern that the Statement of Heritage Impacts understates the proposals impacts to the on the Sydney Harbour Bridge and that the proposal contradicts Article 8 of the Burra Charter.
- Concern that the proposal contradicts with the Conservation Policy no. 18 of the Sydney Harbour Bridge Conservation Management Plan (2021), which states that changes to the Sydney Harbour Bridge should be reversible and/or have minimal adverse impacts, where possible
- Concern that the proposal would permanently disfigure and obstruct features of the heritage-listed parapet of the Sydney Harbour Bridge
- Concern regarding the proposal would visually obstruct the stairs to the Sydney Harbour Bridge when viewed from Bradfield Park North and Alfred Street South
- Concern that the ramp would impact on World Heritage values of the Sydney Harbour Bridge.

Response

Transport acknowledges the concerns of community members in relation to potential impacts on the Sydney Harbour Bridge. It should be noted that heritage listing does not preclude changes to a site. Sensitive change to listed places are expected over time and Transport has worked diligently to ensure these changes are best managed from a heritage perspective to retain heritage values of Australia's most iconic bridge. Section 6.1 of the REF identifies that the proposal is expected to have minor to moderate impacts on the Sydney Harbour Bridge including the approaches and viaducts, arches and bays under Warringah Freeway.

The SoHI has been updated to consider these design changes (refer to section 5.1 of this submissions report). The SoHI has been prepared by heritage specialists, in accordance with relevant guidelines including *Assessing Heritage Significance, Statements of Heritage Impact, Design in Context: Guidelines for Infill Development in the Historic Environment*, The Burra Charter, NSW Heritage Manual, and *Commonwealth of Australia, Matters of National Environmental Significance: Significant Impact Guidelines 1.1.* Article 8 of the Burra Charter states that 'Conservation requires the retention of an appropriate setting' (ICOMOS, 2013). Providing a cycleway facility that sensitively fits in with the heritage values of the area is a key objective of the proposal. The design of the proposal has been refined to minimise, where possible, impacts to heritage values. There are a number of environmental safeguards in place to mitigate impacts to the Sydney Harbour Bridge, including the preparation of a non-Aboriginal heritage management plan. Relevant environmental safeguards include NAH2, NAH3, NAH4, NAH5, NAH6, NAH12, NAH13, NAH14, NAH15, NAH16, NAH17, NAH 18, NAH 19 and NAH 20. Further detail on these measures is provided in section 6.2 of this submissions report.

Since the exhibition of the REF, further design refinements have been made (refer Chapter 4 of this submissions report). This includes shifting the tie in of the ramp with the Sydney Harbour Bridge to about three metres north from where it was initially proposed, with a reduction of about three to 3.5 metres in the ramp length. These refinements reduce the physical bulk of the infrastructure to minimise impacts to the Sydney Harbour Bridge. Another key change includes the relocation of the parapet, which would be placed in Bradfield Park North adjacent to the ramp landing. The relocated parapet would serve the dual purpose of retaining a key piece of heritage and redirect pedestrians from the plantings and former path footprint to minimise pedestrian and bike rider conflict at this location.

Table 8-4 of the SoHI and Table 20 of the updated SoHI assess the proposal against the heritage management strategies described in the Sydney Harbour Bridge Conservation Management Plan, including Policy no. 18 (General management of adaptation and change). The updated SoHI acknowledges that there has been extensive work to address heritage and other considerations during planning and evaluation of the proposal. Further, it is stated that the elevated linear bike ramp represents a new intervention that contributes to the cumulative change that comes with updating of the place over time to cater to modern needs, and the proposal supports ongoing and continued use of the Sydney Harbour Bridge as a major transport link, which is a use integral to the item's heritage value. The assessment concluded that the proposal is consistent with Policy no. 18 and all other heritage management strategies.

Transport acknowledges that the works proposed as part of the proposal would have impacts on the fabric of the Sydney Harbour Bridge parapet, however, the design aesthetic and choice of materials of the new design respects the original fabric (refer to section 6.1.3 of the REF). These impacts are acknowledged as not substantial and in return, improvements of commuter experience and mobility across the Sydney Harbour Bridge Cycleway would be considerable. Further, these impacts are considered necessary to ensure the Sydney Harbour Bridge continue to be used as a critical and iconic transport link.

The LCVIA has also been updated to reflect the design changes and include assessment of additional viewpoints (refer to section 5.2 of this submissions report). Section 6.2.3 of the REF and section 5.2 of this submissions report acknowledges that the proposed ramp would be close to the bridge approach walls and only partially obstruct some features of the wall and stairs from certain viewpoints. As such, the proposal has been assessed as mostly having a low-moderate visual impact during operation. For example, from Viewpoint 7: View northeast along Alfred Street, the upper section of the existing stairs would be partially obstructed by the bike ramp. Two additional viewpoints, Viewpoint 8 and 9, have been assessed in the Addendum LCVIA Viewpoint 8 shows the view east to the Burton Street tunnel archway and Viewpoint 9 shows the view northeast from Burton Street to Milsons Point Station forecourt and entrance. It is acknowledged that the operation of the proposal would have moderate-adverse impacts at these two viewpoints. To minimise visual impacts, an Urban Design Plan will be prepared and implemented as a part of the CEMP in accordance with environmental safeguard LV1. Key design elements would be considered in further design development as per environmental management safeguard LV2.

Section 6.1.2 of the SoHI acknowledges that the Sydney Harbour Bridge is not listed in the World Heritage List, but the bridge is within the visual catchment (buffer zone) of the World Heritage listed Sydney Opera House. However, given that moderate to minimal impacts to the Sydney Harbour Bridge are expected, the proposed ramp is not expected to visually impact the Sydney Opera House. Therefore, the proposed ramp is not expected to impact on World Heritage values.

Further, it should be noted that Transport will continue engaging with the DCCEEW to ensure all Commonwealth assessment requirements have been met in relation to the Sydney Harbour Bridge's national values.

These changes would see improved access and amenity for the bridge's users and potentially enhance the ability of the Sydney Harbour Bridge to attract more users and admirers.

3.6.4 Impacts to Milsons Point Station

Issue description

Community members expressed concern about the potential impacts of the proposal on heritage values of Milsons Point and perceived lack of consideration of the potential heritage impacts. Key concerns include:

- Concern that the proposal would obstruct façade and entrance to the Milsons Point Station and thus, impacting its heritage value.
- Concern that the visual impacts and heritage impacts to the Milsons Point Station entrance are not apparent in the designs exhibited to the public
- Concern about the potential shadowing that the ramp may impose, particularly at the entrance to Milsons Point Station and at the garden paths leading to the pedestrian underpass and associated heritage impacts.

Response

Transport acknowledges the aesthetic significance of Milsons Point Station and the decorative '1932' cartouche above the entrance of the station (refer to sections 6.1 and 6.2 of the REF and sections 5.1 and 5.2 of the submissions report). Concerns in relation to obstruction of the Milsons Point Station entrance are addressed in sections 2.3.18. and 2.3.23 of this submissions report. Since the design competition, the design has sought to minimise any potential shadow impacts on the park and Milsons Point Station entrance. Modelling has been carried out for lighting and it is proposed that the soffit of the bike ramp would be lit using subtle illumination and mild variations in light temperatures that would minimise shadowing from the structure at night. The lighting in the ramp landing area would be integrated with the nearby upgraded streetlighting to prevent over lighting of the space and to ensure that the minimal number of light poles are used in the design. Lighting from the Sydney Harbour Bridge viaduct would be retained as per environmental safeguard LV2, and the height of the ramp should be sufficiently high so that street lighting and daylight should pass underneath.

3.6.5 Impacts to Bradfield Park

Issue description

Community members express concern regarding the proposal's impacts on Bradfield Park North and its heritage value. Key concerns identified included:

- Concern that the proposal would result in a loss of amenity, available open space, solar access and views to the Sydney Harbour Bridge from the park.
- Concern surrounding impacts to the children's playground located in the park during construction
- Concern that the proposal would impact views to the Sydney Harbour Bridge, and in particular the viaducts, from Bradfield Park North
- Concern that the proposal would adversely impact the Bradfield Park Heritage Walk
- Expressed the opinion that the proposed ramp contradicts the objectives of the Bradfield Park and Kirribilli Foreshore Master Plan and Bradfield Park Plan of Management, noting that these plans are based on the principles of the Conservation Management Plan for the Sydney Harbour Bridge.

Response

The design aims to reduce the impact of shadowing and solar access of Bradfield Park. The form of the elevated linear bike ramp has sought to balance lightness, fluidity and transparency in design with robustness, constructability, sustainability and long-term maintenance requirements, as outlined in Chapter 3 of the REF. The bike ramp and associated design features detailed in section 3.1.1 of the REF have been designed specifically to minimise impacts to landscape character and visual amenity of the surrounding area as well as impacts to heritage items during both construction and operation. The lightweight

modular design of the bike ramp deck and precast columns means that much of the bike ramp would be constructed off-site and would be installed in separate sections, without the need for long closure periods of Bradfield Park.

The children's playground is located in Bradfield Park South, and would not be impacted by construction of the proposal. Figure 1-3 in the REF shows the proposed construction footprint, which does not include the existing children's playground.

Section 5.2.1 of this submissions report acknowledges that the landing point for the ramp structure would result in moderate adverse physical and visual impacts to the setting of Bradfield Park Central and North. The construction would see a direct physical impact to the park layout and a disturbance to the landscape features of Bradfield Park North. This change would see the existing wayfinding altered and the visual appeal of the park as an open, public space partially obstructed.

Operational impacts would see the removal of five Poplar trees within the park, however, the main landscape features of Bradfield Park, including the central lawn areas and majority of the features trees, would not be impacted. Whilst public amenity of the park would be altered due to the landing, it would also see a positive impact as general mobility of bike riders and pedestrians would be improved, relieving the congestion of Burton Street stairs and surrounds.

Concerns in relation to heritage, visual and amenity impacts on Bradfield Park North, are addressed in section 2.3.19 of this submissions report. The proposal considered retaining Bradfield Park's existing sandstone heritage inlays and proposes that the interpretive sign of Bradfield Park's heritage would be retained by the proposal's design refinements (refer to section 6.1 and Appendix D of the REF). Bradfield Park Heritage Walk has been retained as a result of design refinement, discussed in Chapter 4 of this submissions report. Concerns in relation to the proposed ramp contradicting objectives of the Bradfield Park and Kirribilli Foreshore Master Plan and Bradfield Park Plan of Management are addressed in section 2.3.31 of this submissions report.

3.7 Issue 6: Landscape character and visual impact

3.7.1 Proposal design

Issue description

Community members expressed concern about the design of the proposal and its visual impacts. Key concerns included:

- Concern about the appearance of the proposal due to the increase in hard landscaping and the limited amount of soft landscaping proposed
- Concern about the shadowing impacts of the proposed ramp, with some members showing particular concern about shading impacts in Bradfield Park North.

Response

Transport acknowledges that the proposal would result in some changes to the landscaping within the surrounding area, including some increases in hard landscaping. The proposal has incorporated design refinement, outlined in Chapter 4 of this submissions report, to minimise hard landscaping where possible. This has included the introduction of low-level planting underneath the ramp structure where gravel was previously proposed. Offset planting of five trees along Alfred Street South would also be included to provide additional soft landscaping and green space.

Partial shading would also occur as a result of the proposal, however due to the ramp structure being located at sufficient height, solar access would still be maintained beneath the ramp. In Bradfield Park North the proposed ramp would run below the tree canopy, therefore the ramp itself would likely have minor shading impacts. Lighting would be provided on the bike ramp in Bradfield Park North and existing lighting would be retained, including street lighting and wall lighting on the Sydney Harbour Bridge viaduct. Accent lighting, to be included as part of the proposal, would also provide additional lighting within Bradfield Park North.

3.7.2 Negative impacts on visual amenity

Issue description

Community members expressed concern about the visual impacts of the proposal on the local area, including Milsons Point Station, Bradfield Park and the Sydney Harbour Bridge. Community members expressed the following about the proposal:

- Opinion that the proposal is visually unappealing
- Opinion that the proposal has an adverse visual impact on the local area and Bradfield Park in particular
- Concern that the proposal will not look like it does in the design drawings once constructed
- Concern that the visual impacts of the proposal from the apartments opposite were not considered, in particular that the loss of poplar trees would lead to decreased privacy for a number of residents
- Concern that appearance of the cycleway would deteriorate over time due to vandalism and lack of maintenance
- The proposed ramp would have negative visual impacts on the façade and entrance of Milsons Point Station
- Concern that the proposal would negatively impact on the heritage values of Bradfield Park due to changes to views to the Sydney Harbour Bridge and its viaducts, views to Milsons Point Station and views and visual amenity along the local Heritage Walk as a result of the proposal
- Negative impacts to the views of the Sydney Harbour Bridge, including views from Bradfield Park
- Changes to the appearance and symmetry of the Sydney Harbour Bridge
- Visual impacts to the Sydney Harbour Bridge walls, tunnels and arches.

Response

As outlined in section 3.2.1 of the REF, Transport acknowledges the importance of the subject site to the community and stakeholders as well as the significance of the site's Aboriginal and non-Aboriginal heritage and open space setting. As such, Transport has determined that a proposal specific Design Excellence Strategy should be developed with input from the NSW Government Architect. Adoption of a Design Excellence Strategy and a design-led approach has promoted a transparent design process with close and regular engagement with a wide range of proposal stakeholders including the local community. As a result of this approach, community members have been provided regular opportunities throughout the development of the design to provide feedback on the ramp design, as detailed in Chapter 2 of the REF.

Visual impacts of the proposal on Bradfield Park, Milsons Point Station and the Sydney Harbour Bridge have been addressed above in sections 2.3.23, 2.3.24 and 3.6, respectively, of this submissions report.

An Addendum LCVIA has been prepared to consider the visual impacts of the updated proposal, which is summarised in section 5.2 of this submissions report and presented in full in Appendix D.

3.7.3 Positive impacts on visual amenity

Issue description

Community members expressed support for the appearance of the proposal. Several community members believe that the proposal would visually compliment the views of the Sydney Harbour Bridge.

Response

Transport acknowledges operation of the proposal would result in positive visual impacts and compliment views of the Sydney Harbour Bridge.

3.7.4 Construction impacts on visual amenity

Issue description

Community members expressed concern about the visual impacts during construction of the proposal and the siting of the proposed ancillary facilities. Community members expressed concern that construction works would directly impact the landscape features and visual amenity of Bradfield Park.

Response

Transport acknowledges that construction of the proposal would result in moderate adverse visual impacts in Bradfield Park, as noted in section 6.2 of the REF. As the proposal would only occur for about 18 months, noted in section 3.3.1 of the REF, construction-related visual impacts would be relatively short term. Following this, operation of the proposal would result in positive visual impacts on the surrounding area.

3.7.5 Landscape character

Issue description

Community members expressed concern that the landing of the ramp within Bradfield Park would negatively impact the landscape character of Bradfield Park. Key concerns included:

- The loss of greenery and the effect this would have on landscape character
- Visual impacts associated with removal of the existing rotunda located in Bradfield Park North.

Response

Transport acknowledges that the proposal would result in the removal of five Simons Poplar, one Ornamental Pear Cultivar and one Canary Island Date Palm. As identified in section 5.4 of this submissions report, two additional trees (one Chinese Elm and one Weeping Bottlebrush) would be pruned in accordance with the updated Arboricultural Impact Assessment, though these works would be minor and are not expected to impact the usual life expectancy of the trees. Tree pruning and works within Tree Protection Zones will be carried out in accordance with recommendations of the Preliminary Arboricultural Report and/or in consultation with a qualified arborist (TreeiQ, 2023) (Environmental safeguard B3).

The proposal would minimise the loss of greenery and the associated impacts to landscape character through offset planting of five trees along Alfred Street South, outlined in section 6.7 of the REF. As previously mentioned, design refinements, detailed in Chapter 4 of this submissions report, would further increase greenery within Bradfield Park North. Additional tree planting within Bradfield Park North has not been proposed, at the request of North Sydney Council.

To accommodate the proposal, Transport acknowledges that the rotunda located in Bradfield Park North would need to be removed. However, the proposal will include replacement seating facilities in the park area. Replacement seating would have views to the park and church. This is an improvement to the existing seating area which faces the Alfred Street South.

Transport will work in collaboration in with North Sydney Council to resolve potential impacts arising from removal and, if possible, relocation of the rotunda.

3.8 Issue 7: Noise and vibration

3.8.1 Operational airborne noise

Issue description

Community members expressed concern regarding operational airborne noise. Concerns were raised that operational noise would result from:

- Congregating bike riders
- Increased traffic and congestion
- Raising of the cycle path, resulting in noise impacts for adjoining residences

- Concern that removal of trees would result in increased noise impacts
- Concern that the steel design of the proposal would result in excessive noise from the structure.

Response

Transport has undertaken an extensive assessment of the potential noise and vibration impacts associated with construction and operation of the proposal, outlined in section 6.3 of the REF and acknowledges that the proposal would result in minimal operation noise impacts which are unlikely to impact on surrounding noise sensitive receivers.

As noted in section 6.3.4 of the REF, the bike ramp would result in minimal noise emissions. There would be no other operational airborne noise as a result of the proposal.

The proposed removal of small stands of trees is expected to have a negligible impact on noise. This is one reason why trees are not used as a form of noise mitigation on projects. In this case, the proposed removal of a singular row of trees is anticipated to result in no additional impact on noise levels.

Chapter 3 of the REF outlines the design features of the proposal, which notes that the ramp structure would consist of a continuous curving box section beam, with steel outriggers to support the decking at about 1.5 metre intervals. The deck surface would be about three metres wide and 200 metres in length, consisting of decorative tiles over a concrete subbase on steel plates, which span between the outrigger beams.

Operational noise impacts have been considered in development of the design to minimise noise impacts during operation. Design considerations included the following:

- The alignment of the bike ramp closely follows the Sydney Harbour Bridge viaduct, thereby maximising the distance between bike riders and adjacent properties on Alfred Street South
- The bike ramp alignment and gradient, as well as the movement configuration in Bradfield Park North, are designed to be accessible and safe to reduce the number of safety incidents and potential conflicts which could possibly result in noise such as bells, verbal commands or involvement of emergency services
- The cycle deck material was investigated extensively and permeable clip systems were dismissed partly out of concern for the potential noise impacts on local receivers
- Dampening systems would likely be included in the deck sections, reducing the vibrations induced by users riding on the ramp, pending further design refinements. Transport acknowledges that the proposal would result in minimal operation noise impacts which are unlikely to impact on surrounding noise sensitive receivers.

3.8.2 Support for minimisation of operational noise

Issue description

Community members noted that the proposal would have minimal operational noise impacts, due to:

- The existing noise environment which includes trains and local traffic
- Reduction in traffic lane width would result in slower traffic speeds and a reduction in noise.

Response

As outlined in section 3.8.1 of this submissions report, Transport acknowledges that the proposal would have minimal operational noise impacts and that design has been developed to minimise operational noise impacts.

3.8.3 Construction noise and vibration

Issue description

Community members expressed concern about noise impacts related to the construction of the proposal. Community members raised particular concerns about noise during night-works.

Response

As outlined in section 6.3 of the REF, construction of the proposal would result in exceedances of noise management levels in some residential areas within proximity to the proposal during certain activities. To avoid noise impacts from night-works as much as possible, the majority of work would be carried out during standard construction hours, detailed in section 6.3.4 of the REF. Transport acknowledges that some out of hours works would be required for certain activities, such as ramp works, for reasons of operation road and rail user safety. It is expected that operation of the concrete saw and jackhammer during construction of the cycle path on Alfred Street South would cause the maximum recorded noise levels, however these works would not occur for long durations and would generally be limited to just a small number of shifts throughout the construction process.

Noise impacts associated with construction of the proposal would be managed in accordance with a NVMP prepared and implemented as part of the CEMP, in line with environmental safeguard NV1. All sensitive receivers likely to be affected will be notified at least five days prior to the commencement of works associated with the activity. Where feasible and reasonable, less noisy and vibration emitting construction methods/plant would be selected. Construction noise impacts would be managed through environmental safeguards proposed in section 6.2 (NV1, NV2, NV4, NV5, NV6, NV7 and NV8) of this submissions report.

3.9 Issue 8: Traffic and transport

3.9.1 Loss of parking

Issue description

Community members raised concerns about the loss of parking during both construction and operation of the proposal. Key concerns raised included:

- Removal of parking spaces would negatively impact residents that do not have access to off-street parking, as well as elderly residents and visitors
- Uncertainty about the number of parking spaces to be removed or stated incorrect numbers in their responses
- Residents request that additional parking be made available elsewhere to compensate for loss of parking, including disabled spaces, on Alfred Street South and expansion of precinct 5 and 6 parking area
- Impacts to businesses due the loss of parking, noting that there is limited parking for customers and deliveries. Concerns about impacts to the Chinese Christian Church and the Kirribilli Markets resulting from the loss of parking were also raised
- Clarification on the number of parking impacts during construction and construction timeframes
- A community member express concern about the statement within the REF that the 'travelling by private vehicles to and from the area is not essential' and the subsequent conclusion that removal of parking would not result in impacts.

Response

Transport acknowledges the impacts to parking on Alfred Street South and Burton Street as a result of the proposal, outlined in section 6.4 of the REF. Transport acknowledges that the loss of parking would impact parking availability for local businesses and facilities in the area, such as the Chinese Christian Church and Kirribilli Markets. As addressed in 2.3.25 of this submissions report however, on-street parking would be available on adjoining streets. The local area is also well served by public transport, being located close to Milsons Point Station and bus stops as well as active transport links. Transport will consult with North Sydney Council and adjacent property occupiers to manage the operational impact of the loss of parking, in accordance with environmental safeguard TT28.

Further assessment has found that construction activities would have a slightly higher impact on local parking than what was proposed in the REF, though the loss of parking spaces would remain largely similar. Parking impacts during construction would be temporary and limited to approximate duration of 18 months, subject to planning approval.

Section 3.3.1 of the REF identifies the phases of the proposal and their expected timeframes, noting that the proposal will commence late-2023. It is now expected that works will start in early 2024 and take about 18 months, subject to planning approval, technical requirements and weather.

Transport clarifies that the statement, 'travelling by private vehicles to and from the area is not essential', was intended to highlight that there are many forms of public and access transport at this point, offering alternatives to the use of private vehicles. Transport acknowledges that some members of the community are less able bodied and require transport by private vehicle. Design refinements, identified in Chapter 4 of this submissions report, have sought to limit the loss of parking in consideration of these concerns. Transport will continue to engage with North Sydney Council on potential alternatives for disabled car spaces.

3.9.2 Support for removal of parking

Issue description

Community members voiced support for the proposal and noted the positive benefits of removing parking spaces along Alfred Street South. Community members noted that this would allow the area to become more of a community space, allowing optimal configuration of Alfred Street South. It was noted that removal of parking spaces would also improve safety, decrease noise, remove visual clutter in the areas, reduce traffic congestion and decrease the risk of bike riders being doored.

Response

Transport acknowledges community member support for the removal of up to 15 parking spaces along Alfred Street South. As noted in section 6.4.3 of the REF, removal of parking spaces along Alfred Street South would substantially improve the safety of active transport users and contribute to encouraging people to use the proposed bike rider connection.

Transport notes that the proposal has sought to balance the loss of parking spaces with the benefits provided by the proposal. To minimise impacts associated with loss of parking spaces, Transport has retained parking spaces where possible.

3.9.3 Bike rider safety

Issue description

Community members raised concerns about the safety of the proposal for bike riders. Community members were concerned that collisions between bike riders would likely increase for the following reasons:

- The ramp landing is unsafe, with the ramp becoming a speedway
- Confusion at the ramp landing
- Conflict point at the top of the ramp between those heading north along the cycle path and those still using the stair access
- Safety issues at the ramp connection to the Sydney Harbour Bridge as it is a right angled-bend, connecting to the narrower Sydney Harbour Bridge cycleway and could be a potential collision point for bike riders
- Potential congestion at the viewing platform and conflict between north and south-bound bike riders
- Concern that the proposal would result in the capacity of the cycleway across the bridge being exceeded
- Concerns about bike rider safety due to aggressive motorists.

Response

Transport is committed to improving the safety of bike riders accessing the Sydney Harbour Bridge cycleway, as outlined in the proposal objectives in section 2.4.1 of the REF. In response to community concerns regarding bike rider collisions, further design refinement has been undertaken, as detailed in Chapter 4 of this submissions report.

Concerns in relation to safety of the ramp landing, are addressed in section 2.3.27 of this submissions report. Updates to the design of the proposal to address these concerns are described in section 4.2 of this submissions report.

Transport acknowledges the conflict point at the proposal's connection with the Sydney Harbour Bridge and has conducted further design refinements with testing and analysis of the ramp intersection undertaken by Aurecon. The removal of about 8.4 metres of viaduct parapet to allow for the cycleway ramp connection would allow for safe passage of bike riders with due consideration of sight lines and turning movements, as outlined in the Sydney Harbour Bridge Cycleway – Northern Access Project Detailed Design Report. Potential conflicts between north bound bike riders on the Sydney Harbour Bridge cycleway and bike riders still using the stairs (Aurecon, 2023). Stairs would be managed by maximising clear sightlines between riders, ground surface line markings, and use of a median island to slow and direct cyclists.

As outlined in section 2.5.1 of the REF, modelling of current and projected capacity of the existing Sydney Harbour Bridge cycleway assumed a growth in cycling to determine if it had the capacity to meet future demand. In response to concerns regarding potentially aggressive motorists, Transport notes the proposal would provide safe separation of bike riders and road traffic, and that road users are obliged to follow the road rules and dangerous driving practices should be reported to police.

3.9.4 Improved bike rider safety

Issue description

Community members were pleased with the safety improvements offered to bike riders as a result of the proposal, including:

- Providing a more accessible and safer route to access the Sydney Harbour Bridge cycleway
- Safety improvements from avoiding the use of steps.

Response

Transport acknowledges support provided by the community in regard to improved bike rider safety and accessibility when accessing the Sydney Harbour Bridge cycleway from Milsons Point. Transport has continued to refine the design of the proposal to improve safety and accessibility, as detailed in section 3.9.3 of this submissions report.

3.9.5 Pedestrian safety

Issue description

Community members noted that there are many pedestrians that frequent the area, including the elderly and school children and that this number is expected to rise due to projected growth in the area. Community members raised concerns about pedestrian safety as a result of the proposal. Key concerns raised were:

- The safety of the proposed pedestrian crossing at the northern end of Alfred Street South
- Safety of pedestrian access to bus stops and creation of blind spots
- Security and safety of pedestrians in Bradfield Park due to the potential for creation of shadowing, caused by the ramp
- Safety of pedestrians walking under the ramp.

Response

Transport acknowledges that future growth in pedestrian traffic in Milsons Point is expected to occur in the future, with the population within the local area predicted to grow from about 4,670 in 2023 to about 5,390 in 2036 (New South Wales Travel Zone Projections (TZP22), Transport for NSW).

The pedestrian and bike rider crossing located at the northern end of Alfred Street South would provide as a safe place for pedestrians and bike riders to cross the road. The crossing would maintain separation between pedestrians and bike riders, as shown in Figure 3-4 of the REF, resulting in improved pedestrian safety as discussed in section 2.3.27 of this submissions report.

As noted in section 4.3.2 of this submissions report, the proposed in-lane bus stop would be replaced by a kerbside bus stop in the same location as the proposed in-lane bus stop . The kerbside bus stop would minimise impacts to motorists and traffic flow. As the Alfred Street South cycle path would not interfere with access to the existing bus stop, impacts to pedestrian safety are unlikely to occur.

Concerns in relation to the safety of pedestrians walking under the ramp are addressed in section 2.3.27 of this submissions report.

3.9.6 Pedestrian/ bike rider safety

Issue description

Community members raised concerns about the potential for collisions between bike riders and pedestrians associated with the proposal due to the following:

- Bike riders entering Alfred Street South in a concentrated fashion from the ramp, particularly with the tight turn at the ramp landing
- Safety implications of ending a linear ramp directly in the path of pedestrians on Alfred Street South, particularly from bike riders gaining too much speed going down the linear ramp
- Bike riders travelling from Burton Street will have to navigate pedestrians before reaching the ramp landing
- Pedestrians will have to cross the cycle path to access Bradfield Park, as well as pedestrians and bike riders sharing road crossings
- Concern that the proposal would encourage pedestrians to access the Sydney Harbour Bridge cycleway via the proposal
- The potential for collisions between cars and bike riders at the Lavender Street roundabout and the proposed pedestrian/bike rider crossing directly south, on Alfred Street South. Some community members were concerned that these crossings would be unsafe if bike riders chose not to dismount or travel directly through the roundabout and the crossings may lead to queuing that would increase safety risks
- Concern that cars would need to cross the cycle path to gain access to off-street parking, creating safety risks
- Concern that the proposal would require bike riders to reduce speed prior to entering traffic, creating unsafe conditions
- Queried whether the proposal would resolve the existing conflict between pedestrians and bike riders at Burton Street and the Sydney Harbour Bridge stairs.

Community members suggested that pedestrians and bike riders should be separated at all intersections for impacts at ground level be minimised where possible.

Response

Transport has considered pedestrian and bike rider safety throughout development of the proposal. The risk of potential conflicts between pedestrians and bike riders would be managed through a two-way separated cycle path along Alfred Street South, as outlined in section 3.1.2 of the REF.

Design refinements outlined in Chapter 4 of this submissions report have been implemented to further improve the safety of pedestrians and bike riders in the area, such as a two-stage pedestrian crossing at the ramp landing, and appropriate signage in shared zones. See section 4.2 of this submissions report for further details.

Concerns in relation to conflict points and speed are addressed in section 2.3.27 of this submissions report.

