COUNCIL SUBMISSION – Parramatta Light Rail Stage 2 EIS, public consultation

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EXECUTIVE SUMMARY

City of Parramatta Council (Council) thanks the Department of Planning and Environment (DPE) and Transport for NSW (TfNSW) for the opportunity to provide a submission to the public consultation for the Parramatta Light Rail Stage 2 EIS. Council looks forward to continuing to work closely and proactively with TfNSW on this critical Project for the City of Parramatta.

Council supports the delivery of Parramatta Light Rail Stage 2, an important part of the city-connecting infrastructure required to support current anticipated population within the Carter Street precinct, Wentworth Point, Melrose Park, Camellia and the eastern LGA corridor.

This support comes with some caveats in relation to some matters which require more comprehensive impact assessment and a deeper understanding of community views about light rail construction. These matters should be fully assessed with the forthcoming EIS Addendum report, presently under preparation by TfNSW, and include:

- **Validated consultation with the impacted community on proposed extended construction hours, particularly Sunday and Public Holiday work**
- **A rethink on the poorly justified proposed Macquarie Street turnback facility**
- **A full impact assessment of the proposal to remove foreshore park land at Eric Primrose Reserve for the alignment**
- **Spoil retention based on a design led process with a positive public domain outcome basis. Numeric waste strategy (spoil reuse) targets are not appropriate in an established urban area context, with an estimated 73,000 cubic metres of spoil to be reused within the alignment.**

There are many matters where quality public domain, social and environmental outcomes will require a strong design-led solution and innovation in impact mitigation of the rail line. Some of these matters are too detailed for the EIS, therefore Council has focussed on higher level principles, and in some cases, proposed conditions of EIS planning approval to achieve the desired outcome for the community.

Particular matters to be addressed by TfNSW are as follows.

- Council supports the alternate light rail alignment to the south of the Sekisui site, but only if the light rail stop adjacent the Ferry Wharf is retained, a spur line is constructed along Hill Road to near the Ferry Wharf, and a full width active transport link (ATL) is constructed by the Project enabling works between the bridge ATL and the Ferry Wharf.
- The EIS should actually rule out bridge construction methods which do not meet the design principles. In accordance with the SEAR's for PLR Stage 2 the bridge structures in the Project should be design- led, and not be left solely to the main infrastructure design and construct process.
- Council recommends to TfNSW the provision of green track, permeable paving and wire-free running in green space and business areas as detailed in this submission.
- The Project should place significant design-led emphasis on mitigating the impacts of site cut and fill, to ensure that the community retains convenient pedestrian crossing points over and across the light rail line, for example, in Boronia Street.
- The EIS Chapter 22 waste management strategy has a target of 100% of clean/usable excavation spoil diverted from landfill, and maximising reuse of spoil on site. The EIS impact assessment of not managing spoil appropriately is wholly inadequate, in that it omits the impact on public pathways,

roads, parks, and the like from the retention of an EIS estimated 73,000 cubic metres of spoil. Direct construction evidence from Stage 1 of the PLR demonstrates the adverse and unsafe outcomes of this numeric approach.

- The EIS planning approval must have a condition requiring Secretary approval of a TfNSW detailed 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, not as a set percentage of retention on site. This work can be carried out by TfNSW and stakeholders as part of the urban design requirements report or incorporated into pre-main-tender processes to provide reasonable certainty for tenderers.
- The EIS planning approval should incorporate, in accordance with the SEARS, a condition requiring that all spoil retention during the design and construct phase of the Project be based on a design led process with a positive public domain outcome basis.
- TfNSW should create a community reference group which includes equal representation from residents and businesses in suburbs along the alignment, the purpose of that reference group being in part to advise TfNSW and contractors of construction impacts, and to respond to TfNSW with recommendations to any contractor request for night work and/or noise intensive work.
- Council recommends that the protection of residential amenity during light rail operation be a strong focus of the EIS, employing world class practices to minimise ground-borne vibration, ground-borne noise and airborne noise from rail operation. This is particularly relevant where the track runs through existing green spaces.
- TfNSW develop within PLR Stage 2 a suitable track insert to assist the Project to provide seamless, coherent, visible, and safe pedestrian and cycle access throughout and adjacent to the PLR corridor.
- The Project not worsen existing flood impacts along the alignment, and stormwater upgrade works be the subject of close engagement between TfNSW and Council, to avoid duplication of work and unnecessary cost.
- The loss of existing street parking during construction, and permanently, particularly in Wentworth Point, with little requirement for effective management of worker vehicles.
- There is no clear strategy to manage residual land, particularly to offset impacts of loss of parking along the route.
- The EIS canvasses sea level rise across the life of the Project. Wentworth Point is presently significantly impacted by stormwater events at relatively low rainfall levels. The Project should not construct elevated track embankments which may divert storm water or sea level rise into the residential area of the suburb.
- Stage 2 of the PLR proposes to remove over double the number of trees than Stage 1. The EIS Addendum report should outline measures to preserve mature canopy, and provide full justification for tree removal in a tree register along with possible design mitigation measures

