

# Chapter 6

## Response to council submissions



## 6. Response to council submissions

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### 6.1 Overview

This section provides responses to the issues raised in submissions from the following local councils:

- City of Parramatta Council (section 6.2)
- City of Ryde Council (section 6.3)
- Cumberland City Council (section 6.4).

As described in section 3.2.2 of this report, the issues raised in each submission have been summarised broadly according to the order and headings provided in the submission. In some instances, related issues have been grouped under a single heading.

Further detail on issues raised in each submission, including background, contextual information and full submissions, is provided in the detailed submissions available via the Department of Planning and Environment's Major Projects website: [Parramatta Light Rail Stage 2](#).

### 6.2 City of Parramatta Council

The following sections summarise the key issues raised in the City of Parramatta Council (Council) submission and note the recommendations made in the submission. The submission also refers to a spreadsheet of detailed comments prepared to supplement the submission. Responses within the spreadsheet have been provided to Council separately.

#### 6.2.1 Validated community consultation on extended construction hours

##### Issue description

Council states that the EIS refers to 53 per cent of respondents to the construction hours survey supporting Sunday and public holidays 7am to 7pm construction hours. This statistic should be considered in the context of the low response rate to the survey, and that 40 per cent of respondents did not support these hours. More work is required to provide evidence of majority support for extended construction hours from impacted properties, including further targeted surveys of directly impacted residents, with an analysis of confidence levels of the survey.

Council notes in relation to the quoted case study from Parramatta Light Rail Stage 1 that the majority of those surveyed for Stage 1 were commercial operators, which is out of context for this project where the properties impacted are predominantly residential.

Council also notes that the precautionary principle requires that approved construction hours not include Sundays and public holidays.

Council recommends (recommendation 1) that construction hours beyond those in the *Interim Construction Noise Guideline* (DECC, 2009) not be approved.

##### Response

Transport for NSW (Transport) acknowledges Council's concerns in relation to the proposed primary project working hours (described in section 7.5 of the EIS).

Input from the community and key stakeholders obtained during engagement for the project (see Chapter 2 (Stakeholder and community engagement) of this report)) indicated support for reducing the overall construction period. In response to these requests, Transport proposed the primary project working hours. A similar approach was implemented during construction of Parramatta Light Rail Stage 1, which significantly reduced the number of nights worked and the associated noise and access impacts on the community.

Engagement with the community was carried out to determine if this was an acceptable option. Feedback was sought from an extensive number of residents and local community members along the alignment.

Further information about the primary project working hours, including the consultation and engagement carried out, is provided in section 4.3.1 of this report.

The approval of the project, including the proposed working hours, is a matter for the Department of Planning and Environment.

## **6.2.2 Alignment options – Chapter 5 Design Development**

### **Macquarie Street turnback**

#### **Issue description**

Council states that the EIS dedicates less than one page to the consideration of turnback location options. It lands on Macquarie Street as the preferred solution but does not provide the detailed analysis referred to or examine the negatives of the Macquarie Street location. It provides an inadequate assessment in reaching the decision.

The submission provides comments on the stated benefits of the Macquarie Street turnback, and notes that the EIS does not canvas the disadvantages of the Macquarie Street turnback to customers and public space.

Council recommends (recommendation 2) that the EIS Addendum report include detailed engagement with City of Parramatta on turnback options, including an analysis of the advantages and disadvantages of each option.

#### **Response**

Transport acknowledges and is aware of Council's concerns and preference for alternatives in relation to the proposed location of the turnback in Macquarie Street.

Chapter 5 (Design development, alternatives and options) of the EIS provides a summary of how the design for the project was developed and includes an overview of the alternatives and options considered for the Parramatta CBD turnback (see section 5.4.1 of the EIS). The chapter was prepared in accordance with the SEARs and the *State significant infrastructure guidelines – preparing an environmental impact statement* (DPIE, 2022b). Section 5.4.1 provides a summary of the decision-making process that was followed to arrive at the proposed turnback location in Macquarie Street. As part of this process, Transport has consulted, and will continue consult with Council regarding the proposed location and design of the turnback.

Consultation to date has identified that Council's concerns with the proposed turnback include:

- a preference for alternatives to the proposed location in Macquarie Street
- the proximity of the turnback to a recently proposed development on the corner of Macquarie and Church streets
- potential impacts on:
  - the public domain in Macquarie Street, including the impact of a stationary light rail vehicle on pedestrian permeability and the visual amenity of surrounding businesses

- customer experience, as the lack of a light rail stop at this location may cause confusion when people see a stationary light rail vehicle.

In accordance with mitigation measure LP2, Transport will continue to consult with Council during further design development to ensure that the design of the project (including the turnback) is integrated as far as practicable with adjoining developments, proposed developments and urban renewal areas. This will include identifying measures and design responses to manage the interface between the project and adjoining land uses and properties as far as reasonably practicable.

New mitigation measure LP3 provides that the location of the turnback facility in the Parramatta CBD will be further refined in consultation with City of Parramatta Council. This will include identifying measures and design responses to maximise customer experience and manage the interface between the turnback facility and adjoining land uses.

## **Camellia to Rydalmere alignment and bridge option**

### **Issue description**

Council states that the base case Camellia option (it is noted that this option is referred to as Camellia option 1 in section 5.4.2 of the EIS) is preferred. The alternate Camellia to Rydalmere foreshore alignment (it is noted this is referred to as Camellia option 3 in section 5.4.2 of the EIS) would be supported by Council if it ran immediately south of Antoine Street and not through the foreshore park. Foreshore open space is a difficult to replace community asset and Council notes that Transport should take a long-term view of the light rail asset and alignment.

The Camellia to Rydalmere foreshore alignment is discussed in Appendix D of the EIS. The discussion of disadvantages provided is not adequate. Council notes the following:

- Eric Primrose Reserve is contaminated land; therefore, the potential to encounter significant or widespread contamination at Rydalmere is not low.
- The EIS does not adequately discuss the visual impact of the embankment-based alignment through the foreshore park, including loss of existing trees shielding industrial buildings from the park.
- Council objects to the loss of foreshore land.
- The creation of embankments for flood immunity and loss of screening trees will result in the tracks and catenary wires being visually intrusive, with a reduction in the remaining foreshore parkland to transit corridor associated minor green space.

Council recommends (recommendation 3) that Transport remove the light rail alignment from Eric Primrose Reserve.

### **Response**

A screening assessment for the Camellia foreshore to Rydalmere alignment was prepared for the EIS to understand the potential environmental and community risks while Transport undertook a process of further investigation and design development (see Appendix D (Camellia foreshore to Rydalmere option – preliminary environmental scoping) of the EIS). This process considered urban design, constructability, land use and open space matters, and the strategic directions of the final *Camellia–Rosehill Place Strategy* (released by the Department of Planning and Environment in August 2022).

Transport has undertaken extensive consultation with Council regarding the Camellia foreshore to Rydalmere alignment, including:

- preliminary alignment workshops with Council staff in March/April 2022 – included discussion of concerns and queries
- workshops with Council staff in September/November 2022

- briefing of Councillors in September 2022 – responding to 18 points of feedback, including on the Camellia to Rydalmere alignment.

Engagement undertaken during and following exhibition of the EIS is described in Chapter 2 (Stakeholder and community engagement) of this report. Further information about engagement in relation to the proposed amendments is provided in Chapter 5 (Stakeholder and community engagement) of the Amendment Report.

During consultation with Council the option to locate the alignment immediately south of Antoine Street was raised, and Transport considered this during the options development for the Camellia foreshore to Rydalmere alignment. The land requirements for this option would affect additional commercial and industrial properties, with the potential for full acquisition of about six properties (consisting of 18 individual parcels (lots) of land). The supply of commercial and industrial land in the area is limited, and it is unlikely that this number of businesses would be able to relocate locally, resulting in additional business impacts. This option was not preferred due to the land requirements and associated business impacts, which would not be consistent with Council planning documents, including the *City of Parramatta Employment Lands Strategy – Review and Update* (City of Parramatta Council, 2020).

Following the options assessment process, the preferred alignment for the Camellia foreshore to Rydalmere option was confirmed. The proposed alignment, which has been incorporated in the amended project (as described in Chapter 4 of this report), extends along the boundary of Eric Primrose Reserve. Further information about the justification for this amendment, compared to the alignment described in the EIS, is provided in section 4.1 of the Amendment Report.

Design development has focused on minimising impacts on open space where possible, as well as improving the quality of open space directly affected by the project. Despite the loss of existing open space in Eric Primrose Reserve, there would be an increase in open space in Rydalmere overall as a result of the project, with additional areas provided around Antoine, Jean and John streets (see Figure 24 in Technical Paper 1 (Design, Place and Movement)). The open space improvements proposed for the reserve (see section 1.8.2 in the updated project description in Appendix A of the Amendment Report) include active transport links, landscaping and recreation facilities.

The project (as amended) would avoid segregation of Eric Primrose Reserve by having the alignment extend around the reserve boundary. It would also avoid impacts on the existing amenities building and allow for mature fig trees to be retained.

As described in section 4.2.2 of this report, additional contamination investigations were undertaken between May and September 2022. An Interpretive Contamination Report was prepared by Nation Partners (2023), which identified that there is a low risk of contamination north of the Parramatta River.

An assessment of the potential environment and community impacts of the amended project is provided in Chapter 6 (Additional environmental assessment) of the Amendment Report and supporting technical reports. This includes assessments of visual impacts (including updated photomontages), land use changes and tree removal. Key findings of these assessments included that there would be no change to the visual impacts at the viewpoints for the exhibited project. A new viewpoint (viewpoint 38 Thackeray Street bridge) was assessed, with the resulting significance of impact being identified as moderate to low. The assessment of tree impacts identified that there would be the potential for fewer trees to be removed.

In accordance with mitigation measures LV5 and LV6 (as amended), the design will continue to be refined to avoid or minimise impacts to trees, and a tree offset strategy will be developed to achieve a net increase in tree numbers and canopy (see Appendix B (Updated mitigation measures)).

## Wentworth Point Sekisui site option

### Issue description

Council expresses concern about the alignment through the existing transit corridor in the Sekisui House development site (it is noted that this option is referred to as option 4 in section 5.3.3 of the EIS and the site is referred to as the Sanctuary Wentworth Point site in the EIS). Council notes that the corridor and the surrounding building envelopes were negotiated via the planning proposal and voluntary planning agreement with the land owner, and with the support of Transport to meet required transit needs.

Council expresses disappointment that Transport is not pursuing this option and a light rail stop near the ferry wharf to promote multi-modal public transport connectivity. Council's view is that the stop next to the ferry wharf should be maintained, and a short light rail spur with turnback be introduced along Hill Road.

Council requests that an active transport link be provided in the Sanctuary Wentworth Point site, from the proposed bridge to the ferry wharf.

Council supports the alternate light rail alignment to the south of the Sanctuary Wentworth Point site (recommendation 4), but only if the light rail stop adjacent the ferry wharf is retained and a spur line created along Hill Road, along with construction by Transport of an active transport link along the original alignment through the site.

### Response

As described in section 5.3.3 of the EIS, two options for the project corridor were considered at Wentworth Point in response to ongoing and planned development – option 3 would extend to the west and south of the Sanctuary Wentworth Point development, while option 4 would extend east along the future Foreshore Boulevard and through the development (see Figure 5.8 in the EIS). Option 4 was not selected as the preferred option due to operational, design and safety issues, including:

- The steep grade from Melrose Park to Wentworth Point over the proposed bridge, followed by the tight curve onto the future Foreshore Boulevard, would require the installation of infrastructure such as barriers and fences in the public domain to mitigate the risk of derailment. This would create a barrier for pedestrians accessing the river foreshore and moving around the area.
- The quick deceleration from the bridge descent into Wentworth Point coupled with the sharp turn into the Sanctuary Wentworth Point site would increase risk of incidents during daily operation. This was deemed a significant operational safety risk as there would be larger pedestrian traffic volumes interfacing with the alignment.
- There would be greater amenity and access impacts on the river foreshore and River Walk due to the proximity of the alignment.
- A complex traffic system would be required for combined bus, vehicles, development access and egress, and pedestrian and light rail operations along the future Foreshore Boulevard and Hill Road to provide a safe environment for all transport modes.
- The tight curve of the track turning from the future Foreshore Boulevard onto Hill Road would increase the potential for wheel squeal adjacent to open space and the proposed Sanctuary Wentworth Point buildings, including residences.
- The light rail track would be close to (within two metres of) Sanctuary Wentworth Point buildings, resulting in poorer safety and amenity outcomes.
- The alignment would require the relocation or protection of utilities on Hill Road, increasing cost and construction complexity.

Option 3, as the preferred option, would result in better public domain and amenity outcomes for the future Foreshore Boulevard and the River Walk, with the benefits as described in section 5.3.3 of the EIS. The active transport link on the proposed bridge between Melrose Park and Wentworth Point would connect to the River Walk and Foreshore Boulevard. The project would not provide additional active transport within the Sanctuary Wentworth Point site at Foreshore Boulevard, but would connect with paths and roads provided as part of that development. Council has provided concept designs for Foreshore Boulevard, and Transport would consider these during design development.