Transport identifies the new pedestrian and bike rider crossing on Lavender Street would improve safety for bike riders and pedestrians by improving their visibility crossing the road, reducing vehicle speeds, as noted in section 6.4.3 of the REF. Design refinements to discourage pedestrians from crossing the Alfred Street South roundabout leg include replacing the existing kerb ramp and footpath with soft landscaping on the eastern side, infilling the pedestrian refuge on the median separating the Bradfield Highway roundabout entry and Alfred Street slip lane, and removing the pedestrian kerb ramp on the western side of Alfred Street South. Bike riders, like motorists, would be required to obey all relevant road rules.

Transport also note that the proposal was selected as it would reduce the conflict between pedestrians and bike riders at the base of the existing stair access, outlined in section 3.1 of the REF.

3.9.7 Public and active transport

Issue description

Community members were satisfied with the retainment of the bus stop in front of Milsons Point Station. However, concerns were raised about the proposed relocation of the bus stop for the following reasons:

- Inconvenience of the relocation and it's impacts on the elderly population
- Impacts to traffic due to the change to an in-lane bus stop
- Concerns about the safety of pedestrians at the relocated bus stop due to potential reduction in visibility.

One community member was uncertain where the bus stop would be relocated.

Response

Design refinements have meant that the proposed in-lane bus stop, located at 110 Alfred Street, to replace the existing bus stop number 206128, would be replaced by a kerbside bus stop in the same location. As noted in section 4.3.2 of this submissions report, the kerbside bus stop would minimise impacts to motorists and traffic flow. Transport acknowledges that the narrower lanes that have prioritised pedestrian movements on the east side of Alfred Street may still result in some impact to northbound motorists when the bus stops. However, visibility to oncoming traffic and pedestrians is good and existing traffic is slow in this location.

Further modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop will be carried out prior to commencement of construction in accordance with revised environmental safeguard TT2.

As the Alfred Street South cycle path would not interfere with access to the existing bus stop, impacts to pedestrian safety are unlikely to occur.

3.9.8 Public transport access during construction

Issue description

Community members raised concerns about access to public and active transport during construction of the proposal, including:

- Community member questioned how construction will be staged and expressed concern about how construction will affect the operation of Milsons Point Station
- Community member requested that bike rider access to the Sydney Harbour Bridge be maintained during construction.

Response

Transport identified the four construction phases, including expected duration and works to occur in section 3.3.1 of the REF. Access to Milsons Point Station would be maintained throughout construction of the proposal, as identified in section 3.3.6 of the REF, with scaffolding shrouding the station entrance while works on the elevated linear bike ramp occur.

As outlined in section 3.3.6 of the REF, access to existing stair access to the Sydney Harbour Bridge cycleway would be maintained throughout construction of the proposal, with the exception of brief periods where it would be necessary to close the stairs to allow for cutting of the parapet and installation of the bridge connection. Catch scaffolding would be installed over the entrance to the stairs to protect bike riders.

3.9.9 Surrounding road network impacts during construction

Issue description

Community members raised concerns that construction of the proposal would increase queuing on Alfred Street South, the Harbour Bridge exit and onto the Pacific Highway and pose a safety risk.

Response

As outlined in section 5.3 of this submissions report and the updated traffic impact assessment (see Appendix E), road modelling was undertaken to assess the potential traffic impacts relating to queuing as a result of the proposal. The updated traffic impact assessment noted that the level of service of the Lavender Street eastbound approach to the roundabout would remain the same irrespective of the proposal. The modelling also indicates that there is no potential queuing impact onto the Warringah Freeway with the introduction of the new design, including at the midblock crossing.

Further modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop will be carried out prior to commencement of construction in accordance with revised environmental safeguard TT2.

3.9.10 Surrounding road impacts during operation

Issue description

Community members raised concerns about congestion impacting Alfred Street South, particularly during school drop off and pick up times. Concerns were raised that the proposal may further exacerbate the traffic congestion due to the following aspects:

- Narrowing of Alfred Street South to accommodate the cycle path
- Relocation of the bus stop to an in-lane bus stop
- Upgrades to the crossing of Lavender Street
- Relocation of the crossing of Alfred Steet.

There were also concerns that the proposal would result in an increase in bike riders in the area that would create congestion at the Lavender Street and Alfred Street South crossings.

Response

Section 5.2 of this submissions report outlines the modelling, analysis and findings carried out in the updated TIA, which indicated that operation of the proposal would not result in increased traffic congestion. While the updated traffic impact assessment projected an increase in bike rider movements westbound, southbound and northbound, it was concluded that the proposal would not alter the performance of the surrounding road network, when compared to the performance of the network with the additional, future traffic included.

As outlined in section 3.9.7 of this submissions report, the previously proposed in-lane bus stop would be replaced by a kerbside bus stop in the same location as the proposed in-lane bus stop. This is expected to reduce potential impacts on the surrounding road network. Further details are provided in Chapter 4 of this submissions report. Further modelling and assessment of potential road network impacts associated with the proposed kerb side bus stop will be carried out prior to commencement of construction in accordance with environmental safeguard TT2.

3.9.11 Large vehicle safety and accessibility

Issue description

Community members raised concerns about narrowing of Alfred Street South for accessibility for large vehicles including trucks, buses and large cars and vehicles seeking to pass each other.

Response

Transport acknowledges that the proposal would result in narrowing of Alfred Street South, between the ramp landing in Bradfield Park North to the pedestrian and bike rider crossing, on Alfred Street South to accommodate the Alfred Street South cycle path and is outlined in section 3.1.2 of the REF. Transport conducted a swept path analysis which confirmed a 12.5-metre -long rigid vehicle would be able to safely make the Lavender Street and Middlemiss Street, as identified in section 6.4.3 of the REF.

A Road Space Reallocation meeting was held to discuss the widths that had been adopted for the proposal. During this meeting, each element of the design was discussed in order to ensure the most appropriate widths for pedestrians, cyclists and drivers would be applied between the cycleway ramp landing point in Bradfield Park North and proposed raised crossing of Alfred Street South and Lavender Street roundabout. To achieve the project objectives, reduce the risk of collisions and provide the safest outcome for all road users in the busy urban environment, it was recommended parking be removed on the eastern side of Alfred Street South between the cycleway ramp landing and the proposed Alfred Street South pedestrian crossing in order to ensure a minimum lane width of 3.2 metre and a parking width of 2.1 metres. The design has been refined to adopt these recommendations.

The proposal is an improvement on the existing shared path width on Alfred Street South and would provide separation and delineation to reduce conflicts between the bike riders and pedestrians. It is noted that lane widths of 3.2 metres have been confirmed by the State Transit Authority as meeting the minimum requirements for bus movements.

3.10 Issue 9: Contamination

3.10.1 Land contamination

Issue description

A community member expressed concern that construction work may expose contaminated soils.

Response

Transport identifies the potential for contamination to be encountered during construction is generally a low to possible likelihood, as identified in section 6.5.3 of the REF. In accordance with environmental safeguard C1, an Unexpected Finds Protocol will be developed to be implemented during onsite soil disturbance works in the event of the identification of any unforeseen contaminated land evidence.

3.11 Issue 10: Socio-economic and land use

3.11.1 Impacts to property values

Issue description

A community member raised concern about reduction to their property value due to the proposal and requested compensation.

Response

Property values are driven by a range of economic, social and amenity factors including housing supply and demand, interest rates, economic growth, local amenity and accessibility to such things as employment and social infrastructure. It is likely that broader external factors would influence property values more than perceived or actual impacts resulting from the proposal. Individual property owners are encouraged to contact the Project Team to discuss their concerns regarding loss in property value. Notwithstanding this, perceptions of property value are not a compensable item under the *Land Acquisition (Just Terms Compensation) Act* 1991.

Transport recognises that accessibility, the safety and amenity of pedestrian and bike rider facilities, and preservation of open spaces are valued highly by the community surrounding the proposal, as noted in section 6.6.5 of the REF. Operation of the proposal would result in improved liveability, increased safety and accessibility to facilities in the vicinity of Milsons Point including the Sydney Harbour Bridge cycleway. The proposal aims to minimise the loss of green and open space where reasonable and feasible to do so. The linear ramp has been designed, in part, to minimise impacts on open space and local amenity, and to enable the continued use and enjoyment of Bradfield Park by the local community.

3.11.2 Impacts to business during construction

Issue description

Community members raised concerns that construction of the proposal for a duration of 18 months will have severe adverse impacts on businesses during construction.

Response

Transport identifies that construction of the proposal would take around 18 months to complete, and subject to planning approval, is expected to commence in early 2024.

As the duration of construction is relatively limited and the majority of construction would occur on the east side of Alfred Street South, impacts to local businesses located on the west side of Alfred Street South are expected to be low, as outlined in section 6.6.3 of the REF. Impacts arising from loss of parking on Alfred Street South would also be limited due to alternative on-street parking available in proximity to affected businesses, as detailed in section 6.4.3 of the REF.

To minimise impacts to the local area during construction of the proposal, a number of environmental safeguards have been proposed in section 6.2 of this submissions report. This includes the provision of clearly sign posted temporary access arrangements for bike riders and pedestrians (LV3), and consolidation of construction equipment and activity to maximise the area of useable public realm, where possible (LV6). All sensitive receivers likely to be affected by noise and vibration will be notified at least five days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact (environmental safeguard NV4). Several environmental safeguards are also proposed to manage impacts on traffic (environmental safeguard TT4), parking (environmental safeguards TT5, TT6, TT7 and TT8), access (environmental safeguard TT23) and pedestrian safety (environmental safeguard TT24). To minimise cumulative impacts and manage the potential for construction fatigue, cumulative visual (environmental safeguard CI1), noise and vibration (environmental safeguard CI2), and socio-economic (environmental safeguard CI3) environmental safeguards are proposed. The environmental safeguards will ensure that affected businesses will be consulted with and notified of construction works occurring, with access to be maintained throughout construction.

Businesses will continue to be consulted during further detailed design development and throughout construction to identify potential impacts and environmental safeguards will be implemented where necessary to minimise impacts to businesses.

3.11.3 Impacts to social infrastructure

Issue description

Community members raised concerns about the impacts to social infrastructure as a result of the proposal. Key concerns included:

- Concern that the proposal would impact pedestrian accessibility to Bradfield Park
- Concern about loss of green space and the amenity of the area
- Concern the acquisition of land within Bradfield Park goes against the intention of the use of the park, which was bequeathed to North Sydney Council for public use
- Concern that the proposal would disrupt the ‘village like ambience’ of the local area through the removal of trees and increased bike riders
- That the ramp design would provide additional shelter for those currently residing under Burton Street Tunnel.

Response

Transport identifies that operation of the proposal would promote a positive impact on amenity due to the improved mobility of bike riders and pedestrians, as outlined in section 6.6.3 of the REF. The proposal would improve amenity and accessibility to the Sydney Harbour Bridge and potentially attract more users and tourists to Milsons Point and Kirribilli. Concerns in relation to pedestrian accessibility, loss of green space and amenity, and intended use of the park are addressed in section 2.3.31 of this submissions report. Further discussion on vegetation removal, replacement planting and increasing green space to improve local amenity can be found in section 3.12.1 of the submissions report. Impacts to Bradfield Park would be minimised through efforts to retain the existing park character, minimising loss of grass and retaining significant trees and through construction of a Country inspired gathering space as outlined in section 3.1 of the REF.

As Bradfield Park is of high value to the local community and is a frequently used public space, Transport has carefully considered the proposal design, ensuring it is consistent with high quality urban design outcomes that would enhance the amenity of the area and result in a minimal loss of usable urban space. Completion of the proposal has the potential to further increase the public usability of Bradfield Park, as it would provide greater accessibility to the Sydney Harbour Bridge cycleway for bike riders of all ages and abilities.

As noted in section 2.3.10 of this submissions report, the proposal would not conflict with the key principles of the Bradfield Park and Kirribilli Foreshore Master Plan, indicating its compatibility with the intended use of the park. Additionally, North Sydney Council has provided landowner's consent to Transport for the use of Bradfield Park, as detailed in section 3.2.3 of this submissions report.

It is acknowledged that the bike ramp may provide additional shelter for those currently sheltering under Burton Street tunnel. The ramp abutment in Bradfield Park North has been carefully sited and designed to maximise visibility from the street and Bradfield Park to maximise safety and security for park users, although information suggests that anti-social and criminal behaviour in the area is not a particular concern. Transport will follow the NSW Government Homelessness Strategy, in particular the '*Protocol for homeless people in public places*' when engaging with homeless persons with regards to matters relating to the proposal.

3.11.4 Local benefits

Issue description

Community members raised concerns that the proposal does not benefit the local community and believe that the benefits of the proposal would be for people from outside the area. Community members note that there are more pedestrians and drivers than bike riders in Milsons Point.

Response

As identified in section 2.3 of the REF, the current stair access to the Sydney Harbour Bridge cycleway creates a barrier to safe and equitable access to active transport infrastructure for people of all ages and abilities. The proposal would provide value to the local community by improving access and safety for both pedestrians and bike riders and support future growth within Milsons Point. As identified in section 6.6.3 of the REF and section 3.11.3 of this submissions report, upgrades to the Alfred Street South cycle path would give pedestrians and bike riders greater confidence to walk or cycle to their destination. This would have the associated benefit of reducing the dependence on private cars for short trips, benefiting local residents.

The proposal would reduce the risk of pedestrian and bike rider conflicts through safe separation of pedestrians and bike riders on the Alfred Street South cycle path. The proposal would retain the green and open space within Milsons Point where feasible to do so, including offset planting of five trees along Alfred Street South and low-level planting underneath the ramp structure. The creation of gathering space including seating and space for meeting, gathering and pedestrian movement also aims to add to the amenity of the Milsons Point area.

3.11.5 Relocation of Kirribilli Markets

Issue description

Community members raised concerns about the relocation of the Kirribilli Markets to Ennis Road, noting this alternative location would not suitable. Suggested alternate locations include the front of Milsons Point Station or North Sydney.

Response

Transport acknowledges that the Kirribilli Markets would need to be relocated during construction of the proposal, as noted in section 6.4 of the REF. Relocation of the Kirribilli Markets to the front of Milsons Point Station would not be suitable as this would be located within the central construction zone, as shown in Figure 3-5 of the REF. Transport acknowledges that access to Milsons Point Station would maintained through the central construction zone throughout construction, however the entrance to the station would be shrouded with scaffolding during installation of the elevated linear bike ramp, as discussed in section 3.3 of the REF. North Sydney would also not be a suitable alternative location as the Kirribilli Markets would be too far from the original location which could cause further impacts to affected stakeholders.

The temporary market location is currently being discussed with North Sydney Council and KNC. As per environmental safeguard SE3, coordination with North Sydney Council and key stakeholders including Kirribilli markets operator will be

undertaken to minimise impacts on major events. Further detail is provided in the response in section 2.3.32 of this submissions report.

To support the REF exhibition a community FAQ document on market relocation plans was developed and distributed to the community, inviting comment on the proposed plans. Feedback on comments received will be taken into consideration when deciding the final market location for the construction period.

3.12 Issue 11: Biodiversity

3.12.1 Concerns about tree removal

Issue description

Community members raised concerns about the loss of vegetation and green space for the proposal. Key concerns and questions included:

- Some community members were confused about the number of trees that would be removed for the proposal. One community member was concerned about the removal of palms in front of Milsons Point Station, noting that they were a donation from SBS Broadcasting to North Sydney Council.
- Concern that areas that are currently vegetated will be replaced with concrete
- Concern about the removal of mature trees which provide shading, visual amenity and habitat. Several members suggested that the proposal should be re-designed to avoid all impacts to trees
- Concern about the cumulative loss of trees and green space within Bradfield Park North and concerns that additional tree removal would have social impacts on the local community.

Response

Transport notes that, as detailed in Chapter 4 of this submissions report, no further tree removal other than that proposed in the REF would be required during construction and operation of the proposal. Section 6.7 of the REF identifies the trees required for removal as five Simons Poplar, an Ornamental Pear Cultivars and one Canary Island Date Palm. Due to the importance of green space to the community, the proposal aims to retain green space where reasonable and feasible to do so.

The updated Arboricultural Impact Assessment has identified two trees (one Chinese Elm and one Weeping Bottlebrush) to be pruned in addition to the one Fig tree and two Chinese Elms identified in the REF, though these works would be minor and are not expected to impact the usual life expectancy of the trees (see section 5.4 of this submissions report). Tree pruning and works within Tree Protection Zones will be carried out in accordance with recommendations of the Preliminary Arboricultural Report and/or in consultation with a qualified arborist (TreeiQ, 2023) (environmental safeguard B3).

Transport notes the palms located in front of Milsons Point Station would be retained as part of the proposal, as identified in section 6.7.3 of the REF. Impacts to visual amenity and loss of green space would be minimised through the planting of five trees along Alfred Street South, offsetting the removal of the Simons Poplars in Bradfield Park North. Shading provided by the affected Simons Poplar have previously been impacted by significant reduction pruning to provide clearance for the Sydney Harbour Bridge viaduct, resulting in reduced structural condition. Shading within Bradfield Park North would also be maintained by mature Chinese Elms located next to the affected Simons Poplars. Section 6.7.3 of the REF also identifies that the trees identified for removal provide limited habitat for threatened species that have the potential to occur. Any threatened species which may potentially use the affected trees would most likely be moving through the site to gain access to other areas which contain more valuable and important habitat features.

Design refinements to reduce loss of green space as a result of the proposal have been identified in Chapter 4 of this submissions report. Low level planting would be provided underneath the ramp structure to replace gravel which was previously proposed, as noted in the updated Urban Design Plan.

3.12.2 Minimisation of tree loss and tree replacement

Issue description

Community members expressed support for the minimisation of tree loss through the design development and the commitment to development of a Tree and Hollow Replacement Plan.

Some community members enquired about the Tree and Hollow Replacement Plan, requesting for the plan to be made public and made suggestions for tree placement, including:

- Suggestions to transplant the existing trees
- Request that replacement trees be planted locally
- Request for mature replacement trees to provide canopy cover
- Request that trees planted be compatible with the cycling infrastructure.

Response

As detailed in section 6.2 of this submissions report, the Tree and Hollow Replacement Plan would be prepared and implemented as part of the CEMP. Offset planting of five trees, to replace the five removed Simons Poplar trees, would be provided along Alfred Street South. Two of these would be located on the east side of Alfred Street South, immediately south of the Alfred Street South shared user crossing. The remaining three would be located on the west side of Alfred Street South, at the northern end of the street. No additional tree planting is proposed within Bradfield Park North, at the request of North Sydney Council. Transplanting of any existing mature trees identified for removal or new mature trees can often result in limited success due to shallow root systems compared to established mature trees. However, they would provide more increased shading and canopy cover.

3.13 Issue 12: Hydrology and flooding

3.13.1 Drainage

Issue description

A community member raised concerns about stormwater management on the proposal, noting that they Sydney Harbour Bridge cycleway can become hazardous when it rains due to overland flow caused by blocked drains.

Response

The proposal would provide adequate drainage into design of the elevated linear bike ramp to avoid hazardous conditions during rain events. This would include drainage cast internally within the elliptical ramp columns, with drainage piping directing stormwater to new and existing drainage pits. Table 6-1 of this submissions report also identifies that. Stormwater impacts would be managed through the implementation of the environmental safeguards outlined in section 6.2 of this submissions report. A final hydrology and drainage assessment would be undertaken prior to construction commencing to inform detailed design measures and minimise flood risks to the environment, properties and the proposal, in accordance with environmental safeguard SW1.

3.14 Issue 13: Aboriginal heritage

3.14.1 Impacts to Aboriginal heritage sites

Issue description

A community member raised concerns that the proposal may be located on Aboriginal sacred land.

Response

An Aboriginal Heritage Due Diligence Assessment was undertaken by Artefact as part of the REF (Appendix J of the REF). Recommendations arising from this assessment have informed the proposal, and environmental safeguards will be put in place as deemed necessary. Transport notes that no Aboriginal archaeological sensitivity was identified within the study area for the proposal, as described in section 6.10 of the REF. A search of the Aboriginal Heritage Information Management System was also conducted on 20 January 2022. The search identified no Aboriginal archaeological sites within the study area of the proposal.

Transport has undertaken consultation with the Aboriginal community, including Aboriginal Elders, during design development, as discussed in section 5.3 of the REF. This included:

- Yarns with significant elders from both Cammeraygal and Gadigal held during September 2021 by WSP. The elders were briefed on the proposal and given opportunity to provide feedback on the scoping and initial designs
- A Connecting with Country 'Design Jam' facilitated by Yerrabingin on 1 June 2022

The Design Jam generated a variety of ideas and opportunities for incorporating into the development of the Concept Design and future stages. Guiding principles raised through the Design Jam included emphasising the physical and spiritual connection between the lands that are divided by the harbour and drawing on thousands of years of rich Gadigal and Cammeraygal history. The guiding principles also include ensuring the design flows with country and acknowledges the rich history that comes with the site.

Transport has ensured that Designing with Country and respect for Aboriginal cultural values remains a priority during future design development of the proposal.

3.15 Issue 14: Climate change and risk

3.15.1 Greenhouse gas emissions

Issue description

A community member raised concerns that construction would involve the generation of carbon and embedded carbon in the materials used.

Response

Transport identifies the proposal would incorporate materials with low embodied carbon to reduce indirect greenhouse gas emissions, as indicated in section 6.12.1 of the REF. This includes the use of a low carbon concrete mix for the precast concrete columns and foundations. A similar low carbon concrete mix would be used for the ramp deck, incorporating a high percentage of recycled aggregate. The internal support structure, including damping system, would also be designed to minimise mass and embodied carbon associated with the proposal. The proposal will be targeting a Silver-rating under the Sustainable Design Guidelines version 4, in accordance with GGCC3. A compulsory requirement for a Silver-rating is using the Carbon Estimate Reporting Tool to reduce emissions across the proposal by a minimum of ten per cent.

3.16 Issue 15: Other impacts

3.16.1 Air quality

Issue description

Community members raised concerns about dust generation during construction.

Response

Impacts associated with dust generation are largely dependent on climate conditions, including wind speed and direction. Transport notes that dust impacts are expected to be confined to the area of immediate works and would be short-term and minor, as identified in section 6.12.2 of the REF. Dust generation would also be managed in accordance with the Air Quality Management Plan prepared as part of the CEMP in accordance with environmental safeguard AQ1.

3.17 Issue 16: Cumulative impacts

3.17.1 Warringah Freeway upgrade project and loss of vegetation and green space

Issue description

Community members raised concerns over the cumulative impacts of the proposal and the Warringah Freeway Upgrade project. There is particular concern over the cumulative vegetation loss.

Response

Transport notes that the proposal would only constitute a small amount of vegetation to be removed. Section 6.7 of the REF identifies that five Simons Poplar, an Ornamental Pear Cultivars and one Canary Island Date Palm would be removed for the proposal. Offset planting of five trees along Alfred Street South and low-level planting below the ramp structure would be provided to assist with maintaining green space in the community.

As part of the Warringah Freeway Upgrade Project Conditions of Approval (E184), trees will be replaced at a ratio of two to one along the project area, with a net increase in tree canopy coverage. The project will maintain as many existing trees as possible, with only trees that directly impact the project's construction being removed. A Tree Replacement Strategy was prepared in partnership with North Sydney Council, which outlines the principles for tree replacement including, but not limited to, potential planting locations and timing within the local government area. For information on the Tree Replacement Strategy visit nswroads.work/wfuportal.

3.17.2 Construction fatigue

Issue description

Community members expressed fatigue due to the cumulative impacts the proposal will have with existing projects within the vicinity including the Sydney Harbour Bridge Arch Maintenance Units, Sydney Harbour Bridge Deck Upgrade, and North Sydney Olympic Pool Aquatic Centre. There is particular concern from some community members regarding cumulative traffic, parking and noise impacts. One community member questions why the construction of other projects have not been completed yet and why the cycleway has been proposed despite the ongoing nature of other projects.

Response

Transport acknowledges that ongoing projects can have cumulative impacts on local communities, with works on the Sydney Harbour Bridge Deck Upgrade, North Sydney Olympic Pool Aquatic Centre and Warringah Freeway Upgrade currently under construction and Sydney Harbour Bridge Arch Maintenance Units planned for construction in the vicinity of Milsons Point, as identified in section 6.13 of the REF. Cumulative impacts associated with the above projects would include:

- Heritage impacts as a result of replacement of the arch maintenance units and deck upgrade works
- Visual impacts of deck upgrade works, including the presence of hoarding, stockpiling and construction fencing near the proposal
- Potential overlapping of construction noise from the Sydney Harbour Bridge Deck Upgrade and Warringah Freeway Upgrade works
- Temporary traffic delays and temporary changes to amenity may be experienced because of increased construction works in the area. The proposal aims to mitigate cumulative impacts by allocating space for construction vehicles to park at the ancillary facility

Transport will hold regular meetings with stakeholder engagement personnel from various projects carrying out work in the immediate area to identify and manage potential cumulative impacts. This approach will aim to manage the potential for construction fatigue as a result of ongoing construction of different projects occurring simultaneously within the local area.

Transport notes the projected construction periods for other projects is out of the scope for this proposal, with Table 6-1 of this submissions report identifying environmental safeguards to be implemented to minimise cumulative impacts as a result of the proposal.

3.18 Issue 17: General

3.18.1 Support for the proposal

Issue description

Community members expressed general support for the proposal and support for the proposal over other options identified. Community members stated that they believe the proposal is the best solution, aesthetically and in terms of minimising impacts to the environment.

Response

Transport acknowledges the community's support for the proposal, with the preferred option best achieving the proposal objectives of improving access to the Sydney Harbour Bridge cycleway, increasing pedestrian and bike rider safety and supporting future growth in the number of bike riders.

It is noted that once operational, the proposal would connect customers and communities, promote a safe, reliable, sustainable and integrated transport system, while creating vibrant places and encouraging a healthier and more sustainable lifestyle. Active transport infrastructure provides positive community health, amenity and environmental outcomes. The proposal would help shape sustainable infrastructure and encourage active transport, tourism and decarbonisation.

3.18.2 Naming of the ramp

Issue description

A community member requested that the proposed ramp is named in honour of Ray Rice OAM due to their service for Bicycle NSW.

Response

There is nothing proposed at this stage regarding the naming of the proposed cycleway or whether this process will invite public feedback, suggestions or submissions on the desired name. Given the type of infrastructure, cycleway naming conventions typically include location-based names indicating area connectivity it provides so the journey and area it connects is obvious and easy to understand for public use.

3.18.3 General opposition

Issue description

Community members expressed opposition to the proposal.

Response

Transport acknowledges opposition expressed by some members of the community. Specific concerns raised by the community have been addressed in section 2.2 to section 3.19.3 of this submissions report.

3.19 Issue 18: Out of scope

3.19.1 Miscellaneous

Issue description

Community members raised the following issues that are outside the scope of the proposal:

- Concerns about Bradfield Park South
- Concerns about impacts to Cammeraygal Golf Course and tree loss associated with the Warringah Freeway Upgrade
- Concerns about the lack of cycling and pedestrian infrastructure provided as part of the Warringah Freeway Upgrade
- Community member was concerned about safety issues due to high number of visitors and would like police presentation on the weekends
- Community member believed that the navigation of Kirribilli Markets is currently difficult, particularly for wheelchair users, due to the cracked pavement, cobblestones and layout of the market

- Community member appreciated the lift design on the eastern side of Sydney Harbour Bridge, noting that it compliments the heritage structure
- Community member requested the government purchase a bowling site from ALC
- Community member wanted the Gore Hill cycleway to be cleaned
- Community member observed that the Balgowlah Seaforth roundabout and North Sydney are dangerous
- Community member queried whether the Burton Street tunnel can be repurposed, suggesting that it can be converted into a playground, tennis courts or a space for art installations
- Community member believed that additional local public transport may be required at Milsons Point, suggesting mini buses could be useful
- Community member believed that the removal of mandatory helmet laws would better encourage cycling
- Community members believed that government funding is better spent to improve hospitals and healthcare
- Community members raised concerns about buses using Milsons Point area as a layover
- Community members believed that the footpath adjacent to the Pacific Highway to North Sydney is dangerous for both bike riders and pedestrians
- Suggestion that a shared pathway be provided for bike riders and pedestrians along the rail line between Wendy Whiteley's Secret Garden and Luna Park
- Suggestion that bike riders be registered and have minimum requirements for insurance and that this be monitored by police
- Suggestion that bike riders should use the train rather than ride over the Sydney Harbour Bridge Cycleway
- Community member stated there needs to be additional and clear speed limit and one way signs for Greenway Drive
- Community member requested for removal of parking on Burton Street for community space
- Community member questioned how the proposal would join with the Warringah Freeway project.

Response

The comments listed above are noted, however, are outside the scope of this proposal and therefore, have not been considered any further.

It is noted that the proposal would not join with the Warrigah Freeway Project.

3.19.2 Additional cycleways and cycleway connections

Issue description

Community members raised several issues in relation to additional cycleway connections. Concerns raised by community members include:

- The proposal would not address the lack of cycling infrastructure available in North Sydney
- Request for a connection between the proposed cycleway and existing cycleways throughout North Sydney
- Request for a cycleway connection between Chatswood to the Sydney Harbour Bridge
- Requests for cycleway connections between Milsons Point to Crows Nest, Lane Cove, Mosman and St Leonards
- Community member would like the Gore Hill cycleway to be cleaned
- Existing cycleways are unsafe, particularly between Lane Cove and the Sydney Central Business District
- Request for safe cycleways to be constructed along the Pacific Highway.