Council requests that the Department and TfNSW PLR Stage 2 Project team consider the above issues within the Environmental Impact Statement (EIS) and forthcoming Addendum report, the design stages and eventual Contract documents, to ensure the best possible rail user experience, balanced with the construction and operational impacts for local residents and business. Council welcomes further opportunities to meet with TfNSW to discuss this submission.

It should be noted that this is a Council officer submission. A spreadsheet of relevant comments and notations, further supplement this submission, at Attachment A.

KEY ISSUES

1.0 VALIDATED COMMUNITY CONSULTATION ON EXTENDED CONSTRUCTION HOURS

The Project seeks to change the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009) to enable construction work hours from Monday to Sunday, including public holidays: 7am to 7pm.

The proponent's specific extended construction hour's survey of October 2022, by letter drop of 7,000 properties, had 257 responses - less than 4%, very low. Council understands that the letter drop extended 400m from the alignment.

The EIS (Chapter 8 and Appendix F) provides a statistic of 53% of respondents supporting Sunday and Public Holidays 7am to 7pm construction hours. This statistic is repeated as fact, in the Technical Paper 3 Noise and Vibration Executive Summary page iv. This statistic should be considered in the context of the low response rate, and that 40% of respondents did not support the Sunday and Public Holidays 7am to 7pm construction hour's question.

Notwithstanding, Appendix F section 4.3 'Survey Results' states:

> *Although the results indicate preliminary support for the extended construction hours, in response to feedback received a requirement has been included in the EIS for no work to be undertaken one weekend per month in areas to provide respite where there is the potential for construction noise impacts.*

It is the reasonable view of this submission that the proponent has more work to do to provide evidence of strong majority support for extended construction hours from actual impacted properties along the alignment.

It is noted that in the EIS the 'Have Your Say' survey indicated that community members did identify a preference for faster construction, whilst still avoiding prolonged night works. The timing of construction, particularly evening and night works, was identified as an issue for residents.

It is also noted that in the quoted Case Study from PLR Stage 1 concerning extended hours for track works at Church/George St and Church/Phillip Streets, the majority of those surveyed were commercial operators - out of context for PLR2 where the properties impacted are predominantly residential.

As the extended construction hours survey results presented are not convincing and should not be relied upon, the precautionary principle requires that approved construction hours not include Sunday's and Public Holidays. It is open to TfNSW to carry out further targeted surveys of directly impacted residents, with an analysis of confidence levels of the survey. This could be carried out and included in the forthcoming Addendum EIS due in 2023, or later.

Recommendation 1 – The EIS (planning approval) not approve construction hours beyond those in the Interim Construction Noise Guideline (Department of Environment and Climate Change, 2009)

2.0 ALIGNMENT OPTIONS – CHAPTER 5 DESIGN DEVELOPMENT

2.1 Macquarie Street turnback

Macquarie Street is one of several turn back locations examined in the EIS. The EIS dedicates less than one page to this significant issue, but lands on Macquarie Street as the preferred solution, with the best service efficiency and fewest light rail vehicles to run the service being a key factor.

The EIS refers to a detailed analysis, but does not provide that analysis. The EIS does not examine the negatives of the Macquarie Street location, and provides a purely operational, wholly inadequate impact assessment in reaching the decision.

The EIS states the following benefits of the Macquarie Street turnback, with Council comment, Table 1.