As described in section 6.3.1 of the EIS, a light rail stop is proposed at Hill Road near Footbridge Boulevard (the Footbridge Boulevard stop), which would be about 340 metres or a four-minute walk to Sydney Olympic Park Wharf. This is about 225 metres further than a stop location within the Sanctuary Wentworth Point site on the future Foreshore Boulevard. In line with Council's preference, Transport is investigating providing a 240 metre-long light rail stub (spur) and a terminus along Hill Road on the eastern side of Sanctuary Wentworth Point to provide light rail services closer to the wharf. Transport has engaged with Council to obtain feedback on the preferred arrangements and will consult further with Council on the results of the investigation.

Technical Paper 1 (Design, Place and Movement) of the EIS describes how the project has been developed to integrate with existing and proposed development along the alignment, including at Wentworth Point. Key urban design principles that underpin the design include provision for dedicated, safe and convenient facilities that prioritise walking and cycling, including connections between different modes of transport (see sections 3.5, 4.10 and 14.2 of Technical Paper 1).

### **6.2.3 River bridge structures**

#### **Issue description**

Council states that the design of the proposed bridges will be a key visual legacy of the project. The lowest construction cost should not be a key determinant of bridge design aesthetics. The Bidgee Bidgee (James Ruse Drive) bridge constructed as part of Parramatta Light Rail Stage 1, which is the result of the design and construct process, is considered by Council to be a cheaper option that is functional but sub-optimal in appearance.

Council recommends (recommendation 5) that, in accordance with the SEARs, the bridge structures should be design led, and not form part of the main infrastructure design and construct process. Preferred bridge designs should be determined, in consultation with stakeholders via agreed design principles and cost estimates, in a process separate to and before the main infrastructure design and construct contract, and included as a requirement for eventual main construction tenderers. The EIS should discard and reject unsuitable bridge designs with poor aesthetics.

#### **Response**

Transport is committed to achieving design excellence for the project, which is 'the highest standard of architectural, urban and landscape design' (Government Architect NSW, 2017). As described in sections 5.1.2 and 5.6.2 of the EIS, continued achievement of design excellence has and would continue to be centred around an urban design-led process to achieve better placemaking, customer and land use outcomes while incorporating identified opportunities for improvement. This approach is further detailed in Technical Paper 1 (Design, Place and Movement).

In addition to establishing a project-wide urban design vision and objectives, a specific design vision for bridges was developed in response to analysis and stakeholder consultation (see section 13.2 of Technical Paper 1). Five design principles have been developed to support delivery of this vision. Relevantly, these include the principles of:

- ‘Design quality’, which states that ‘designs are to achieve high quality outcomes and elegant proportions to reduce visual and physical impacts and create an asset to the adjacent neighbourhoods and region’.
- ‘Value’, which states that the project would ‘provide value for money and an asset of lasting value to all, through good design, innovation and collaboration’.

Consistent with this, Transport would achieve design excellence for the bridges by:

- independent design review
- engaging a multidisciplinary team to realise the project’s urban design vision and objectives
- setting urban design requirements for the project, which identify specific requirements for the design of bridges
- ongoing engagement with key stakeholders (including Council) and the community
- design review under the guidance of a project-specific Design Review Panel.

Further information about these aspects is provided in the clarification in section 4.3.6 of this report.

#### **6.2.4 Green track locations**

##### **Issue description**

Council states that only one green track area is designated (at the Atkins Road stop open space) and notes that green tracks should be provided where the alignment runs through existing green space or where there are substantial hard surface areas.

A figure (Figure 4) was provided with the submission to indicate where Council considers that green track areas should be provided along the alignment (including between South Street and Boronia Street, Ken Newman Park and along Hill Road), as well as where permeable track form paving could be provided, for a softer public domain finish.

Council recommends (recommendation 6) that Transport provides green track and permeable paving as per Figure 4 in the submission.

##### **Response**

The project would incorporate sections of permeable track, including areas of green track. As described in section 6.2.1 of the EIS, locations where permeable and green track would continue to be considered include:

- within or adjacent to areas of open space
- adjacent to vegetated or environmentally sensitive areas
- where it would contribute to the amenity of the public domain, based on existing and future land uses.

The EIS commits to providing green track in the vicinity of the Atkins Road stop and the Bulla Cream Dairy (Willowmere) heritage item, and to investigating other areas of permeable and green track during design development (see section 6.2.1 of the EIS). The design development of track forms such as green track are informed by number of technical assessments, some of which require the design to be further developed before they can progress.



The use of permeable and green track would be investigated in other locations in consultation with key stakeholders, including Council and Sydney Olympic Park Authority. Relevant considerations include:

- existing conditions and usage patterns
- community and stakeholder preferences and interests
- the functionality of the proposed spaces/precincts
- maintenance access requirements for the project and adjacent land uses
- safety aspects relating to the differentiation of track and open space areas
- the impacts of permeable and green tracks on adjacent environmentally sensitive areas, e.g., the need for irrigation, fertiliser and the management of weeds.

An initial concept plan for improvements at Ken Newman Park was provided in Figure 6.20 of the EIS. The use of permeable and green track in Ken Newman Park would be considered during design development along with the improvements at this open space, taking into account the considerations listed above.

In relation to Hill Road, the final track form, and potential for using permeable and green track, would also consider:

- Sydney Olympic Park Authority's management strategy for the Millennium Parklands, including the impacts of green track adjacent to environmentally sensitive areas (such as wetlands)
- consideration of opportunities for any future shared use of parts of the project corridor by buses.

Investigations into the use of permeable and green track would occur as part of the development of the project's urban design requirements, which would be prepared in accordance with mitigation measures LV1 and LV2 (as described in the response in section 6.2.3 above).

Mitigation measures SE1 and LV1 commit Transport to consulting with Council as part of the process of developing the design and finalising the urban design requirements.

## **6.2.5 Wire-free running locations**

### **Issue description**

Council states that wire-free areas can considerably improve the visual impact of the project by limiting most infrastructure to track level only, and that the EIS only proposes wire-free running in Sydney Olympic Park.

A figure (Figure 5) was provided with the submission to indicate where Council considers that wire-free running should be provided, including in:

- the future Camellia town centre
- green space east of South Street, through Melrose Park to the Parramatta River
- the Carter Street precinct.

Council recommends (recommendation 7) that wire-free running should be provided in high density residential areas, and specifically within the Ken Newman Park reserve and adjoining linear green space.

### **Response**

The project would incorporate sections of wire-free power supply. The EIS confirms a commitment to provide wire-free power supply along Dawn Fraser Avenue in Sydney Olympic Park (between the Jacaranda Square and Carter Street stops). The EIS also commits to investigating the feasibility of wire-free across other sections of the alignment.

The clarification in section 4.3.2 of this report provides further information about the options to power light rail vehicles (including wire-free power), constraints that influence how power is supplied to vehicles, and how the location of wire-free sections would be confirmed during design development, including the required studies. During design development, and once the necessary assessments have been carried out, key stakeholders (including Council and Sydney Olympic Park Authority) would be consulted regarding the proposed location of additional wire-free sections. In accordance with new mitigation measure LV3, opportunities to incorporate additional wire-free sections will be investigated in consultation with relevant stakeholders, including in visually sensitive environments, areas where existing above-ground infrastructure and significant street trees need to be retained, and areas adjoining significant habitat in accordance with mitigation measure BD4.

The design of the wire-free sections would be confirmed in accordance with the project's urban design requirements. In addition to new mitigation measure LV3, as noted above, mitigation measures SE1 and LV1 commit Transport to consulting with Council as part of the process of developing the design and finalising the urban design requirements. Further information is provided in section 4.3.2 of this report.

In relation to the wire-free sections suggested by Council in their submission (Figure 5):

- The section of track in the future Camellia town centre is being constructed as part of the Parramatta Light Rail Stage 1 project and is not within the scope of the Parramatta Light Rail Stage 2 project.
- The feasibility of providing wire-free power in the green space east of South Street, through Melrose Park to the Parramatta River, is currently being investigated.
- The project as described in the EIS includes a commitment to provide wire-free power supply in the Carter Street precinct.

## **6.2.6 Cut and fill, design implications and walkable neighbourhoods**

### **Issue description**

Council requests that cut and fill requirements not compromise public areas, that the light rail alignment be a good neighbour to adjoining residential and business properties, and not isolate the community it serves.

Council also requests that roads and other areas of the alignment with significant cut aim to maximise safe and convenient cross connections for pedestrians, cyclists and persons with a disability, and suggests a maximum distance of 200 to 400 metres between cross-connections.

Council recommends (recommendation 8) that the Department apply a condition of planning approval requiring Transport investigate and provide north-south pedestrian crossing points over the alignment every 400 metres or otherwise to match existing connections, particularly where signalised intersections are not available and/or the alignment is cut into the existing road.

### **Response**

Transport acknowledges the importance of maintaining local and regional connectivity as key design principles that would shape the design of the project.

The design needs to balance providing permeability with minimising property impacts, enabling driveway access to private properties, and delivering appropriate grades to enable light rail operation. Being a good neighbour involves considering all potential impacts and striking an appropriate balance between varying needs. It is noted that level changes to maximise permeability would have flow on effects and the potential for additional impacts on surrounding properties.

The urban design vision and objectives for the project (see Figure 5.26 in the EIS and section 3.4 in Technical Paper 1 (Design, Place and Movement)) express the design intent and provide guiding principles for ongoing design development. The design vision for the project is to deliver comfortable, attractive, convenient and safe places, and maximise transport choice and public amenity for the communities through which the project passes. The vision is supported by five design principles, which include 'connectivity'. In accordance with this principle, the project would seek to increase rather than preclude permeability by creating more accessible links across the alignment, unless the connection would result in operational safety issues considering Transport's requirements for safe pedestrian and cyclist access.

Pedestrian and cyclist connections across the alignment would continue to be assessed during further design development, supported by safety risk assessments. These assessments would consider all users of the space that the alignment would occupy (pedestrians, cyclists, motorists and light rail vehicles), and how they use the space (existing formal and informal crossings).

Examples of locations noted in Technical Paper 1 where Transport would continue to develop the design to increase permeability (where this does not necessitate additional property acquisition or prevent property access) include:

- South Street, Rydalmere – the design would be developed to maximise north–south permeability across South Street.
- Boronia Street, Ermington – the design would be developed to achieve as much permeability as possible, around and across the light rail alignment, where retaining walls would be required on either side of the track zone.
- Hope Street, Melrose Park – a median between the light rail corridor and adjoining vehicular travel lanes would provide for the safe pedestrian crossing of Hope Street and maintain permeability.
- Hill Road, Wentworth Point / Sydney Olympic Park – the design would be developed to provide a safe and intuitively permeable interface between Hill Road and the Millennium Parklands, prioritising convenience, accessibility and permeability for customers and parkland visitors, and maximising connectivity between areas of development and the Millennium Parklands.

## **6.2.7 Spoil retention within the corridor and design implications**

### **Issue description**

Council raises concerns that targets to minimise offsite spoil disposal could result in poor public domain outcomes, and should not be incorporated into project contracts.

Council notes that there is no discussion in the EIS on minimising impacts on the public domain (paths, streets, parks) through unnecessary filling and retaining, and states that the EIS is silent on how excess excavated fill will be reused, and what guidelines will be provided for the contractor.

Council requests that public lands not be used for dumping excess spoil, with resulting adverse impacts.

Council recommends (recommendation 9) that a detailed cut and fill balance be provided, with scenario testing against best practice public domain outcomes, to provide a realistic assessment of likely spoil retention. The approval should include a condition that any spoil retention targets within the EIS are not fixed, and be subordinate to design-led best practice public domain outcomes. The approval should include a condition requiring Council stakeholder engagement in a detailed Transport cut and fill strategy, which justifies (on a positive public domain outcome basis) the amount and location of spoil to be retained along the alignment.

## Response

Design development to date has included a focus on placemaking, including recognising the role of the project in contributing to successful places and place identity. The 'place' design principle is one of the five design principles that support the design vision for the project. In accordance with this principle, and as described in section 6.3 of Technical Paper 1 (Design, Place and Movement), the project would seek to create attractive and memorable places. This would include minimising filling and excessive earthworks in environmentally sensitive areas. Landscape design principles to assist with integrating the project into the local environment, including for embankments and earthworks, are described in section 14.2.7 of Technical Paper 1.

Transport acknowledges that spoil needs to be carefully managed to balance place and sustainability outcomes for the project and commits to working with Council to develop design-led best practice public domain outcomes. As described in section 4.4.2 of the Amendment Report, the estimated cut and fill volumes have been revised in response to further design development (including the proposed amendments). The revised figures show that there would now be a deficit of about 91,600 cubic metres of structural fill, which would need to be imported during construction.

Although the design presented within the EIS and Amendment Report provides a sound basis for assessing the potential impacts of the project, further design development is required to support project delivery. Based on the current level of design, Transport is not able to provide a detailed cut and fill balance at this stage. Further design development would include developing a detailed three-dimensional model to accurately identify level changes and show how the project interfaces with its surroundings. This model would be incorporated into the urban design requirements, which would specify requirements for slopes, batters, embankments, retaining walls, treatments and finishes. In accordance with mitigation measure LV1, the urban design requirements will be finalised in consultation with key stakeholders, including Council.