Response

As noted in the REF, the proposal includes an elevated linear bike ramp which connects to the Sydney Harbour Bridge and lands in Bradfield Park North, where it connects to the Alfred Street South cyclepath. The cyclepath is located on Alfred Street

South, between Burton Street and Lavender Street. It would then join the existing bike network at Middlemiss Street. The existing walking and bike network across North Sydney and the surrounding suburbs has recently been the subject of an Active Transport Network Review, prepared by Transport to meet Condition E195 of the approval for the Warringah Freeway Upgrade. This review aims to identify gaps in this network, and recommendations on how to address them.

Additionally, Transport is committed to investigate future cycleway connections across the the broader Eastern Harbour City area, and will continue to work with the relevant stakeholders to progress these opportunities. Further information is available in the Eastern Harbour City Strategic Cycleway Corridors Program Summary (nsw.gov.au).

The comments listed above are noted, however, any other cycleways or cycleway connections outside this footprint are not within the scope of the proposal and as such have not been considered any further in this report.

3.19.3 Sydney Harbour Bridge cycleway

Issue description

Community members raised concerns in relation to the existing Sydney Harbour Bridge Cycleway, noting the following:

- Concern that the cycleway is unsafe due to its narrow width and the speeds at which bike riders ride and concern that the addition of e-bikes, scooters and cargo bikes on the cycleway would increase the risk of collisions
- Request for the cycleway to be more accessible for pedestrians with additional access points to Milsons Point Station
- Community members request for upgrades to the ramp located on the southern side of the Sydney Harbour Bridge, noting that the gradient of the ramp is too steep
- Request that the shared path on the southern end of the Sydney Harbour Bridge cycleway be changed to a dedicated cycle path.

Response

As noted in section 2.1 of the REF, the proposal is part of the broader Sydney Harbour Bridge Cycleway Access program of works. The program also includes the the Sydney Harbour Bridge Southern access. Transport is working in partnership with the City of Sydney on the southern cycleway proposal. The comments listed above are noted, however, the southern access and the existing cycleway are outside the scope of this proposal and therefore, have not been considered any further.

4. Changes to the proposal

Following exhibition of the REF, the proposal has been refined (referred to as 'the revised design') in response to stakeholder feedback and further progression of the design, particularly to minimise impacts to the Sydney Harbour Bridge fabric and to reduce conflict between pedestrians and bike riders. The revised design is a result of refinement and development of the design by leading heritage firm Design 5 Architects in collaboration with Aspect Studios, Aurecon and Transport.

Figure 4-1 show key features of the revised design for the proposal. Further detail is provided in Figure 4-4 and Figure 4-5, which figures identify changes proposed to the elevated linear bike ramp, the bike ramp landing, and Alfred Street South cycle path.

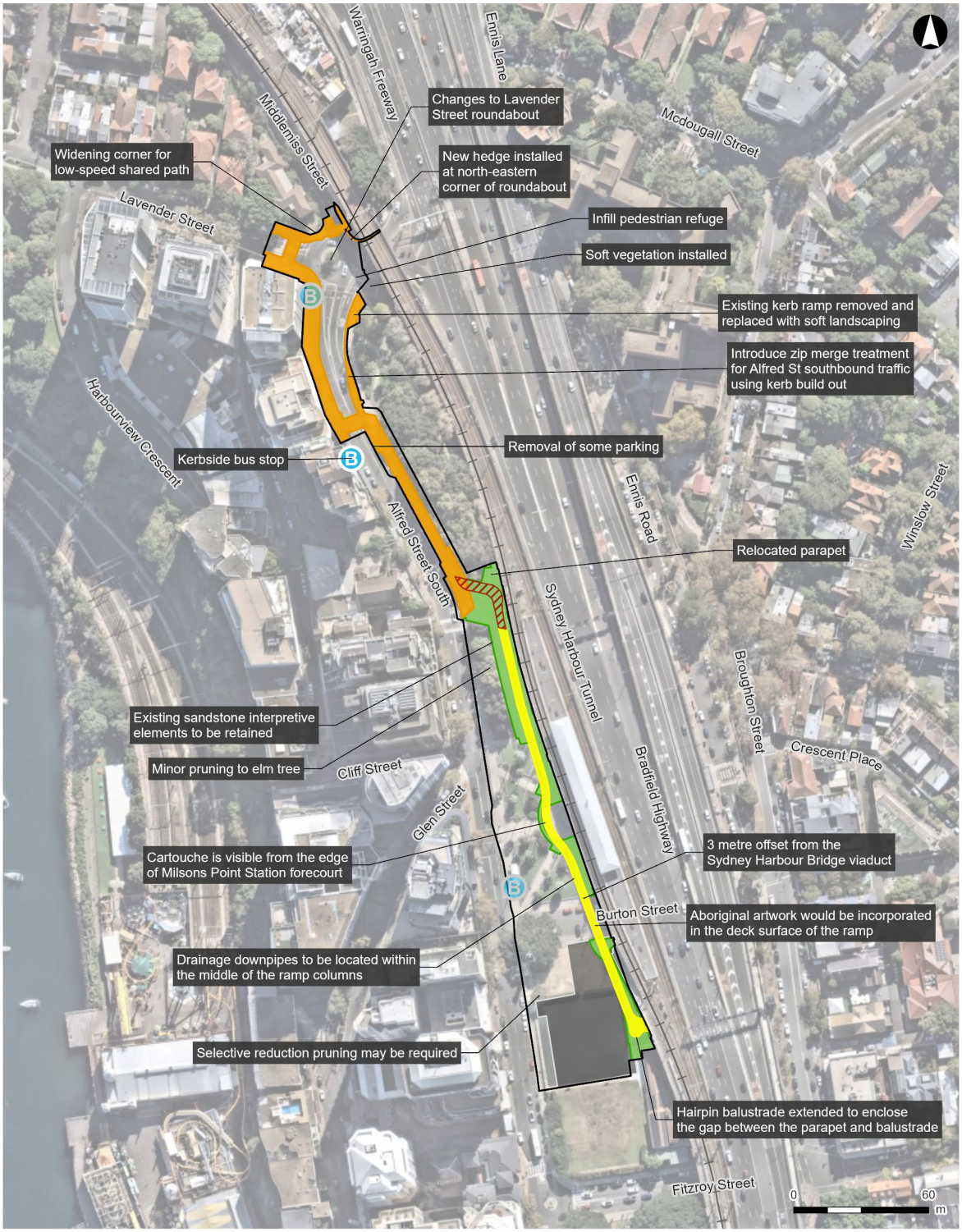


Figure 4-1: Overview of changes to the proposal

4.1 Elevated linear bike ramp

The design changes in the revised design include:

- Changes to the offset to the Sydney Harbour Bridge viaduct: The southern end of the abutment would adopt a similar geometry to the ramp columns and would widen slightly more than the previous alignment to allow more accessibility for maintenance (see section 4.1.1)
- Changes to form and detail: Aboriginal artwork would be incorporated in the deck surface of the ramp (see section 4.1.2)
- Changes to the Milsons Point Station entry arc: Further design modelling has indicated that the cartouche is visible from the edge of Milsons Point Station forecourt (see section 4.1.3)
- Changes to the ramp columns: Drainage downpipes would be located within the middle of the ramp columns (see section 4.1.4)
- Changes to the balustrade: The deflection rail on the ramp has been reduced and the hairpin balustrade has been extended to enclose the gap between the parapet and balustrade (see section 4.1.5)
- Changes to the connection to the Sydney Harbour Bridge: The ramp tie in with the Sydney Harbour Bridge would be shifted around 3 metres north from where it was initially proposed, with a minor reduction in the ramp length. A 125 mm raised median, line marking, and different pavement finishes would be introduced in the middle of the upper connection platform of the ramp structure (see section 4.1.6)
- Changes to parapet removal from the Sydney Harbour Bridge: The 8.4 metre section of parapet would be relocated to the north of the ramp landing area (see section 4.1.7)
- Changes to lighting: Three pole lights would be installed at the Bradfield Park North ramp landing and lighting would also be incorporated into the underside of the handrail and into the soffit of the ramp (see section 4.1.8)
- Changes to tree pruning: Two trees (one Chinese Elm and one Weeping Bottlebrush) would be pruned in addition to the one Fig tree and two Chinese Elms identified in the REF (see section 4.1.9).

4.1.1 Offset to Sydney Harbour Bridge viaduct

Description of change

The REF identifies that the bike ramp's alignment has been generally matched to that of the Sydney Harbour Bridge viaduct. The ramp's offset from the viaduct varies slightly along its length in response to varying design and site constraints across the proposal site. South of the Milsons Point station entry, the ramp generally adopts a three-metre offset from the viaduct in order to prevent the need for throw screens to the adjacent railway corridor. North of the station entry, this offset gradually tapers from three metres to 1.5 metres in order to reduce impacts and encroachment on Bradfield Park while maintaining required offsets for viaduct maintenance.

Justification

South of the Milsons Point station entry, the ramp generally adopts a three-metre offset from the viaduct in order to prevent the need for throw screens to the adjacent railway corridor. North of the station entry, this offset gradually tapers from three metres to 1.5 metres in order to reduce impacts and encroachment on Bradfield Park while maintaining required offsets for viaduct maintenance.

4.1.2 Form and detail

Description of change

The REF identifies that country design narratives would be incorporated into the ramp landing, with a constellation of circular paving inlays proposed based on inputs from Aboriginal elders and knowledge holders.

As part of the design changes, it is proposed that an indigenous artwork would be incorporated in the surface of the ramp. The artwork would incorporate a pattern showing inter-connected and overlapping eels.

Figure 4-2 Sketch by Maddison Gibbs and Jason Wing proposed to be incorporated into the bike ramp deck paving design

Justification

The proposed inclusion of indigenous artwork on the ramp surface would be consistent with the proposal's Design excellence approach, which includes the recognition of Aboriginal voices and occupation of the site.

4.1.3 Milsons Point Station entry arc

Description of change

The REF identifies that the ramp would obstruct the view to the decorative '1932' cartouche above the station entrance and decorative parapet from the view east from Alfred Street South to the Milsons Point Station entry (Viewpoint 4 in Table 6-15 of the REF).

Further design modelling indicates that the cartouche is visible from the edge of Milsons Point Station forecourt. See Figure 4-3:.

Figure 4-3: Design model view – view to the cartouche from the edge of the forecourt (note that the balustrade modelled shows the bronze finish) (model source: Aurecon)

Justification

Further design modelling indicates that the cartouche is visible from the edge of Milsons Point Station forecourt.

4.1.4 Ramp columns

Description of change

In the REF, it is noted that the columns would be formed with a tapered ellipse profile with the smallest dimension of the column aligned to the axis of the Sydney Harbour Bridge. Drainage downpipes were proposed to be integrated into the columns with a recessed bronze toned cover plate. Column foundations would be bored reinforced concrete piles..

The tapered ellipse profile of the columns is retained in the revised design, however, the drainage downpipes would be located within the middle of the columns rather than on the surface of the columns. The columns would have a rib-profile, which has been designed to discourage graffiti and bill-poster attachment, and gradually decreases in depth towards the head of the column. Bronze trims would be adopted at the base of the columns in the plaza forecourt. The colour and surface texture of the concrete mix for the columns would be carefully selected, and an anti-graffiti coating will be applied.

Justification

Designing the drainage downpipes within the middle of the columns would allow for no break in the façade of the columns, minimising visual impacts. The colour and surface texture of the concrete mix would be selected to respect and compliment the aged appearance of the viaduct revetment walls adjacent, and the anti-graffiti coating would minimise maintenance requirements. The ribbed surface of the columns has been designed to discourage graffiti and bill-poster attachment, compliment the heritage setting with a contemporary architectural treatment, and gradually decreases in depth towards the head of the column.

4.1.5 Balustrade

Description of change

The balustrade as described in the REF was about 1.4 metres high, with an outward angle to create a feeling of openness for bike riders. Deflection rails would be incorporated within the balustrade, mirroring the angle of the balustrade screen and providing visual balance. Lighting would be integrated within the deflection rail and/or balustrade.

As part of the design changes the hairpin balustrade has been extended to enclose the gap between the parapet and balustrade. The material for the balustrade would be selected during further design refinement. LED lighting would be incorporated into the underside of the deflection rail and into the soffit of the ramp.

Justification

Bronze alloy balustrading is likely to be slightly thicker than stainless steel balustrading. As such, the use of stainless steel for the balustrade may be less visually intrusive but both materials have merit as viable options within the heritage setting. Final choice of materials for the balustrade will be determined through further design refinement.

The inclusion of the deflection rail is intended to enable users to safely deflect off the rail in the event of a collision, avoiding the balustrade and preventing the handlebars from being caught against the components of the bridge.

4.1.6 Connection to the Sydney Harbour Bridge

Description of change

The tie in with the Sydney Harbour Bridge would be shifted around 3 metres north from where it was initially proposed, with a minor reduction in the ramp length (approximately 3-3.5 metres). A 125 mm raised median, line marking, and different pavement finishes would be introduced in the middle of the upper connection platform of the ramp structure.

Justification

The shift in the tie in of the cycleway to the Sydney Harbour Bridge allows for the reduction in ramp length. This reduces the physical bulk of the infrastructure. The raised median, line marking and different pavement finishes would delineate bike riders to slow down or move to the side.

4.1.7 Parapet removal

Description of change

The REF identifies that about 8.4 metres of viaduct parapet would be removed, allowing a safe passage for bike riders. The design has considered sight lines and turning movements, incorporating low height medians to separate north and south moving bike riders. The design has aimed to reduce impacts to the heritage structure as much as possible. This would be achieved through a design that is contemporary, lightweight, with a high degree of visual transparency. This would create a high degree of legibility between the old and new structures. At the ramp's connection with the Sydney Harbour Bridge Cycleway, a rest area would be incorporated on the west side of the ramp.

The 8.4 metre section of parapet that would be removed is proposed to be relocated in line with the new cycle path at the end of the ramp landing point. It would be subject to heritage interpretation.

Justification

The parapet has been relocated adjacent to the end of the ramp landing point to passively redirect pedestrians away from the cycle path. Heritage interpretation would be incorporated to integrate the parapet into the surroundings.

4.1.8 Lighting

Description of change

The REF proposed minor lighting upgrades to Bradfield Park North and in other locations where required to meet safe lighting standards, that would provide lighting for pedestrians, bike riders, road users and CCTV surveillance.

As a part of the design changes, it has been identified that three pole lights would be installed at the Bradfield Park North ramp landing standard with North Sydney Council requirements. One pole light would have a CCTV camera fixed to it. The lighting in the ramp landing area would be integrated with the nearby upgraded streetlighting. LED lighting would be also incorporated into the underside of the handrail and into the soffit of the ramp. The functional lighting will be non-dimmable and controlled by PE sensors to switch on during dark hours. The functional lighting will be non-dimmable and controlled by PE sensors to switch on during dark hours

Justification

The use of high efficiency, long-life LED light sources with precision optics for all proposed lighting would minimise glare and obtrusive light into the surrounding environment.

The provision of pole lights to the Public Plaza would activate this public space and promote safety in accordance with relevant guidelines. To avoid visual clutter, the lighting to the ramp landing area would be integrated with the nearby upgraded streetlighting, to prevent over lighting of the space and to ensure that the minimal number of light poles are used in the design.

The underside of the structure offers a unique opportunity to tell a story of both physical form and the bringing together of two local indigenous lands. Using subtle illumination and mild variations in light temperatures – representative of the Cammeraygal and Gadigal lands – this interactive application connects the north and south of the elevated ramp through an interplay of light.

The lighting at the ramp landing would provide a visually consistent link with the cycleway, with functional pole top lighting provided to the pathways to ensure a seamless entry and exit off the elevated cycleway. Integrated low level feature lighting to the raised dividing island provides clear, illuminated wayfinding at the point where the cycleway separates, to enhance the safety of users.

4.1.9 Tree pruning

Description of change

The REF proposed that Trees 1 (Chinese Elm), 21 (Moreton Bay Fig), and 23 (Chinese Elm) would require pruning.

The updated Arboricultural Impact Assessment has identified two additional trees, Trees 26 (Chinese Elm) and 41 (Weeping Bottlebrush), for pruning.

Justification

Minor pruning of the above trees is required to provide clearance to the elevated linear bike ramp and for access during construction. Pruning would not significantly impact the life expectancy or amenity of the trees.

4.2 Bike ramp landing

Design changes to the ramp landing include:

- Changes to Bradfield Park North landing: The ramp landing would be curved to slow down bike riders coming off the ramp. It has been clarified that he precast abutment at the northern end of the cycleway would be constructed as a series of linear parts with joints between or cast in situ (see section 4.2.1)
- Changes to impacts to the sandstone inlays: The sandstone inlays within Bradfield Park North would be updated in line with most recent surveys. The stone of the inlays at the ramp landing would be lifted and relayed at the correct grading levels of the ramp landing (see section 4.2.2).

4.2.1 Bradfield Park North landing

Description of change

The REF identifies that the ramp landing would be located close to the existing viaduct, set away from the east edge of Alfred Street South. The gathering place, provided at the ramp landing, would provide seating and space for meeting, gathering and pedestrian movement. Bike riders and pedestrians would be separated wherever possible to reduce conflicts. Country design narratives would also be incorporated into the ramp landing, with a constellation of circular paving inlays proposed based on inputs from Aboriginal elders and knowledge holders.

The design has been amended to provide a sharp bend at the landing, which transitions to a shared pedestrian and bike rider zone just north of the structure. The curve has been designed to ensure it will be safe for biker riders and will encourage those travelling down the ramp to slow down ahead of the gathering space and shared zone. The shared zone is defined by a unique shared path paving, accompanying signs and line marking. The separated cycleway commences once pedestrians and bike riders are clear of the park area and travelling parallel to Alfred Street.

A new gathering space has been proposed to provide additional seating and bike hoops which has been separated from the ramp landing. The gathering space would include bike parking, repair kit and e-bike charger and seating for everyone.

The precast abutment proposed at the northern end of the cycleway linear elements may be constructed as a series of linear elements with gaps between or may be cast in-situ as a monolithic structure. The final design of the abutment will be developed in consultation with and / or following advice from North Sydney Council and Heritage NSW.

Justification

The 90-degree bend of the path route at the ramp landing is designed to slow down bike riders travelling towards Alfred Street from the ramp. The path route at this point is separated by landscaped medians to reduce the risk of northbound and southbound bike riders colliding. This geometry also acts as a traffic calming device and visual cue for bike riders approaching from the ramp. The shared zone is introduced to slow down bike rider traffic and prepare them for interactions with pedestrians in the park. The unique shared path paving, accompanying signs and line marking provides a clear indicator to both bike riders and pedestrians on where the shared zone is, and provides a delineation between dedicated bike rider and pedestrian paths to minimise collisions.

The gathering space has been moved from the immediate vicinity of the ramp landing to discourage bike riders from dwelling at the ramp landing and separate bike riders who wish to rest from those travelling through.

The length of the precast abutment was determined by the beam spans and the requirements for maximised visibility of the landscape area between the Sydney Harbour Bridge and the proposed bike ramp in accordance with CPTED principles.

4.2.2 Sandstone inlays

Description of change

The REF identifies the retention of the existing heritage interpretation elements, including the sandstone strips outlining previous subdivision and road alignments.

The sandstone inlays within Bradfield Park North would be updated in line with most recent surveys. The stone of the inlays at the ramp landing would be lifted and re-laid at the correct grading levels of the ramp landing.

Justification

Further surveys carried out in the proposal area confirmed the location of the sandstone inlays within Bradfield Park North. These elements would be retained as much as practical to minimise impacts to existing elements within Bradfield Park North.

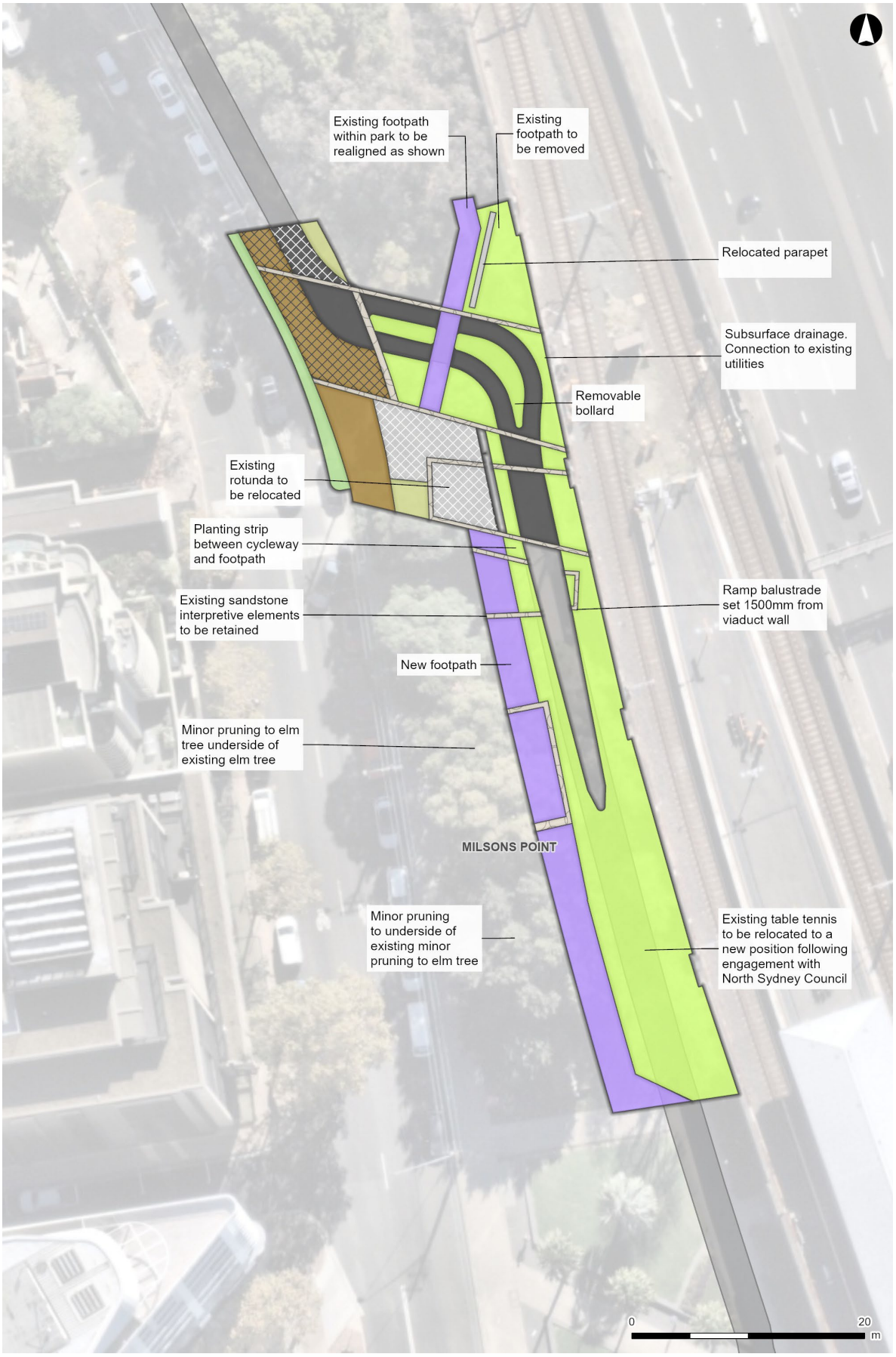


Figure 4-4 Bike ramp landing – refined design

4.3 Alfred Street south cycle path

Changes to the Alfred Street south cycle path include:

- Changes to the width of the cycle path: Further detail on the widths of the two-way separated path has been provided as part of the revised design (see section 4.3.1)
- Change to a kerb side bus stop: The in-lane bus stop has been removed from the design and replaced with a kerb-side bus stop (see section 4.3.2)
- Adjustments to the Lavender Street roundabout: Minor adjustments to the Lavender Street roundabout (see section 4.3.3)
- Further detail on signage: further detail on signage has been provided as part of the revised design (see section 4.3.4).

4.3.1 Width of Alfred Street south cycle path

Description of change

The REF identifies that the cycle path would consist of a two-way separated path about 2.5 metres wide.

Further detail has been provided as a part of the revised design. South of the new pedestrian crossing, the two-way cycle path would be about 2.4 metres wide (1.2 metre lane in each direction) and located on the eastern side of Alfred Street South. North of the new pedestrian crossing, the two-way cycle path would be about 2.5 metres wide (1.35 metre lane in each direction) on the western side of Alfred Street South.

Justification

The Alfred Street South cycle path uses the existing paved footpath or existing roadway width to avoid encroaching into Bradfield Park North and therefore is limited to a 2.4 metre width. This has been deemed adequate for this area of the proposal. This is an improvement on the existing shared path width on Alfred Street and will provide separation and delineation to reduce conflicts between the two transport modes.

The cycle path on the western side of Alfred Street uses the existing paved footpath to avoid encroaching into the road.

4.3.2 Change to kerb side bus stop

Description of change

The REF identifies that the existing bus stop on Alfred Street South near Lavender Street would be permanently relocated about 60 metres to the south of its current location on Alfred Street South. To accommodate this, an in-lane bus stop was proposed.

The previously proposed in-lane bus stop would be replaced by a kerbside bus stop in the same proposed location as the proposed in-lane bus stop. Four parking spots would be removed to accommodate the new kerbside bus stop. However, the total number of parking spaces to be permanently removed will remain as 15, as consistent with the REF. The existing parking island located south of the proposed pedestrian crossing would also be removed.

Justification

The kerbside bus stop would minimise impacts motorists and traffic flow. However, the narrower lanes that have prioritised pedestrian movements on the east side of Alfred Street may still result in some impact to northbound motorists when the bus stops.

4.3.3 Lavender Street roundabout

Description of change

The REF identifies that the existing pedestrian crossing on the western leg of the roundabout, crossing north-south across Lavender Street, would include provision for a cycle crossing of the street. Due to space constraints on the northern side of Lavender Street, it was proposed that the separated walking and cycling facility would revert to a shared path on the northern side of the roundabout. Minor adjustments to the design and location of the roundabout would be implemented to maximise available space in this location. A new continuous footpath treatment was proposed included on Middlemiss Street at its intersection with the Lavender Street roundabout.

The design has been amended to retain the roundabout at its current location. Instead, the existing planted central island would be removed and replaced with a 5-metre diameter mountable roundabout. In addition to the works proposed in the REF, the following have been proposed:

- Northern and southern side of the Lavender Street crossing would be dedicated shared zones for pedestrians and bike riders
- Narrowed Alfred Street approach to cater for the new separated cycleway
- Modified median islands on the Alfred Street and Lavender Street approaches to allow for road signs
- Realignment of the north-western kerb and introduction of a shared path between the Lavender Street and Middlemiss Street legs.
- Removing the existing kerb ramp and footpath on the eastern side of Alfred Street
- Infilling the pedestrian refuge on the median separating the Bradfield Highway roundabout entry and Alfred Street slip lane
- Removing the pedestrian kerb ramp on the western side of Alfred Street
- Installation of soft landscaping (hedge) on the north-eastern corner of the roundabout
- Installation of soft landscaping (vegetation) on the Alfred Street side of the roundabout
- Installation of a shared zone crossing on Middlemiss Street
- Relocation of the hold line on the Lavender Street approach approximately 2 metres north to align with narrowed Alfred Street alignment
- The kerb would be built out in the form of a zip merge treatment for Alfred Street southbound traffic with landscaping provided behind the kerb build out
- The median kerb on the eastern side of the roundabout would be maintained.

The updated design for the Lavender Street roundabout is shown in Figure 4-3.

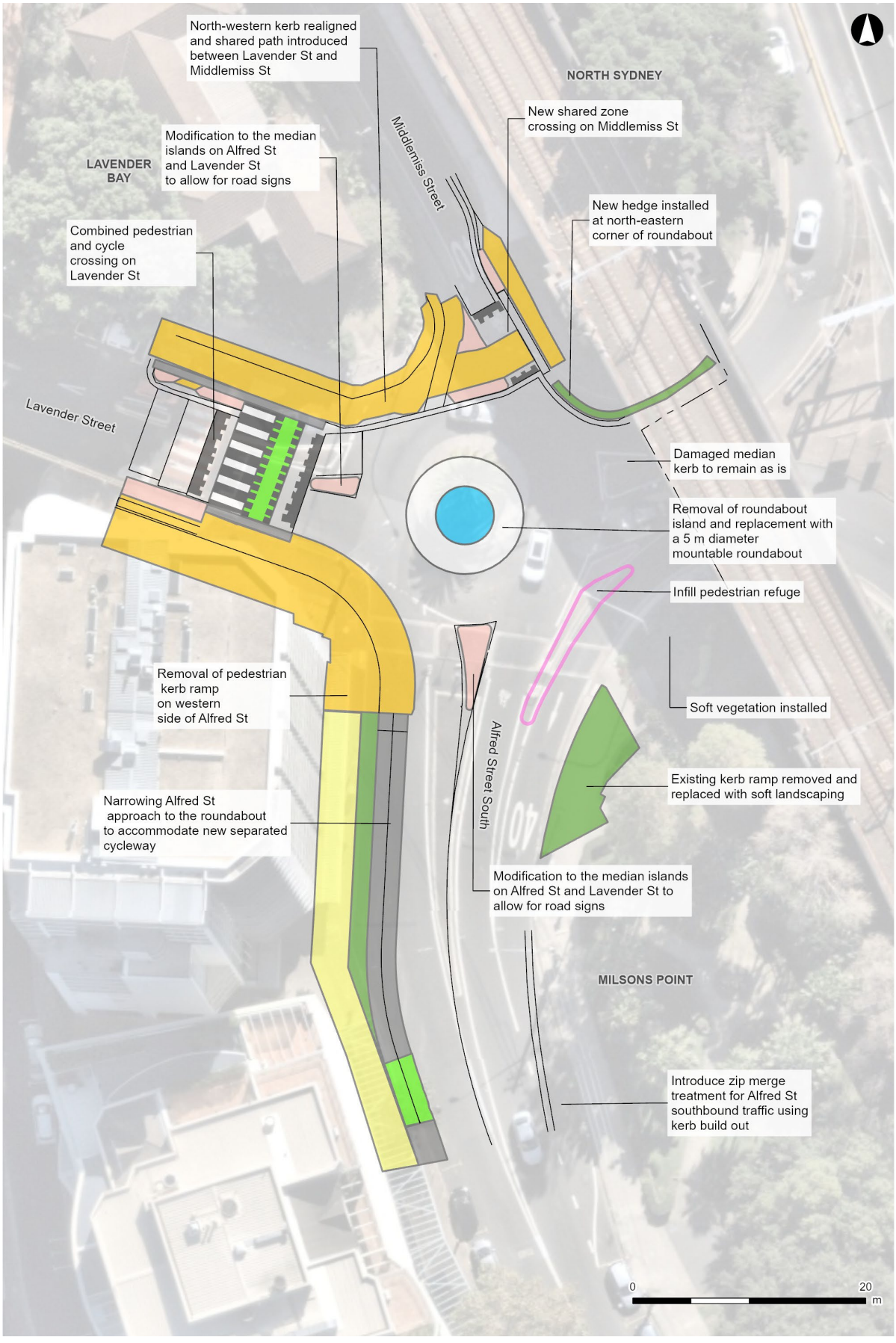


Figure 4-5: Proposed adjustments to the Lavender Street roundabout

Justification

Due to the reduction in the available road pavement due to the proposed bike path and shared path works, maintaining a reduced island in the centre of the Lavender Street roundabout would result in an unacceptable overhang at the north-eastern corner of the intersection. This would obstruct right turning movements for buses and large vehicles from Alfred Street South to the Pacific Highway. Therefore, the central roundabout structure and tree would be removed and replaced with a mountable central median to account for this right turning movement requirement. Maintaining the Alfred Street South slip lane island is also important to define the movement and provide the required separation between buses turning right from Lavender Street and buses or heavy vehicles using the slip lane into Alfred Street South.