Benefit	Council comment
Less heritage impact	Heritage impacts are not discussed
Integration with PLR1 operations	Integration with turnback options not discussed
Amenity benefits of avoiding additional light rail movements through Eat Street, which was made a shared light rail and pedestrian zone as part of Parramatta Light Rail Stage 1	It is incorrect to state that Eat Street is a shared light rail and pedestrian zone, the street has deterrent planters along dining areas and only one pedestrian 'crossing' between the Church Street stop and Lennox Bridge. Additional movements is a counter intuitive argument. Eat Street was specifically deconstructed and reconstructed for a single purpose light rail environment, with turn up and go journeys every 7.5 minutes. If this impacts amenity of the end state street the light rail should not be in Eat Street.
Fewer potential impacts on the operation of Parramatta Light Rail Stage 1	Potential impacts not discussed. No discussion of potential vs actual impacts vs scale of impact and comparison to alternatives.
Detailed analysis to arrive at the decision	Detailed analysis not provided

Table 1 – Council comment on EIS benefits statement for Macquarie Street turnback

The EIS does not canvass the disadvantages of the Macquarie Street turnback to customers and public space, including:

- No direct trip to Eat Street, Riverside Theatres and the Stadium from PLR Stage 2 stops. Transfer required at Parramatta Square,
- Amenity outcome of having a drivers facility in the middle of the public domain of Macquarie Street
- Loss of 17 car parking spaces
- Not an appropriate share path area due to non-compliance with TfNSW Policies and Technical Directions
- The CBD is a high pedestrian activity area and the combined volume of vehicles and pedestrians will create a very congested environment within the limited space of Macquarie Street. Furthermore, due to the existing awnings in Macquarie Street, any truck that is stopped for loading purposes, will be blocking all through traffic. Given that on-street Loadings Zones are critical to the operation of many local businesses in the area, the turnback facility in Macquarie Street cannot be supported as it is currently described
- No prior notice to the public, the previous 'Have Your Say' report on alignment options, omitted to mention the Macquarie Street turnback.

Recommendation 2 – The required EIS Addendum report include detailed prior engagement with City of Parramatta on turnback options, including a detailed analysis of the advantages and disadvantages of each option for operations, customers, efficiency of movement to key destinations, public domain, heritage, and other like matters.

2.2 Camellia to Rydalmere alignment and bridge option

Council's stated preference is for the base case Camellia option – Figure 1 below, however the alternate 'A9' Camellia to Rydalmere foreshore alignment at Figure 2 would be supported by Council only if it ran immediately south of Antoine Street and not through the foreshore park. Foreshore open space is a difficult to replace precious community asset and TfNSW should take a long term view of the light rail asset and alignment. Loss of open space is long term, acquisition impacts may have a shorter term.

The Camellia to Rydalmere foreshore option is discussed in Appendix D to the EIS. Whilst acknowledging that further impact review is required in an Addendum EIS report, Appendix D examines the pro's (advantages) of the option, but not the con's (disadvantages). This is not adequate.

The Appendix notes that contamination on the parkland is low risk, however Council has advised TfNSW that Eric Primrose Reserve is contaminated land, therefore the potential to encounter significant or widespread contamination at Rydalmere is not low, as stated. Council will provide TfNSW with the relevant information.