### 6.2.8 Construction impacts, amenity, community reference groups

#### Issue description

Council notes that the alignment runs through residential environments, with potential for significant construction impacts (particularly noise and vibration) and construction fatigue. Council requests that every effort be made to fully consider impacts on resident amenity during construction. Council also requests that night works should not be used as a fallback to stay on schedule, be built into completion dates, or be unevenly balanced against avoiding disruption to traffic during business hours.

Council recommends (recommendation 10) that Transport create a community reference group(s) which includes proportional representation from residents and businesses in suburbs along the alignment. The purpose of the reference group(s) would be in part to advise Transport and contractors of construction impacts, and to respond to Transport with recommendations to any contractor request for night work and/or noise intensive work.

#### Response

##### Amenity impacts

In accordance with the SEARs, a comprehensive range of specialist technical assessments were carried out to consider the potential amenity impacts of the project on the community, including noise and vibration; traffic, transport and access; air quality; and visual impacts. These individual potential impacts have been acknowledged, integrated and assessed by the Social Impact Assessment (Technical Paper 7) and the results were summarised in Chapter 14 (Socio-economic impacts) of the EIS. Technical Paper 7 also noted that there is the potential for some residents to experience construction fatigue due to other projects being constructed nearby, and that this may affect some people's quality of life, health and wellbeing.

The potential contributions of noise impacts associated with the project to community construction fatigue were also considered by Technical Paper 3 (Noise and Vibration) and the Updated Noise and Vibration Report (see section 4.2.1).

Section 14.6 of the EIS describes the approach to managing amenity impacts. The section notes that comprehensive and appropriate communication and consultation with the community and other key stakeholders would play a key role in managing the potential for impacts on amenity during construction and operation, and is critical to the successful delivery of the project. In accordance with mitigation measure SE1, the Community Communication Strategy (provided in Appendix D of this report) will be implemented to guide the management and delivery of community and stakeholder engagement in the lead up to, and during, construction.

#### **Night works**

The proposed primary project working hours are described in section 7.5.1 of the EIS, with further clarification provided in section 4.3.1 of this report. As described in section 7.5.2 of the EIS, discrete activities would need to occur outside the primary project working hours ('out-of-hours' work) at some locations to minimise the potential for road safety hazards and maintain operation of key roads and public transport facilities. This would include night works in some locations at certain times.

Out-of-hours work would need to be approved in accordance with the requirements of the environmental protection licence for construction, or the out-of-hours work protocol prepared in accordance with mitigation measure NV11 for work that is not subject to an environment protection licence. This approval process would ensure a strong justification is provided for the out-of-hours work, in accordance with the *Interim Construction Noise Guideline* (DECC, 2009). The justification must be for reasons other than convenience, such as to sustain operational integrity of road and utility networks. Out-of-hours work that impacts sensitive receivers would not be used as a fallback to stay on schedule or be built into project completion dates.

In accordance with mitigation measure NV8, appropriate respite periods will be identified, in consultation with the community and in accordance with the *Construction Noise and Vibration Strategy* (Transport for NSW, 2019a), for work with the potential to result in noise levels above 75 dBA and/or that needs to occur outside the primary project working hours. The respite periods will take into consideration, amongst other things, the communities' preferred noise and vibration management approach and the construction schedules of other major projects in close proximity to the project works.

In addition, and in accordance with mitigation measure NV12, work outside the recommended standard working hours defined by the *Interim Construction Noise Guideline* will be scheduled using the hierarchy of preferred working hours described in section 7.5 of the EIS as far as practicable, and in consultation with the community and key stakeholders (including the NSW EPA). Mitigation measure NV12 provides that highly noise and vibration intensive works (as defined in the *Construction Noise and Vibration Strategy*) will be limited to recommended standard hours as far as practicable.

#### **Community reference group**

Transport notes Council's recommendation to establish a community reference group(s) during construction. Transport intends to reinstate the Parramatta Light Rail Community and Stakeholder Reference Group for the project.

## 6.2.9 Operational impacts and residential amenity – groundborne vibration, groundborne noise and airborne noise

### Light rail noise – sleep disturbance

#### Issue description

Council requests that Transport ensures that properties are subject to ‘acceptable’ noise emission from the light rail, noting that there are many properties where sleep disturbance could occur as a result of light rail operations, and properties backing on to green space where there is presently no road or rail line. The project should do what is necessary to protect the amenity of impacted residents.

Council recommends (recommendation 11) that Transport confirms whether noise mitigation was provided for the CBD and South East light rail project where the  $L_{Amax}$  or  $L_{Aeq(periode)}$  noise trigger levels were exceeded. Council recommends the same standard and noise mitigation principles be applied to the project.

#### Response

An operational noise and vibration assessment (Technical Paper 3 (Noise and Vibration)) was prepared by a team of qualified and experienced noise and vibration assessment specialists in accordance with the SEARs and relevant guidelines, including the *Rail Infrastructure Noise Guideline* (NSW EPA, 2013). The *Rail Infrastructure Noise Guideline* provides direction on the establishment of criteria for sensitive receivers, and the impact assessment and mitigation processes. As described in section 4.2.1 of this report, an Updated Noise and Vibration Report has been prepared to assess the potential impacts of the proposed amendments to the project.

The *Rail Infrastructure Noise Guideline* trigger levels requires that, for residential receivers, both the  $L_{Aeq(periode)}$  and  $L_{AFmax}$  noise trigger levels need to be exceeded to qualify for consideration of at-property mitigation measures. This approach has been applied for both the project and Parramatta Light Rail Stage 1, in addition to other light rail projects in Sydney. This means that, if only one of the  $L_{Aeq(periode)}$  and  $L_{AFmax}$  trigger levels are exceeded at a particular receiver, that receiver would not qualify for mitigation consideration. The NSW EPA has confirmed this interpretation is appropriate.

The assessment of operational sleep disturbance impacts found that the predicted maximum noise levels associated with light rail vehicle operations between Sandown Boulevard and Carter Street range from 39 to 80 dBA ( $L_{Amax}$ ). This does not exceed the trigger at which residential receivers would qualify for at-property mitigation considerations. As described in section 4.3.1 of the Updated Noise and Vibration Report,  $L_{Amax(95%)}$  noise levels between Parramatta CBD and Sandown Boulevard will not be affected by the combined frequency of light rail vehicle movements due to the project and Parramatta Light Rail Stage 1.

### Operational noise and vibration – groundborne noise

#### Issue description

Council states that higher performance track forms are likely to be required in areas where the groundborne noise levels are predicted to be higher than the airborne noise levels. It is expected that feasible light rail track form designs are available to reduce the groundborne noise levels so that they are not higher than the airborne noise levels within dwellings.

Council recommends (recommendation 12) that the Department apply a condition of planning approval requiring the use of higher performance track forms:

- where groundborne noise levels are predicted to be higher than the airborne noise levels inside residential properties and above the  $L_{Amax}$  35 dBA noise trigger level
- for existing green space between River Road and Spurway Street.

## Response

The operation of rail infrastructure generates vibration that has the potential to result in human comfort impacts within buildings or affect equipment highly sensitive to vibration (e.g. electron microscopes and other medical equipment). Ground vibration at the base of a building can also result in regenerated noise through the structure (more commonly referred to as groundborne noise) that can be heard within buildings. Given this, groundborne noise only affects occupants within buildings and does not affect outdoor spaces.

As described in section 10.7.1 of the EIS, the project would continue to be refined during further design development to minimise the potential for operational noise and vibration impacts (including groundborne noise). In accordance with mitigation measure NV1, an operational noise and vibration review of the developed design will be undertaken to review the potential for operational impacts and confirm feasible and reasonable mitigation measures to be incorporated in the design. Where impacts are identified, the review will consider measures such as higher performance tracks, which could include use of embedded track encapsulated within highly resilient boots and/or floating slab track.

The operational noise and vibration review will be informed by compliance monitoring for Parramatta Light Rail Stage 1 to confirm the effectiveness of various high performance track forms implemented.

In accordance with mitigation measure NV1, the operational noise and vibration review will be undertaken in consultation with relevant council(s) and the NSW EPA.

## Out-of-hours work for construction

### Issue description

Council's submission includes reference to specialist advice provided by a third party, which notes the importance of effective community engagement in relation to noise and out-of-hours work.

Council requests that the Department apply a suitable condition to any planning approval.

### Response

Transport is committed to ongoing consultation with the community, including in relation to potential noise impacts during construction and out-of-hours work. Transport recognises the importance of engaging with the community during the development of noise mitigation strategies, and the provision of information regarding noise and vibration impacts. In accordance with mitigation measure SE1, the Community Communication Strategy (provided Appendix D of this report) will be implemented to guide the management and delivery of community and stakeholder engagement in the lead up to, and during, construction.

The mitigation measures proposed to minimise noise and vibration impacts during construction commit Transport to consult and engage with the community in relation to the potential impacts and management approaches. These include:

- NV5 provides that the construction noise and vibration management plan, which will detail processes, responsibilities and measures to manage noise and vibration and minimise the potential for impacts, will be aligned with the results of community consultation. The plan will be prepared in accordance with the *Construction Noise and Vibration Strategy* (Transport for NSW, 2019a), which defines requirements in relation to consultation and notification.
- NV8 provides that appropriate respite periods will be identified, in consultation with the community, for work with the potential to result in noise levels above 75 dBA and/or that needs to occur outside the primary project working hours. The respite periods will take into consideration the communities' preferred noise and vibration management approach.

- NV11 provides that the out-of-hours work protocol will include implementing feasible and reasonable measures and communication requirements in accordance with the *Construction Noise and Vibration Strategy*. Measures will focus on proactive communication and engagement with potentially affected receivers, provision of respite periods, and/or alternative accommodation for defined exceedance levels.
- NV12 provides that all work outside the recommended standard hours defined by the *Interim Construction Noise Guideline* (DECC, 2009) will be scheduled using the hierarchy of preferred working hours described by section 7.5 of the EIS as far as practicable, and in consultation with the community and key stakeholders (including the NSW EPA).

## Operational road traffic noise modelling

### Issue description

Council states that it is likely that at-property treatments, such as upgraded window glazing, etc., would be required at locations where the operational road traffic noise levels are exceeded.

Council recommends (recommendation 13) that the Department apply a condition requiring at-property treatments for all receivers that are predicted to experience an increase in road traffic noise level greater than 2 dB and noise levels above the *NSW Road Noise Policy* (DECCW, 2011) controlling noise criteria.

### Response

The Updated Noise and Vibration Report (see section 4.2.1 of this report) describes the predicted operational noise impacts as a result of the proposed changes to the road network. Consistent with the noise and vibration assessment for the exhibited project, the updated assessment (described in the Updated Noise and Vibration Report) found that 32 receivers are predicted to experience an increase in noise greater than 2 dB and experience noise levels above the *NSW Road Noise Policy* (DECCW, 2011) controlling criteria for residences adjacent to collector roads. All identified receivers are located north of South and Boronia streets where the eastbound traffic lane would move closer to the residences to allow for the centre-running light rail track.

As noted in the response above, in accordance with mitigation measure NV1, once the design is further developed, an operational noise and vibration review will be undertaken to review the potential for operational impacts and confirm feasible and reasonable measures to be incorporated in the design. The review will include a detailed road traffic noise assessment for the proposed reconfiguration of South and Boronia streets, including:

- simultaneous noise monitoring and traffic count data for South and Boronia streets and side streets to validate the noise model in accordance with the *Model Validation Guideline* (Transport for NSW, 2018)
- a review of the forecast traffic volumes for the year of opening and the year of opening plus 10 years
- vehicles crossing over the rail track using traffic volumes forecast for side streets
- three-dimensional road and light rail interface and local topography.

The detailed road traffic noise assessment will be undertaken in accordance with the *NSW Road Noise Policy*, the *Road Noise Criteria Guideline (RCNG)* (Transport for NSW, 2022c) and the *Road Noise Mitigation Guideline* (Transport for NSW, 2022d). The *Road Noise Mitigation Guideline* provides a framework for the selection of reasonable and feasible mitigation measures to be considered for qualifying receivers, including at-property treatments.



## Operational noise levels and future residential development

### Issue description

Council notes that the *Camellia Rosehill Place Strategy* has been approved and the Department is proceeding with rezoning and a civil assets brief. Council also notes that the Melrose Park south rezoning and development process is well established. Council requests that these developments be protected from operational noise above policy triggers and that the project be constructed to meet operational noise criteria in strategic residential growth corridor(s), at public funding cost, and in a manner that recognises the required amenity of these high density living areas.

Council recommends (recommendation 14) that Transport commits to investigating predicted operational rail noise within the Camellia town centre and Melrose Park south strategic growth areas, with a view to including appropriate operational noise mitigation measures in the Urban Design Requirements and contract for the project. The Department should apply a condition of planning approval requiring those mitigation measures occur, consistent with the amenity required of a substantial town centre (e.g. no high noise walls). This may require some retrofitting of the light rail track in Camellia (it is noted that this track was constructed as part of Parramatta Light Rail Stage 1).