The purpose of the proposed removal of the existing kerb ramp and footpath on Alfred Street South and replacement with vegetation, infilling the pedestrian refuge and removing the pedestrian kerb ramp on the western side of Alfred Street is to discourage pedestrians from crossing the Alfred Street roundabout leg.

Similarly, to discourage pedestrians from crossing the Bradfield Highway leg of the roundabout, a hedge would be installed on the north-eastern corner of the roundabout and vegetation would be installed on the Alfred Street South side of the roundabout.

The zip merge treatment for the south-bound traffic provides equal priority for both movements and was assessed to be an appropriate treatment given the similar speeds expected for vehicles exiting the roundabout or entering Alfred Street South via the slip lane.

4.3.4 Signage

Description of change

Further design development has provided details regarding signage. The general principles adopted for the proposal for wayfinding and signage include:

- Cycling wayfinding will be provided via on-ground pavement markings and signage at key bike rider decision points
- Pedestrians will be directed to use the stairs on the eastern side of the Sydney Harbour Bridge
- Existing North Sydney Council interpretation signage will be retained where possible, or relocated where impacts are unavoidable.

Regulatory signs such as 'No Stopping' signs are currently placed along Alfred Street South to prohibit parking along the road section. At other places, 'Directional No Stopping' signs and 'Restricted Parking' signs would be strategically placed to provide similar parking arrangements as the existing. For utilised intersections, such as the intersection between the cycle path and the road, 'pedestrian crossing' signs would be used to warn the motorists of the pedestrian crossing ahead and indicate the priority of pedestrians/bike riders to the crossing. 'Shared Zone' and 'End of Shared Zone' signs would be placed at Middlemiss Street intersection to indicate the start and end of shared zone environment. A 'Give Way to Pedestrians' sign would be provided at the crossing to inform road users of the priority given to the movement of pedestrians in the shared environment zone.

At locations where pedestrian paths join or intersect with the separated path and bicycle only path, 'Bicycle and Pedestrian Warning' and 'Bicycle Warning' signs would be provided respectively to warn pedestrians of the bike rider and pedestrian movements ahead. Similarly, 'Speed Hump' and 'km/hr' signs would be placed on both sides of the pedestrian and bike rider crossing, to warn drivers of the raised crossing.

As a minimum, directional signs would be provided at the ramp landing area and at the Lavender Street raised pedestrian and cycleway crossing to define destinations North Sydney, Sydney CBD and Milsons Point.

The separated path and shared path are indicated using 'Separated Path' and 'Shared Path' signs respectively with 'End' sign added to them where they terminate. Additionally, 'Bicycle only' sign will be provided at location where the separated path terminates and bicycle only path towards the Sydney Harbour Bridge cycleway commences.

Justification

The wayfinding and signage strategy for the proposal has sought to provide intuitive and clear wayfinding guidance while minimising clutter and visual intrusive on the sensitive heritage setting. This will be declined through a combination of signposting, use of colour and ground marking.

5. Environmental assessment

As a result of the changes to the proposal outlined in Chapter 4 of this submissions report, additional environmental assessment was required. This Chapter describes the additional assessment carried out for the revised design since the exhibition of the REF and identifies changes in potential impacts of the proposal compared to those identified in Chapter 6 of the REF. The following sections assess changes due to the revised design against each environmental assessment discipline. As the revised design is generally located within or immediately adjacent to the REF proposal area, there would be negligible change to the existing environment as outlined in the REF.

5.1 Non-Aboriginal heritage

5.1.1 Methodology

As part of the additional non-Aboriginal heritage assessment, an Archaeological Research Design (ARD) has also been undertaken to assess the study area's potential to contain historical archaeological resources and to provide a methodology for managing potential archaeological remains discovered during excavation works associated with the proposal (refer to Appendix B).

The impacts to the Sydney Harbour Bridge within the study area, including all excavation works within the Sydney Harbour Bridge curtilage would be subject to approval under Section 60 of the Heritage Act. The detailed design Statement of Heritage Impact (SoHI) and the ARD have been submitted to the Heritage Council as part of the Section 60 application.

The preparation of the updated SoHI and ARD have been informed by searches of NSW and Commonwealth heritage registers and was carried out in alignment with the relevant guidelines, which remains consistent with the methodology detailed in section 6.1.1 of the REF. The study area is consistent with section 6.1.1 of the REF and is shown in Figure 5-1.

The updated SoHI has been prepared in accordance with the conservation principles and methodolgoy contained in the *Burra Charter: The Australian ICOMOS Charter for Place of Cultural Significance* (2013) and in accordance with the best practice standards set out by Heritage NSW. The relevant best practice guidelines include:

- Assessing Heritage Significance (NSW Heritage Office, 2001)
- Statements of Heritage Impact (NSW Heritage Office and Department of Urban Affairs & Planning, 2002)
- Design in Context: Guidelines for Infill Development in the Historic Environment (NSW Heritage Office and Royal Australian Institute of Architects, 2005)
- NSW Heritage Manual (NSW Heritage Office & Department of Urban Affairs and Planning NSW Heritage Manual, 1996)
- Commonwealth of Australia, Matters of National Environmental Significance: Significant Impact Guidelines 1.1 (Department of the Environment 2003).

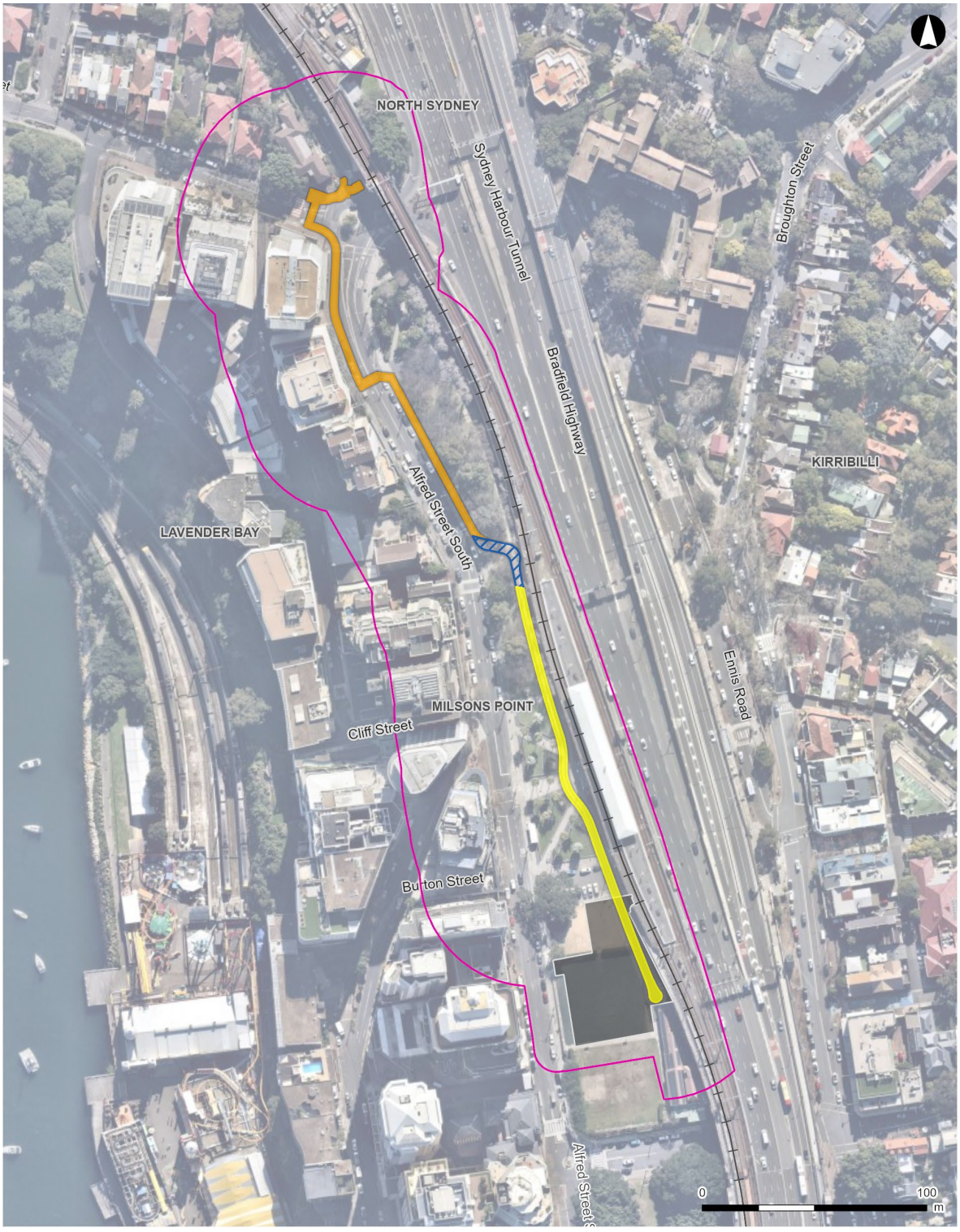


Figure 5-1: Study area

5.1.2 Summary of additional study and consultation

A SoHI, previously prepared in October 2022 for the REF, was based on the concept design of the proposal (refer to Appendix D of the REF). Following a review of submissions received during the public display period of the REF, a detailed design of the proposal has been released for further assessment. An updated SoHI (refer to Appendix C) has been prepared based on the detailed design to provide an additional assessment of:

- The archeological potential and significance of the study area
- Direct and indirect impacts to listed heritage items as a result of the detailed design, including a comparison between the concept design impacts and the detailed design impacts
- Policies from the Sydney Harbour Bridge Conservation Management Plan against the detailed design.

5.1.3 Description of existing environment

The assessment of heritage significance within the study area in the updated SoHI is consistent with that described in section 6.1.2 of the REF.

The assessment of archaeological potential and significance of the study area has been updated after further analysis of historic plans, aerials and potential archaeological features. A summary of the arcaheological potential and significance of the the study area is provided in Table 5-1.

Table 5-1: Archaeological potential and significance summary for the study area

Phase	Potential archaeological remains	Potential	Significance
Phase 1 (1800 – 1861)	Evidence of low impact pastoral activities, early road construction and quarry activity, i.e. tree boles, burnt stumps, furrows and irrigation channels, post holes from fence lines, backfilled depressions associated with quarrying activity. Evidence of early residential development including cesspits, wells, undocumented outbuildings, and external kitchens. Evidence of early utilities such as tank illustrated on the 1840s plan and swan groove/evidence of water management in Lane Cove Road.	Moderate	Local
Phase 2 (1861 – 1920s)	Evidence of the residential and commercial development of the study area including: • Brick and/or stone footings • Postholes associated with fence lines, house stumps • Brick pads showing the location of posts • Areas of beaten earth, remnant tile, stone or brick paved flooring, evidence of timber flooring in the form of remnant joists and/or bearer impressions • Brick chimney bases and hearths • Paved areas showing the location of former verandahs • Wells, cisterns, privies and/or cesspits associated with artefact bearing backfill and accumulated deposits • Rubbish pits • Artefact bearing garden soils	High	Local

Phase	Potential archaeological remains	Potential	Significance
	• Early road surfaces, drainage and kerbing associated with Burton and Willoughby Streets. Remains of residences along Alfred Street may also be present and are known to have been excavated in the north of the park (HLA, 2003).		
Phase 3 (1920s – 1932)	Backfill deposits from the Sydney Harbour Bridge construction.	High (Nil for relics (outside of SHR curtilage))	Unlikely to reach the threshold of local significance
Phase 4 (1940s – 2016)	Minor development works on Bradfield Park.	Nil – low (extant)	None (extant)

5.1.4 Potential impacts

Direct and indirect heritage impacts

An updated assessment of direct and indirect impacts to listed heritage items has been undertaken as a result of the detailed design and its refinements to minimise impacts on the Sydney Harbour Bridge fabric. Table 5- to Table 5- provide a summary of impacts between the concept design and the detailed design of the proposal. The potential impacts would remain consistent with the upper threshold of impacts assessed in the proposed concept design compared to the detailed design.

All impacts to the SHR within the study area would be managed via the Section 60 process of the Heritage Act.

Table 5-2: Comparison of direct heritage impacts to the Sydney Harbour Bridge and surrounding heritage listings

Listing(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail)	Removal of part of a parapet near the Burton Street stairs along the viaduct.	**Minor to Moderate adverse**	**Minor to Moderate adverse**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The cutting of part of a parapet on the western cycleway would result in Moderate physical impacts. This would see a removal of original fabric and replacement with contemporary material in the form of a linking ramp between the new structure and the existing. Whilst it is not ideal to remove original fabric, it would see a small section of the larger parapet removed whilst the remaining of the structure would be retained. Design refinement has also included aligning the cutting before the roundel decorative piece to ensure the symmetry of the parapet is retained and the cut is flush. The section of parapet being removed is also proposed to be reused within Bradfield Park North as an interpretation piece, which would have **minor positive** impact.
TAHE Section 170 Register: 4301067: Sydney Harbour Bridge, approaches and viaducts	The connection between the newly built ramp and the existing cycleway on the bridge.	**Minor to Moderate adverse**	**Minor to Moderate adverse**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The connection between the new ramp and the existing cycleway would be designed to be at the same level as the existing and would not be dominant in material, colour, form or scale. Keeping the landing level and clean would ensure the new design would merge with the existing heritage fabric in a sympathetic way.
North Sydney LEP: I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway	Raised median strips in the middle of the upper connection platform.	**Minor to Moderate adverse**	**Minor to Moderate adverse**	The proposed works' potential impacts between the concept design and detailed design remain consistent. Raised median strips are proposed on the upper platform of the ramp structure to encourage bike riders to slow down or move to the side. Whilst these design elements are necessary for the safety of pedestrians and bike riders, they present a **minor adverse** physical impact to the existing viaduct structure, disturbing the flush concrete finish and introducing a physical and visual obstruction between the ramp connection and existing cycleway.
	Paving finishes and line marking between on the existing cycleway and new cycleway.	**Minor to Moderate adverse**	**Minor to Moderate adverse**	The proposed works' potential impacts between the concept design and detailed design remain consistent. Line marking and different pavement finishes are proposed on the upper platform of the ramp structure to encourage bike riders to slow down or move to the side. Whilst these design elements are necessary for the safety of pedestrians and bike riders, they present a **minor adverse** physical impact to the existing viaduct structure, disturbing the flush concrete finish and introducing a physical and visual obstruction between the ramp connection and existing cycleway.

Listing(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
North Sydney LEP 2013: I0538: Bradfield Park (including northern section)	Creation of a landing point for the ramp in Bradfield Park.	**Moderate adverse**	**Moderate adverse**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The landing point for the ramp structure would result in **moderate adverse** physical and visual impacts to the setting of Bradfield Park North. The construction would see a direct physical impact to the park layout and a disturbance to the landscape features of Bradfield Park North. This change would see the existing wayfinding altered and the visual appeal of the park as an open, public space partially obstructed. Whilst public amenity of the park would be altered due to the landing, it would also see a positive impact as general mobility of bike riders and pedestrians would be improved, relieving the congestion of Burton Street stairs and surrounds.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) 01194: Milsons Point Railway Station Group **TAHE Section 170 Register:** 4301067: Sydney Harbour Bridge, approaches and viaducts 4801026: Milsons Point Railway Station **North Sydney LEP 2013:** I0538: Bradfield Park (including northern section) I0539: Milsons Point Railway Station Group I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway	Introduction of a new structure into the setting of Bradfield Park, Milsons Point Station and the Bradfield Highway approaches of the bridge.	**Minor to Moderate adverse**	**Moderate adverse**	The proposed works' potential impact remains consistent with the upper threshold of impact assessed in the concept design compared to the detailed design. The ramp and associated structural elements would see **a moderate adverse** direct physical and visual impact to the setting of Bradfield Park Central and North, the Northern Bowling Green, Milsons Point Station and the Bradfield Highway approaches on the Alfred Street South side. Generally, the interface of the ramp and the public domain is sympathetic to the heritage precinct and the landscape features of the open park setting. The materiality of the slim-line balustrades and piers, as well as the light colour palate, winding profile, setback from Alfred Street South, clearance from the viaducts, as well as the height of the structure, all blend well within the wider precinct. However, it is noted that the introduction of this structural element would result in a change to this open space and would partially obstruct the existing open space character to the precinct. Physical impacts would include the construction of the piers and the ramp landing, which would see potential disruption to the layout of the park space, the removal of original fabric within Bradfield Park Central and North, and the removal of some vegetation. The detailed design indicates that a larger abutment and footings are required to construct the proposed works, than first indicated in the concept design. As a result, this design change would have the potential to have a moderate adverse impact on archaeological remains within the park due to excavation requirements for footings. An ARD for the archaeological remain has been prepared to address the potential archaeology and their management should excavation have the potential to impact these artefacts.

Listing(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
North Sydney LEP: I0538: Bradfield Park (including northern section)	A change to the layout of Bradfield Park, including the removal of some landscaping elements, vegetation, and introduction of new pedestrian and cycle pathways.	**Minor adverse**	**Minor adverse**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The proposal would see a change to the layout of Bradfield Park Central and North, with the construction of the ramp structure and landing, as well as the introduction of new pedestrian and cycle pathways within and along the parks. **Minor adverse** physical and visual impacts would result from this change however it is noted that the layout of the park would remain largely similar to the existing with small changes such as the removal of some landscaping elements, retaining walls or garden beds, and some vegetation. It is also noted that the new pathways would generally mirror the existing alignment of pedestrian footpaths along Alfred Street South and within Bradfield Park North. The design refinements have also included the retention of significant trees within the park area, as well as existing heritage interpretation elements such as the sandstone strips outlining previous subdivisions and road alignments. The design has also proposed to include more heritage interpretation opportunities in this area, including plantings and use of paving finishes and potentially the reuse of the parapet cutting. These would all result in **minor positive** impacts to the overall setting of the heritage precinct.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) **North Sydney LEP:** I0538: Bradfield Park (including northern section)	Alfred Street south cycleway and pedestrian pathway adjustments. Bus stop adjustments along Alfred Street. On-street parking adjustments. Associated landscaping.	**Minor adverse to Neutral**	**Minor adverse to Neutral**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The proposed works' along Alfred Street South, such as the associated pathway adjustments and transport and amenity adjustments, would result in a **minor adverse to neutral** physical and visual impact to nearby listings. These works would see a change to the existing arrangement of Alfred Street South but would not detrimentally impact the heritage values of any nearby listed items. It is noted majority of these works would occur outside of the curtilage of the listed items but may intersect with a listing boundary closer to the Bradfield Park side of the street.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail)	New pedestrian crossings and round about adjustments on both Middlemiss and Lavender Streets. Associated landscaping.	**Minor adverse to Neutral**	**Minor adverse to Neutral**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The proposed works at the roundabout intersection with Middlemiss, Lavender and Alfred Streets would result in a **minor to neutral** physical and visual impact to nearby listings. These works would see a change to the existing arrangement of the roundabout but would not detrimentally impact the heritage values of any nearby listed items. It is noted majority of these works would occur outside of the NHL and SHR curtilages but may intersect with a listing boundary closer to the Bradfield Park side of the intersection. These works would result in a change to the streetscaping and amenity at this intersection which would see a positive impact to the efficiency, useability and character of the street. It is also noted that the

Listing(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
				palm tree in the middle of the roundabout is to be retained, maintaining the visual appeal and notability of this intersection.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) **TAHE Section 170 Register:** 4301067: Sydney Harbour Bridge, approaches and viaducts **North Sydney LEP 2013:** I0538: Bradfield Park (including northern section) I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway	Ancillary sites during construction	**Negligible to Neutral**	**Negligible to Neutral**	The proposed works' potential impacts between the concept design and detailed design remain consistent. The use of sites such as the space adjacent to the Northern Bowling Green and Burton Street archway as ancillary sites during the construction phase of this proposal would result in **negligible to neutra**l direct physical impacts. The impacts would be temporary in nature and are not expected to have any heritage impact.

Table 5-3: Comparison of potential direct heritage impacts (vibration and settlement) to the Sydney Harbour Bridge and surrounding heritage listings

Listings(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail)	Excavation in Bradfield Park Central and North, and on each side of the Burton Street for the columns footings and associated works.	**Negligible to Neutral**	**Negligible to Neutral**	The proposed works potential impacts between the concept design and detailed design remain consistent. Excavations associated with these works is expected to have **negligible to neutral** potential direct physical impacts (vibration and settlement). It is unlikely any excavation associated with the construction phase of the proposal would result in any adverse potential physical impacts to the heritage listings and features of the precinct. However, it is possible that indirect physical impacts, such as cracking or displacement could be

Listings(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
01194: Milsons Point Railway Station Group **TAHE Section 170 Register:** 4301067: Sydney Harbour Bridge, approaches and viaducts **North Sydney LEP:** I0538: Bradfield Park (including northern section) I0539: Milsons Point Railway Station Group I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway				caused by works associated with trenching, piling, jackhammering or concrete cutting within the vicinity of heritage items.

Table 5-4: Comparison of indirect heritage impacts to the Sydney Harbour Bridge and surrounding heritage listings

Listings(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) **TAHE Section 170 Register:** 4301067: Sydney Harbour Bridge, approaches and viaducts **North Sydney LEP:**	Removal of part of a parapet near the Burton Street stairs along the viaduct. The connection between the newly built ramp and the existing cycleway on the bridge. Raised median strips in the middle of the upper connection platform.	**Minor adverse**	**Minor adverse**	The proposed works potential impacts between the concept design and detailed design remain consistent. There would be a minor adverse visual impact as a result of the partial demolition of the parapet and construction of a connection between the new ramp and the existing cycleway on the bridge. Whilst the removal of an 8.4 metre section of the parapet would alter the visual appearance of the viaduct structure, as it is a relatively small section in the scheme of the whole bridge, its impact overall would be minor to the understanding of the bridge and its structures. Potential impacts would include the construction of a linear cycleway ramp and its connection with the existing approach and staircase near Burton Street. Whilst the cycleway ramp would run parallel with the bridge, it has been designed to be as small in scale and architecturally streamline as possible to ensure that minimal visual impacts occur to the bridge and viaduct structures. The cycleway's linear design has been purposefully designed through iteration in the proposal to achieve this minimised impact.

Listings(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway	Paving finishes and line marking between the existing cycleway and new cycleway.			The proposed works would have a localised impact at the area of the cycleway approach near the staircase at Burton Street, but would not compromise the visual prominence of the bridge itself. The existing steps would remain functional and would not be altered.
North Sydney LEP: I0538: Bradfield Park (including northern section)	Creation of a landing point for the ramp in Bradfield Park	**Moderate adverse**	**Moderate adverse**	The proposed works potential impacts between the concept design and detailed design remain consistent. The construction of a landing in Bradfield Park would see a direct moderate adverse visual impact to the park layout and a disturbance to the landscape features of Bradfield Park North. This change would see the existing wayfinding altered and the visual appeal of the park as an open public space partially obstructed.
SHR: 011941: Milsons Point Railway Station Group **TAHE Section 170 Register:** 4801026: Milsons Point Railway Station **North Sydney LEP:** I0539: Milsons Point Railway Station Group	Partial obstruction of the Burton Street entrance to Milsons Point Station and the Burton Street archway.	**Minor adverse to negligible**	**Minor adverse to negligible**	The proposed works potential impacts between the concept design and detailed design remain consistent. The new structure would partially obstruct the Burton Street archway and entrance to Milsons Point Station. This would result in **minor adverse to negligible** direct visual impact to these key heritage features in the precinct. Renders from Alfred Street South facing the viaducts show that the new ramp structure and piers would not fully block viewpoints to these features but would see a minor adverse interruption from the public domain. The archway and the entrance to the Station would remain legible. The cartouche would remain visible as viewed from within the garden.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) 01194: Milsons Point Railway Station Group **TAHE Section 170 Register:** 4301067: Sydney Harbour Bridge, approaches and viaducts 4801026: Milsons Point Railway Station **North Sydney LEP:**	Introduction of a new structure into the setting of Bradfield Park, Milsons Point Station and the Bradfield Highway approaches of the bridge.	**Moderate to minor**	**Moderate adverse**	The proposed works potential impacts remains consistent with the upper threshold of impact assessed in the concept design compared to the detailed design. A **moderate adverse** visual impact would result from the construction of the elevated ramp. The proposed cycleway ramp, whilst it has been designed with a heritage focus in mind, it would still involve the construction of a new structure within Bradfield Park and the landscape around Milsons Point Station, and would alter the original visual understanding of the parapet and approaches as seen from the streetscape. The construction of the new structure would see temporary indirect impacts visual impacts to the wider heritage precinct in the form of construction works, temporary hoarding and plant movement. These works would also see temporary interruption to free-flowing movement and amenity in the public domain of the parks, the Burton Street archway and staircase, and the entrance to Milsons Point Station.

Listings(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
I0538: Bradfield Park (including northern section) I0539: Milsons Point Railway Station Group I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway				
North Sydney LEP: I0538: Bradfield Park (including northern section)	A change to the layout of Bradfield Park, including the removal of some landscaping elements, vegetation, and introduction of new pedestrian and cycle pathways.	**Minor adverse**	**Minor adverse**	The proposed works potential impacts between the concept design and detailed design remain consistent. **Minor adverse** visual impacts would result from this change, however it is noted that the layout of the park would remain largely similar to the existing, with small changes such as the removal of some landscaping elements, retaining walls or garden beds, and some vegetation. It is also noted that the new pathways would generally mirror the existing alignment of pedestrian footpaths along Alfred Street and Bradfield Park North. The detailed design has included the retention of significant trees within the park, as well as existing heritage interpretation elements such as sandstone strips outlining previous subdivisions and road alignments. The design also proposed to include more heritage interpretation opportunities in this area, including use of native plantings and use of paving finishes and potentially the reuse of the parapet cutting. These would all result in **positive** impacts to the overall setting of the heritage precinct.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) **North Sydney LEP:** I0538: Bradfield Park (including northern section)	Alfred Street South cycleway and pedestrian pathway adjustments. Bus stop adjustments along Alfred Street. On-street parking adjustments. Associated landscaping.	**Minor adverse to neutral**	**Minor adverse to neutral**	The proposed works potential impacts between the concept design and detailed design remain consistent. The proposed works would result in a **minor adverse** to neutral visual impact to nearby listed items. These works would see a change to the existing arrangement of Alfred Street South but would nor detrimentally impact the heritage values of any nearby listed items. It is noted majority of these works would occur outside of the curtilage of the listed items, however it may intersect with a listing boundary closer to the Bradfield Park side of the street. These works would result in a change to the streetscaping and amenities along Alfred Street South, which would see a **positive** impact to the efficiency, useability, and character of the street.

Listings(s) impacted	Design feature	Concept design impact grading	Detailed design impact grading	Discussion
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail)	New pedestrian crossings and roundabout adjustments on both Middlemiss Street and Lavender Street. Associated landscaping.	**Minor adverse to neutral**	**Minor adverse to neutral**	The proposed works potential impacts between the concept design and detailed design remain consistent. The proposed works at the roundabout intersection with Middlemiss, Lavender and Alfred Streets would result in a **minor adverse** to neutral visual impact to nearby listed items. These works would see a change to the existing arrangement of the roundabout, but would not detrimentally impact the heritage values of any nearby listed items. It is noted majority of these works would occur outside of the NHL and SHR curtilages but may intersect with a listing boundary closer to the Bradfield side of the intersection. These works would result in a change to the streetscaping and amenity at this intersection, which would see a **positive** impact to the efficiency, useability and character of the street. It is also noted that the palm tree in the middle of the roundabout is to be retained, maintaining the visual appeal and notability of this intersection.
NHL: 105888: Sydney Harbour Bridge **SHR:** 00781: Sydney Harbour Bridge, approaches and viaducts (road and rail) **TAHE Section 170 Register:** 4301067: Sydney Harbour Bridge, approaches and viaducts **North Sydney LEP:** I0538: Bradfield Park (including northern section) I0530: Sydney Harbour Bridge approach viaducts, arches and bays under Warringah Freeway	Ancillary sites during construction.	**Negligible to Neutral**	**Negligible to Neutral**	The proposed works potential impacts between the concept design and detailed design remain consistent. The use of sites such as the space adjacent to the Northern Bowling Green and Burton Street archway as ancillary sites during the construction phase of this proposal would result in **negligible to neutral** indirect physical and visual impacts. The impacts would be temporary in nature and are not expected to have any heritage impact.