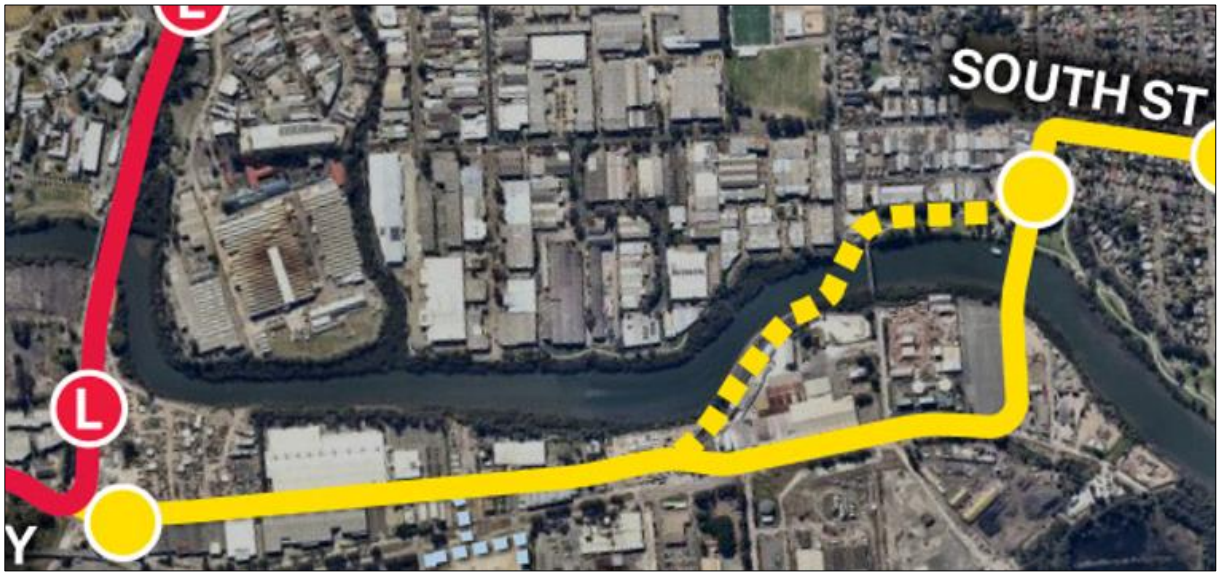


Figure 1 Base case alignment along Grand Avenue (bold line) with foreshore bridge crossing (dashed line)

In relation to the option, the EIS does not adequately discuss the visual impact of the embankment based alignment through the foreshore park, including loss of the existing tree scape shielding industrial buildings from the park. Instead the EIS conflates that impact with a positive impact of rail passengers and visitors having a more scenic journey over the river bridge and along the Camellia foreshore.

Council maintains its objection to the loss of foreshore land, which due to 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.

Recommendation 3 – TfNSW to remove the light rail alignment from Eric Primrose Reserve.

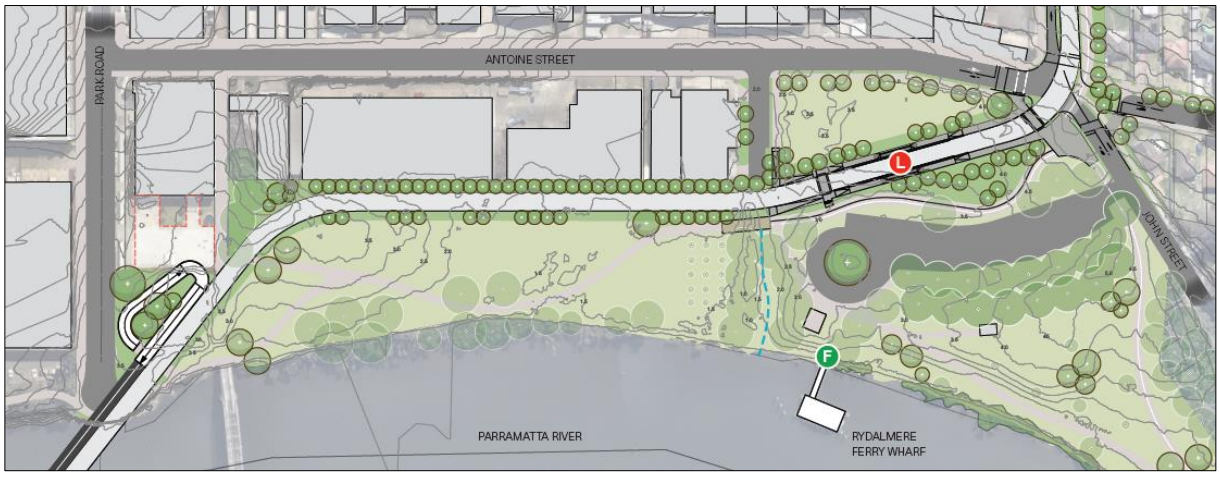


Figure 2 TfNSW preferred A9 Camellia/Rydalmere alignment within foreshore park

2.3 Wentworth Point Sekisui site option

The EIS has removed the base case for the Wentworth Point alignment running through an existing transit corridor in the Sekisui House development site. The corridor and the surrounding building envelopes were specifically negotiated at length via planning proposal and voluntary planning agreement with the land owner, and with the support of TfNSW to meet required transit needs (solid line in Figure 3).