### Response

#### *Guidelines for consideration of noise at future developments*

In accordance with mitigation measure NV1, feasible and reasonable measures to be incorporated in the design will be confirmed as part of the operational noise and vibration review. Measures will be considered for qualifying receivers within existing and 'planned' developments that exceed the trigger levels prescribed in the *Rail Infrastructure Noise Guideline* (NSW EPA, 2013) for noise from the rail track. The *Rail Infrastructure Noise Guideline* defines 'planned' development as approved development, including staged development that identifies building locations. This would include developments at Sanctuary Wentworth Point and in the Carter Street precinct.

With regard to developments not yet approved via development consent, such as those subject to strategic plans and rezonings, the *Rail Infrastructure Noise Guideline* states that (section 1.4.3.2):

*Where planned rail infrastructure projects (and/or corridors) have been approved, it is reasonable for a developer and consent authority to consider such approved projects in accordance with the requirements of the Infrastructure SEPP.*

Section 2.100(3) of State Environmental Planning Policy (Transport and Infrastructure) 2021 (the Transport and Infrastructure SEPP) (previously the Infrastructure SEPP) provides that:

*If the development is for the purposes of residential accommodation, the consent authority must not grant consent to the development unless it is satisfied that appropriate measures will be taken to ensure that the following LAeq levels are not exceeded:*

- a) *in any bedroom in the residential accommodation – 35 dB(A) at any time between 10:00 pm and 7:00 am,*
- b) *anywhere else in the residential accommodation (other than a garage, kitchen, bathroom or hallway) – 40 dB(A) at any time.*

As such, the onus is on the developer or consent authority to ensure that developments demonstrate that the internal noise levels stipulated in the Transport and Infrastructure SEPP can be achieved in their proposed developments if they are given development consent following approval for the rail infrastructure corridor.

## **Consideration of potential noise and vibration impacts of the Parramatta Light Rail stabling and maintenance facility at the future Camellia town centre**

In addition to the above, the operational noise and vibration review for Parramatta Light Rail Stage 1 identified that noise levels from the Parramatta Light Rail stabling and maintenance facility may be above relevant noise goals during the evening and night periods at potential future residential receivers in the north of the proposed Camellia town centre. The noise and vibration assessment for Parramatta Light Rail Stage 2 (Technical Paper 3 (Noise and Vibration)) and the Updated Noise and Vibration Report (see section 4.2.1 of this report) identified that operation of the project is predicted to increase these exceedances as a result of the proposed increase in light rail vehicle movements entering and exiting the stabling and maintenance facility.

Although there is no requirement for Parramatta Light Rail Stage 1 or the project to meet the noise goals defined by section 2.100(3) of the Transport and Infrastructure SEPP at these potential future receivers, at-source noise mitigation options for the stabling and maintenance facility were investigated by the operational noise and vibration review for Parramatta Light Rail Stage 1. The review confirmed that, due to the potential height of future residential towers in the proposed Camellia town centre, noise barriers would not be a feasible and reasonable option to reduce noise levels (due to the required height for barriers to be effective). As a result, at-property treatment was considered to be the most effective future mitigation option to reduce airborne noise levels. Future residential developments would need to incorporate at-property acoustic treatments as part of their design and approval.

The relevant government authorities (Council or the Department of Planning and Environment) preparing future rezoning planning proposal/s for development in the proposed Camellia town centre would need to consider potential noise impacts from the stabling and maintenance facility in consultation with Transport.

If residual noise impacts are predicted after all feasible and reasonable mitigation measures have been considered by the operational noise and vibration review for the project (in accordance with mitigation measure NV1), suitable permissible land uses and planning controls should be considered by the relevant government authorities. Various strategic planning initiatives are discussed in section 1.1.1 of the *Noise Policy for Industry* (NSW EPA, 2017) and should be considered to avoid potential land use conflicts within the Camellia town centre.

### **Operational noise from light rail stops**

#### **Issue description**

Council states that there are several stops where residential receivers are within 25 metres of the stop and would have the potential to experience nuisance/annoying noise from public address system announcements.

Council recommends (recommendation 15) that the Department apply a planning approval condition that regular public address system announcements not be made during the evening (6pm to 10pm) and night-time (10pm to 7am) periods, where light rail stops are close to residents. Public address system announcements should only be utilised in emergency situations during these periods.

#### **Response**

As described in section 6.10.5 of the EIS, the public address system would be used only in the event of an emergency and would be designed to minimise impacts on the amenity of the surrounding community. Regular service information would not be provided by the public address system. Only emergency announcements would be made. To minimise the potential for noise impacts, and in accordance with mitigation measure NV2, the public address system will be designed to comply with the *Noise Policy for Industry* (NSW EPA, 2017) intrusiveness and sleep disturbance noise trigger levels at all locations.

## 6.2.10 Cycling and pedestrian connections

### Restriction of cycling approaches across light rail tracks

#### Issue description

Council states that for Parramatta Light Rail Stage 1, cycling approaches to intersections were restricted to right angle and similar crossings, so that narrow wheels did not get caught in the rail flange gap in the road. Council notes that rail authorities in Europe and other countries use rubber track inserts to eliminate this issue and requests that project infrastructure not be designed with transport continuity cross-purposes.

It is recommended (recommendation 16) that Transport develop a suitable track insert to assist the project to provide seamless, coherent, visible, and safe pedestrian and cycle access throughout and adjacent to the Parramatta Light Rail corridor.

#### Response

Transport is committed to providing safe cycling and walking connections as part of the project. As described in section 6.4 of the EIS, active transport links would be designed in accordance with the principles outlined in Technical Paper 1 (Design, Place and Movement), the urban design requirements, relevant guidelines and standards (including *Guide to Road Design Part 6A: Paths for Walking and Cycling* (Austroads, 2017) and Australian Standard AS 1428.1-2009 *Design for access and mobility*), and crime prevention through environmental design principles.

In accordance with mitigation measure TT4, road safety audits will be undertaken where changes to the road network are proposed, in accordance with relevant Austroads guidelines, to ensure the safety of road users, including cyclists, is considered during design development. These audits will consider lessons learnt from other light rail projects in NSW.

The design has and would continue to consider cyclist safety. Crossing points would be as close to a right angle as possible to reduce the chance of bicycle wheels being caught in the track. In addition, innovative technologies, including rubber track inserts or other technologies that address the specific risk of bicycle-rail interface, would continue to be investigated as the design progresses.

## 6.2.11 Flood affected land and stormwater controls within the corridor

### Stormwater drainage on Hill Road and flood management objectives

#### Issue description

Council states that it is likely that stormwater systems along Hill Road will require significant upgrades as part of the project. Council is also proposing stormwater works as part of the Hill Road Masterplan and requests that careful engagement and work programming occur to prevent duplication of infrastructure work.

Council requests that the project not worsen existing and future flood impacts along the alignment. Further, the rail track must not be built on embankments along Hill Road to provide flood immunity. This will have significant detrimental impacts on flooding and flood waters diversion into residential areas.

Council raises particular concerns about Hill Road, which currently experiences regular floods at low intervals. Council notes that the stormwater drains in Hill Road do not function effectively due to their level relative to the Parramatta River. As a result, Council requests that the project should avoid structures such as embankments adjoining Hill Road which will divert and/or retain stormwater to the detriment of road users and adjoining properties.

Council notes that (recommendation 17), for operational flood levels in events up to the one per cent annual exceedance probability (AEP), Council cannot support flood management objectives that will cause increased risk to private landowners in Parramatta. Council states that they can only support an increase in flood levels up to 0 millimetres in residential and commercial land, and 10 millimetres in public land.

Council notes that increases in flood management levels built into the project will lessen Council's existing flood management controls, and have cumulative impacts with other projects, such as Sydney Metro West. Increases in flood levels are not acceptable on private land.

## **Response**

### **Flood management objectives**

The flood management objectives for the project (see section 17.1.3 of the EIS) have been developed in conjunction with, and with input from, key project stakeholders, including Council. The objectives were developed to be consistent with accepted industry practice and relevant guidelines, as well as other major infrastructure projects in NSW and are therefore considered to be appropriate for the project. The clarification in section 4.3.5 of this report provides further information about the flood management objectives and how they were developed.

In accordance with the flood management objectives, the project would be designed to ensure that, for flood events up to the one per cent AEP, there would be no afflux (an increase in inundation relative to the existing condition) greater than:

- 10 millimetres in residential zoned land
- 20 millimetres in commercial/industrial zoned land
- 50 millimetres in public land.

### **Flood immunity and co-ordination of stormwater upgrades**

Transport would continue to work with Council to coordinate drainage works along Hill Road as far as practicable to minimise disruptions and the potential for duplication with work to be undertaken by Council.

It is noted that it is likely that some embankments would be required along Hill Road given that the road is currently flood prone (see response below) and the project is required to be operational during flood events up to the five per cent AEP flood event.

The project, including any embankments required and the associated drainage, would be designed such that the project's flood management objectives (as described above) are achieved. The measures to achieve the flood management objectives will be defined by the flood management strategy, which will be prepared in accordance with mitigation measure W1. In addition, mitigation measure W2 commits to designing drainage and flood management infrastructure with regard to relevant design requirements and guidelines, including the *Development Engineering Design Guidelines* (City of Parramatta Council, 2018) and the *Sydney Olympic Park Authority Policy – Stormwater Management and Water Sensitive Urban Design* (SOPA, 2016).

During design development, where it is identified that the existing stormwater network does not have the capacity to manage the stormwater volumes generated as a result of the project, appropriate modifications will be undertaken in consultation with the relevant asset owner. Required modifications would be confirmed in accordance with the flood management strategy (prepared in accordance with mitigation measure W1) and the design standards and requirements of the asset owner.

### *Inundation along Hill Road*

Technical Paper 10 (Hydrology, Flooding and Water Quality) provides an overview of existing conditions (without the project) and a detailed assessment of potential flooding impacts during operation. Appendix C1 of Technical Paper 10 shows that the northern end of Hill Road (north of Bennelong Parkway) is currently subject to inundation of between 100 and 500 millimetres during a one per cent AEP event. The depth of inundation increases in less frequent storm events. There is minimal flooding evident on Hill Road between Bennelong Parkway and Holker busway.

Appendix C3 of Technical Paper 10 provides figures showing the outputs of flood modelling predictions associated with the project– that is, the impacts relating to the project only, excluding existing flooding. Over the same section of Hill Road, the results indicate minimal change in inundation levels. The only observable increase is along the western edge of the roadway where an increase of about 20 to 50 millimetres is predicted during a one per cent AEP event. There is no residential development along the western side of Hill Road in this location. At Bennelong Parkway, there is a small section of roadway where a reduction of inundation of about 10 to 50 millimetres is predicted during a one per cent AEP event.

For the section of Hill Road between Bennelong Parkway and Holker Busway, inundation increases of between 10 and 100 millimetres are predicted along most of its length and along the western edge of the roadway in particular. At the intersection with Holker Busway, inundation of more than 100 millimetres is predicted as a result of the project.

Transport commits to achieving the flood management objectives provided in section 17.1.3 of the EIS in all areas within and adjacent to the project site for any changes to flooding resulting from the project. This commitment is confirmed by mitigation measure W1 (as amended), which requires the development of a flood management strategy demonstrating how the flood management objectives have been achieved.

Transport has carried out revised flood modelling to assess the amended project (incorporating the proposed amendments described in section 4.1 of this report and in more detail in the Amendment Report). A discussion of the changes to predicted flood levels along Hill Road as a result of the amended project is provided in section 6.10 of the Amendment Report.

### **Cumulative impacts**

An assessment of potential cumulative impacts of the project and other proposed developments in the study area was undertaken in section 7.1 of Technical Paper 10, and where required, updated in section 4.3 of the Supplementary Flooding Report. The predicted impacts were considered to be low, provided the mitigation measures are implemented for the project, and proposed developments are designed and constructed to current standards.

## **6.2.12 Public art and heritage interpretation**

### **Consistency in implementation of public art and heritage interpretation**

#### **Issue description**

Council raised issues regarding the public art and interpretation implemented for Parramatta Light Rail Stage 1.

Council recommends (recommendation 18) that the Department provides a modified planning approval condition that requires Transport develop a comprehensive public art and interpretation strategy for the whole alignment, using a consistent consultant scope, engaging closely with Council, and requiring coordination between Transport, contractors and stakeholders to provide an integrated approach.

#### **Response**

Transport acknowledges the importance of providing a coordinated project-wide public art and heritage interpretation strategy.

Technical Paper 1 (Design, Place and Movement) (see section 14.9) acknowledges that public art adds enormous value to the cultural, aesthetic and economic vitality of the community. Public art contributes to, and can enhance, quality of life and allow for a sense of ownership by community members.

Heritage interpretation involves sharing memories and history, and enhances understanding and enjoyment of heritage items. Integrating interpretation into the design is a way to recognise and embrace Aboriginal and non-Aboriginal heritage, and contributes to the designing with and connecting with Country process.

Transport recognises the need to integrate the approach to public art and heritage interpretation and commits to designing and delivering integrated solutions for public art and heritage interpretation as part of the project. An integrated public art and heritage interpretation strategy is currently being commissioned. The strategy will be an inclusive, comprehensive strategy for the whole alignment, and will be developed in consultation with stakeholders, including Council and Aboriginal groups.