Assessment against Sydney Harbour Bridge Conservation Management Plan

The detailed design of the proposal has been assessed against the Sydney Harbour Bridge Conservation Management Plan and has been found to be generally consistent with the policies outlined in the document, as detailed in section 6.1.3 of the REF.

Archaeological impact

Bradfield Park has high potential to contain substantially intact locally significant archaeological resources associated with Phase 2 (1861-1920s) and moderate potential to contain intact archaeological resources associated with Phase 1 (1788-1860). Proposed excavation works in Bradfield Park North have potential to intersect with Phase 2 building footings. Excavation impacts within areas of high archaeological potential would be relatively localised and associated with the following project works:

- Deep excavation for piers
- Excavation for landscaping
- Excavation for installation of signage
- Early works investigations (boreholes and NDD slot trenches).

Should intact archaeological remains survive within areas proposed for excavation, it is likely to have a minor or moderate impact, depending on the depth of excavation. However, previous work has demonstrated even shallow ground works have the potential to result in impact to archaeological resources.

The proposed columns for the cycle ramp pass through both the frontages and yards of former 1890s properties, which are likely to contain archaeological relics within backfilled wells and cesspits. The presence of artefact deposits associated with structural remains and wells/tanks containing artefactual material has been previously demonstrated through archaeological excavation in the vicinity of the proposal.

Overall, there is potential for the works to impact locally significant archaeological resources. It is assumed that these impacts can be partially mitigated through archaeological management and the implementation of heritage interpretation strategies where appropriate.

All excavation works within the Sydney Harbour Bridge curtilage area are subject to approval under Section 60 of the Heritage Act and the updated SoHI and ARD have been provided to the Heritage Council as part of the Section 60 application.

Areas outside the Sydney Harbour Bridge curtilage which have the potential to contain locally significant archaeological relics associated with residential occupation of the study area from the early 19th century (historical phases 1 and 2), would be subject to approval under Section 140 of the Heritage Act.

Detailed assessment of the archaeological impact of the proposal is provided in Appendix C.

5.1.5 Revised safeguards and management measures

Potential impacts to non-Aboriginal heritage would be managed through the safeguards and measures identified in section 6.1.4 of the REF. Several of the safeguards have been revised or updated in response to the updated SoHI and ARD, and are presented in Table 5-5. Where new text is introduced it is formatted underlined and where text has been removed it is formatted ~~strikethrough.~~

Table 5-5: Non-Aboriginal heritage safeguards and management measures

ID	Impact	Environmental safeguards	Timing	Reference
~~NAH1~~	~~Non-Aboriginal heritage~~	~~The proposal will update and/or provide further assessment of heritage impacts to Heritage NSW during the detailed design phase of the proposal, as required by the s60 approval by Heritage NSW. This may include:~~ • ~~Further heritage impact assessment on the detailed design for the proposal~~ • ~~A materials and finishes palette~~ • ~~Photographic Archival Recording of the site and surrounding areas.~~	~~Detailed design~~	~~Additional safeguard NAH1~~
NAH1	Non-Aboriginal heritage	Further refinement of the design and the proposal delivery will be carried in consultation with the project Heritage Architect and in accordance with the Conditions of Approval from the Section 60 application under the *Heritage Act 1977.*	Detailed design, pre-construction and construction	Additional safeguard NAH1
NAH2	Non-Aboriginal heritage	Where there is any contradiction between the Environmental Safeguards and the Conditions of Approval from the Section 60 application under the *Heritage Act, 1977*, the latter will prevail over the Environmental Safeguards.	Detailed design, pre-construction and construction	Additional safeguard NAH2
~~NAH2~~ NAH3	Non-Aboriginal heritage	Design of the proposal will progress in accordance with the conservation policies and management measures outlined in the Sydney Harbour Bridge Conservation Management Plan prepared by GML (2021) and the Supplementary Detailed Heritage Framework (draft) prepared by TZG (2021).	Detailed design	Additional safeguard NAH3
NAH4	Non-Aboriginal heritage	A Heritage Interpretation Strategy (HIS) and Plan will be prepared and considered during progression of detailed design, in accordance with the recommendations in the Sydney Harbour Bridge Conservation Management Plan (GML, 2021) and the Supplementary Detailed Heritage Framework (draft) (TZG,2021) as well as any other future heritage interpretation documentation prepared for the proposal. Appropriate heritage interpretation must be incorporated into the design for the proposal in accordance with the NSW Heritage Office's NSW Heritage Manual (1996), Interpreting Heritage Places and Items Guidelines (2005b), and Heritage Interpretation Policy (2005a). The Sydney Harbour Bridge Interpretation Plan 2007 must also be referred to during the preparation of the HIS. Opportunities for interpretative displays in appropriate locations will be explored as part of the HIS. Connecting with Country opportunities will be developed and documented within the HIS in consultation with the Design Integrity Panel (DIP), Aboriginal knowledge holders and Heritage NSW	Detailed design	Additional safeguard NAH4
~~NAH5~~	~~Non-Aboriginal heritage~~	~~Further consultation with key heritage stakeholders, including (but not limited to) Transport for NSW Heritage, Heritage NSW, and~~	~~Detailed design~~	~~Additional safeguard NAH5~~

ID	Impact	Environmental safeguards	Timing	Reference
		~~the Department of Climate Change, Energy, the Environment and Water (DCCEEW) must be undertaken in detailed design.~~		
NAH5	Non-Aboriginal heritage	A vibration management plan will be prepared to guide vibration levels and provide advice on vibration monitoring during works.	Pre-construction	Additional safeguard NAH5
NAH6	Non-Aboriginal heritage	An appropriately qualified and experienced heritage architect will provide ongoing heritage advice throughout all aspects of the proposal in detailed design, pre-construction and construction phases, including regarding compliance with the Section 60 Conditions of approval. The heritage architect will review and approve a materials and finishes palette for the proposal for approval by the Heritage Council NSW. No changes to the overall design intent, overall design footprint or constructability of the proposal will occur during construction of the proposal without consultation with the heritage architect.	Detailed design / Pre construction. Construction	Additional safeguard NAH6
~~NAH7~~	~~Non-Aboriginal heritage~~	~~A materials and finishes palette for the bike ramp and landing in Bradfield Park will be further developed in detailed design, incorporating specialist heritage input and DIP advice.~~	~~Detailed design~~	~~Additional safeguard NAH6~~
NAH7	Non-Aboriginal heritage	Photographic Archival Recording (PAR) of the proposal area and reporting will be carried out prior to commencement of construction. The PAR will be prepared in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998a), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006). The record will be prepared by a suitably qualified heritage consultant using archival-quality material, and will include recording of views and setting of the northern approaches of Sydney Harbour Bridge. Records will be provided to Heritage NSW, North Sydney Council and State Library of NSW. A copy of the record will be provided to the owner of the asset.	Pre-construction	Additional safeguard NAH7
NAH8	Non-Aboriginal heritage	The proposal will not proceed with construction until all requirements under the *EPBC Act, 1999* have been met, in consultation with the Department of Climate Change, Energy, Environment and Water (DCCEEW).	Construction	Additional safeguard NAH8
~~NAH11~~ NAH9	Unexpected non-Aboriginal heritage finds	The Transport for NSW Unexpected Heritage Finds Procedure (2021) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Construction	Section 4.9 of QA G36 Environment Protection

ID	Impact	Environmental safeguards	Timing	Reference
~~NAH8~~	~~Non-Aboriginal heritage~~	~~The heritage interpretation and Connecting with Country opportunities will be developed and documented within the HIS in consultation with the Design Integrity Panel (DIP), Aboriginal knowledge holders and Heritage NSW.~~	~~Detailed design~~	~~Additional safeguard NAH7~~
NAH10	Non-Aboriginal heritage	~~An Archaeological Research Design will be prepared for the proposal by a suitably qualified Excavation Director prior to ground disturbance activities. The Archaeological Research Design will include a management plan for potential archaeological remains, this will include an assessment as to which works will be managed under the relevant Sydney Harbour Bridge Conservation Management Plan exemptions from Heritage Act approval.~~ The management of potential archaeological impacts and excavation methodology will be in accordance with the Archaeological Research Design prepared by Artefact Heritage, March 2023.	~~Detailed design / Pre-construction~~ Construction	Additional safeguard NAH10
NAH11	Non-Aboriginal heritage	A Construction Environmental Management Plan (CEMP) must be prepared for the proposal prior to construction works commencing. This plan The CEMP must outline all relevant environmental and heritage constraints, mitigations and control measures to ensure unapproved impacts to heritage items are avoided.	Construction	Additional safeguard NAH11
NAH12	Non-Aboriginal heritage	The Design Integrity Panel,~~,~~ incorporating heritage, design and Connecting with Country expertise, will have continued involvement ~~in the design process and~~ throughout the construction of proposal. Heritage NSW will be invited to attend meetings as observers.	~~Detailed design and~~ Construction	Additional safeguard NAH12
NAH13	Non-Aboriginal heritage	Site rehabilitation measures related to construction sites will be incorporated within an Urban Design and Landscape Plan or similar documents. The objective of the rehabilitation will be to minimise long-term impacts on the visual amenity of the items by recreating a sympathetic environment. The landscape design will be finalised in consultation with the project Heritage Architect and Connecting with Country consultant and would document new plantings, retained plantings and overall landscaping within the proposal area.	~~Pre-construction /~~ Construction	Additional safeguard NAH13
NAH14	Non-Aboriginal heritage	A heritage induction briefing will be prepared for the proposal and delivered to all staff working on the proposal. The briefing will be prepared by a qualified heritage specialist, and delivered by the proposal heritage specialist when feasible. It will contain key information about heritage significance, areas to avoid any key do's and dont's within heritage areas.	Construction	Additional safeguard NAH14
NAH15	Non-Aboriginal heritage	Operating plant (swinging, reversing, moving etc.) will adhere to standard setbacks and	Construction	Additional safeguard NAH15

ID	Impact	Environmental safeguards	Timing	Reference
		clearances from heritage structures and items which are not identified to be impacted.		
NAH16	Non-Aboriginal heritage	Temporary hoarding and signage will be placed around heritage buildings and structures to be avoided during works and ~~will include~~ should consider interpretative signage or artwork on the hoarding to reduce the visual impacts during construction.	Construction	Additional safeguard NAH16
NAH17	Non-Aboriginal heritage	Vibration monitoring will be carried out throughout construction to ensure no indirect impacts occur to heritage items and the public domain. This will be guided by Construction Noise and Vibration Management Plan. Vibration monitors will be applied to significant heritage fabric (beeswax), and regular visual monitoring of lesser significant elements will be undertaken in conjunction with the monitors.	Construction	Additional safeguard NAH17
NAH18	Non-Aboriginal heritage	Protection of significant heritage fabric will be put in place to ensure that no inadvertent damage occurs to fabric, including protection from concrete splatter.	Construction	Additional safeguard NAH18
NAH19	Non-Aboriginal heritage	Repair of the Sydney Harbour Bridge parapet and bridge deck will be undertaken after completion of the parapet removal. Surfaces and fabric should be made good to match existing. Surrounding fabric will be protected during repair works to ensure no inadvertent damage occurs to fabric, including concrete splatter.	Construction	Additional safeguard NAH19
NAH20	Non-Aboriginal heritage	The removed section of parapet from the Sydney Harbour Bridge will be carefully stored on site or in a facility off-site until such time when its installation within the garden as part of the interpretation of the site.	Construction	Additional safeguard NAH20
NAH21	Non-Aboriginal heritage	An excavation director nominated for the construction phase of the project will be present on site supervising all excavation activities in the accordance with the ARD and Section 60 Conditions of approval.	Construction	Additional safeguard NAH21

5.2 Landscape Character and Visual Impact

5.2.1 Methodology

A Landscape Character and Visual Assessment (LCVIA) of the proposal preliminary design was previously prepared in November 2022 as a part of the REF submission (refer to Appendix C of the REF). Following a review of submissions received during the public display period of the REF, a detailed design of the proposal has been released for further assessment. An Addendum LCVIA (refer to Appendix D) has been prepared based on the detailed design to identify any changes to the impacts identified in the REF.

The methodology for the assessment of landscape and visual impacts is detailed in the section 6.2 – Landscape character and visual impact – of the REF. The method includes the following steps, which have been used for this assessment:

- Identify the sensitivity of the receptor (e.g. landscape character area or viewpoint)
- Describe the magnitude of change
- Assign an impact level.

The assessment area for the Addendum LCVIA remains consistent with the environment described in section 6.2 of the REF.

The visual impact assessment reviewed the seven viewpoints assessed in the REF as well as two additional viewpoints added in response to the submission revoiced from North Sydney Council.

5.2.2 Summary of additional study and consultation

The REF included an assessment of a range of representative views in the vicinity of the proposal. The following viewing locations have been reassessed as the proposed detailed design would be seen in these views:

- Viewpoint 1: View north along Alfred Street South
- Viewpoint 2: View south along Alfred Street South
- Viewpoint 3: View from Bradfield Park north
- Viewpoint 4: View east from Alfred Street South to the Milsons Point Station entry
- Viewpoint 5: View south from Milsons Point Station western entry
- Viewpoint 6: View southwest from Milsons Point Station platform
- Viewpoint 7: View northeast along Alfred Street South.

The following viewpoints have also been added, in response to the submission received from North Sydney Council in relation to the LCVIA prepared for the REF. These additional views are:

- Viewpoint 8: View east to the Burton Street tunnel archway
- Viewpoint 9: View northeast from Burton Street to Milsons Point Station forecourt and entrance.

The location of these viewpoints is shown in Figure 5-2, and updated visuals and the corresponding modelled images are identified in Table 5-6. Though these modelled images show the proposal with bronze balustrading, the material for the balustrade would be selected during further design refinement. A viewpoint description and corresponding visual sensitivity for additional viewpoints are identified in section 5.2.3 of this submissions report.

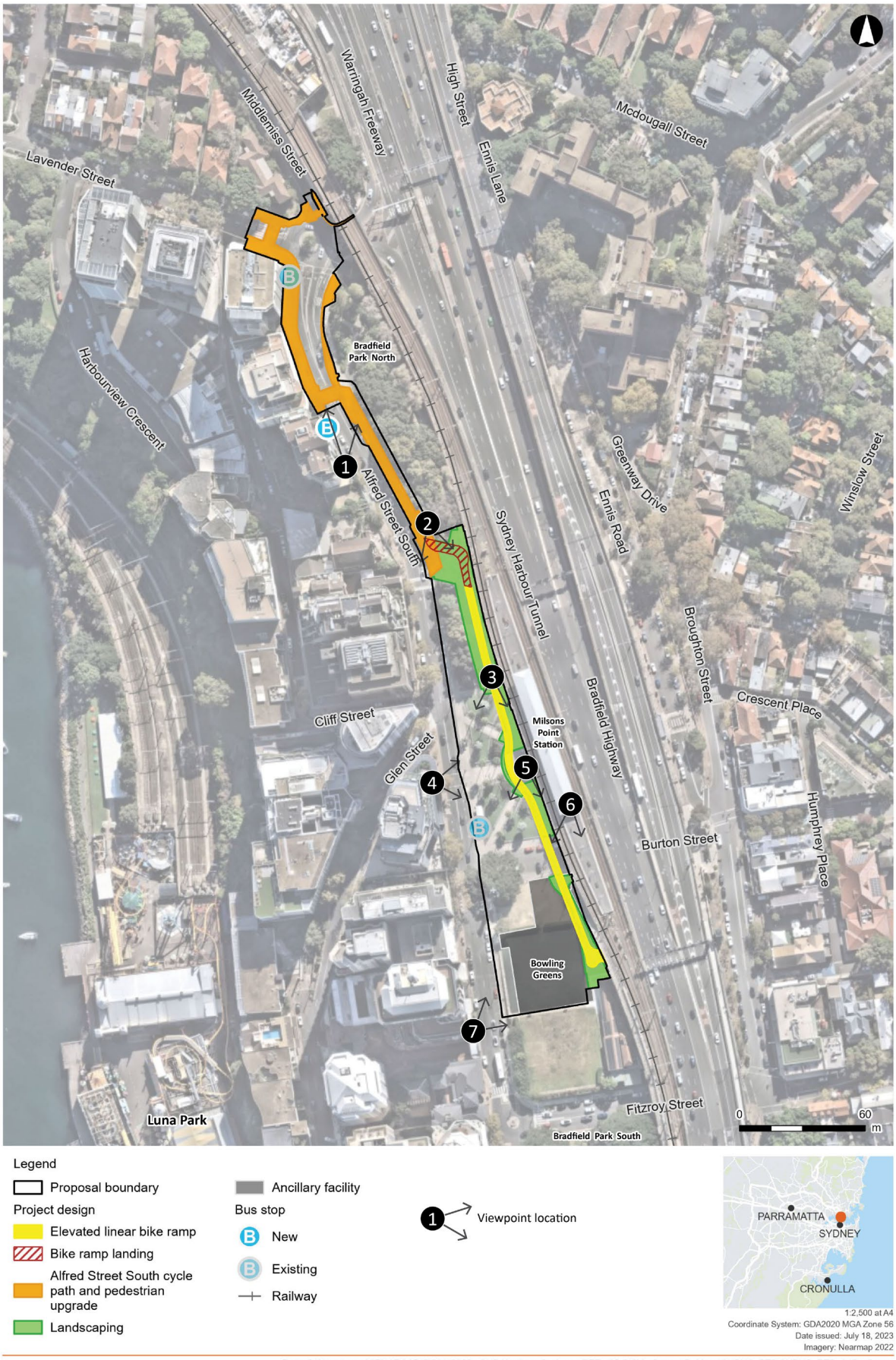


Figure 5-2: Viewpoint location plan

5.2.3 Description of existing environment

The description of the existing environment is consistent with the REF.

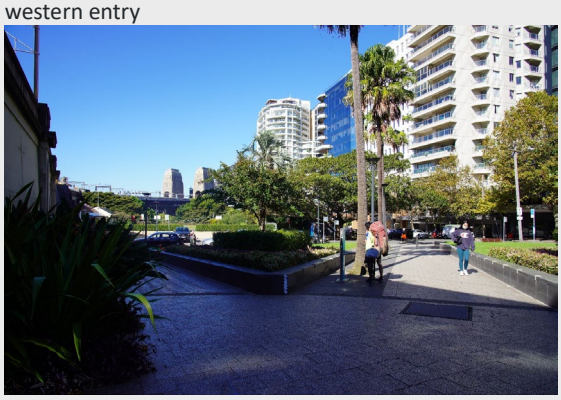
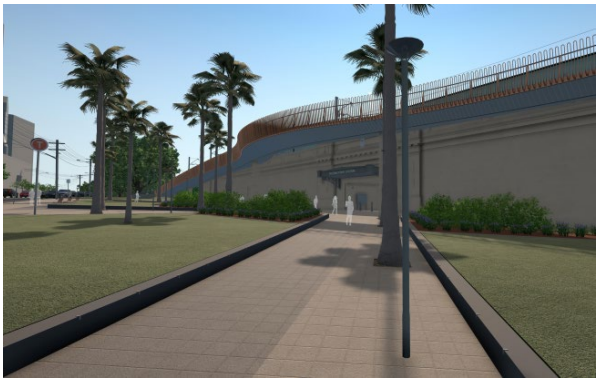
The following landscape character areas were identified for the study area in the REF, as shown in Figure 5-3. These remain relevant and have been used for this updated assessment:

- Sydney Harbour Bridge and Milsons Point Station
- Bradfield Park
- Recreational and entertainment areas
- Kirribilli village
- Kirribilli residential area
- Milsons Point mixed use core
- Lavender Bay residential area.

Figure 5-3: Landscape character areas

Table 5-6: Visual sensitivity from selected viewpoints

Viewpoint location	Modelled image
Viewpoint 1 - View north along Alfred Street South 	*Lighting poles indicative only and to be subject to separate approval* 
Viewpoint 2 - View south along Alfred Street South 	
Viewpoint 3 - View south from Bradfield Park north 	
Viewpoint 4 - View east from Alfred Street South to the Milsons Point Station entry 	

Viewpoint location	Modelled image
Viewpoint 5 - View south from Milsons Point Station western entry 	
Viewpoint 6 - View southwest from Milsons Point Station platform 	
Viewpoint 7 - View northeast along Alfred Street South 	
Viewpoint 8 – View northeast from Burton Street to Milsons Point Station forecourt and entrance 	

Viewpoint location	Modelled image
Viewpoint 9 – View east to the Burton Street tunnel archway 	
'Postcard' views of the Sydney Harbour Bridge  	The proposal would be located on the western side of the Sydney Harbour Bridge approach walls and set back from Sydney Harbour. This area does not typically feature in 'postcard' views of the Sydney Harbour Bridge. As such, an artist impression for the 'postcard' views of the Sydney Harbour Bridge have not been included.

Table 5-7: Visual sensitivity from Viewpoints 8 and 9

Viewpoint location	Visual sensitivity
Viewpoint 8 – View northeast from Burton Street to Milsons Point Station forecourt and entrance 	Regional visual sensitivity This view shows the view along the axial route to the Alfred Street South entrance to Milsons Point Station, including the original awning, light fittings either side and decorative '1932' cartouche. This entrance has aesthetic significance, the station has a state heritage listing and is an essential component of the northern approach to the Sydney Harbour Bridge. Elevated above the station entry, and bridge walls, trains can be seen entering and departing the station, passing across the view. Bradfield Park, seen in the foreground of this view is a busy plaza, activated by pedestrians and bike riders. This area of the park is a local heritage item (North Sydney LEP) and includes axial pathways, lawn areas and ornamental plantings of *Livistona australis* (Cabbage Tree Palm) and *Butia capitata* (Jelly Palm).

Viewpoint location	Visual sensitivity
	While this view is outside the Sydney Harbour Bridge heritage curtilage and Sydney Harbour Bridge setting boundary, it is located within a local heritage listed park and is a direct, heavily experienced view to National and State heritage listed items, including Milsons Point Station and the northern Sydney Harbour Bridge approaches.
Viewpoint 9 – View east to the Burton Street tunnel archway 	Regional visual sensitivity This view shows the Burton Street tunnel archway through the Sydney Harbour Bridge. It includes the decorative concrete walls, stairs and the high arch of the Burton Street underbridge linking Milsons Point with Kirribilli. Trains are also visible above the bridge, passing across the view intermittently. The Sydney Harbour Bridge approaches and stairs, and the bowling greens at Bradfield Park can be seen to the south (right of view). This view is from a location within the local heritage listed area of Bradfield Park, outside the Sydney Harbour Bridge heritage curtilage and Sydney Harbour Bridge setting boundary. This view is, however, a view to World Heritage and National listed items, including the northern Sydney Harbour Bridge approaches.

Views at night

The REF highlights the distinct lighting in the areas within the vicinity of the Milsons Point Station and Bradfield Park. The assessment of these views remain relevant as the location of the ramp is unchanged.

Views from private dwellings

The REF assessed the potential impact on views from residences in the multi-storey apartment buildings to the west of Alfred Street South by considering similar views from level 4 and level 11 of the properties at 52 Alfred Street, directly opposite the proposal site. As the location of the ramp is unchanged, the assessment of these views is still relevant. A description of the viewpoints from representative private dwellings is provided in Table 5-8.

Table 5-8: Representative views from private dwellings

View location	View description
Level 4, 52 Alfred Street	View across Bradfield Park Central to the approach walls of the Sydney Harbour Bridge, including the arched Burton Street underpass, the bridge stairs, and the Milsons Point Station entry (from some locations), station entrance plaza and parkland areas of Bradfield Park and bowling greens.
Level 11, 52 Alfred Street	Downward view across Bradfield Park to the approach walls of the Sydney Harbour Bridge, including the arched Burton Street underpass, the bridge stairs, the Milsons Point Station entry, bowling greens.

5.2.4 Potential impacts

Construction

Landscape character impacts

A summary of the landscape character impacts for the proposed detailed design, as well as a comparison to the impacts identified for the preliminary design, is provided in Table 5-9. While there is further detail around the assumptions made in the assessment, and some minor changes, overall, the findings of the Landscape Character Assessment remain unchanged from the REF.

Table 5-9: Landscape character impacts during construction

Landscape sensitivity	Rationale for revised assessment	Magnitude of change	REF Landscape character impact	Revised landscape character impact
Sydney Harbour Bridge and Milsons Point Station				
National landscape sensitivity	• The general location and extent of the construction site would not change. • Removal of part of the Sydney Harbour Bridge parapet would be shifted slightly north and reduced in length. • The construction site would continue to be set back from Milsons Point Station and the northern approach spans of Sydney Harbour Bridge, and the station and bridge would continue to remain open.	Moderate Overall, the project would affect a relatively small area of direct change and a moderate magnitude of change.	Moderate-high adverse	Moderate-high adverse
Bradfield Park				
Regional landscape sensitivity	• The general location and extent of the construction site would be unchanged. • The construction site would continue to be set back from Milsons Point Station and the northern approach spans of Sydney Harbour Bridge, and a large part of Bradfield Park would remain open to public use, including the western entrance plaza. • The main landscape features of the central and northern areas of Bradfield Park, including the central lawns, canopy trees and majority of the feature trees, would continue to be retained. • No additional tree removal is proposed.	Moderate Overall, the project would affect a relatively small area of Bradfield Park, and the main landscape features of the park would remain so there would be a moderate magnitude of change to the character of this landscape.	Moderate adverse	Moderate adverse
Milsons Point mixed use core				
Local landscape sensitivity	• The general location and extent of the construction site would be the same.	Neutral change Overall, the construction activity within Alfred Street South would	Negligible	Negligible

Landscape sensitivity	Rationale for revised assessment	Magnitude of change	REF Landscape character impact	Revised landscape character impact
	• The existing bus stop bay at Alfred Street South would now be retained, reducing the extent of construction activity slightly.	continue to influence the character of the adjacent areas of the Milsons Point mixed use core area, resulting in a minor (and temporary) change the character, amenity and function of this landscape overall.		
Lavender Bay residential area				
Local landscape sensitivity	• The general location and extent of the construction site would be unchanged. • The existing Canary Island Date Palm would continue to be removed from the roundabout. • The construction activity on Lavender Street and at the Alfred Street South intersection roundabout would continue to result in some footpath closures and diversions around the construction site temporarily.	Neutral change Overall, the construction activity would have a small and contained impact on this character area as a whole, due to localised and small scale of the works.	Negligible	Negligible

Visual impacts

A summary of the construction visual impacts identified for the detailed design is provided in Table 5-10. This includes an assessment of the potential visual impacts from Viewpoints 8 and 9.

The detailed design includes further detail and refinements that provide some improvement to the visual impacts of the proposal. However, overall, the visual impacts during construction remain unchanged from the REF.

Table 5-10: Summary of construction visual impacts from the selected viewpoints

Viewpoint	Visual sensitivity	Impact level	Revised impact level	Visual impact
1: View north along Alfred Street South	Local	Low adverse	Low adverse	The prominence and extent of construction activity, movement of construction vehicles, machinery and plant would remain as previously assessed. The main construction activity, ramp works and construction compound, would continue to be located to the south and not seen from this view.
2: View south along Alfred Street South	Local	Moderate adverse	Moderate adverse	The prominence, general extent and close proximity of construction activity would be unchanged, and there would be some additional works associated with the placement of the wall section in Bradfield Park North. The proposal construction would continue to disrupt views to Bradfield Park, Milsons Point Station entrance and Sydney Harbour Bridge approach wall and northern pylons.
3: View south across Milsons Point Station entrance plaza	Regional	Moderate adverse	Moderate adverse	The general extent, prominence and close proximity of construction activity would remain as previously assessed.