The TfNSW preferred alignment is now bordering the west and south of the Sekisiui site. The option of a light rail stop near the Ferry Wharf, to promote ideal seamless multi-modal public transport connectivity, has not been pursued by TfNSW, which is disappointing. Council's strong view is that a stop next to the Ferry Wharf should be maintained, and a short spur with turnback introduced along Hill Road. It will be incredibly shortsighted not to include this spur, given the Ferry Wharf and light rail line link customers directly with the major stadiums within Sydney Olympic Park. The spur line could operate on a special event basis.

Figure 3 Base case alignment (solid line)along nominated Sekisui site transit corridor, and alternate dashed line route to south

At a minimum, Council wishes to see a Hill Road spur line and stop near to the Ferry Wharf, and the completion of an ATL along the original K1 alignment through the Sekisui site, from the PLR Bridge to the Ferry Wharf.

Recommendation 4 - Council supports the alternate light rail alignment to the south of the Sekisui site, 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 TfNSW of an ATL along the original K1 alignment through the Sekisui site.

3.0 RIVER BRIDGE STRUCTURES

The design of proposed bridges in PLR Stage 2 will a key visual legacy of the Project.

The Bidgee Bidgee (James Ruse Drive) bridge in Stage 1 – a miniature arch bridge, is the result of the Project's design and construct process. The arch structure is a cheaper option. Whilst the bridge design had to accommodate future road widening and maximum grades for the light rail vehicles, the end result has been considered in some quarters to be functional but sub-optimal in appearance.

For Stage 2 TfNSW has advised that it is 'preparing' for a design and construct process to determine bridge design outcomes. This ensures that the bridge designs will be subject to a competitive tendering environment and will be 'price-led'.

The Department Secretary's Environmental Assessment Requirements (SEAR's) for Stage 2, require the Project to deliver a design-led process for the Project. This is notably different to the SEAR's for PLR1 which had no such requirement. This is a really important difference.

The EIS canvasses design options for bridges in Chapter 5, however unsuitable options have not been discarded, and the door remains open for the cheapest design to be approved. The lowest construction cost should not be a key determinant of bridge design aesthetics.

Recommendation 5 - In accordance with the SEAR's for PLR Stage 2 the bridge structures in the Project 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.

4.0 GREEN TRACK LOCATIONS

The TfNSW PLR Stage 1 Project team are justifiably proud of the 1.3km of green track along the alignment. However for Stage 2 there is only one designated green track area at the Atkins Road stop. Green tracks should be provided where the alignment runs through existing green space or where there are substantial hard surface areas.

Figure 4 indicates where green track areas should be provided along the alignment, namely the green space between South Street and Boronia Street, Ken Newman Park and the long Hill End Road hardstand strip. Figure 4 also indicates where permeable track form paving could be provided, for a softer public domain finish.