Requirements for Aboriginal and non-Aboriginal heritage interpretation have also been identified as part of the heritage assessments, and committed to through mitigation measure AH3 and NAH6. In accordance with mitigation measure AH3, the heritage interpretation strategy will include measures to ensure a meaningful design response to Aboriginal heritage and cultural values. It will be developed in consultation with relevant stakeholders, including registered Aboriginal parties, and will take into account the recommendations of the Cultural Values Assessment (Appendix G of the Aboriginal Cultural Heritage Assessment Report). With respect to non-Aboriginal heritage, and in accordance with mitigation measure NAH6, the strategy will include interpretation requirements for specific parts of the project, particularly where heritage items will be impacted, or archaeological sites are proposed to be excavated.

Key principles for public art, as defined in section 14.9 of Technical Paper 1, include:

- ensuring all public art is developed in partnership with, and meets any relevant public art strategies of, Council and Sydney Olympic Park Authority
- integrating Aboriginal and non-Aboriginal public art
- integrating the public art strategy with the heritage interpretation strategy across the alignment.

### **6.2.13 Cabinet location and disability access**

#### **Accessible path of travel on footpaths**

##### **Issue description**

Council raised issues regarding the obstructions that electrical, traffic signal and other cabinets located in footpaths can present for a clear path of travel for people with disability and vision impairment.

Council requests that stronger public domain controls be provided in the project documentation to oblige the contractor to work harder to avoid visual clutter.

Council recommends (recommendation 19) that the Department condition the planning approval for the project to provide for the creation of accessible paths with clear 'paths of travel'; shorelines that are unencumbered by incidental electrical and traffic signal cabinets; and designs that consider local built form context to ensure that persons do not have to weave their way around cabinets on the footpath.

##### **Response**

Transport acknowledges that services cabinets can potentially create obstacles to paths of travel along with visual impacts.

Technical Paper 1 (Design, Place and Movement) (see section 14.4.2) confirms the commitment to ensuring that walking and cycling facilities are designed and built to be safe and accessible to people of all ages and abilities, including people using assisted mobility devices, walking aids and different types of bicycles.

The urban design requirements, which would be finalised during design development in accordance with the vision, principles and outcomes in Technical Paper 1, would provide key principles and objectives for the location of cabinets installed by Transport to guide their placement and ensure they do not impact paths of travel. It is noted that Transport does not have control over the placement of infrastructure by utility service providers.

Further information about how the urban design requirements would be developed, and the involvement of stakeholders and the project-specific Design Review Panel in this process, is provided in the responses in section 6.2.3 of this report.

## **6.2.14 Car parking strategy during construction**

### **Impact of construction worker parking on local parking**

#### **Issue description**

Council raised issues regarding workers' parking during construction of Parramatta Light Rail Stage 1 and notes that these issues will be exacerbated for the project.

Council requests that further explanation be provided in relation to the construction worker parking requirements in Table 5.5 of Technical Paper 2 (Transport and Traffic).

Council recommends (recommendation 20) that the Department condition the planning approval to require Transport and contractors provide shuttle buses to alignment work sites, as part of the parking management strategy within the traffic and access management plan, to minimise impacts on residential parking.

#### **Response**

#### **Potential impacts on local parking and explanation of Table 5.5 of Technical Paper 2**

Transport acknowledges that construction worker parking would have the potential to affect the availability of on-street parking in the vicinity of the project site, if parking is not provided elsewhere, as described in section 9.3.6 of the EIS.

Some parking for the construction workforce would be provided at construction compounds. As described in section 9.3.6 of the EIS, it is estimated that up to about 340 additional parking spaces would be required across the project site to service the parking demand from construction workers. To meet some of this demand, the project would provide about:

- 200 off-street spaces at the Sydney Olympic Park P5 car park (in compound 12 (Holker Busway) (now referred to as compound 11 in the updated project description provided in Appendix A of the Amendment Report))
- 50 off-street spaces at Edwin Flack Avenue (in compound 15 (Dawn Fraser Avenue) (now referred to as compound 14 in the updated project description in Appendix A of the Amendment Report)).

Potential impacts on parking during construction are considered in section 5.3 of Technical Paper 2 (Transport and Traffic) and summarised in section 9.3.6 of the EIS.

Construction worker parking requirements are estimated in Table 5.5 in Technical Paper 2 based on an estimate of the number of workers required within each precinct and the likely availability of parking (for example, within construction compounds, surrounding streets or other nearby parking areas). Based on the difference between the estimated worker parking demand and the available supply of parking spaces identified in Table 5.5, the need for additional worker parking has been determined. The analysis concludes that the estimated difference between worker parking demand and the available spaces is about 119 spaces in Camellia, Rydalmere and Ermington. Parking arrangements for workers would be subject to further investigation during construction planning by the construction contractor as part of the parking management strategy (described below).

#### **Mitigation and management measures**

Opportunities for additional construction workforce parking would be investigated during construction planning, particularly for larger work areas.

As described in sections 9.3.6 and 9.6.1 of the EIS, and in accordance with mitigation measure TT7, the approach to managing impacts on on-street parking will be defined by the parking management strategy, which will be developed and implemented in consultation with key stakeholders, the community and relevant property owners/occupants. The parking management strategy will include measures to manage construction worker parking to minimise worker parking in public streets, such as the provision of designated parking areas within the project site, encouraging use of public transport, and implementing shuttle bus arrangements.

Further information about the requirements for the parking management strategy is provided in section 9.6.1 of the EIS.

### **6.2.15 Assessment of lighting impacts**

#### **Impact of lighting on adjoining properties**

##### **Issue description**

Council states that the EIS does not provide an assessment of the impact of track and stop lighting on adjoining properties.

Council also states that there will be a new track behind existing dwellings in Ken Newman Park, with track lighting and the potential for light throw.

Council recommends (recommendation 21) that Transport carry out a detailed assessment of lighting impacts along the alignment.

##### **Response**

Transport acknowledges that there are a range of sensitive environments along the alignment, including Ken Newman Park, where receivers may experience lighting impacts.

The Landscape and Visual Impact Assessment (provided as Appendix A of Technical Paper 1 (Design, Place and Movement) and summarised in Chapter 15 (Landscape and visual impacts) of the EIS) considered the potential for impacts as result of lighting.

Ken Newman Park was identified as a landscape character zone with a high sensitivity to change (see section 15.2.2 of the EIS). The Landscape and Visual Impact Assessment identified that the project would have the potential for a high impact on this zone.



Four representative viewpoints in and around Ken Newman Park were considered by the assessment (viewpoints 12(b), 13, 14 and 15 – see section 15.2.3 of the EIS). These viewpoints were considered to have moderate (viewpoints 12(b) and 13) and high (viewpoints 14 and 15) sensitivity to change. At these viewpoints, the assessment concluded that the project would have the potential for moderate to high visual impacts during night time operation, including as a result of the introduction of lighting.

Transport is not proposing to undertake a detailed lighting assessment at this stage, as the design is evolving (as described in section 5.6 of the EIS) and there is not currently a sufficient level of detail on the lighting design to meaningfully consider and adjust lighting impacts. Detailed consideration and minimisation of lighting impacts will be undertaken during further design development. Mitigation measure LV7 commits to designing and siting lighting to minimise glare and light spill into adjoining areas in accordance with Australian/New Zealand Standard AS/NZS 4282:2019 *Control of the obtrusive effects of outdoor lighting* and relevant standards in the series AS/NZS 1158:2005 *Lighting for roads and public spaces*.

## 6.2.16 Residual land strategy

### Managing residual land

#### Issue description

Council raised issues regarding the approach to residual land during Stage 1 and states that the EIS is silent on replacing or providing additional commuter parking to encourage use of the light rail.

Council recommends (recommendation 22) that the future use of residual land should be considered at the same time as the preparation of the urban design guidelines, so that residual land contributes effectively to project impacts and needs. Residual land should be used for commuter parking or similar public use as part of this project. The Department is encouraged to apply a condition of planning approval to require this action by the proponent.

#### Response

Transport is delivering Parramatta Light Rail to provide a sustainable, integrated public transport service that supports population and employment growth, and integrates with existing and future modes of transport.

The SEARs (SEAR 2. Design, Place and Movement – see Appendix A (SEARs compliance table) of the EIS) requires the project to demonstrate consistency with a range of design and placemaking guidelines, including *Creating Walkable Neighbourhoods* (Active Living NSW, 2018), *Better Placed* (Government Architect NSW, 2017), *Aligning Movement and Place* (Government Architect NSW, 2019), *Greener Places* (NSW Government, 2020), and the *Healthy Urban Development Checklist* (NSW Health, 2009). In accordance with these guidelines, Transport is not proposing the use of residual land for commuter car parking. The project aims to provide multi-modal connections between buses, ferries, trains and Sydney Metro West. The active transport links provided as part of the project connect to the pedestrian and road network to provide safe access to adjacent existing and future neighbourhoods, encouraging active transport to and from stops.

The amended project would only result in about 4,000 square metres of residual land, which is surplus to the operational and open space requirements of the project (see section 1.9.2 of the updated project description in Appendix A of the Amendment Report). This small area of residual land has resulted from design refinements to reduce the project's land requirements and the associated need for property acquisition.

As described in sections 6.9.2 and 13.7 of the EIS, and in accordance with mitigation measure LP4, a residual land management plan will be prepared in consultation with key stakeholders to define the approach to managing residual land, including the future use of the land. The plan will include:

- identification of residual land, including location, land use characteristics, size and surrounding land uses
- identification of potential feasible uses for the land guided by relevant local and regional strategic and statutory planning instruments, including master planning for identified urban renewal areas, environmental constraints, and consideration of future development feasibility
- identification of, and consultation with, key internal and external stakeholders, including local councils and relevant government agencies (including the Department of Planning and Environment, Transport and Sydney Olympic Park Authority) as appropriate
- identification of proposed uses for the land and actions required (including any remediation of contaminated land) to make the land suitable for the identified final use
- timeframes for implementation of the actions in relation to the identified future uses.

### **6.2.17 Tree removal**

#### **Issue description**

Council requests that, given the significant amount of tree removal, measures should be provided to preserve mature canopy and provide thorough justification for tree removal with possible design mitigation measures.

Council notes that it has recently planted trees along South Street that are not incorporated in the tree survey as they are under three metres in height. By the time of pre-works/construction the trees will be of significant height. These trees, which were planted under the Greening Our City Program, will need to be replaced or relocated. This will further increase the number of trees to be removed.

Council requests that a clear breakdown of the number of trees in private property compared with the public domain is needed to understand the impacts on Council's assets.

Council recommends (recommendation 23) that the EIS Addendum report outline measures to preserve mature canopy, provide full justification for tree removal in a tree register along, and possible design mitigation measures.

#### **Response**

The arboricultural assessment for the EIS, which was undertaken by a qualified arborist, was informed by a survey of street trees and planted vegetation within and immediately adjacent to the project site. For the purposes of the assessment, and in accordance with the SEARs, a 'tree' was defined as per Australian Standard AS 4980-2009 *Protection of trees on development sites* as a 'Long lived woody perennial plant greater than (or usually greater than) three metres in height with one or relatively few main stems or trunks'.

The results of the assessment are described in the Arboricultural Report, which forms Appendix B to Technical Paper 1 (Design, Place and Movement), with a summary of tree impacts provided in section 15.3.3 of the EIS. Appendix A of the Arboricultural Report included detailed mapping to show the location and number of each tree/tree group surveyed. The mapping corresponded to a detailed tree table in Appendix C of the report that provided tree information (such as species and tree condition). This information will form the basis for the tree register for the project (described below).

As design development and construction planning progresses, it is important to revise tree information to capture changes to the local environment, such as the growth of recently planted trees like those planted by Council on South Street. The tree register prepared in accordance with mitigation measure LV4 will identify all trees with the potential to be impacted by the project, including any newly planted trees. The tree register for the project will be consistent with the Parramatta Light Rail Stage 1 Tree Register, which informed the design and construction planning for Stage 1.

Transport has worked to further review and refine the commitments made in the EIS. This has included aligning the proposed approach with the latest Transport policies with respect to biodiversity management and tree offsets to strengthen the mitigation measures and make clearer Transport's intent to avoid tree removal during design development and construction planning as far as practicable. Transport has added an additional requirement to mitigation measure LV5 to confirm that trees within the project site boundary, which will not be directly impacted by infrastructure or utility works, will be assessed for retention through careful consideration of design and construction methods. The clarification in section 4.3.3 of this report provides further information about Transport's proposed approach to managing the impacts on trees during design and construction.

## **6.2.18 Improvements to heritage assessment and engagement process**

### **Issue description**

City of Parramatta councillors requested improvements to assessment, design and community engagement processes in respect of the project's impacts on heritage items and heritage precincts.

Councillors requested improvements by completing and publishing heritage assessments before the contract is awarded and enabling full community consultation on the impact and outcomes for the heritage item(s).

### **Response**

Technical Paper 4 (Preliminary Aboriginal Cultural Heritage Assessment Report), Technical Paper 5 (Statement of Heritage Impact – Built Heritage) and Technical Paper 6 (Historical Archaeological Assessment) assessed the impacts of the project on Aboriginal and non-Aboriginal heritage. These technical papers formed part of the EIS, which was exhibited on the Department of Planning and Environment's Major Projects website (available at: [Major Projects | Planning Portal](#)) with direct links available to this site from the Parramatta Light Rail website (available at: [Parramatta Light Rail](#)), and the project's virtual engagement room and EIS portal (available at: [Virtual engagement room](#)). Feedback on heritage matters raised during the EIS exhibition period have been addressed in this Response to Submissions.