Viewpoint	Visual sensitivity	Impact level	Revised impact level	Visual impact
4: View east from Alfred Street South to the Milsons Point Station entry	Regional	Moderate adverse	Moderate adverse	The general extent, prominence and proximity of construction activity would remain the same, including a mobile crane work zone that would be established beside the Burton Street underbridge. The construction activity would be temporary, substantially altering the character of this view and partly obstructing views to the Sydney Harbour Bridge approach walls, Milsons Point Station entry and the arch of the Burton Street underbridge in the short term.
5: View south from Milsons Point Station western entry	Regional	Moderate-high adverse	Moderate-high adverse	The general extent, prominence and proximity of construction activity would remain unchanged. Also, there would be no further tree removal seen in this view.
6: View southwest from Milsons Point Station platform	Regional	Low-moderate adverse	Low-moderate adverse	The general extent, prominence and proximity of construction activity would remain the same, with the upper section of the raised platform worksite, ramp deck and balustrade installation visible.
7: View northeast along Alfred Street	Local	Low-moderate adverse	Low-moderate adverse	The general extent, prominence and proximity of construction activity would remain the same, including the establishment of a laydown, storage area and sheds in the location of the bowling green and boules piste, and a temporary workzone for mobile crane. Also, there would be no further tree removal proposed.
8: View northeast from Burton Street to Milsons Point Station Forecourt and Entrance	Regional	n/a	Moderate-adverse	The central and northern parts of the ramp construction site would be seen in the middle ground of this view, in the eastern side of Bradfield Park, extending in front of Milsons Point Station and the walls of the Sydney Harbour Bridge. The lawn areas and ornamental plantings of *Lagerstroemia sp*. (Crepe myrtle), *Livistona australis* (Cabbage Tree Palm) and *Butia capitata* (Jelly Palm) would be retained. The construction of several columns would be visible, including one to the southern side of the station entrance (right of view) in the middle ground. This would include temporary construction sites surrounded by hoarding and fencing that may obstruct the view to the station entry, parts of the Sydney Harbour Bridge wall and Burton Street underpass at times during construction. Generally, the work would include elements raised above Bradfield Park, so that there would be a clear view of the cycleway deck installation. Overall, the construction work would partly obstruct this view of the Sydney Harbour Bridge approach walls, and Milsons Point Station entry. This work would contrast in character with the landscape features of Bradfield Park and would comprise much of the view, being located to the fore and middle ground and across this view, substantially altering the character of the view temporarily. This would result in a moderate magnitude of change and a moderate adverse visual impact during

Viewpoint	Visual sensitivity	Impact level	Revised impact level	Visual impact
				construction. This impact would be temporary and experienced in the short term.
9: View east to the Burton Street tunnel archway	Local	n/a	Moderate-adverse	The southern part of the ramp construction site would be seen in the middle ground of this view, extending across Burton Street, in front of the Burton Street archway and the Sydney Harbour Bridge walls. The north bowling green and boules piste would be closed and used as a laydown and storage area, and site sheds. The existing mature trees and majority of the hedges in Bradfield Park Central would be retained and fenced during construction. From this location, the construction of several columns would be visible, as would installation of the ramp deck and balustrades overhead. This work would obstruct views to the Sydney Harbour Bridge stairs, approach walls and the Burton Street arch. Burton Street would remain open, including the on-street parking and lanes through the underbridge, however, there would be a temporary workzone for mobile crane use in this area on occasions. Overall, this work would obstruct the view to the heritage features of this view and contrast with the character of this view. The works would extend across the view and would rise above the skyline. This would result in a moderate magnitude of change and a moderate adverse visual impact during construction. This impact would be temporary and experienced in the short term.
'Postcard' views of the Sydney Harbour Bridge	National	Negligible	Negligible	The alignment and form of the ramp would be largely unchanged. The refinements to the design would not be appreciated in the 'post card' views of the Sydney Harbour Bridge, which are visible from a greater distance or from the east, where the site is not visible.

Views at night

There are no changes proposed that would alter the extent and scale of construction and require additional lighting during construction. As such, there would continue to be negligible visual impacts at night, during construction. This level of impact remains unchanged from the REF.

Views from private dwellings

There are no changes proposed that would alter the extent and scale of construction. Due to the distance between these properties and the proposed construction works, there would not be any substantial changes to the assessment of visual impact, which would remain as low.

Operation

Landscape character impacts

A summary of the landscape character impacts for the proposed detailed design, as well as a comparison to the impacts identified for the preliminary design, is provided in Table 5-11. Overall, the findings of the Landscape Character Assessment remain unchanged from the REF.

Table 5-11: Landscape character impacts during operation

Landscape sensitivity	Rationale for revised assessment	Magnitude of change	REF Landscape character impact	Detailed design landscape character impact
Sydney Harbour Bridge and Milsons Point Station				
National landscape sensitivity	• There would continue to be a small physical change to the bridge structure, with the removal of a short, and slightly reduced, section of the bridge parapet wall. • The ramp would continue to be set back from and aligned parallel to the northern approach spans of Sydney Harbour Bridge, and curve away from the Milsons Point Station entry. • The ramp would continue to be out of view from the southern areas of Bradfield Park, limiting its influence on the character of the Sydney Harbour Bridge.	Moderate adverse While the project would introduce a new built structure to the Sydney Harbour Bridge, the generally linear alignment, with original and contemporary character, would respect the character of the Sydney Harbour Bridge features and Milsons Point Station.	Low adverse	Low adverse
Bradfield Park				
Regional landscape sensitivity	• There is no further tree removal or changes to the forecourt's pathways, and garden beds proposed. • Some improvement to the look of the columns, being slimmer, ellipse-shaped and tapered towards the top, with a ribbed concrete finish, no visible services and bronze trims at the base of the columns in the plaza forecourt. • Columns would continue to be spaced widely and the shape of the bridge would be angled to visually lighten the structure. • The handrails and balustrade would have a contemporary form and matt finish. • Integrated Aboriginal artwork, proving cultural expression in the landscape, provide interest and contribute to sense of place and local character.	Moderate While the project would introduce a new built structure to the central areas of Bradfield Park, the generally linear alignment, with original and contemporary character, would respect the character of the park and minimise adverse effects on the character.	Low-moderate adverse	Low-moderate adverse

Landscape sensitivity	Rationale for revised assessment	Magnitude of change	REF Landscape character impact	Detailed design landscape character impact
	• The removed section of Sydney Harbour Bridge parapet would be reintegrated into Bradfield Park, near the ramp landing. Providing an opportunity for heritage interpretation and placemaking. • Signage would be incorporated into the pavement to reduce the potential for visual clutter in the park. • Cycle path along Alfred Street South, in the vicinity of the park, would continue to be upgraded improving the amenity of the streetscape and park interface. • No further impacts on the main landscape features and recreation areas of the park.			
Milsons Point mixed use core				
Local landscape sensitivity	• The new cycle path along Alfred Street South, between Burton Street and Middlemiss Street, would continue to improve the amenity and function of the streetscape. • The existing bus stop bay at Alfred Street South would now be retained. • There would be an additional carpark retained and one less street tree added. • Streetscape improvements such as new paving and planting, would continue to enhance the character of this part of Alfred Street South.	Low improvement Overall, there would continue to be a low magnitude of change, and an overall improvement to the character of this landscape.	Low beneficial	Low beneficial
Lavender Bay residential area				
Local landscape sensitivity	• Streetscape improvements such as new paving and planting, would continue to enhance the character of a small part of Lavender Street. • There would be a shared path on the northern side of the roundabout instead of a separated walking and cycling facility.	Neutral change While the new pathways and streetscape improvements would slightly improve accessibility and amenity, the improvements would be localised and would not alter the wider character, amenity and/ or function of this landscape.	Negligible	Negligible

Visual impacts

A summary of the operational visual impacts identified for the detailed design is provided in Table 5-12. This includes an assessment of the potential visual impacts from Viewpoints 8 and 9.

Overall, the visual impacts during operation of the proposal remain unchanged from the REF.

Table 5-12: Summary of operational visual impacts from the selected viewpoints

Viewpoint	Visual sensitivity	Impact level	Detailed design impact level	Visual impact
1: View north along Alfred Street South	Local	Low beneficial	Low beneficial	• The upgraded streetscape would improve the amenity of this view, with a less vehicle dominated streetscape and improved streetscape planting.
2: View south along Alfred Street South	Local	Low-moderate adverse	Low-moderate adverse	• The curve of the ramp landing would continue to be prominent, with a slightly tighter curve. • The 8.4 metre section of removed parapet wall would be relocated to the north of the ramp landing, providing a new feature in this view, obstructing the view to a section of the Sydney Harbour Bridge northern approach wall. • Signage would be incorporated into the pavement to reduce the potential for visual clutter in the vicinity of the ramp landing and park interface. • The ramp would continue to obstruct views to Milsons Point Station entrance. • The northern pylons of the bridge and approach spans would also continue to be seen, in the background of view.
3: View south across Milsons Point Station entrance plaza	Regional	Moderate adverse	Moderate adverse	• The general location and visual appearance of the ramp would be similar; offset and extending in a long linear alignment parallel to the Sydney Harbour Bridge northern approach. • The ramp would continue to block views to the approach wall and Milsons Point Station entry, rising slightly more steeply, to be positioned above the parkland. • There would be narrower, tapered ellipse shaped columns, with a ribbed, off-form concrete finish that would be slightly less visually obtrusive. • The garden bed along the northern approach wall would be replaced with new areas of low planting. • The sandstone inlays would be relocated and visible in the landscape, through the design of pathway surfaces and planting beds, adding visual interest. • Cyclists on the ramp would continue to be visible moving along the ramp, increasing the activity seen in the view. • The footpath along Alfred Street South and the new cycle path would also continue to be seen in this view.
4: View east from Alfred Street South to the Milsons Point Station entry	Regional	Low-moderate adverse	Low-moderate adverse	• The location of the proposal would be the same, and slight increase in the steepness of the ramp would not be perceptible in this view. • The cycle ramp would continue to generally follow the gradient of the Sydney Harbour Bridge ramp, crossing this view, curving away from the station entrance, and descending to the north (left of view), parallel to the Sydney Harbour Bridge approach wall.

Viewpoint	Visual sensitivity	Impact level	Detailed design impact level	Visual impact
				• The ramp columns would be tapered ellipse shaped columns, slightly thinner in profile, with a ribbed, off-form concrete finish, slightly reducing their prominence in this view. • The main features of Bradfield Park would continue to be seen in the middle ground of this view, including the axial pathways, lawn areas and ornamental trees. • The ramp would continue to obstruct the view to the decorative '1932' cartouche above the station entrance and decorative bridge wall parapet from this location.
5: View south from Milsons Point Station western entry	Regional	Moderate adverse	Moderate adverse	• The location of the proposal would be the same, and slight increase in the steepness of the ramp would not be perceptible in this view. • There are no proposed changes to the axial pathways, lawn areas and ornamental trees. • The partial view to the Sydney Harbour Bridge pylons and arch would be maintained. • The improved design of the balustrade and piers would reduce the visual mass of the structure somewhat.
6: View southwest from Milsons Point Station platform	Regional	Low-moderate adverse	Low-moderate adverse	• The general location of the proposal would be unchanged. • The ramp balustrade would be visible and generally level with the top of the Sydney Harbour Bridge wall, being simplified as one uniform treatment along the length of the ramp and with a contemporary design and matt finish.
7: View northeast along Alfred Street	Local	Low-moderate adverse	Low-moderate adverse	• The bridge connection would be located slightly further north and have a slightly adjusted shape connection point. • The ramp would be slightly steeper to allow for the shortening of the ramp, but this would not be perceptible in this view. • There would be a consistent balustrade along the ramp and extending around the landing with bike riders' rest area at the cycleway entrance, simplifying this area in the view. • The balustrade design has been refined and would have a contemporary style. • The balustrade and ramp deck would continue to partially block views to the concrete detailing along top of the Sydney Harbour Bridge walls and the upper section of the existing stairs.
8: View northeast from Burton Street to Milsons Point Station Forecourt and Entrance	Regional	n/a	Moderate-adverse	The main features of Bradfield Park would continue to be seen in the middle ground of this view, including the axial pathways, lawn areas and ornamental trees of *Livistona australis* (Cabbage Tree Palm) and *Butia capitata* (Jelly Palm). There would be several columns visible, however, these would not obstruct the view directly along the axial path, and view to the station entry. The ramp would be generally parallel to the bridge, crossing this view, and curving away from the station entrance. The ramp would gently descend northwards (left of view), in a long linear alignment. From this location, the underside of the bridge deck would be seen, with the architectural balustrade along the ramp.

Viewpoint	Visual sensitivity	Impact level	Detailed design impact level	Visual impact
				The decorative '1932' cartouche above the station entry would be obstructed by the ramp structure from this location, and visible as the viewer moves further along the pathway and closer to the station entry. The ramp would also obstruct the view to the decorative top section of the approach walls. Bike riders would be visible travelling along the cycleway, elevated above the station entrance plaza. This movement would be viewed in the context of the existing trains elevated on the bridge, in the background of this view. Overall, the main features of this view would either be retained, or only slightly obstructed in this view. The ramp design would be visually lightweight, with further refinements to the column design reducing visual clutter. The location of the ramp near to the bridge approach wall would reduce its prominence and collocate the built elements in the view. As such, there would be a moderate magnitude of change and a **moderate adverse visual impact** during operation.
9: View east to the Burton Street tunnel archway	Local	n/a	Moderate-adverse	The ramp would be visible, raised above Bradfield Park and crossing Burton Street, including a three-metre-wide concrete deck supported by steel structure and slim concrete columns. From this angle, the underside and western elevation of the ramp would be visible and viewed in close proximity. The ramp would be aligned generally parallel and offset from the Sydney Harbour Bridge, providing some visual separation from the approach wall and Burton Street arch. The ramp would converge with Sydney Harbour Bridge, south of the stairs (right of view). From this location the bridge stairs would be unobstructed. The ramp would both complement the bridge providing a visual connection to the stone clad superstructure of the Sydney Harbour Bridge, as well as be differentiated from the heritage structure with its contemporary form. The ramp would incorporate design features that minimise the visual bulk and scale of the structure, including the asymmetrically shaped ramp deck, visually lightweight balustrade and the slender tapering oval columns with precast ribbed texture. Overall, the project would introduce a new contemporary built structure into this view. While the design would reduce the visual mass of the structure somewhat, the ramp would introduce some visual clutter into this view towards the bridge. Overall, there would be a moderate magnitude of change and a **moderate adverse visual impact** on this view during operation.
'Postcard' views of the Sydney Harbour Bridge	National	Negligible	Negligible	The alignment and form of the ramp would be largely unchanged. The refinements to the design would not be appreciated in the 'post card' views of the Sydney Harbour Bridge, which are visible from a greater distance or from the east, where the site is not visible.

Views at night

A key design refinement includes the integration of lighting into the underside of the handrail and into the soffit to illuminate the underside of the ramp deck. The ramp would continue to be adequately lit to provide for bike rider safety. There would continue to be a be negligible visual impacts at night, during operation, as the lighting would be designed to avoid light spill and be seen in the context of an existing brightly lit setting. This level of impact remains unchanged from the REF.

Views from private dwellings

An updated assessment of the operational visual impacts from two representative locations is provided in Table 5-13. Overall, there would not be any substantial changes to the assessment of visual impact, which would remain as low.

Table 5-13: Representative viewpoint assessment during operation

View location	REF Assessment	Detailed design, February 2023
Level 4, 52 Alfred Street	Low visual impact	Low visual impact
	• The cycle ramp would be in the same location and of a similar scale and form. There would be no appreciable change to the obstruction of the Sydney Harbour Bridge approach walls and bridge stairs, the Burton Street underpass arch and Milsons Point Station entry in views from this location. • The Sydney Harbour Bridge pylon towers, arch and harbour waters would remain visible. • The prominence of the ramp in these views would remain as assessed in the REF.	
Level 11, 52 Alfred Street	Low visual impact	Low visual impact
	• The cycle ramp would be in the same location and of a similar scale and form. There would be no appreciable change to the obstruction of the plaza, the Sydney Harbour Bridge approach walls, bridge stairs, the Burton Street underpass arch and Milsons Point Station entry in views from this location. • The proposal would not obstruct a view towards the Sydney Harbour Bridge pylon towers, arch or the harbour waters. • The prominence of the ramp in these views would remain as assessed in the REF.	

5.2.5 Revised safeguards and management measures

Several of the safeguards identified in section 6.2.4 of the REF have been revised or updated in response to the addendum LCVIA and are presented in Table 5-14. Where new text is introduced it is formatted <u>underlined</u> and where text has been removed it is formatted ~~strikethrough~~.

Table 5-14: Landscape character and visual safeguards and management measures

ID	Impact	Environmental safeguards	Timing	Reference
LV2	Landscape character and visual impact	The following design elements will be considered in detailed design: • Ensure the width of the ramp piers are slender to minimise their visual mass and scale • Use of visually light-weight materials and a neutral colour palette to reduce the visual prominence of the ramp • Contemporary materials and design to differentiate the structure from the heritage features and	Detailed design	Additional safeguard LV2

ID	Impact	Environmental safeguards	Timing	Reference
		minimise the impact on the landscape character of the bridge and its setting • Bridge alignment to minimise the obstruction to the visual features of the bridge including the Milsons Point Station entry, including the cartouche where possible, and Burton Street archway • Minimise the height of the ramp so that it does not rise substantially above the Sydney Harbour Bridge walls • Minimise the removal of trees and vegetation where possible • Where vegetation removal is necessary, avoid trees that contribute to the symmetry and integrity of the station entrance plaza design where possible • Ensure line markings and any signage incorporated into the ground surfaces of the project are sympathetic to the character of the station entrance plaza and heritage values of the setting • Minimise any visual clutter created by lighting, signage, CCTV and any other aboveground infrastructure within the visual setting of the Sydney Harbour Bridge • Relocate or provide new table tennis in another location in the local area to replace the removed table from within Bradfield Park. • Investigate opportunities to relocate the existing Canary Island Date Palm to an alternative location in consultation with North Sydney Council if appropriate.		

5.3 Traffic and transport

5.3.1 Methodology

The Traffic and Transport Impact Assessment previously prepared in November October 2022 for the REF, was based on the concept design of the proposal (refer to Appendix G of the REF). An addendum traffic impact assessment has been prepared to assess any potential impacts resulting from the revised design on traffic and transport. The addendum traffic impact assessment has been prepared in accordance with the Austroads Guideline to Traffic Management Part 2, Australian Standard/New Zealand Standards and relevant local environmental development plans and included the following:

- Description of the existing condition of traffic and parking surrounding the development site
- Intersection performance analysis using SIDRA (version 9)
- Assessing the impact of the proposal on the surrounding road network.

Traffic surveys and pedestrian surveys in the study area were undertaken over a period of seven days, from 25 November 2022 (Friday) to 1 December 2022 (Thursday) at the following locations:

- Roundabout at Alfred Street South / Lavender Street / Middlemiss Street / Entry and Exit ramps to the Warringah Freeway
- Intersection at Alfred Street South / Burton Street
- Signalised pedestrian crossing in Alfred Street South, immediately outside Milsons Point Station.

The intersection performance analysis used the following scenarios:

- Existing base year: this scenario provides an indication of the current road's capacity and intersections performance.
- Opening Year 2024 – No Development: This scenario provides an indication of the road's capacity and intersections performance with the expected growth within the study area, without the proposal
- Opening Year 2024 – With Development: this scenario provides an indication of the road's capacity and intersections performance with the expected growth within the study area and the implementation of the proposal
- 2034 – No Development: this scenario provides an indication of the road's capacity and intersections performance with the expected growth within the study area, after a 10 year growth period from 2024, without the proposal
- 2034 – With Development: this scenario provides an indication of the road's capacity and intersections performance with the expected growth within the study area, after a 10 year growth period, from 2024, and the implementation of the proposal.

In relation to modelled scenarios, as part of the "Opening Year 2024" and the "10 year growth period to 2034", the following bike riders crossing utilisation scenarios have been considered at the zebra crossing on Lavender Street, just west of the Alfred Street / Lavender Street roundabout:

- 100 per cent crossing utilisation
- 70 per cent crossing utilisation
- 40 per cent crossing utilisation.

The level of service criteria, as per the Highway Capacity Manual definition has been used to access the performance of each intersection and represents:

- Level of service A: low level of delay
- Level of service F: high level of delay.

A detailed presentation of the SIDRA layout and results for each scenario, is presented in Appendix C, D, E, F, G, H, I, J and K of the traffic impact assessment.

5.3.2 Summary of additional study and consultation

The Traffic and Transport Impact Assessment previously prepared in November October 2022 for the REF, was based on the concept design of the proposal (refer to Appendix G of the REF). The addendum traffic impact assessment has been prepared to assess potential impacts resulting from the revised design on traffic and transport and to identify environmental safeguards to avoid or minimise these impacts. A detailed assessment is presented in Appendix E.

5.3.3 Description of existing environment

Traffic volumes and conditions

An indication of existing traffic conditions on the road network in the vicinity of the proposal is provided by traffic surveys and pedestrian surveys, as detailed in Table 5-15 to Table 5-17. On day six of the survey period, 30 December 2020 (Wednesday), the location was observed to have the highest vehicle counts across the network during the AM and PM peak hours, which were 7:45am to 8:45am and 5:30pm to 6:30pm.

Table 5-15: Traffic volumes for the roundabout north of Alfred Street

Road	AM peak volume	PM peak volume
Exit ramp from Warringah Freeway	452	454
Middlemiss Street	117	57
Lavender Street	395	320
Alfred Street South	422	492

Table 5-16: Traffic volumes of the signalised intersection on Alfred Street South

Road	AM peak volume	PM peak volume
Alfred Street South from Cliff Street	732	607
Alfred Street South from Burton Street	359	292

Table 5-17: Traffic volumes for Alfred Street South and Burton Street intersection

Road	AM peak volume	PM peak volume
Alfred Street South north of Burton Street	636	420
Burton Street	77	63
Alfred Street South of Burton Street	306	241

Traffic modelling was carried out for the existing traffic conditions and identified that the eastbound approach of the Lavender Street roundabout is currently operating at a LOS of E. The eastern ramp approach to the Alfred Street South / Lavender Street Roundabout is currently operating at a LOS of A.

Pedestrian connectivity

Table 5-18 provides pedestrian crossing movement volumes within the study area.

Table 5-18: Pedestrian crossing movement volumes

Road	AM peak volume	PM peak volume
Warringah Freeway Ramp	30	97
Middlemiss Street at roundabout near Alfred Street South	30	29
Lavender Street pedestrian crossing	147	134
Alfred Street South at roundabout near Lavender Street	21	74
Alfred Street South between Cliff Street and Burton Street	437	376
Alfred Street South north of Burton Street	5	15
Burton Street near Alfred Street South	146	194
Alfred Street South south of Burton Street	56	46

Cycle connectivity

A summary of the bike riders count is presented in Table 5-19.

Table 5-19: Cyclist movement volumes

Road	AM peak volume	PM peak volume
Warringah Freeway Ramp	0	0
Middlemiss Street at roundabout near Alfred Street South	93	33
Lavender Street pedestrian crossing	48	14
Alfred Street South at roundabout near Lavender Street	65	126
Alfred Street South between Cliff Street and Burton Street	182	99
Alfred Street South north of Burton Street	80	37
Burton Street near Alfred Street South	42	51
Alfred Street South south of Burton Street	3	2

Motorist parking facilities

Existing parking facilities within the vicinity of the proposal remains consistent with section 6.4.2 of the REF.

5.3.4 Potential impacts

Traffic performance

The traffic survey results and the traffic analysis for existing conditions both with and without the proposal are summarised in Table 5-20.

Table 5-20 Summary of LOS with and without proposal for existing and future year scenarios

	LOS				
Intersection	Existing	Opening Year (2024) No proposal	10 Years Scenario (2034) No proposal	Opening Year (2024) With proposal (40% bike rider crossing scenario)	10 Years Scenario (2034) With proposal (40% bike rider crossing scenario)
Lavender Street eastbound approach to the zebra crossing	E	F	F	F	F
Eastern ramp approach to the Alfred Street S / Lavender Street roundabout	A	A	A	A	A

The modelling revealed that:

- The Lavender Street eastbound approach to the roundabout is currently operating at a LOS E that would reduce to LOS F in 2024 and would remain LOS F, irrespective of the proposal
- The eastern approach to the Lavender Street zebra crossing would drop to a LOS D post proposal in 2034, when considering a conservative scenario with a 100 per cent bike rider crossing utilisation. However, this is expected considering the existing conditions
- The implementation of the proposed crossing approximately 70 metres south of the roundabout on Alfred Street South would not affect the operational characteristic of the roundabout which would maintain an overall LOS A
- Other locations within the modelled network would operate at an acceptable LOS C and above.

The SIDRA results also indicate that there is no potential queuing impact onto the Warringah Freeway with the introduction of the proposal, including at the midblock crossing. The traffic analysis demonstrates the proposal would improve active transport connection and accessibility to key cycling corridor and public transport hubs with no major impact on the road network operations.

Parking impacts

Further assessment has found that construction activities would have a slightly higher impact on local parking than proposed in the REF, though the loss of parking spaces would remain largely similar. Parking impacts during construction would be temporary and limited to approximate duration of 18 months, subject to planning approval, weather and technical requirements.

5.3.5 Revised safeguards and management measures

Potential impacts to traffic and transport would be managed through the safeguards and measures identified in section 6.4.4 of the REF. Several of the safeguards have been revised or updated in response to the new traffic impact assessment and are presented in Table 5-21. Where new text is introduced it is formatted <u>underlined</u> and where text has been removed it is formatted ~~strikethrough~~.

Table 5-21: Traffic and transport safeguards and management measures

ID	Impact	Environmental safeguards	Timing	Reference
TT2	Traffic and transport	Further traffic modelling and risk analysis will be carried out to confirm the impacts of the relocated, kerbside bus stop ~~raised pedestrian and bike rider priority crossing~~ on Alfred Street South and its impacts on the road network and safety risk associated with the proposal bus stop relocation prior to commencement of construction. This would include: • Obtaining traffic counts and queue data for intersections in the vicinity of the proposal and assessing the impacts of the proposal • Continued engagement with relevant stakeholders as part of the implementation of a traffic solution for the bus stop relocation.	Detailed design	Additional safeguard TT2
TT9	Public transport	If any ~~additional~~ bus stop relocations are required during the construction period, consultation and coordination with affected bus operators, Council, other stakeholders and appropriate Transport staff will be undertaken in conjunction with any temporary bus stop relocations, in addition to the provision of signage to assist in wayfinding.	Pre-construction, construction	Additional safeguard TT9
TT25	Pedestrian safety	~~Detailed design~~ Future design will consider the potential for safety issues resulting from reduced visibility for eastbound drivers to pedestrians waiting to cross on the northern side of Lavender Street when a bus is stopped at the Lavender Street opposite Cliff Street bus stop and this will be reviewed prior to construction and any potential road safety issues would be mitigated through design. Consultation with stakeholders with reference to relevant bus stop design guidelines should be undertaken to ensure the safety of the pedestrian crossing will be maintained.	Detailed design	Additional safeguard TT25
TT30	Bike rider access to Sydney Harbour Bridge	Access to the Sydney Harbour Bridge cycleway will be maintained as far as practical during construction. Where access must be restricted for workplace health and safety reasons bike riders will be notified prior to the closure and alternative access routes advised.	Construction	Additional safeguard TT30

5.4 Biodiversity

5.4.1 Methodology

As part of the biodiversity assessment, an updated Arboricultural Impact Assessment has been undertaken to assess the impact of the proposal on trees, and where appropriate, recommend the use of sensitive construction methods and tree protection measures to minimise adverse impacts.

The methodology for the Arboricultural Impact Assessment is detailed in Appendix F and includes the following steps:

- Site inspection (carried out in October 2021, May 2022 and May 2023)
- Visual tree assessment

- Establish the Tree Protection Zones, tree protection measures and structural root zones
- Assess the health and structural condition of each tree
- Assess the useful life expectancy of each tree
- Assess the landscape significance of each tree
- Assign a retention value for each tree.

The Arboricultural Impact Assessment has been prepared to consider the objectives of the following:

- *State Environmental Planning Policy Vegetation in Non-Rural Areas (2017)*
- *North Sydney Local Environmental Plan (2013)*
- *Section 16 to Part B of North Sydney Development Control Plan (2013)*
- *Transport for NSW Sydney Harbour Bridge Ramp Option - Consultation Report (2021)*
- *Sydney Harbour Bridge Cycleway Access Project – North Supplementary Detailed Heritage Framework (2021)*
- *Australian Standard 4970 Protection of Trees on Development Sites (2009)*
- *Australian Standard 4373 Pruning of Amenity Trees (2007)*
- *Australian Standard 2303 Tree Stock for Landscape Use (2015)*
- *Safe Work Australia Guide for Managing Risks of Tree Trimming and Removal Work (2016).*

The assessment area for the updated Arboricultural Impact Assessment remains consistent with the environment described in section 6.7 of the REF.

The updated Arboricultural Impact Assessment reviewed the 34 trees assessed in the REF as well as seven additional trees added in response to changes in the detailed design.

5.4.2 Summary of additional study and consultation

A Preliminary Arboricultural Assessment of the proposal concept design was previously prepared in May 2022 as a part of the REF submission (refer to Appendix I of the REF).

An updated Arboricultural Impact Assessment has been prepared based on the detailed design to:

- Identify any changes to the impacts identified in the REF
- Provide an assessment of an additional seven trees in the study area
- Recommend tree protection measures where appropriate.

5.4.3 Description of existing environment

The existing environment remains consistent with the REF.

The 41 trees assessed comprise a mix of Australian-native and exotic species and have each been allocated a retention value. The following conclusions were made:

- 15 trees were allocated a retention value of ‘priority for retention’
- 19 trees were allocated a retention value for ‘consider for retention’
- Six trees were allocated a retention value of ‘consider for removal’
- One tree was allocated a retention value of ‘priority for removal’.

5.4.4 Potential impacts

Construction

The proposed removal of Tree numbers 2, 3, 27, 28, 29, 30 and 31 remain consistent with section 6.7.3 of the REF.

In addition to Trees 1, 21 and 23 proposed for retention and pruning in the REF, the Arboricultural Impact Assessment has identified the following trees would require pruning to provide clearance to the elevated cycleway and for access during construction:

- One Chinese Elm (*Ulmus parvifolia*) (Tree 26)
- One Weeping Bottlebrush (*Callistemon viminalis*) (Tree 41).

The trees proposed to be removed and pruned are shown in Figure 5-4.

Figure 5-4: Trees proposed to be removed and pruned by the proposal

Operation

During operation, the proposal would not result in removal of any further trees. Impacts to biodiversity during operation of the proposal remains consistent with section 6.7.3 of the REF.

5.4.5 Conclusion of significance of impacts

The conclusion of significance of impacts remains consistent with section 6.7.4 of the REF.

The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the Biodiversity Conservation Act and therefore a *Species Impact Statement* or Biodiversity Development Assessment Report is not required.