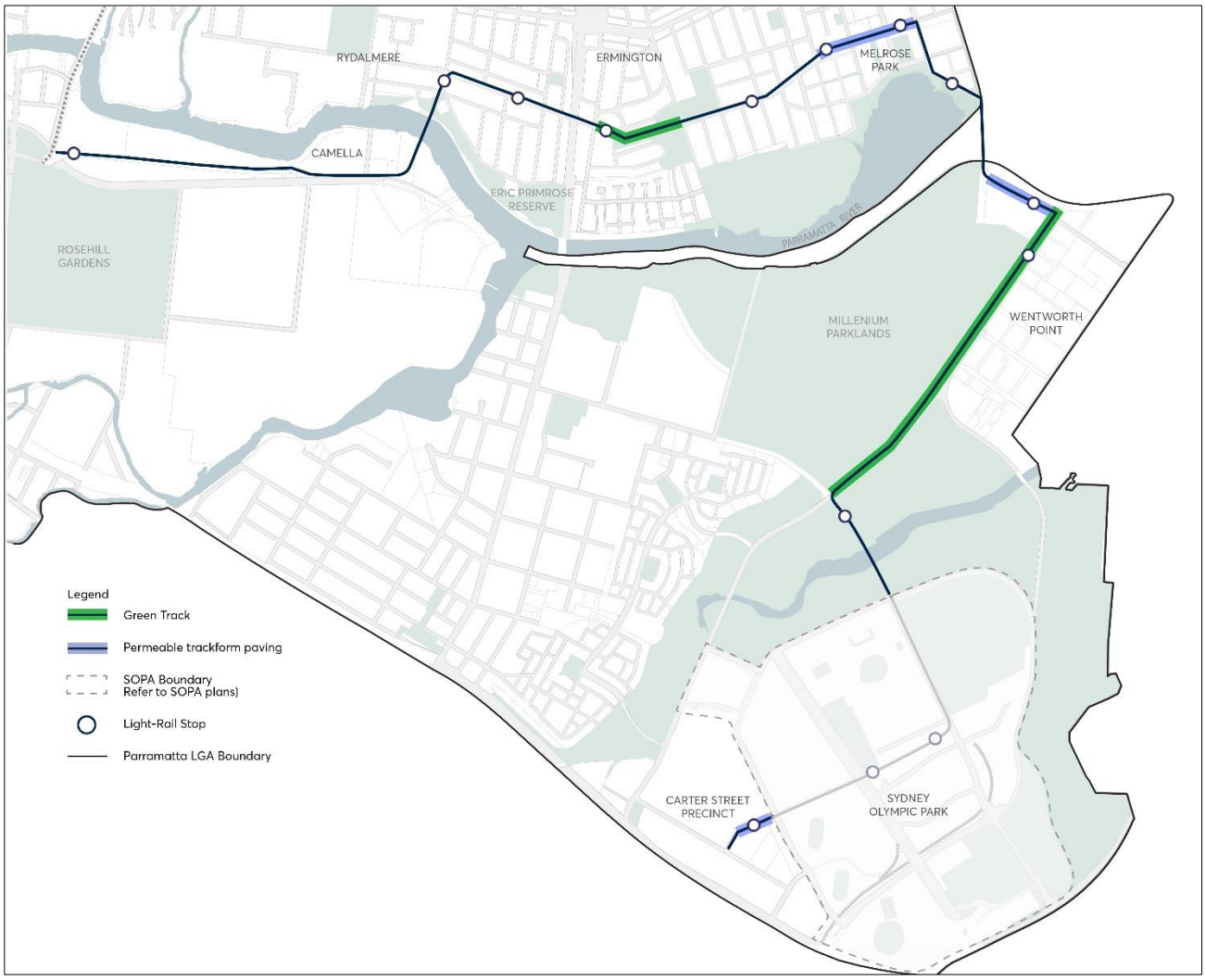


Figure 4 Proposed green track areas

Recommendation 6 - Council recommend to TfNSW the provision of green track and permeable paving per Figure 4.

5.0 WIRE-FREE RUNNING LOCATIONS

PLR Stage 1 provided wire free running through significant commercial and sensitive areas, including the Parramatta CBD and the Cumberland estate. TfNSW will not provide an entire alignment of wire free running, due to battery life costs and other factors.

Wire free (catenary free) areas can considerably improve the visual impact of the Project by limiting most infrastructure to track level only. Figure 8 indicates that wire free running should be provided in the future Camellia town centre, the residential green space east of South Street, through Melrose Park, and through to the River, along with the Carter Street precinct in Sydney Olympic Park.

At present the EIS only provides wire-free running in Sydney Olympic Park.

Wire-free running should be provided in high density residential areas, and specifically within the Ken Newman Park reserve and adjoining linear green space, to improve the amenity of those residents who will now have a train line running behind them, replacing existing lightly used green space.