In addition, updated heritage reports have been prepared including an assessment of the potential impacts of the proposed amendments to the project (see section 4.2.1 of this report). A summary of the heritage assessments is provided in sections 6.4 and 6.5 of the Amendment Report, and the updated heritage reports are available on the websites listed above.

The mitigation measures proposed to minimise impacts to Aboriginal and non-Aboriginal heritage commit Transport to consult and engage with relevant key stakeholders in relation to potential impacts and management approaches. These include:

- AH2 commits to ongoing consultation through the life of the project, including on managing potential impacts on objects/aspects of cultural significance in consultation with registered Aboriginal parties.
- AH4 commits to continued consultation with and involvement of Aboriginal stakeholders during design development.

- AH7 requires consultation with registered Aboriginal parties during preparation of the detailed salvage methodology, which will also include a process for further consultation and requirements in the short and long-term management of Aboriginal objects recovered during testing and salvage.
- NAH5 provides for consultation with City of Parramatta Council and the property owner regarding adaptive reuse options for Bulla Cream Dairy (Willowmere).
- NAH6 commits to preparing a heritage interpretation strategy to guide incorporating appropriate interpretation and integration of heritage in the design, in consultation with relevant stakeholders including City of Parramatta Council.
- NAH8 commits to preparing a heritage management plan, including measures to manage non-Aboriginal heritage and minimise the potential for impacts during construction, in consultation with relevant heritage agencies (Heritage NSW, Sydney Olympic Park Authority, City of Parramatta Council and City of Ryde Council).

## 6.3 City of Ryde Council

### 6.3.1 Introduction / project justification

#### Route extension

##### Issue description

The City of Ryde Council (Council) states that the route should be extended to include direct interchange with existing heavy rail facilities at either Meadowbank or West Ryde, which is a priority transport project contained in the City of Ryde Integrated Transport Strategy 2041.

Council states that a route extension would further enhance the benefits derived from the project, which would have been further amplified if a direct light rail connection to Macquarie Park was provided.

##### Response

The preferred light rail alignment was selected to serve and connect communities living north and south of the Parramatta River in GPOP, and to connect to existing and new public transport modes and interchanges, serving the forecast high demand for journeys and reducing congestion on existing networks.

As described in section 5.3.1 of the EIS, seven corridor options between Camellia and Sydney Olympic Park were considered during the phase 1 corridor assessment. This included a corridor option that followed Victoria Road to West Ryde. This option was not selected as preferred primarily due to unacceptable construction and traffic management challenges on Victoria Road, and because it provided limited opportunity to service growth or new residential development catchments. Further information about the development of the preferred network for Parramatta Light Rail is provided in *Parramatta Light Rail - How the preferred network was determined* (Transport for NSW, 2016) (available at: [Parramatta Light Rail Options Report](#)) and Chapter 5 of the EIS (Design, development, alternatives and options).

Parramatta Light Rail will interchange with rail and Sydney Metro West at Westmead, Parramatta and Sydney Olympic Park, providing access to Macquarie Park.

Future extensions may be considered in line with NSW Government integrated transport and land use planning.

## 6.3.2 Project construction phase

### Issue description

Council raised the following issues in relation to the management of potential construction impacts:

- Loss of parking along the route should be minimised to limit impact on existing land uses, particularly commercial activities.
- To minimise the impact of construction activities, consideration should be given to providing temporary off-street parking facilities for workers and contractors. Arrangements should be made to lease nearby Council sites such as the Melrose Park sports facilities during working hours. A shuttle bus system could be used to transport workers to and from construction sites.
- Alternative arrangements for the existing shared user path along the foreshore of Melrose Park will be needed during the construction phase of the project.
- Any damage to areas adjacent to the light rail route will need to be restored in accordance with City of Ryde's standard drawings, or as detailed within the local Development Control Plan. A detailed pre-construction dilapidation report detailing the condition of all Council Infrastructure within the vicinity of the works (100 metres) will be required.
- Detailed design plans for works impacting City of Ryde land should be submitted to Council for review to enable endorsement and the provision of any necessary Council requirements or conditions.

### Response

#### Minimising loss of parking / parking facilities for construction workers

Section 9.3.6 of the EIS summarises the potential impacts on parking availability during construction. Table 9.5 provides details of the existing parking supply and the number of spaces estimated to be affected during construction. The table shows that there is considered to be sufficient parking on side streets north of Parramatta River within the vicinity of the project site (in Rydalmere, Ermington and Melrose Park) to accommodate car parking requirements during the construction stage.

Opportunities to reduce the loss of on and off-street parking will be reviewed during design development in accordance with mitigation measure TT5.

Transport acknowledges that construction worker parking would have the potential to affect the availability of on-street parking in the vicinity of the project site, if parking is not provided elsewhere, as described in section 9.3.6 of the EIS.

It is estimated that up to about 340 additional parking spaces would be required across the project site to service the parking demand from construction workers. To meet some of this demand (as described in section 7.7 of the EIS) about 250 off-street parking spaces would be provided in construction compounds. Opportunities for additional construction workforce parking would be investigated during construction planning, particularly for larger work areas.

The approach to managing impacts on on-street parking will be defined by the parking management strategy developed in accordance with mitigation measure TT7. The strategy will include measures to manage the reduction in on-street parking availability, including provision of alternative parking arrangements for accessible and service spaces, staged removal, resident parking schemes, and managed staff parking arrangements. The parking management strategy will also include measures to minimise worker parking in public streets, such as provision of designated parking areas within the project site, encouraging use of public transport, and implementing shuttle bus arrangements.

Further information about the requirements for the parking management strategy is provided in section 9.6.1 of the EIS.

### **Detour of Parramatta Valley Cycleway at Wharf Road**

As outlined in section 9.3.4 of the EIS, the section of the Parramatta Valley Cycleway using Wharf Road at Melrose Park and the shared use path through Koonadan Reserve connecting to Wharf Road would be disrupted by road closures and the construction compound at Wharf Road car park and would be closed. A temporary detour of the cycleway would be provided connecting the existing path along Waratah Street to Wharf Road, Andrew Street and Lancaster Avenue. Access to and from the west for bicycles and pedestrians would be maintained through the work areas using traffic control.

As noted in section 4.2.3 of the Amendment Report, as a result of proposed changes to the bridge and construction compound 8 in Melrose Park (Wharf Road - now referred to as compound 7 in Appendix A of the Amendment Report), further changes to the Parramatta Valley Cycleway are now proposed. An alternative route via Mary Street, Wharf Road, Andrew Street and Lancaster Avenue would be provided. Further details are provided in sections 4.2.3 and 6.2 of the Amendment Report.

### **Damage to Council infrastructure**

In accordance with new mitigation measure TT19, pre-construction condition surveys will be completed for local roads, footpaths and other Council assets within 100 metres of the project which could be affected or damaged during construction. Where damage to an asset is caused by the project it will be restored to at least the condition it was pre-works or compensation will be offered to the asset owner. A copy of the pre-condition condition report will be provided to Council prior to the commencement of works within the vicinity of the asset.

### **Detailed design plans for works impacting City of Ryde land**

Transport will continue to engage with Council where the project has the potential to affect Council assets, such as transport or stormwater infrastructure.

## **6.3.3 Alternatives and options**

### **Relocation of transmission tower, impact on open space and boat ramp**

#### **Issue description**

Council states that it strongly supports further investigations/options analysis aimed at relocating Ausgrid's existing transmission tower and associated high voltage power lines, in relation to the alignment of the route in Melrose Park (as described in Chapter 5 of the EIS). Council's preference is to relocate the infrastructure below ground or integrate it with the bridge. Relocation of this infrastructure would allow an alternative route that would significantly reduce property impacts, as well as limiting the loss of existing mangroves and tree cover.

Council requests that the alternative route be designed to minimise the impact on available open space in Archer Park and boat ramp / car parking facilities.

#### **Response**

As outlined in section 4.1 of this report, Transport is proposing to amend the project to include a new alignment for the bridge between Melrose Park and Wentworth Point that is located further west than that described in the EIS to avoid direct impacts on residential properties and reduce direct impacts (clearing) to mangroves and saltmarsh vegetation. Further information is provided in section 4.2 of the Amendment Report.

To accommodate the amended alignment, the existing transmission tower in Archer Park would be replaced with three new poles to maintain the necessary clearances. Undergrounding or integration of the power lines with the bridge was not considered viable as it would introduce additional engineering, environmental, maintenance and operational complexities and costs. Integration of high voltage power lines on the bridge would also pose safety and operational risks due to interference between rail systems equipment and high voltage power lines. Further information is provided in the response to similar issues raised by communities submissions in section 8.2.3 of this report (under the heading 'Bridge design – high voltage electricity transmission lines').

The amended design has sought to minimise impacts on open space in Archer Park and impacts on Ermington Boat Ramp. However, there would be some reconfiguration of the car park and access changes, along with relocation of the existing amenities block. These changes, and the associated potential impacts, are considered in Chapters 4 (Description of the amendments) and 6 (Additional environmental assessment) of the Amendment Report.

## **Melrose Park Bridge**

### **Issue description**

Council encourages Transport to reconsider the preferred bridge option (as suggested by Transport's Design Review Panel) so it more closely aligns to the previous project announcements made in 2018 and imagery released.

Council notes that the project risks failing to achieve the bridge design objectives (in Technical Paper 1 (Design, Place and Movement)) and playing a critical role in interpreting the connection of two significant urban renewal areas (Melrose Park and Wentworth Point). It is not considered that a box girder bridge design would meet the EIS's urban design vision.

Council requests that the design and construction of the new bridge aim to minimise the loss of mangroves along Parramatta River. Koonadan Reserve is an area of protected ecologically endangered saltmarsh, requiring consideration during the design, construction and operational phases of the project.

### **Response**

#### **Preferred bridge option**

As described in section 5.4.5 of the EIS, a range of options for the bridge between Melrose Park and Wentworth Point were assessed. These options were developed based on consideration of a range of important constraints, including:

- the limited space on both sides of the Parramatta River
- presence of environmentally sensitive areas including those referenced in the submission
- the span for the navigational channel
- the need to achieve appropriate grades for the light rail alignment and active transport link.

Each of these factors have been considered extensively as part of the options and design development process.

A box girder bridge was determined to be the preferred bridge type as it would:

- provide a good design outcome and better value
- be consistent with examples referenced by *Bridge Aesthetics: Design Guideline* to improve the appearance of bridges in NSW (Roads and Maritime Services, 2019)
- have a longer span and require fewer piers, which would achieve a suitable navigable width and result in less construction impacts within the Parramatta River.

Other bridge types (super T and steel-tied arch) were not preferred as they would result in more piers (with greater impacts on the navigation channel and construction impacts), require higher quantities of materials (such as steel), or result in increased maintenance. However, the Transport for NSW Design Review Panel recommended consideration of alternative bridge design options as part of design development, including cable-stay, extradosed and box girder designs. These options are being further investigated as outlined in section 5.6 of the EIS and below.

Regardless of the final bridge type, the project's urban design requirements would enable a new crossing to be created that is highly efficient, resilient, functional and achieves design excellence.

It is also noted that the bridge design imagery referred to in the submission was a visualisation produced by a private developer, and was not released by Transport.

#### **Bridge design vision and objectives**

A description of how the bridge would be designed in accordance with the design vision and objectives is provided in the response to similar issues raised by City of Parramatta Council (see section 6.2.3 above under the heading 'River bridge structures'). Further information is provided in the clarification in section 4.3.6 of this report.

#### **Minimising impacts on mangroves and saltmarsh communities**

Section 13.6 of Technical Paper 1 (Design, Place and Movement) includes the following urban design requirements specifically to minimise the potential biodiversity impacts of the bridge:

- Minimise impacts to the foreshore areas, mangroves and wetland areas. Careful placement of bridge piers, bridge abutments and overall bridge design to minimise impacts both during and post construction.
- Consider ways in which the pile cap design can enhance the ecology of the Parramatta River. Bridge abutments to consider ecological corridors and habitat creation.

Potential impacts on mangroves and saltmarsh communities were assessed by Technical Paper 9 (Biodiversity Development Assessment Report) and the results were summarised in Chapter 16 (Biodiversity) of the EIS. Assessed impacts included direct impacts associated with vegetation clearance and disturbance during construction, and operational impacts including shading.

The amended alignment of the bridge between Melrose Park and Wentworth Point would reduce the boundary of the project site at Melrose Park, including around Koonadan Reserve. Direct impacts (clearing) of mangroves and saltmarsh vegetation has reduced from about 0.96 hectares (for the project described in the EIS) to about 0.75 hectares as a result of the proposed amendments. The potential for indirect impacts on native vegetation and threatened species habitat as a result of shading from the bridges has also reduced. Further information about the change in impacts on biodiversity as a result of the amended project is provided in section 6.9 of the Amendment Report.