The proposal is not likely to significantly impact threatened species, ecological communities or migratory species, within the meaning of the EPBC Act.

5.4.6 Revised safeguards and management measures

Potential impacts to biodiversity would be managed through the safeguards and measures identified in section 6.7.5 of the REF. One safeguard has been added in response to the updated Arboricultural Impact Assessment and is presented in Table 5-22. Where new text is introduced it is formatted underlined and where text has been removed it is formatted ~~strikethrough~~.

Table 5-22: Biodiversity safeguards and management measures

ID	Impact	Environmental safeguards	Timing	Reference
B3	Biodiversity	~~A 3D cloud point survey will be undertaken to accurately record the dimensions of the trees and ensure adequate clearance is provided to the trees to be retained. The potential movement of 'he trees' trunks and crown in high winds and minimum vertical clearances below their crowns will be considered during the design process.~~ Tree pruning and works within Tree Protection Zones will be carried out in accordance with the recommendations of the Preliminary Arboricultural Report (Tree iQ, 2023) and/or in consultation with a qualified arborist.	~~Detailed design / pre-construction~~ Construction	Arboricultural Impact Assessment (Tree iQ, June 2023)) (Appendix F)

6. Environmental management

The REF for the proposal identified the framework for environmental management, including safeguards and management measures that would be adopted to avoid or reduce environmental impacts (section 7 of the REF).

After consideration of the issues raised in the public submissions and changes to the proposal, the safeguard and management measures have been revised. Changes to the environmental safeguards include: maintaining access to the Sydney Harbour Bridge cycleway, archival recordings, vibration management, a landscape scheme, consultation with a heritage specialist, early investigation works, protection of significant fabric, repairs to parapet and bridge deck, and management of potential archaeological impacts and excavation.

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

6.1 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 CEMP will be prepared to describe safeguards and management measures identified. The CEMP will provide a framework for establishing how these measures will be implemented and who would be responsible for their implementation.

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

6.2 Summary of safeguards and management measures

The REF for the proposal title identified a range of environmental outcomes and safeguards that would be required to avoid or reduce the environmental impacts.

After consideration of the issues raised in the public submissions, the environmental safeguards for the proposal (refer to section 7 of the REF) have been revised. Should the proposal proceed, the environmental safeguards in Table 6-1 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 deleted measures, or parts of measures, have been struck out.

Table 6-1: Summary of environmental safeguards and management measures

No.	Impact	Environmental safeguards	Timing	Reference
GEN1	General - minimise environmental impacts during construction	A CEMP will be prepared and submitted for review and endorsement of the Transport for NSW Senior Manager Environment and Sustainability 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.	Pre-construction / detailed design	Additional safeguard GEN1
GEN2	General - notification	All businesses, residential properties and other key stakeholders (eg schools, Council) affected by the activity will be notified at least five days prior to commencement of the construction.	Pre-construction / Construction	Additional safeguard GEN2
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, in particular works adjacent to and impacting the Sydney Harbour Bridge • Adjoining sensitive receivers requiring particular noise management measures.	Construction	Additional safeguard GEN3
GEN4	General – minimise construction footprint	Further design development and construction planning will aim to minimise the area needed for construction. Construction works will be staged to minimise the area required for construction at any one time and minimise impacts to open space in Bradfield Park.	Pre-construction / Construction	Additional safeguard GEN4

No.	Impact	Environmental safeguards	Timing	Reference
~~**NAH1**~~	~~Non-Aboriginal heritage~~	~~The proposal will update and/or provide further assessment of heritage impacts to Heritage NSW during the detailed design phase of the proposal, as required by the s60 approval by Heritage NSW. This may include:~~ ~~• Further heritage impact assessment on the detailed design for the proposal~~ ~~• A materials and finishes palette~~ ~~• Photographic Archival Recording of the site and surrounding areas.~~	~~Detailed design~~	~~Additional safeguard NAH1~~
NAH1	Non-Aboriginal heritage	Further refinement of the design and the proposal delivery will be carried in consultation with the project Heritage Architect and in accordance with the Conditions of Approval from the Section 60 application under the *Heritage Act 1977.*	Detailed design, pre-construction and construction	Additional safeguard NAH1
NAH2	Non-Aboriginal heritage	Where there is any contradiction between the Environmental Safeguards and the Conditions of Approval from the Section 60 application under the *Heritage Act, 1977*, the latter will prevail over the Environmental Safeguards.	Detailed design, pre-construction and construction	Additional safeguard NAH2
~~**NAH2**~~ **NAH3**	Non-Aboriginal heritage	Design of the proposal will progress in accordance with the conservation policies and management measures outlined in the Sydney Harbour Bridge Conservation Management Plan prepared by GML (2021) and the Supplementary Detailed Heritage Framework (draft) prepared by TZG (2021).	Detailed design	Additional safeguard NAH3
NAH4	Non-Aboriginal heritage	A Heritage Interpretation Strategy (HIS) and Plan will be prepared and considered during progression of detailed design, in accordance with the recommendations in the Sydney Harbour Bridge Conservation Management Plan (GML, 2021) and the Supplementary Detailed Heritage Framework (draft) (TZG,2021) as well as any other future heritage interpretation documentation prepared for the proposal. Appropriate heritage interpretation must be incorporated into the design for the proposal in accordance with the NSW Heritage Office's NSW Heritage Manual (1996), Interpreting Heritage Places and Items Guidelines (2005b), and Heritage Interpretation Policy (2005a). The Sydney Harbour Bridge Interpretation Plan 2007 must also be referred to during the preparation of the HIS. Opportunities for interpretative displays in appropriate locations will be explored as part of the HIS. Connecting with Country opportunities will be developed and documented within the HIS in consultation with the Design Integrity Panel (DIP), Aboriginal knowledge holders and Heritage NSW	Detailed design	Additional safeguard NAH4
~~**NAH5**~~	~~Non-Aboriginal heritage~~	~~Further consultation with key heritage stakeholders, including (but not limited to) Transport for NSW Heritage, Heritage NSW, and the Department of Climate Change, Energy, the Environment and Water (DCCEEW) must be undertaken in detailed design.~~	~~Detailed design~~	~~Additional safeguard NAH5~~
NAH5	Non-Aboriginal heritage	A vibration management plan will be prepared to guide vibration levels and provide advice on vibration monitoring during works.	Pre-construction	Additional safeguard NAH5
NAH6	Non-Aboriginal heritage	An appropriately qualified and experienced heritage architect will provide ongoing heritage advice throughout all aspects of the proposal in detailed design, pre-construction and	Detailed design / Pre construction. Construction	Additional safeguard NAH6

No.	Impact	Environmental safeguards	Timing	Reference
		construction phases, including regarding compliance with the Section 60 Conditions of approval. The heritage architect will review and approve a materials and finishes palette for the proposal for approval by the Heritage Council NSW. No changes to the overall design intent, overall design footprint or constructability of the proposal will occur during construction of the proposal without consultation with the heritage architect.		
~~**NAH7**~~	~~Non-Aboriginal heritage~~	~~A materials and finishes palette for the bike ramp and landing in Bradfield Park will be further developed in detailed design, incorporating specialist heritage input and DIP advice.~~	~~Detailed design~~	~~Additional safeguard NAH6~~
NAH7	Non-Aboriginal heritage	Photographic Archival Recording (PAR) of the proposal area and reporting will be carried out prior to commencement of construction. The PAR will be prepared in accordance with the NSW Heritage Office's How to Prepare Archival Records of Heritage Items (1998a), and Photographic Recording of Heritage Items Using Film or Digital Capture (2006). The record will be prepared by a suitably qualified heritage consultant using archival-quality material, and will include recording of views and setting of the northern approaches of Sydney Harbour Bridge. Records will be provided to Heritage NSW, North Sydney Council and State Library of NSW. A copy of the record will be provided to the owner of the asset.	Pre-construction	Additional safeguard NAH7
NAH8	Non-Aboriginal heritage	The proposal will not proceed with construction until all requirements under the *EPBC Act, 1999* have been met, in consultation with the Department of Climate Change, Energy, Environment and Water (DCCEEW).	Construction	Additional safeguard NAH8
~~**NAH11**~~ **NAH9**	Unexpected non-Aboriginal heritage finds	The Transport for NSW Unexpected Heritage Finds Procedure (2021) will be followed in the event that any unexpected heritage items, archaeological remains or potential relics of non-Aboriginal origin are encountered. Work will only re-commence once the requirements of that Procedure have been satisfied.	Construction	Section 4.9 of QA G36 Environment Protection
~~**NAH8**~~	~~Non-Aboriginal heritage~~	~~The heritage interpretation and Connecting with Country opportunities will be developed and documented within the HIS in consultation with the Design Integrity Panel (DIP), Aboriginal knowledge holders and Heritage NSW.~~	~~Detailed design~~	~~Additional safeguard NAH7~~
NAH10	Non-Aboriginal heritage	~~An Archaeological Research Design will be prepared for the proposal by a suitably qualified Excavation Director prior to ground disturbance activities. The Archaeological Research Design will include a management plan for potential archaeological remains, this will include an assessment as to which works will be managed under the relevant Sydney Harbour Bridge Conservation Management Plan exemptions from Heritage Act approval.~~ The management of potential archaeological impacts and excavation methodology will be in accordance with the Archaeological Research Design prepared by Artefact Heritage, March 2023.	~~Detailed design / Pre-construction~~ Construction	Additional safeguard NAH10
NAH11	Non-Aboriginal heritage	A Construction Environmental Management Plan (CEMP) must be prepared for the proposal prior to construction works commencing. The CEMP must outline all relevant environmental	Construction	Additional safeguard NAH11

No.	Impact	Environmental safeguards	Timing	Reference
		and heritage constraints, mitigations and control measures to ensure unapproved impacts to heritage items are avoided.		
NAH12	Non-Aboriginal heritage	The Design Integrity Panel,~~,~~ incorporating heritage, design and Connecting with Country expertise, will have continued involvement ~~in the design process and~~ throughout the construction of proposal. Heritage NSW will be invited to attend meetings as observers.	~~Detailed design and~~ Construction	Additional safeguard NAH12
NAH13	Non-Aboriginal heritage	Site rehabilitation measures related to construction sites will be incorporated within an Urban Design and Landscape Plan or similar documents. The objective of the rehabilitation will be to minimise long-term impacts on the visual amenity of the items by recreating a sympathetic environment. The landscape design will be finalised in consultation with the project Heritage Architect and Connecting with Country consultant and would document new plantings, retained plantings and overall landscaping within the proposal area.	~~Pre-construction /~~ Construction	Additional safeguard NAH13
NAH14	Non-Aboriginal heritage	A heritage induction briefing will be prepared for the proposal and delivered to all staff working on the proposal. The briefing will be prepared by a qualified heritage specialist, and delivered by the proposal heritage specialist when feasible. It will contain key information about heritage significance, areas to avoid any key do's and dont's within heritage areas.	Construction	Additional safeguard NAH14
NAH15	Non-Aboriginal heritage	Operating plant (swinging, reversing, moving etc.) will adhere to standard setbacks and clearances from heritage structures and items which are not identified to be impacted.	Construction	Additional safeguard NAH15
NAH16	Non-Aboriginal heritage	Temporary hoarding and signage will be placed around heritage buildings and structures to be avoided during works and ~~will include~~ should consider interpretative signage or artwork on the hoarding to reduce the visual impacts during construction.	Construction	Additional safeguard NAH16
NAH17	Non-Aboriginal heritage	Vibration monitoring will be carried out throughout construction to ensure no indirect impacts occur to heritage items and the public domain. This will be guided by Construction Noise and Vibration Management Plan. Vibration monitors will be applied to significant heritage fabric (beeswax), and regular visual monitoring of lesser significant elements will be undertaken in conjunction with the monitors.	Construction	Additional safeguard NAH17
NAH18	Non-Aboriginal heritage	Protection of significant heritage fabric will be put in place to ensure that no inadvertent damage occurs to fabric, including protection from concrete splatter.	Construction	Additional safeguard NAH18
NAH19	Non-Aboriginal heritage	Repair of the Sydney Harbour Bridge parapet and bridge deck will be undertaken after completion of the parapet removal. Surfaces and fabric should be made good to match existing. Surrounding fabric will be protected during repair works to ensure no inadvertent damage occurs to fabric, including concrete splatter.	Construction	Additional safeguard NAH19
NAH20	Non-Aboriginal heritage	The removed section of parapet from the Sydney Harbour Bridge will be carefully stored on site or in a facility off-site until such time when its installation within the garden as part of the interpretation of the site.	Construction	Additional safeguard NAH20
NAH21	Non-Aboriginal heritage	An excavation director nominated for the construction phase of the project will be present on site supervising all excavation activities in the accordance with the ARD and Section 60 Conditions of approval.	Construction	Additional safeguard NAH21

No.	Impact	Environmental safeguards	Timing	Reference
LV1	Landscape character and visual impact	An Urban Design Plan will be prepared to support the final detailed proposal design and implemented as part of the CEMP. The Urban Design Plan will present an integrated urban design for the proposal, providing practical detail on the application of design principles and objectives identified in the environmental assessment. The Plan will include design treatments for: • Location and identification of existing vegetation and proposed landscaped areas, including species to be used • Built elements including retaining walls, bridges and noise walls • Pedestrian and bike rider elements including footpath location, paving types and pedestrian crossings • Fixtures such as seating, lighting, fencing and signs • Details of the staging of landscape works taking account of related environmental controls such as erosion and sedimentation controls and drainage • Tree replacement requirements as identified in the Tree Hollow Replacement Plan • Procedures for monitoring and maintaining landscaped or rehabilitated areas. The Urban Design Plan will be prepared in accordance with relevant guidelines, including: • Beyond the Pavement urban design policy, process and principles (Transport for NSW, 2020c) • Landscape Design Guideline (Roads and Maritime Services, 2018b) • Bridge Aesthetics (Transport for NSW, 2019a) • Noise Wall Design Guidelines (Transport for NSW, 2019b) • Shotcrete Design Guideline (Roads and Maritime Services, 2016a) All lighting will be managed in accordance with AS4282:2019 *Control of the obtrusive effects of lighting*.	Detailed design / pre-construction	Core standard safeguard LV1 Beyond the Pavement urban design policy, process and principles (Transport for NSW, 2020) Landscape Design Guideline (Roads and Maritime Services, 2018) Bridge Aesthetics (Transport for NSW, 2019a) Noise Wall Design Guidelines (Transport for NSW, 2019b) Shotcrete Design Guideline (Roads and Maritime Services, 2016a)
LV2	Landscape character and visual impact	The following design elements will be considered in detailed design: • Ensure the width of the ramp piers are slender to minimise their visual mass and scale • Use of visually light-weight materials and a neutral colour palette to reduce the visual prominence of the ramp • Contemporary materials and design to differentiate the structure from the heritage features and minimise the impact on the landscape character of the bridge and its setting • Bridge alignment to minimise the obstruction to the visual features of the bridge including the Milsons Point Station entry, including the cartouche where possible, and Burton Street archway	Detailed design	Additional safeguard LV2

No.	Impact	Environmental safeguards	Timing	Reference
		• Minimise the height of the ramp so that it does not rise substantially above the Sydney Harbour Bridge walls • Minimise the removal of trees and vegetation where possible • Where vegetation removal is necessary, avoid trees that contribute to the symmetry and integrity of the station entrance plaza design where possible • Ensure line markings and any signage incorporated into the ground surfaces of the project are sympathetic to the character of the station entrance plaza and heritage values of the setting • Minimise any visual clutter created by lighting, signage, CCTV and any other aboveground infrastructure within the visual setting of the Sydney Harbour Bridge • Relocate or provide new table tennis in another location in the local area to replace the removed table from within Bradfield Park. • Investigate opportunities to relocate the existing Canary Island Date Palm to an alternative location in consultation with North Sydney Council if appropriate.		
LV3	Wayfinding	Temporary access arrangements will be well signed and provide a visually legible route for bike riders and pedestrians.	Construction	Additional safeguard LV3
LV4	Public access	Construction staging will ensure public access to recreational areas of the station entrance plaza are maintained where possible and reduced access to these facilities is minimised.	Pre-Construction/ Construction	Additional safeguard LV4
LV5	Hoarding	High quality hoarding will be used and incorporate artwork prepared in consultation with stakeholders.	Construction	Additional safeguard LV5
LV6	Public spaces	Construction equipment and activity will be consolidated to maximise the area of useable public realm where possible.	Construction	Additional safeguard LV6
NV1	Noise and vibration	A Noise and Vibration Management Plan (NVMP) will be prepared and implemented as part of the CEMP. The NVMP will generally follow the approach in the Interim Construction Noise Guideline (ICNG) (DECC, 2009) and identify: • All potential substantial noise and vibration generating activities • Feasible and reasonable mitigation measures to be implemented to avoid and minimise noise impacts • A monitoring program to assess performance against relevant noise and vibration criteria • A communications plan with affected neighbours and sensitive receivers, including notification and complaint handling procedures • Contingency measures to be implemented in the event of non-compliance with noise and vibration criteria.	Detailed design / Pre-construction	Section 4.6 of QA G36 Environment Protection

No.	Impact	Environmental safeguards	Timing	**Reference**
NV2	Noise	Noise mitigation measures that will be adopted in the NVMP will include: • Selection of less noisy and less vibration emitting construction methods/plant and equipment, where feasible and reasonable • The noise levels of plants and equipment must have operating Sound Power or Sound Pressure Levels compliant with the criteria in Appendix H of the Construction Noise and Vibration Guideline (Transport for NSW, 2016) • Maximising the offset distance between noisy plant and adjacent sensitive receivers • Avoiding simultaneous operation of noisy plant, where feasible • Planning construction traffic flow, parking and loading/unloading areas to minimise reversing movements • Selecting site access points and delivery locations as far as possible from sensitive receivers.	Construction	Additional safeguard NV2
NV3	Vibration	Vibration mitigation measures that will be adopted in the NVMP include: • Undertaking a plant and vibration assessment to identify potential vibration risks to human comfort and cosmetic and structural damage, and potential damage to heritage items • Where identified as being required, undertaking a pre-construction building surveys for structures and heritage items prior to commencement of activities with the potential to cause property damage • Conducting vibration monitoring at high-risk receptors, including heritage items, during construction • Consideration of feasible alternative construction methodologies or equipment where vibration intensive equipment is expected to exceed the criteria.	Pre-construction/ Construction	Additional safeguard NV3
NV4	Noise and vibration	All sensitive receivers (e.g. schools and local residents) likely to be affected will be notified at least five days prior to commencement of any works associated with the activity that may have an adverse noise or vibration impact. The notification will provide details of: • The proposal • The construction period and construction hours • Contact information for project management staff • Complaint and incident reporting • How to obtain further information.	Detailed design / Pre-construction	Standard safeguard NV4

No.	Impact	Environmental safeguards	Timing	Reference
NV5	Noise and vibration	All employees, contractors and subcontractors are to receive an environmental induction. The induction must at least include: • All project specific and relevant standard noise and vibration mitigation measures • Relevant licence and approval conditions • Permissible hours of work • Any limitations on high noise generating activities • Location of nearest sensitive receivers • Construction employee parking areas • Designated loading/unloading areas and procedures • Site opening/closing times (including deliveries) • Environmental incident procedures.	Pre-construction, construction, operation or other as required	Standard safeguard NV5
NV6	Construction hours	Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods. If the work cannot be undertaken during the day, it should be completed before 11 pm. Where work is to be carried out outside of recommended working hours, all affected receivers will be notified of all relevant details of the proposed activities.	Construction	Additional safeguard NV6
NV7	Construction hours	Where practicable, work should be scheduled to avoid major student examination periods when students are studying for examinations, whether at an institution or within a residence, such as before or during Higher School Certificate and at the end of higher education semesters.	Construction	Additional safeguard NV7
NV8	OOHW	OOHW during evening and night periods will managed in accordance with Transport's Construction Noise and Vibration Strategy to provide respite from construction noise. High noise activities, such as saw cutting and jack hammering, would be completed prior to midnight.	Construction	Additional safeguard NV8
TT1	Traffic and transport	A Traffic Management Plan (TMP) will be prepared and implemented as part of the CEMP. The TMP will be prepared in accordance with the Transport *Traffic Control at Work Sites Manual* (Transport, 2022) and *QA Specification G10 Control of Traffic* (Transport for NSW, 2008). The TMP will include: • Confirmation of haulage routes • Measures to maintain access to local roads and properties • Site-specific traffic control measures (including signage such as portable and static variable message signs) to manage and regulate traffic movement	Detailed design / Pre-construction	Section 4.8 of QA *G36 Environment Protection*

No.	Impact	Environmental safeguards	Timing	Reference
		• Measures to maintain pedestrian and bike rider access • Requirements and methods to consult and inform the local community of impacts on the local road network • Access to construction sites including entry and exit locations and measures to prevent construction vehicles queuing on public roads • Designated areas within the proposal area for heavy vehicle turning movements, parking, loading and unloading • On-site parking arrangements for construction, supervisory and management personnel • Sequence for implementing traffic works and traffic management devices • Safety principles for construction activities, such as speed limits around the site and procedures for specific activities • Induction requirements for construction, supervisory and management personnel • Procedures for inspections and record keeping for maintaining traffic control measures • Contact details of key proposal personnel • A response plan for any construction traffic incident • Consideration of other developments that may be under construction to minimise traffic conflict and congestion that may occur due to the cumulative increase in construction vehicle traffic • Monitoring, review and amendment mechanisms.		
TT2	Traffic and transport	Further traffic modelling and risk analysis will be carried out to confirm the impacts of the relocated, kerbside bus stop ~~raised pedestrian and bike rider priority crossing~~ on Alfred Street South and its impacts on the road network and safety risk associated with the proposal bus stop relocation prior to commencement of construction. This would include: • Obtaining traffic counts and queue data for intersections in the vicinity of the proposal and assessing the impacts of the proposal • Continued engagement with relevant stakeholders as part of the implementation of a traffic solution for the bus stop relocation.	Detailed design	Additional safeguard TT2
TT3	Pedestrians and bike riders	Appropriate signage and wayfinding facilities relating to changes to pedestrian and bike rider access during construction will be developed and implemented.	Pre-construction, construction	Additional safeguard TT3

No.	Impact	Environmental safeguards	Timing	Reference
TT4	Pedestrians and bike riders	The TMP will provide details on managing active transport movements near the construction site. The following key principles will guide the development safe active transport arrangements: • Pedestrians and bike riders will be kept clear of work sites at all times. Construction areas will be defined by temporary pedestrian fencing or more substantial fencing in urban or shopping areas • Temporary footpaths will be adequately signposted to indicate the direction of the footpath, be of all-weather standard, consist of equivalent material and performance to adjacent footpath and have an unobstructed width at local constrictions no less than one metre (elsewhere at least two metres) • Crossing facilities and associated signs will be maintained where possible. If access to an existing crossing cannot be provided, alternative facilities as close as possible to the established crossing are to be provided • Traffic management in the form of lowered speed limits will be implemented to facilitate a safer environment for pedestrians who may have been displaced from the footpath as a result of construction work • Where traffic is flowing temporarily in the opposite direction from normal, medians, refuges or other physical devices are required to separate lanes • The installation of construction barriers along the side of the road may result in some reduction in lane width for vehicles and bicycles alike, increasing the risk of collision. The speed limit on Alfred Street South will therefore be reduced to minimise potential conflicts between bike riders and vehicles • Bike rider needs and visibility will need to be considered in providing lighting at night • Roadworks signs will be positioned above the head height of bike riders • Barrier boards will not be placed so that they direct bike riders away from allocated cycle paths Adjacent to the work site, pavement surfaces will be maintained in a clean smooth state to ensure bike rider comfort and safety. The edges of temporary surfaces will be 'feathered' to remove any hazardous edges.	Detailed design / construction	Additional safeguard TT4
TT5	Parking	Parking spaces identified for removal will be removed progressively as construction works dictate, and works will be optimised to limit the impact on vehicle spaces outside of the necessary construction zone.	Pre-construction, construction	Additional safeguard TT5
TT6	Parking	Construction works will be staged to minimise the loss of parking at any one time during construction.	Pre-construction, construction	Additional safeguard TT6

No.	Impact	Environmental safeguards	Timing	Reference
TT7	Parking	Consultation with Council will be undertaken from an early stage of design to enable the proposed temporary reductions in metered parking arrangements throughout the construction period and for any permanent changes to metered parking.	Pre-construction	Additional safeguard TT7
TT8	Parking	Construction workers will be encouraged to use public transport to access the proposal.	Construction	Additional safeguard TT8
TT9	Public transport	If any ~~additional~~ bus stop relocations are required during the construction period, consultation and coordination with affected bus operators, Council, other stakeholders and appropriate Transport staff will be undertaken in conjunction with any temporary bus stop relocations, in addition to the provision of signage to assist in wayfinding.	Pre-construction, construction	Additional safeguard TT9
TT10	Public transport	Wayfinding tools such as sign posting will be implemented in the event that pedestrians are required to be diverted from the Alfred Street South Milsons Point Station access. A detailed construction traffic and access assessment will be carried out before construction when the detailed staging and work methodology has been developed.	Pre-construction, construction	Additional safeguard TT10
TT11	Traffic and ancillary facilities access management	For each stage of construction, detailed TGSs (Traffic Guidance Scheme) will be prepared and implemented in accordance with the Traffic control at work sites, version 6.1 (Transport, 2022) by suitably qualified personnel.	Pre-construction, construction	Additional safeguard TT11
TT12	Traffic and ancillary facilities access management	For each stage of construction, access will be maintained to the La Capannina restaurant. For the duration of construction works where direct access is unavailable, an alternative route will be provided via a driveway through the bowling green of Alfred Street South.	Pre-construction, construction	Additional safeguard TT12
TT13	Traffic and ancillary facilities access management	Dilapidation surveys of roads around the proposal will be undertaken prior to their use for construction as well as after construction is complete. Any damage to roads resulting from construction of the proposal will be repaired.	Pre-construction, construction	Additional safeguard TT13
TT14	Traffic and ancillary facilities access management	Direct access at the frontages of the ancillary facility will be provided with adequate sight distances relating to the posted road speed. This will allow vehicles on the main road to see vehicles emerging from the construction compound and will allow ample room to slow down and stop if necessary. Similarly, it will allow vehicles waiting to emerge from the site access, adequate sight distance to see approaching vehicles and determine acceptable gaps for them to enter the main road traffic.		Additional safeguard TT14
TT15	Traffic and ancillary facilities access management	The ancillary facility will generally have traffic control at the site access to manage the vehicular traffic into and out of the ancillary facility and to manage pedestrian movement across the access.	Construction	Additional safeguard TT15
TT16	Traffic and ancillary	All vehicles accessing the construction site for the purpose of material delivery and construction works will be fitted with safety flashing lights located on the top of the vehicle and functioning reverse beepers. All operators will be licensed for the particular item of	Construction	Additional safeguard TT16

No.	Impact	Environmental safeguards	Timing	Reference
	facilities access management	plant/ equipment, and will demonstrate competence in the use of the plant/ equipment as part of the site management and safety plan.		
TT17	Traffic and ancillary facilities access management	All vehicles accessing the construction site will be sized adequately to address clearance constraints such as the clearance over the Burton Street underpass, and powerlines and trees.	Construction	Additional safeguard TT17
TT18	Traffic and ancillary facilities access management	Routes used for access and haulage during construction will be developed in consultation with relevant stakeholders upon confirmation of material source and disposal locations, and will be outlined in the TMP.	Construction	Additional safeguard TT18
TT19	Traffic and ancillary facilities access management	Appropriate construction speed limits will be implemented in consultation with Transport to facilitate safety of road users and construction personnel during construction.	Construction	Additional safeguard TT19
TT20	Traffic and ancillary facilities access management	Traffic management plans will specifically address night works safety issues to protect motorists and construction personnel.	Pre-construction, construction	Additional safeguard TT20
TT21	Traffic and ancillary facilities access management	Temporary accesses, entrances and exits, road works and other traffic management measures will be designed and operated to conform with relevant road safety and Transport requirements and will not impact upon the safety of the users of the existing road network.	Pre-construction, construction	Additional safeguard TT21
TT22	Load and delivery	Pedestrian and vehicle access to adjoining properties will be maintained throughout the duration of the work, where possible.	Pre-construction, construction	Additional safeguard TT22
TT23	Access	Properties impacted during construction, such as the businesses located along the western side of Alfred Street South, will be notified prior to the commencement of construction and advised to schedule deliveries outside of work hours. Store owners will additionally be consulted regarding temporary access arrangements to their properties.	Pre-construction	Additional safeguard TT23
TT24	Pedestrian and bike rider safety	Appropriate signage will be installed warning bike riders of potential conflict points and the need for lowered speeds. Barricades will be installed as required by the ROLs and TMP. This will avoid pedestrians and bike riders following desire line through the roundabout.	Construction	Additional safeguard TT24
TT25	Pedestrian safety	~~Detailed design~~ Future design will consider the potential for safety issues resulting from reduced visibility for eastbound drivers to pedestrians waiting to cross on the northern side of Lavender Street when a bus is stopped at the Lavender Street opposite Cliff Street bus stop and this will be reviewed prior to construction and any potential road safety issues would be mitigated through design.	Detailed design	Additional safeguard TT25