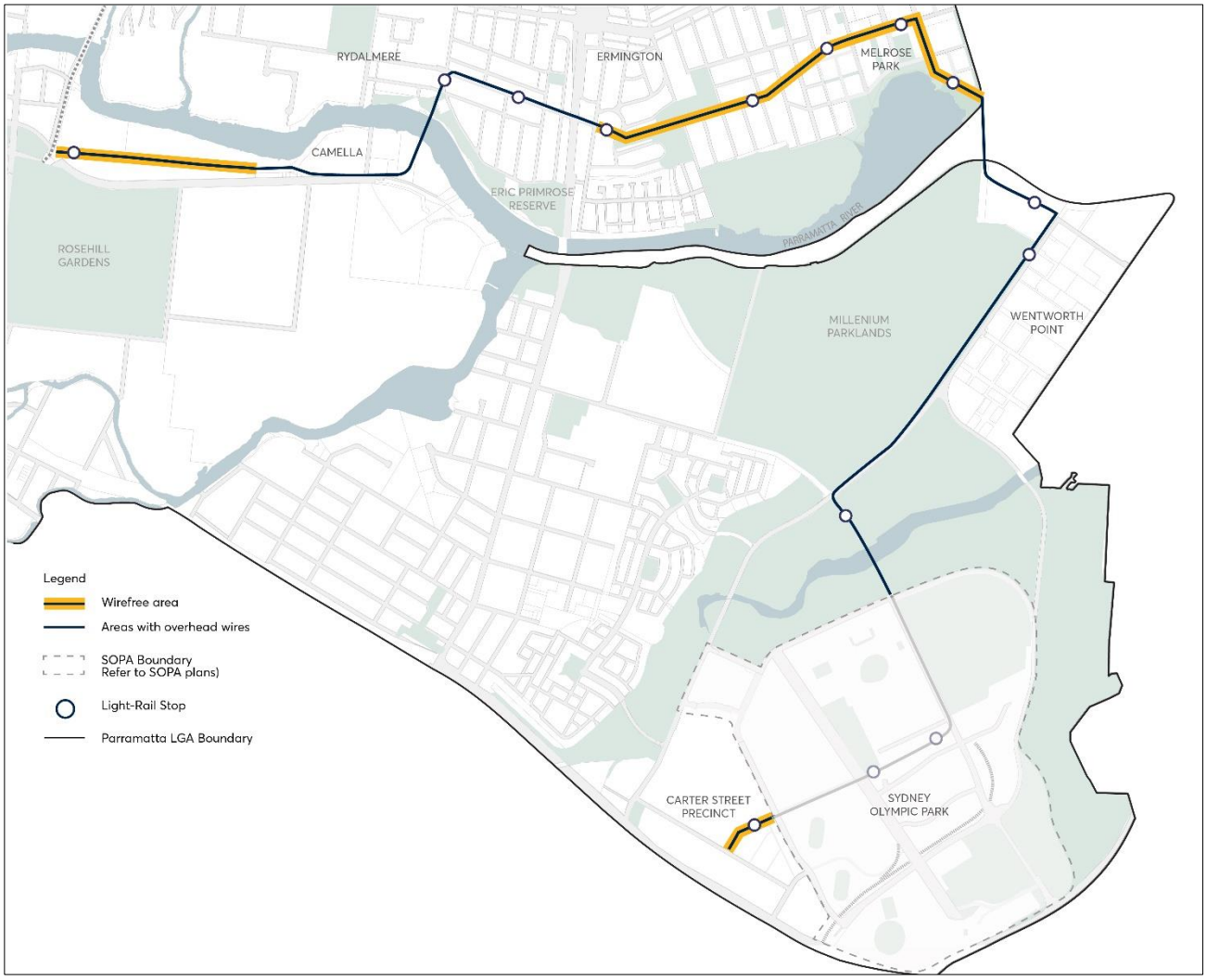


Figure 5 Proposed wire free running area

Recommendation 7 - Wire-free running should be provided in high density residential areas, and specifically within the Ken Newman Park reserve and adjoining linear green space.

6.0 CUT AND FILL, DESIGN IMPLICATIONS & WALKABLE NEIGHBOURHOODS

The Stage 2 alignment is heavily undulating and quite complex in terms of existing gas and water pipelines. Considerable cut and fill will be required to ensure maximum alignment gradients are not exceeded. Figures 6-8 below provide examples of this complexity, where site cut will be required.

Figure 6 Linear utility & green corridor east of South Street – light rail alignment

Figure7 Corner of Hope and Waratah Streets – light rail alignment

Figure8 Boronia Street looking east – light rail alignment

Cut and fill requirements should not compromise the public areas - the new light rail alignment must be a good neighbour to adjoining residential and business properties and the alignment should not isolate the community it serves.

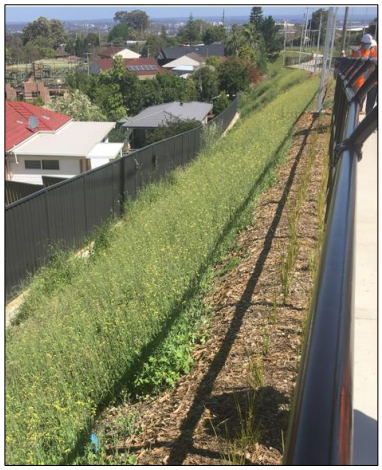
Road and other areas of the alignment with significant cut should aim to maximise safe and convenient cross-connections for pedestrians, cyclists and persons with a disability (maximum distance of 200m-400m between cross-connections).