Mitigation measure BD1 commits to limiting vegetation clearing to the minimum necessary to construct the project. In accordance with BD1, the design and location of the project (including the proposed bridges) will be further refined to minimise or avoid impacts on native vegetation, fauna movement and habitat, including mangroves as far as practicable.

The construction methodology, described in section 7.3.2 of the EIS, proposes the use of temporary working platforms that would be erected over the mangroves to minimise direct impacts. Additional measures to protect mangroves and saltmarsh communities during construction would be detailed in the biodiversity management plan (prepared in accordance with mitigation measure BD11) and the habitat restoration and revegetation plan (prepared in accordance with mitigation measure BD14) that would provide for active revegetation of mangroves and restoration of affected habitat.



## Wire-free operations

### Issue description

Council states that wire-free operation is imperative to minimise visual clutter within the landscape of the overall project. Council strongly encourages Transport to consider the long-term impacts of overhead wires and the quickly advancing technologies that may make overhead wires between stops redundant in the future.

Council requests that Transport ensure wire-free operations over the Melrose Park bridge to reduce as much as possible elements that detract from the potential aesthetic qualities of the bridge and surrounding foreshore areas. This would be consistent with the previously released bridge imagery.

### Response

The project would incorporate sections of wire-free power supply. Transport would investigate the feasibility of providing wire-free power supply for other sections of the alignment in addition to those described in the EIS. This commitment is confirmed by new mitigation measure LV3 (see Appendix B (Updated mitigation measures) of this report).

The clarification in section 4.3.2 of this report provides further information about the options to power light rail vehicles (including wire-free power), constraints that influence these options, and how the location of wire-free areas would be confirmed during design development, including the required studies. During design development, and once the necessary studies have been undertaken, key stakeholders would be consulted regarding the proposed location of additional wire-free sections.

The design of the wire-free sections would be confirmed in accordance with the project's urban design requirements. Further information is provided in section 4.3.2 of this report.

## Melrose Park bridge abutment

### Issue description

Council states that bridge abutments have historically been accepted as 'left over' and uninspiring places, with little to no activation potential or purpose. Council notes that the project has the potential to demonstrate best practice, with the Caulfield - Dandenong Railway and Linear Park in Victoria being a key example, and that these spaces can 'come alive' with activity through the inclusion of elements such as multisport courts, fitness equipment and hit-up walls.

### Response

As noted above and in section 4.1 of this report, the project (as amended) includes a new alignment for the bridge between Melrose Park and Wentworth Point that is located further west to avoid direct impacts on residential properties. While the bridge works associated with the amended project would impact a similarly sized area of Archer Park compared to the exhibited project (see section 6.6 of the Amendment Report) and require some reconfiguration of the car park and access changes, it would still provide an opportunity to improve the open space and recreation amenity of the foreshore area.

A new active transport ramp and at grade separated cycleway would be provided along with a new amenities building. Design development for the space is continuing. Indicative features that could be included on and adjacent to the bridge abutment in Melrose Park include:

- visual treatments on the abutment as a component of the Designing with Country suite of elements
- shared cyclist and pedestrian plaza
- shelter and BBQ area.

While there is insufficient space to accommodate larger infrastructure (such as fitness equipment or multisport courts), the above improvements along with the new active transport connection to Mary Street would activate and connect Archer Park with existing and future Melrose Park communities. The design would also ensure that safe pedestrian and cyclist movements around the car park and access to the boat ramp are maintained.

As part of the amendment, Transport has revised the open space concept plan for Archer Park noting the value that Ermington Boat Ramp has for the community. The concept plan focuses on retaining and enhancing the function and values of the park and boat ramp (see Figure 33 and section 3.3.5 of the Supplementary Design, Place and Movement Report).

## **Permeable tracks**

### **Issue description**

Council requests that the project embrace permeable tracks, wherever possible, to improve the aesthetic qualities of the project, while reducing the heat island effects of expanding areas of hard stand.

### **Response**

The project would incorporate sections of permeable track, including areas of green track. The EIS notes (section 6.2.1) that green track would be provided in the vicinity of the Atkins Road stop, and the potential to provide other areas of permeable and green track would be investigated during design development.

As described in section 6.2.1 of the EIS, locations where permeable and green track would continue to be considered include:

- within or adjacent to areas of open space
- adjacent to vegetated or environmentally sensitive areas
- where it would contribute to the amenity of the public domain, based on existing and future land uses.

The design development of track forms such as permeable track are informed by number of technical assessments, some of which require the design to be further developed before they can progress. Further information is provided in the response in section 6.2.4 of this report.

## **Cycleways**

### **Issue description**

Council states that a shared pathway is not considered to be appropriate due to the expected population growth on either side of the bridge. Council also states that cyclist and pedestrians should be separated, as the bridge will form a critical north–south crossing point for commuters, recreational cyclists and pedestrians. Ideally, the project should include segregated cycleways and pedestrian pathways along its entire route.

### **Response**

Transport undertook modelling of peak pedestrian and cyclist activity, including consideration of existing activity, population growth and land use changes to inform priority locations/connections and the capacity needed for the active transport links proposed in the EIS. The configuration of the active transport links is different in various locations to accommodate the different types and volumes of users expected and respond to spatial constraints.

A shared path on the Melrose Park to Wentworth Point bridge is preferred for the following reasons:

- The greatest demand for the existing and future cycleway over the bridge is for recreation and inexperienced cyclists, including children.

- A wider shared path provides more space for a variety of types of cyclists, including commuters who want to travel at high speed, families with children who are less experienced and unpredictable when moving through public spaces, and recreational cyclists who prefer to ride side-by-side, which is possible on a shared path.
- A shared path would provide a safer environment for the movement of users (cyclists and pedestrians).
- The bridge has prolonged gradients both uphill and downhill so it is important to encourage cyclists to ride more carefully. A separated path for cyclists encourages speed, whereas a shared path discourages this. It allows for cyclists to travel at different speeds uphill and downhill, including space for commuter cyclists to overtake and for the rocking side to side movements often used by more experienced cyclists when travelling uphill.

Further information about the proposed active transport links, including location and width, is provided in the responses in section 8.2.4 of this report.

### 6.3.4 Environmental assessment / mitigation measures

#### Issue description

Council states that although the EIS indicates that mitigation measures have been developed with the aim of minimising or mitigating construction noise and vibration impact ‘where practicable’, there is little detail available to indicate what measures will be undertaken.

#### Response

Transport is committed to minimising potential noise impacts during construction in accordance with the *Construction Noise and Vibration Strategy* (Transport for NSW, 2019a). The *Construction Noise and Vibration Strategy* outlines Transport’s approach to mitigating and managing construction noise and vibration for infrastructure projects, including light rail works. The strategy outlines standard management and mitigation measures (section 8.1) that ‘shall be applied to mitigate noise and vibration impacts where reasonable and feasible’. These measures would apply to all construction works associated with the project.

A range of mitigation measures (NV4 to NV15) (see Appendix B (Updated mitigation measures) of this report) are proposed to minimise noise and vibration impacts during construction. In particular, detailed management measures would be developed in accordance with the following:

- NV5 provides that the construction noise and vibration management plan will detail processes, responsibilities and measures to manage noise and vibration and minimise the potential for impacts during construction. The plan will be aligned with the results of community consultation and will be prepared in accordance with the management approach and mitigation measures in the *Construction Noise and Vibration Strategy*.
- NV6 provides that location and activity-specific construction noise and vibration impact assessment will be undertaken, and impact statements prepared, to define feasible and reasonable mitigation and management measures in accordance with the *Construction Noise and Vibration Strategy*. Mitigation measure NV5 has been amended to clarify that the location and activity-specific assessments will be based on a more detailed understanding of construction methods, including the size and type of construction equipment, duration and timing; and detailed reviews of local receivers, as required.

Other prescriptive mitigation measures include:

- NV7 commits to provide solid hoarding with a minimum height of 2.4 metres around construction compounds located close to residential areas, where construction noise is predicted to exceed noise management levels during recommended standard hours.

- NV8 commits to identifying appropriate respite periods in consultation with the community and in accordance with the *Construction Noise and Vibration Strategy*, for work with the potential to result in noise levels above 75 dBA and/or that needs to occur outside the primary project working hours.
- Where construction activities are predicted to exceed noise management levels at sensitive receivers, NV9 commits to not undertaking work in that area one weekend per month, unless it is otherwise agreed by a substantial majority of the sensitive receivers impacted by the proposed works.

Any activities that could exceed the construction noise management levels and vibration criteria would be identified and managed in accordance with the *Construction Noise and Vibration Strategy*, the noise and vibration management plan, and the activity-specific construction noise and vibration impact statements.

### 6.3.5 Operational impacts

#### Issue description

Issues and concerns raised by Council, and recommendations made, in relation to operational impacts include:

- The EIS claim that there is sufficient parking to accommodate displaced vehicles will need to be tested and monitored using regular surveying to ensure that vehicles are being accommodated in alternative, convenient locations, minimising the impact on local residential areas.
- More frequent monitoring of operational traffic performance than that proposed by the EIS is recommended.
- While the EIS requires ‘additional feasible and reasonable mitigation measures’ designed to ‘manage traffic performance impacts’, the types of measures are not specified.
- Non-Aboriginal heritage visual impacts should be mitigated by planned improvements to open space and parkland adjacent to Parramatta River.
- Area-wide wayfinding signage will be important to assist users locate the stops along the route, including electronic real-time signage indicating when the next service is due to arrive.
- The new bridges over the Parramatta River should not impede the operation of existing and future ferry operations, particularly access under each bridge at high tide.

#### Response

##### Parking surveys

Operational impacts on parking are described in section 6.1.3 of Technical Paper 2 (Transport and Traffic) and summarised in section 9.4.5 of the EIS. The assessment identified that the project would permanently impact up to about 633 on-street parking spaces, which constitutes about 68 per cent (on average) of the identified parking supply along the light rail alignment. The impacts of permanently removing parking in Camellia, Rydalmere, Ermington and Melrose Park are relatively low, given that the supply of parking on streets immediately adjacent to the alignment is sufficient to accommodate displaced vehicles. However, areas of Wentworth Point, Sydney Olympic Park and Lidcombe may experience increased demand for parking spaces given that the existing parking demand already exceeds the proposed supply in these areas.

The approach to managing impacts on on-street parking will be defined by the parking management strategy prepared in accordance with mitigation measure TT7, as detailed in section 8.4 of Technical Paper 2. The parking management strategy will be informed by further detailed surveys of parking availability and usage, and will consider monitoring the potential impacts of displaced parking.

### **Monitoring of operational traffic performance and additional feasible and reasonable mitigation measures**

Mitigation measure TT20 provides for a review of network operational performance 12 months and three years from project opening to confirm the operational impacts associated with the project. This monitoring frequency is considered sufficient and has been defined to provide meaningful insight in the context of changes to driver behaviour and other road network conditions resulting from the project. The Department of Planning and Environment's standard conditions of approval for linear infrastructure identifies 12 months and five years as the relevant periods in which to conduct reviews of road network performance, which is similar to that proposed for the project.

If the need for additional mitigation arises from the reviews of network operational performance, appropriate measures would be identified and implemented in consultation with stakeholders. Additional mitigation cannot be identified ahead of the reviews being undertaken, as it would be specific to any impacts identified.

### **Non-Aboriginal heritage impacts**

As described in section 4.2.1 of this report, the assessments of non-Aboriginal heritage impacts carried out for the EIS (Technical Paper 5 (Statement of Heritage Impact – Built Heritage) and Technical Paper 6 (Historical Archaeological Assessment)) have been updated to consider the potential impacts of the amended project.

The updated assessments consider the potential impacts on heritage items along the foreshore (the items being Wetlands, Ermington Wharf / Wharf / Former Pennant Hills Wharf, and Millennium Parklands), and potential impacts on historical archaeological management units and maritime archaeological maritime units, including those mapped within open space, the foreshores and within the Parramatta River. A summary of the results of the assessments is provided in section 6.5 of the Amendment Report.

Potential non-Aboriginal heritage visual impacts are addressed in the Updated Statement of Heritage Impact, which identifies there would be high to moderate visual impacts for several heritage items/areas as a result of the proposed bridges (including the locally-listed items Ermington Wharf / Wharf / Former Pennant Hills Wharf and Wetlands). To mitigate visual impacts on heritage items, mitigation measure NAH4 provides for the design to be prepared in accordance with the urban design requirements (which includes open space improvements) and the recommendations in the Updated Statement of Heritage Impact.

Opportunities to incorporate appropriate interpretation and integration of heritage in the design will also be undertaken in accordance with mitigation measure NAH6, which will consider heritage interpretation as part of planned improvements to open space and parkland adjacent to Parramatta River.

### ***Wayfinding signage***

Section 6.3.2 of the EIS and section 14.7 of Technical Paper 1 (Design, Place and Movement) describes the approach to wayfinding signage that meets the standards for light rail operations and applies consistent branding in accordance with Transport requirements. Wayfinding signage would generally include directional information, warning and customer information signage on cabinets, poles or totems located on and around the stops or fixed to shelter structures. Wayfinding (directional) information would include information on how to find the right platform, the time the next service departs, how to make a connection to another form of transport and/or find a destination in the local precinct. The final branding and signage designs would be confirmed during design development in accordance with Transport's design standards and in consultation with key stakeholders.