No.	Impact	Environmental safeguards	Timing	Reference
		Consultation with stakeholders with reference to relevant bus stop design guidelines should be undertaken to ensure the safety of the pedestrian crossing will be maintained.		
TT26	Pedestrian safety	~~Pedestrian fencing~~ Plantings will be installed along Alfred Street South near the location of the existing pedestrian refuge to deter unsafe crossings near the roundabout after the completion of the raised pedestrian crossing	Construction	Additional safeguard TT26
TT27	Cyclist safety	Potential conflict points between bike riders and vehicles that may result from the widening of the shared path at the corner of Lavender Street and Alfred Street South, consideration for bike rider safety across this connection will be included in further design development.	Detailed design	Additional safeguard TT27
TT28	Parking	The operational impact of the removal of up to 15 parking spaces will be managed through consultation with impacted stakeholders, including Council and adjacent property occupiers.	Construction	Additional safeguard TT28
TT29	Road Safety Audit	A Road Safety Audit will be conducted of the proposed cycleway upgrade and impacts on the surrounding road network by an independent party at each stage of design and implementation (concept design, detailed design, temporary works arrangement and pre-opening). Any potential safety issues identified through these audits will be addressed prior to progressing to the next stage of design or prior to opening the facility.	Concept design. Detailed design/Pre-construction	Additional safeguard TT29
TT30	Bike rider access to Sydney Harbour Bridge	Access to the Sydney Harbour Bridge cycleway will be maintained as far as practical during construction. Where access must be restricted for workplace health and safety reasons bike riders will be notified prior to the closure and alternative access routes advised.	Construction	Additional safeguard TT30
C1	Unexpected contamination exposure	An Unexpected Finds Protocol will be developed to be implemented during onsite soil disturbance works in the event of the identification of any unforeseen contaminated land evidence.	Pre-construction	Additional safeguard C1
C2	Contamination exposure	A targeted site investigation in accordance with the requirements of NEPM 2013 will be undertaken at the proposal boundary before the start of construction to assess contamination status. This will include an in-situ waste classification of soils as disposal of soils will require classification prior to excavation and removal from the proposal boundary. Classification of waste will be carried out in accordance with the *Waste Classification Guidelines* (NSW EPA, 2014) and any applicable resource recovery orders, such as *The excavated public road material order 2014*.	Pre-construction	Waste Classification Guidelines-Part 1: Classifying Waste (NSW EPA, 2014)
C3	Contamination exposure	The findings of the targeted site investigation and in-situ waste classification will inform the appropriate management, handling and/or disposal of excess soils.	Construction	Additional safeguard C3
SE1	Property acquisition	All property acquisition will be carried out in accordance with the *Property Acquisition Process (IP-001-PS V1.0* (Transport for NSW, 2021a) and the *Land Acquisition (Just Terms Compensation) Act 1991*.	Pre-construction/ Construction	Core standard safeguard SE1
SE2	Socio-economic	A Community Liaison Management Plan (CLMP) will be prepared and implemented as part of the CEMP to help provide timely and accurate information to the community during construction. The CLMP will include (as a minimum):	Detailed design/Pre-construction	Core standard safeguard SE2

No.	Impact	Environmental safeguards	Timing	Reference
		• Mechanisms to provide details and timing of proposed activities to affected residents, including changed traffic and access conditions • Contact name and number for complaints. The CLMP will be prepared in accordance with the Community Involvement and Communications Resource Manual (RTA, 2008).		
SE3	Major events	Coordination with North Sydney Council and key stakeholders including Kirribilli markets operator will be undertaken to minimise impacts on major events.	Pre-construction/ Construction	Additional safeguard SE3
B1	Biodiversity	A Flora and Fauna Management Plan will be prepared in accordance with Transport's Biodiversity Guidelines: Protecting and Managing Biodiversity on Projects (RMS, 2011), Transport's Tree and hollow replacement guidelines (2022) and implemented as part of the CEMP. It will include, but not be limited to: • Plans showing areas to be cleared and areas to be protected, including exclusion zones, protected habitat features and revegetation areas • Requirements set out in requirements set out in the Landscape Guideline (RMS, 2008) • Pre-clearing survey requirements • Procedures for unexpected threatened species finds and fauna handling • Protocols to manage weeds and pathogens • Identify the process to be followed should additional tree trimming be required as part of the construction activities, in accordance with Transport's environmental management systems.	Detailed design / pre-construction	Section 4.8 of QA G36 Environment Protection
B2	Biodiversity	Measures to further avoid and minimise the construction footprint and native vegetation or habitat removal will be investigated during detailed design and implemented where practicable and feasible.	Detailed design / pre-construction	Additional safeguard B2
B3	Biodiversity	~~A 3D cloud point survey will be undertaken to accurately record the dimensions of the trees and ensure adequate clearance is provided to the trees to be retained. The potential movement of 'he trees' trunks and crown in high winds and minimum vertical clearances below their crowns will be considered during the design process.~~ Tree pruning and works within Tree Protection Zones will be carried out in accordance with the recommendations of the Preliminary Arboricultural Report (Tree iQ, 2023) and/or in consultation with a qualified arborist.	~~Detailed design / pre-construction~~ Construction	Arboricultural Impact Assessment (Tree iQ, June 2023)) (Appendix F)
B4	Biodiversity	An Arboricultural Impact Assessment and Tree Protection Plan will be prepared by an Arborist (AQF Level 5) during detailed design to examine the potential impact of the proposal on trees and provide recommendations for tree sensitive methods and tree protection measures.	Detailed design / pre-construction	Arboricultural Impact Assessment (TreeiQ, June 2023) (Appendix F)
B5	Biodiversity	A suitably qualified ecologist will supervise the removal of all required trees to observe for fauna welfare in case of injury during tree removal.	Construction	Additional safeguard B5

No.	Impact	Environmental safeguards	Timing	Reference
B6	Biodiversity	Tree removal and pruning shall be undertaken by a Contracting Arborist with minimum AQF Level 3 Arboricultural Qualifications and will comply with the NSW Work Cover Code of Practice for the Amenity Tree Industry.	Construction	Additional safeguard B6
B7	Biodiversity	A Tree and Hollow Replacement Plan will be prepared by professional suitably qualified in rehabilitation and restoration techniques, in accordance with Transport's Tree and hollow replacement guidelines (2022) and implemented as part of the CEMP. The Tree Hollow Replacement Plan will form part of the Urban Design and Landscape Plan that will be developed for the proposal. It will include, but not be limited to: • A site prioritisation and identification, including tenure, current zoning and management arrangements • Soil/site preparation requirements • Planting strategy and maintenance • Reporting.	Detailed design / pre-construction	Transport's *Tree and hollow replacement guidelines* (2022)
SW1	Minimise future flooding and hydrology risks	Prior to construction commencing, final hydrology and drainage assessments will be undertaken to inform detailed design measures to minimise flood risks to the environment, properties and the proposal.	Detailed design / pre-construction	Additional safeguard SW1
SW2	Surface run off	During construction site water will be managed locally with appropriate erosion and sediment controls. Off site water will be diverted around and away from the area of disturbance within the proposal boundary to avoid generating sediment laden water on site.	Pre-construction and Construction	Additional safeguard SW2
SW3	Mobilisation and discharge of sediment during construction.	A Soil and Water Management Plan (SWMP) will be prepared and implemented as part of the CEMP. The SWMP will identify all reasonably foreseeable risks relating to soil erosion and water pollution and describe how these risks will be addressed during construction.	Pre-construction and Construction	Section 2.1 of QA G38 Soil and Water Management
SW4	Mobilisation and discharge of sediment during construction	A site-specific Erosion and Sediment Control Plan/s will be prepared and implemented as part of the Soil and Water Management Plan The Plan will include arrangements for managing wet weather events, including monitoring of potential high-risk events (such as storms) and specific controls and follow-up measures to be applied in the event of wet weather.	Pre-construction and Construction	Section 2.2 of QA G38 Soil and Water Management
AH1	Aboriginal heritage	An Aboriginal Heritage Management Plan (AHMP) will be prepared in accordance with the Stage 1 Procedure for Aboriginal cultural heritage consultation and investigation (Transport, 2012) and Unexpected Heritage Items Procedure (Transport for NSW, 2022d) and implemented as part of the CEMP. It will provide specific drafting guidance on measures and controls to be implemented for managing impacts on Aboriginal heritage. The AHMP will be prepared in consultation with all relevant Aboriginal groups.	Detailed design / Pre-construction	Section 4.9 of QA G36 Environment Protection
AH2	Aboriginal heritage	The nearest AHIMS site (AHIMS ID 45-6-1271) will be marked on all construction plans, ensuring impacts are avoided.	Pre-construction/ Construction	Additional safeguard AH2

No.	Impact	Environmental safeguards	Timing	**Reference**
AH3	Aboriginal heritage	Aboriginal social, cultural and contemporary value would be considered through: • Consultation with the Aboriginal community • Preparation of an interpretive plan for Aboriginal cultural heritage values.	Detailed design/Pre-construction	Additional safeguard AH3
AH4	Aboriginal heritage	Unexpected Heritage Items Procedure (Transport for NSW, 2022d) will be followed in the event that an unknown or potential Aboriginal object/s, including skeletal remains, is found during construction. This applies where Transport does not have approval to disturb the object/s or where a specific safeguard for managing the disturbance (apart from the Procedure) is not in place. Work will only re-commence once the requirements of that Procedure have been satisfied.	Pre-construction/Construction	Section 4.9 of QA G36 Environment Protection
GGCC1	Greenhouse gas emissions	The procurement strategy developed for the construction phase will demonstrate value for money and consideration for opportunities to procure goods and services: • From local suppliers • That are energy efficient or have low embodied energy • That minimise the generation of waste, including the reuse of spoil generated by the proposal • That make use of recycled materials.	Construction	Additional safeguard GGCC1
~~**GGCC2**~~	~~Climate change~~	~~• Undertake a detailed climate change risk assessment prior to detailed design~~	~~Detailed design~~	~~Additional safeguard GGCC2~~
GGCC3	Greenhouse gas emissions	As the proposal will be targeting a Silver rating under SDGv.4, the following compulsory requirements will be prioritised for delivery across the proposal, including: • Carbon Estimate Reporting Tool to be used to reduce emissions across the proposal by a minimum of 10 per cent • Air emissions workbook completed • Compliance with the Transport's *Biodiversity Policy 2022* • Sustainable procurement requirement included in supply chain assessments.	Detailed design / Pre-construction	Additional safeguard SSMP
AQ1	Air quality	An Air Quality Management Plan (AQMP) will be prepared and implemented as part of the CEMP. The AQMP will include, but not be limited to: • Potential sources of air pollution • Air quality management objectives consistent with any relevant published EPA and/or Office of Environment and Heritage (OEH) guidelines • Mitigation and suppression measures to be implemented	Pre-construction / Construction	Section 4.4 of *QA G36 Environment Protection*

No.	Impact	Environmental safeguards	Timing	Reference
		• Methods to manage work during strong winds or other adverse weather conditions • A progressive rehabilitation strategy for exposed surfaces.		
W1	Waste	A Waste Management Plan (WMP) will be prepared and implemented as part of the CEMP. The WMP will include but not be limited to: • Measures to avoid and minimise waste associated with the proposal • Classification of wastes and management options (re-use, recycle, stockpile, disposal) • Statutory approvals required for managing on- and off-site waste, or application of any relevant resource recovery exemptions • Procedures for storage, transport and disposal • Monitoring, record keeping and reporting. The WMP will align with the Environmental Procedure - Management of Wastes on Transport for NSW Land (Transport, 2014) and relevant Transport Waste fact sheets.	Detailed design / Pre-construction	Section 4.2 of QA G36 Environment Protection
W2	Waste	The Sustainability Strategic Management Plan (SSMP) has allocated the following targets for landfill diversion: • 100 per cent of soil spoil volume • Over 90 per cent of inert and non-hazardous waste volume • Over 60 per cent of office waste material volume.	Detailed design / Pre-construction	Additional safeguard SSMP
CI1	Cumulative visual	Out of hours works would be coordinated with the Sydney Harbour Bridge Deck Upgrade to minimise light spill at night.	Construction	Additional safeguard CI1
CI2	Cumulative noise and vibration	For periods where cumulative construction noise and vibration may occur all feasible and reasonable mitigation measures should be implemented including scheduling of work across construction sites, such as night works, and consultation with affected sensitive receivers.	Pre-construction/ construction	Additional safeguard CI2
CI3	Cumulative socio-economic	Develop a Community and Stakeholder Engagement Plan that considers cumulative impacts in the timing and content of information and notifications to the community that aims to minimise consultation fatigue and ensure consistency across other Transport projects being constructed at the same time.	Pre-construction/ construction	Additional safeguard CI3

6.3 Licensing and approvals

Table 6-2 identifies the permits and licenses that would be required to construct the proposal.

Table 6-2: Summary of licensing and approval required

Instrument	Requirement	Timing
Heritage Act 1977 (s60)	Permit to carry out activities to an item listed on the State Heritage Register or to which an interim heritage order applies from the Heritage Council of NSW.	Prior to start of the activity.
Heritage Act 1977 (s57)	Exemption notification for Standard Exemptions for Works Requiring Heritage Council Approval (Heritage NSW, 2020) or in accordance with agency specific exemptions to an item on the State Heritage Register from the Director OEH.	Prior to start of the activity impacting a State Heritage Listed item, not subject to a s60 approval
Heritage Act 1977 (s140)	Permit to disturb or excavate land that is likely to contain archaeological relics of State heritage significance.	Prior to the start of works outside the State Heritage curtilage but within areas identified as having the potential to contain locally significant archaeological 'relics'.
Roads Act 1993 (s138)	Road occupancy license to carry out works that would impact on the operational efficiency of the road network.	Prior to works on public roads.

7. Next Steps

Transport as the determining authority will consider the information in the Sydney Harbour Bridge Cycleway Northern Access REF and this submission report and make a decision whether or not to proceed with the proposal.

Transport for NSW will inform the community and stakeholders of this decision and where a decision is made to proceed will continue to consult with the community and stakeholders prior to and during the construction phase.

8. Definitions

Term	Definition
AHIMS	Aboriginal Heritage Information Management System
AHMP	Aboriginal Heritage Management Plan
ARD	Archaeological Research Design
BC Act	*Biodiversity Conservation Act 2016 (NSW)*
CBD	Central business district
CBUG	Community and Bike User Group
CCTV	Closed circuit television
CEMP	Construction environmental management plan
CLMP	Community Liaison Management Plan
CPTED	Crime Prevention Through Environmental Design
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DECC	Department of Environment and Climate Change
DPE	Department of Planning and Environment
EHS	Engineering Heritage Sydney
EIS	Environmental Impact Statement
EPA	Environment Protection Authority
EP&A Act	*Environmental Planning and Assessment Act 1979 (NSW).* Provides the legislative framework for land use planning and development assessment in NSW
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*. Provides for the protection of the environment, especially matters of national environmental significance, and provides a national assessment and approvals process
Heritage Act	*Heritage Act 1977 (NSW)*
HIS	Heritage Interpretation Strategy
ICNG	*Interim Construction Noise Guideline*
KNC	Kirribilli Neighbourhood Centre
LCVIA	Landscape Character and Visual Impact Assessment
LEP	Local Environmental Plan. A type of planning instrument made under Part 3 of the EP&A Act.
LoS	Level of Service. A qualitative measure describing operational conditions within a traffic stream and their perception by motorists and/or passengers
MNES	Matters of national environmental significance under the *Environment Protection and Biodiversity Conservation Act 1999 (Commonwealth)*

Term	Definition
NAHMP	Non-Aboriginal Heritage Management Plan
NHL	National Heritage List
North Sydney LEP	North Sydney Local Environment Plan 2013
NVMP	Noise and Vibration Management Plan
OEH	Office of Environment and Heritage within the Department of Planning and Environment.
OOHW	Out of hours work
Proposal boundary	Includes the area of direct impact and an appropriate buffer for construction of the proposal, including the ancillary facility
QA Specifications	Specifications developed by Transport for use with road work and bridge work contracts let by Transport.
REF	Review of Environmental Factors
RMS	NSW Roads and Maritime Services, now Transport for NSW
Roads Act	*Roads Act 1993*
SEPP	State Environmental Planning Policy. A type of planning instrument made under Part 3 of the EP&A Act.
SEPP (Transport and Infrastructure)	State Environmental Planning Policy (Transport and Infrastructure) 2021
SHR	State Heritage Register
SoHI	Statement of Heritage Impact
TMP	Traffic Management Plan
Transport	Transport for NSW
WFU	Warringah Freeway Project

9. References

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TreeiQ 2023, Arboricultural Impact Assessment Sydney Harbour Bridge Cycleway Norther Access Milsons Point

TZG 2021, Supplementary Detailed Heritage Framework Report

Appendix A: Summary table of respondents, submissions and response locations

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E-146	3.11.3

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Appendix B: Archaeological Research Design

Appendix C: Updated Statement of Heritage Impacts

Appendix D: Addendum Landscape Character and Visual Impact Assessment

Appendix E: Traffic Impact Assessment

Appendix F: Arboricultural Assessment

Appendix G: Mark-ups provided by North Sydney Council

Appendix H: Section 171 Factors

Section 171 Factors

The assessment of the proposal against the Section 171 requirements under the Environmental Planning and Assessment Regulation was reviewed during preparation of the submissions report. Section 171 Factor (b), relating to 'transformation of the locality' been assessed to be a 'minor' impact to account for the change that the proposal would bring to the locality. All other Section 171 factors were assessed to have the same impact level as presented in the REF.

Factor	Impact as assessed in the REF	Impact revised for submissions report
(a) Any environmental impact on the community? Construction of the proposal would result in impacts on the local community associated with property and land use, social infrastructure, community values, noise, visual amenity and traffic and access. Construction impacts would be managed through the implementation of safeguards and management measures identified in section 6.2 of this submissions report. Once operational, the proposal would improve safety, ease of access for a broad range of customer groups and bike riders, including seniors, families, people with disability and lower level of fitness, and decrease congestion due to the existing bottleneck caused by the stairs. The proposal would also enhance amenity of the area and encourage cycling as an alternative form of transport to driving, which would assist in relieving congestion on roads.	Short term negative Long term positive	No change
(b) Any transformation of a locality? The proposal would have a minor to moderate visual impact on the locality due to the installation of the bike ramp, which would be installed above the entrance to Milsons Point Station and connect to the Sydney Harbour Bridge. Some loss of open and green space would be experienced within Bradfield Park north due to the introduction of the elevated linear bike ramp within and above the park. It is acknowledged that the proposal would lead to a change to the locality through improvements to safety and accessibility for bike riders that would support future growth in the number of bike riders using the Sydney Harbour Bridge Cycleway. The proposal would also enhance amenity of the area through encouraging cycling as an alternative form of transport to driving, which would assist in relieving congestion on roads. The safeguards and management measures identified in section 6.2 of this submissions report would minimise the visual impacts of the proposal and help recognise community benefits from the proposal.	Nil	Minor, long-term negative Long-term positive
(c) Any environmental impact on the ecosystems of the locality? The proposal is not likely to significantly impact threatened species or ecological communities or their habitats, within the meaning of the Biodiversity Conservation Act 2016 or EPBC Act. The proposal would require the removal of five non-native poplar trees, one ornamental pear in Bradfield Park north and a Canary Island Date Palm from the centre of the roundabout at the intersection of Alfred Street South, Lavender Street and Middlemiss Street. A Tree and Hollow Replacement Plan would be prepared for the proposal in accordance with Transport's Tree and Hollow Replacement Guideline (2022) and would specify the number of trees to be provided as offsets for the proposal. Trees would be replaced at a minimum ratio of 4:1. See section 6.7.5 of the REF and section 6.2 of this submissions report for detailed safeguards and management measures.	Nil	No change
(d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality?		

Factor	Impact as assessed in the REF	Impact revised for submissions report
During construction, the proposal would temporarily affect the amenity of the area as a result of impacts on public open space, visual impacts, noise and vibration, lighting during night works, and temporary changes to access to parking, cycleways and footpaths. Construction of the proposal would result in minor to moderate adverse short-term impacts due to the introduction of construction sites, enclosed by site fencing and hoarding, in the middle ground of most viewpoints. Views of Bradfield Park and the Sydney Harbour Bridge would largely remain visible, however there would be construction activity partly obstructing many viewpoints, altering the character of the view temporarily. Impacts on amenity would be experienced mostly by nearby residents and those who frequently use Bradfield Park and the surrounding area for formal and informal recreational activities. Noise impacts during the construction phase will be mitigated through safeguards referred to section 6.2 of this submissions report. During operation, the proposal would improve the amenity and accessibility of the Sydney Harbour Bridge and potentially attract more users and tourists to Milsons Point and Kirribilli. Considerable effort has been made through the options identification and design process (refer to Chapters 2 and 3 of the REF) to ensure a high quality urban design outcome that will enhance the amenity of the area and result in a minimal loss of usable open space. The upgrades to pavement and landscaping would also enhance the amenity along Alfred Street South for park users. Visual impacts of the proposal would be mitigated through design features that minimise the visual bulk and scale of the structure, reducing its prominence. The proposal was assessed as having a low-moderate visual impact during operation. Section 6.2 of this submissions report details the visual safeguards and management measures in place to mitigate potential impacts. No additional impacts related to noise generation would occur during operation of the proposal.	Short term negative Long term positive	No change
(e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations? Construction of the proposal would result in a minor to moderate impact to the heritage fabric of the locally, state and nationally heritage listed Sydney Harbour Bridge as well as a moderate impact to the locally listed Bradfield Park. Other direct impacts to heritage listed items would be minor to negligible. The potential for construction works to impact on significant archaeological resources would be moderate given that earthworks would be limited to relatively shallow excavation. The impact to the heritage listings would be mitigated through good contemporary design, by locating the proposed elevated linear bike ramp close to the concrete bridge approach, and by graduating the proposed elevated linear bike ramp from its connection to the Sydney Harbour Bridge and Bradfield Park. Safeguards and management measures are provided in section 6.2 of this submissions report. During operation, the proposal would improve accessibility and amenity for commuters and visitors to the Sydney Harbour Bridge and would enhance and strengthen the core function of the Sydney Harbour Bridge as an iconic and critical transport link, as well as have a positive impact on its National	Short term negative Long term positive	No change

Factor	Impact as assessed in the REF	Impact revised for submissions report
Heritage values. Measures that would be considered in further design development to mitigate impacts to listed heritage items and visual amenity are listed in section 6.2 of this submissions report.		
(f) Any impact on the habitat of protected fauna (within the meaning of the *Biodiversity Conservation Act 2016*? The significant impact test applied to threatened species and ecological communities relevant to the proposal is presented in section 6.7 of the REF. The proposal is unlikely to have a significant impact on any Biodiversity Conservation Act 2016 listed species, populations or ecological communities or their habitats.	Nil	No change
(g) Any endangering of any species of animal, plant or other form of life, whether living on land, in water or in the air? The proposal would not result in the endangering of any species.	Nil	No change
(h) Any long-term effects on the environment? The design development of the proposal has avoided impacts to the environment, including tree removal, as much as possible. The proposal would require the removal of five non-native poplar trees and one ornamental pear in Bradfield Park north and a Canary Island Date Palm from the centre of the roundabout at the intersection of Alfred Street South, Lavender Street and Middlemiss Street. A Tree and Hollow Replacement Plan would be prepared for the proposal, as detailed in section 6.2 of this submissions report. As the proposal boundary is a highly urbanised area with no remnant native vegetation present, there are no additional long-term effects on the environment.	Nil	No change
(i) Any degradation of the quality of the environment? During construction, the proposal would result in some impacts to heritage items, visual amenity and noise and vibration. Safeguards and management measures to ameliorate or minimise these expected impacts are detailed in section 6.2 of this submissions report. The proposal would require the removal of five non-native poplar trees and one ornamental pear in Bradfield Park north and a Canary Island Date Palm from the centre of the roundabout at the intersection of Alfred Street South, Lavender Street and Middlemiss Street. A Tree and Hollow Replacement Plan would be prepared for the proposal in accordance with Transport's Biodiversity Policy 2022 which aims to 'protect and enhance biodiversity, with the goal of achieving a no net loss of biodiversity as a consequence of its infrastructure development activities'.	Short term negative Long term - Nil	No change
(j) Any risk to the safety of the environment? It is considered unlikely that significant contamination is present within the proposal boundary. The proposal boundary is not mapped as occurring in high flood hazard land, bushfire prone land or adjacent to hazardous or offensive development. During construction, excavation would be minor and relatively shallow. Further detail and management measures are provided in section 6.2 of this submissions report. Construction of the proposal would require work on roads and deliveries requiring multiple, temporary road closures, which have the potential to cause safety issues. These risks would be managed by carrying out works outside standard construction hours to minimise disruption to the traffic network and safety risks and implementing the safeguards identified in section 6.2 of this submissions report.	Short term negative Long term positive	No change

Factor	Impact as assessed in the REF	Impact revised for submissions report
Risks and hazards associated with climate change were assessed as low to moderate, based on the climate change pre-screening assessment. Further detail is provided in section 6.11 of the REF. Operation of the proposal will improve the safety for bike riders, pedestrians and road users.		
(k) Any reduction in the range of beneficial uses of the environment? Construction of the proposal would result in some, temporary loss of open space within Bradfield Park. The Kirribilli markets would be relocated for the duration of construction. The south bowling green would remain open for use by school children during the week and there is an ongoing engagement with Loreto Kirribilli and St Aloysius School to ensure impact on the school use would be minimised. Negotiations with Billi Boules Club have advised that the Coal Loader site would be appropriate for them to use during the construction period, with the option to use the Waverton Bowling Club, if needed. Measures to mitigate the loss of open space during construction are identified in section 6.2 of this submissions report. During operation, the proposal would increase the range of beneficial users of the environment as it would improve mobility of bike riders and pedestrians. The proposal would improve amenity and accessibility of the Sydney Harbour Bridge and potentially attract more users and tourists to Milsons Point and Kirribilli. The proposal would provide the community with greater confidence to walk or cycle to their destination and feel safe while riding their bikes.	Short term negative Long term positive	No change
(l) Any pollution of the environment? Potential construction impacts associated with pollution of the environment include potential spills, noise, air quality (assessed as minor) and waste generation which would be managed through the implementation of safeguards and management measures identified in section 6.2 of this submissions report. During operation, by creating a safer and more accessible cycleway, the proposal aims to reduce the pressure on roads and potentially decrease road-related pollutant contributions, indirectly contributing to an improvement in ambient air quality.	Short term negative Long term positive	No change
(m) Any environmental problems associated with the disposal of waste? Waste streams that would be generated during construction include cleared excavation, spoil, vegetation clearing, domestic waste from the site compound, packaging, scrap material and other general construction waste. It is not anticipated any waste disposal issues would be encountered. An in-situ waste classification of soils would be conducted in accordance with the safeguards in section 6.2 of this submissions report.. This would be done prior to excavation and removal of soil from within the proposal boundary. Management measures to minimize waste impacts are proposed in section 6.2 of this submissions report. A Waste Management Plan (WMP) would be prepared and implemented as part of the CEMP.	Short term negative	No change
(n) Any increased demands on resources (natural or otherwise) that are, or are likely to become, in short supply? There would be no increased demands on resources that are, or are likely to become in short supply, as a result of the proposal. Material selection would be completed during detailed design, material sources would comply with relevant Transport material quality specifications and would be sourced from local commercial suppliers where available.	Nil	No change

Factor	Impact as assessed in the REF	Impact revised for submissions report
(o) Any cumulative environmental effect with other existing or likely future activities? Potential cumulative impacts during construction of the proposal include the potential for cumulative heritage impacts to the heritage values of the Sydney Harbour Bridge resulting from concurrent construction of the proposal with the Sydney Harbour Bridge Arch Maintenance Units project. Potential cumulative construction noise impacts from the Sydney Harbour Bridge deck upgrade, the Warringah Freeway Upgrade and the proposal occurring concurrently. As these projects are all managed by Transport, ongoing planning would ensure noise impacts are adequately managed. Cumulative socio-economic impacts during construction would be minor and associated with traffic delays, temporary changes to amenity, decrease in patronage to local businesses and temporary loss of public open space. Potential, minor, cumulative traffic impacts may occur as a result of the overlap with the North Sydney Olympic Pool redevelopment project. Safeguards and management measures to avoid, reduce or manage cumulative impacts are presented in section 6.2 of this submissions report. During operation of the proposal there would be a minor cumulative heritage impact to the heritage values of the Sydney Harbour Bridge, due to overlap of the proposal with the Sydney Harbour Bridge Arch Maintenance Units projects. However, the combined projects would positively allow better access to the Sydney Harbour Bridge for the public and support ongoing use of the bridge. The arch maintenance project would also potentially cause a cumulative visual impact due to the introduction of permanent new elements to the Sydney Harbour Bridge. Operation of the proposal would promote positive cumulative traffic impacts, given that it would improve active transport accessibility and safety and decrease motorists on the road, reducing road traffic.	Short term negative Long term positive	No change
(p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions? The proposal would not impact on coastal processes or coastal hazards.	Nil	No change
(q) Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1 The proposal is consistent with and would help fulfil the goals and objectives of numerous strategic planning instruments, such as the Future Transport Strategy – Our Vision for NSW (Transport for NSW, 2022), Connecting to the future: Our 10 Year Blueprint (Transport for NSW, 2018), NSW Infrastructure Strategy 2022-2042 (Infrastructure NSW, 2022) and Transport Sustainability Plan 2021 (Transport for NSW, 2020). A detailed description of all applicable strategic planning and policy documents is presented in section 2.2 of the REF. A detailed description of how the proposal would help to fulfill the goals and objectives of strategic planning instruments is outlined in section 2.2 of the REF.	Long term positive	No change
(r) Other relevant environmental factors.	In considering the potential impacts of this proposal all relevant environmental factors have been considered, refer to	In considering the potential impacts of this proposal all relevant environmental factors have been considered. Refer to Chapter 6 of the REF

Factor	Impact as assessed in the REF	Impact revised for submissions report
	Chapter 5 of this assessment.	and Chapter 5 of this submissions report.

NSW GOVERNMENT