## Ferry operations

Potential impacts on ferry operations are described in Technical Paper 2 (Transport and Traffic) and summarised in section 9.4.8 of the EIS. The assessment concludes that the proposed height of the bridge between Camellia and Rydalmere would provide for continued operation of all ferry classes, except SuperCats, at Mean High Water level or below. It is noted that River Class ferries, which are progressively being introduced into service and would replace the SuperCats, would be able to operate under all tidal conditions.

For the proposed bridge between Melrose Park and Wentworth Point, the clearance between piers would potentially restrict the passage of ferries to one-way movements. While this would result in a change at this location, the same restriction is already present at other locations both upstream and downstream of the new bridge and as a result, is not considered to be a major change to ferry operations in this area. The proposed height of the bridge between Melrose Park and Wentworth Point is consistent with upstream and downstream structures and the channel would remain navigable by all classes of ferries.

As described in section 4.1 of this report, the location of the bridges between Camellia and Rydalmere and between Melrose Park and Wentworth Point have been amended. Further information, including an assessment of the potential impacts of these amendments, is provided in Chapters 4 (Description of the amendments) and 6 (Additional environmental assessment) of the Amendment Report.

### 6.3.6 Specific feedback – community

#### Issue description

Council recommends:

- Ongoing consultation with the Melrose Park Residents Action Group, particularly in relation to the final location of the bridge across Parramatta River, future traffic growth, demand for parking and loss of tree cover associated with the present route alignment.
- Reinstatement of the Community and Stakeholder Reference Group.

#### Response

As described in section 8.4.2 of the EIS, Transport would continue to engage with stakeholders and the community in the lead up to, and during, construction. The approach to engaging with stakeholders (including the Melrose Park Action Group) is defined by the Community Communication Strategy (provided in Appendix D of this report) which will be implemented in accordance with mitigation measure SE1 to guide the management and delivery of community and stakeholder engagement in the lead up to, and during, construction. Mitigation measure SE1 has been amended to confirm Transport's commitment to ongoing consultation with key stakeholders during design development.

Further information about the amended location of the bridge between Melrose Park and Wentworth Point is provided in section 4.2 of the Amendment Report. Responses to issues raised about traffic and parking are provided in sections 6.3.5 and 6.3.7 of this report. The clarification in section 4.3.3 of this report provides information about Transport's proposed approach to managing the impacts on trees during construction.

Transport notes Council's recommendation to establish a community reference group(s) during construction. Transport intends to reinstate the Parramatta Light Rail Community and Stakeholder Reference Group for the project.

### 6.3.7 Specific feedback – traffic, transport and parking

#### Issue description

Issues raised by Council in relation to the potential impacts on traffic, transport and parking include:

- Appropriate mitigation measures should be considered at the listed locations, including adopting the improvements at the intersection of Victoria Road / Wharf Road specified in the Transport Management and Accessibility Plan for the Melrose Park North Precinct Planning Proposal (December 2019).
- The project will have significant parking implications for City of Ryde residents to the west of Wharf Road. Works will reduce parking opportunities for City of Ryde residents. Parking demand associated with the project will impact on the parking needs of existing and future land uses within Melrose Park.
- Consideration should also be given to the provision of an appropriate level of off-street, car parking in the immediate vicinity of light rail stops to minimise parking impacts on surrounding areas.
- The need for parking in the vicinity of the Waratah Street stop area is likely to affect the users of the boat ramp and boating facilities and the surrounding streets.
- Supplementary traffic, public transport and active transport infrastructure should be incorporated to minimise traffic and parking demand during construction and operation.
- Accessible pathways should be provided between bus stops within City of Ryde, including surrounding streets and the new light rail hub on Waratah Street.

#### Response

##### Traffic mitigation measures at intersection

Technical Paper 2 (Transport and Traffic) considered potential impacts on intersections within and adjacent to the project alignment and the results are summarised in section 9.4.1 of the EIS. In relation to the intersection of Victoria Road / Wharf Road, Figure 9.9 of the EIS presents the intersection performance results both with and without the project in the morning and afternoon periods of 2031. A level of service of F is predicted at Victoria Road / Wharf Road under both the existing conditions (2019) and in the future with the project (2031). This demonstrates that the project does not affect the operation of the intersection. As a result, there is no obligation to implement measures in relation to its performance. The responsibility for implementing the recommendations of the Transport Management and Accessibility Plan for the Melrose Park North Precinct Planning Proposal lies with the proponent of the development for which the plan was prepared.

##### Parking impacts

Technical Paper 2 acknowledges that the project would reduce the amount of parking available in Melrose Park. The assessment identifies that the project would permanently impact up to about 120 parking spaces, with an additional 52 spaces temporarily removed during construction. Table 5.4 in Technical Paper 2 notes that the existing (surveyed) parking occupancy is close to the remaining capacity during construction.

It is also acknowledged that the project may generate additional parking demand in the form of 'kiss-and-ride' and 'park-and-ride' demand around light rail stops. The project is not planning to provide off-street parking facilities for this demand in accordance with the *Road User Space Allocation Policy* (Transport for NSW, 2021a). The policy requires that users are considered in the following order ahead of general traffic and on-street parking for private motorised vehicles:

1. walking (including equitable access for people of all abilities)
2. cycling (including mobility devices)
3. public transport
4. freight and deliveries
5. point to point transport.

The approach to managing impacts on on-street parking would be defined by the parking management strategy prepared in accordance with mitigation measure TT7. Further information is provided in the response in section 6.3.5 above.

#### **Impacts on boat ramp usage associated with parking in the vicinity of the Waratah Street stop**

The trailer car park at Ermington Boat Ramp would be signposted for trailer parking only. Enforcement of parking restrictions at the Ermington Boat Ramp would be the responsibility of Council.

#### **Additional infrastructure**

The project would integrate with, and complement, other transport modes forming part of a multimodal transport network comprising heavy rail, light rail, bus, walking, cycling and private cars. The project includes new walking and cycling infrastructure in the form of active transport links running generally along the alignment, with connections to existing walking and cycling routes, including the Parramatta Valley Cycleway. It is generally not proposed to undertake additional works outside of the project site boundary.

Section 6.1.2.2 of Technical Paper 2 (Transport and Traffic) identifies intersections outside of the project site (i.e. off-corridor) that are predicted to experience increased delays under the 'with project' scenario. Within the City of Ryde local government area, this includes the intersection of Victoria Road / Wharf Road. The assessment identifies the potential for increased delays at this intersection of about 20 seconds in the morning peak and 23 seconds in the afternoon peak.

It is acknowledged that access restrictions created by the light rail infrastructure (for example, turn restrictions or street closures) may change the way local streets surrounding the project site function. These impacts are addressed in section 6.2 of Technical Paper 2 in the individual precinct assessments.

Mitigation measure TT20 provides for a review of network operational performance at periods of 12 months and three years from the opening of the project to confirm the operational impacts associated with the project. Depending on whether issues are identified due to changed utility of surrounding streets, mitigation measures will be developed in conjunction with relevant stakeholders.

#### **Accessible pathways**

Transport is committed to providing safe cycling and walking connections as part of the project. As described in section 6.4 of the EIS, the active transport links would be designed in accordance with the principles outlined in:

- Technical Paper 1 (Design, Place and Movement)
- the urban design requirements
- relevant guidelines and standards (including Guide to Road Design Part 6A: Paths for Walking and Cycling (Austroads, 2017) and Australian Standard AS 1428.1-2009 Design for access and mobility)



- crime prevention through environmental design principles.

It is generally not proposed to undertake additional works to upgrade pedestrian infrastructure that is outside of the project site.

### 6.3.8 Specific feedback – property

#### Issue description

Issues raised by Council in relation to property impacts include:

- Alternative routes for the bridge across the river from Melrose Park should be considered to minimise property acquisition requirements on Wharf Road.
- As the Waratah Street light stop (referred to as the rail hub in the submission) is within close proximity to the City of Ryde LGA boundary, the area should be upgraded to town centre standards.
- To help offset the loss of public open space acquired, the acquisition and embellishment of ‘regional open space’ identified within Ryde LEP 2014 should be undertaken, as shown in the submission.
- The project will impact the existing stormwater network around Wharf Road. All required modifications to the stormwater network need to be factored into the overall planning and budget for the project.

#### Response

##### Alternative bridge routes and the Waratah Street stop

As noted in section 4.1 of this report, Transport is proposing to amend the alignment of the bridge between Melrose Park and Wentworth Point and locate it further west to avoid direct impacts on residential properties. Further information is provided in section 4.2 the Amendment Report.

As part of this amendment, the Waratah Street stop would be located slightly north of the location proposed in the EIS. The stop would be located in an open space environment, adjacent to future development areas. It would include materials and finishes defined by the urban design requirements, which would consistent Parramatta Light Rail Stage 1 and those used for the project in other areas. Further information about the proposed approach to the design of the Waratah Street stop is provided in section 9.4.3 of Technical Paper 1 (Design, Place and Movement).

##### Acquisition and embellishment of regional open space

As described in the response in section 6.3.3 above, while the bridge works associated with the amended project would impact a similarly sized area of Archer Park compared to the exhibited project (see section 6.6 of the Amendment Report), it has provided an opportunity to improve the open space and recreation amenity of the foreshore area. As part of the amendment, Transport has revised the open space concept plan for Archer Park. Further information is provided in section 6.3.3 above.

Mitigation measure SE7 has been amended to confirm Transport’s commitment to offsetting the direct impacts of the project’s land requirements on open space (parks and reserves), in consultation with relevant councils and Sydney Olympic Park Authority, through the provision of a net increase in open space, including active transport infrastructure and improved open spaces and recreation facilities.

##### Modifications to the stormwater network

During design development, where it is identified that the existing stormwater network does not have the capacity to manage the stormwater volumes generated as a result of the project, appropriate modifications would be undertaken in consultation with the relevant asset owner. Required modifications would be confirmed in accordance with the flood management strategy (prepared in accordance with mitigation measure W1) and the design standards and requirements of the asset owner.

## **6.4 Cumberland City Council**

### **6.4.1 Community consultation**

#### **Issue description**

Cumberland City Council (Council) acknowledges the consultation undertaken to date and recommends this continue with Council, key stakeholders and the community during the detailed design, construction, and operation phases.

Council would appreciate further notice of upcoming community consultation and workshop sessions before they take place.

#### **Response**

Transport commits to ongoing communication and engagement with the community and other key stakeholders during design development and delivery of the project, and recognises that this would play a key role in managing the potential for impacts during design development, construction and operation. Effective communication and engagement are fundamental to reducing risk and minimising potential impacts. Identifying, engaging and effectively communicating with stakeholders is critical to Transport's successful delivery of the project.

The approach to engaging with the community and key stakeholders is defined by the Community Communication Strategy (provided in Appendix D of this report) which will be implemented in accordance with mitigation measure SE1 to guide the management and delivery of community and stakeholder engagement in the lead up to, and during, construction. Mitigation measure SE1 has been amended to confirm Transport's commitment to ongoing consultation with key stakeholders during design development.

### **6.4.2 Walking and cycling links**

#### **Issue description**

While Council is generally supportive of the project, it is important that there is an integrated approach to link the Cumberland area with the light rail system. In particular, there is a need for better walking and cycling links between the Cumberland area and Carter Street stop to enable local connectivity to the light rail network, including the proposed Pippita Rail Trail project.

#### **Response**

The Carter Street terminus and proposed public domain improvements do not preclude Council or other parties from providing future active transport connections in this precinct.

It is noted that City of Parramatta Council is finalising designs for improvements to active transport along Carter Street, and that Cumberland City Council has received funding from the NSW Government to progress the planning and design of the Pippita Rail Trail. The delivery of these projects will assist in supporting improved walking and cycling links to the project.

### **6.4.3 Extension to Lidcombe Station and Town Centre**

#### **Issue description**

Council would also like to advocate for the extension of Parramatta Light Rail from Carter Street to Lidcombe Station and Town Centre. This link will ensure that there is a strong southern anchor for light rail with mixed land uses and transport hubs, and will provide further travel options for residents, workers and visitors in the Lidcombe area.

Council prepared a preliminary feasibility study (provided with the submission) to progress advocacy and planning work for the proposal.

Council seeks further discussion with State agencies on the way forward on the potential light rail extension.

### **Response**

Chapter 5 (Design development, alternatives and options) of the EIS describes the alternatives and options that were considered and refined as part of the project. As described in section 5.3.1 of the EIS, 12 potential corridor options were identified to cater for forecast demand beyond Sydney Olympic Park and connections to Strathfield. This included two corridor options to Lidcombe. Only one of these options progressed to the next stage of optioneering (identified as Corridor 5 in section 5.3.1 of the EIS). It was noted that this option would potentially attract the highest demand overall, but required significant property acquisition south of the M4 Western Motorway. Therefore, a shortened Lidcombe corridor was identified as the preferred corridor option to maximise the benefits of the project by connecting to Sydney Olympic Park and the Carter Street precinct. This corridor also had relatively low costs, enhanced the catchment of the proposed Sydney Metro West station at Sydney Olympic Park, and had community support, as described in the *Carter Street Precinct Development Framework* (DPIE, 2020a).

Future extensions may be considered in line with NSW Government integrated transport and land use planning.