Recommendation 8 – The Department apply a condition of planning approval requiring TfNSW to investigate and provide north/south pedestrian crossing points over the alignment every 400m or otherwise to match existing connections, particularly where signalised intersections are not available and/or the alignment is cut into the existing road way.

7.0 SPOIL RETENTION WITHIN THE CORRIDOR AND DESIGN IMPLICATIONS

The PLR Stage 1 EIS (section 6.6.2 – Earthworks) provided a diversion rate for construction waste from landfill of at least 90 per cent of waste by volume, with a target of 95 per cent of waste by volume. This diversion rate (actual or intent) was embodied in the main infrastructure contract, creating an incentive for the contractor to maximise retention of spoil within the alignment.

Whilst this was a 'sustainability' initiative, it had very adverse consequences for the alignment, specifically the former T6 corridor, where numerous steep, difficult to maintain embankments were created, along with loss of privacy to residential properties. See Figures 9A and 9B.



Figures 9A & 9B Examples of adverse effects of spoil retention – unsafe, difficult to maintain steep embankments and overlooking

This was a poor result and completely inappropriate. This occurred because the EIS objectives or targets for the re-use of spoil within the project boundaries were not balanced against key public domain objectives, including creating safe, maintenance cost-effective path and landscaped areas, minimising excessive filling and embankments without design or functional justification, minimising overlooking and promoting connectivity within local areas.

Despite extensive written consultation and workshopping with TfNSW on this issue, the same mistake - the inappropriate use of fixed targets which override design objectives, should not be repeated in Stage 2 of the PLR.

Within the Stage 2 EIS Project Description chapter 7.3.5, Waste Management chapter 22.2.1, and Technical Paper 1 Design Place and Movement, there is no discussion on minimising impact to the public domain (paths, streets, parks) through unnecessary filling and retaining, particularly to meet a numeric target for excavation spoil use.

The Stage 2 PLR EIS is silent on how TfNSW and the eventual design and construct contractor will reuse 73,000 cubic metres of excavated fill, and what guidelines will be provided for the contractor, for review by the DRP.

Within the EIS, fixed percentages for spoil retention must not be employed without an overriding comprehensive analysis of cut and fill balance and a Planning Approval condition test against a best practice public domain outcome. The Stage 2 Project will not have the benefit of a former heavy rail corridor to retain spoil in. Public lands must not be used for dumping excess spoil, with resulting adverse impacts.

The discussion within Technical Paper 1 on design-led principles, design integrity, DRP involvement, built form, public spaces and the like will be completely ineffective and lip service if the EIS and planning approval imitate PLR Stage 1 with a waste management strategy target of 95-100% of clean/usable excavation spoil diverted from landfill, and maximising reuse of spoil on site. The evidence from Stage 1 construction cannot be dismissed.

Recommendation 9

- **The EIS Addendum report provide a detailed cut and fill balance and scenario testing against best practice public domain outcomes, to provide a realistic assessment of likely spoil retention, and**
- **The EIS Planning Approval include a condition that any spoil retention targets within the EIS not be fixed, and be subordinate to and subject to design-led best practice public domain outcomes, and**
- **The Department including in the EIS Planning Approval include a condition requiring Council stakeholder engagement in a detailed TfNSW 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. This strategy to be approved by the DPE Secretary for incorporation into the TfNSW tender process.**

8.0 CONSTRUCTION IMPACTS, AMENITY, COMMUNITY REFERENCE GROUPS

The Stage 1 PLR Project utilised primarily existing roads, many within commercial areas, and an existing heavy rail corridor. A Business Reference Group was created, with the ability to recommend to TfNSW that out of hours (night work) and noise intensive work proceed, tied to the Project EPA licence. There was not an equivalent resident's reference group.

The Stage 2 alignment runs through low density and high density residential environments. Construction impacts, noise and vibration particularly, will be very significant. Construction fatigue will occur. Every effort must be made, to fully consider resident amenity during construction. Night works should not be used as a fall-back to stay on schedule, or built into the Project completion dates by a contractor, or unevenly balanced against disruption to business hours traffic. TfNSW should create a community reference group, or location groups, which include proportional representation from residents and businesses in suburbs along the alignment, so that residents have a voice in construction impacts of the Project.

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

9.0 OPERATIONAL IMPACTS AND RESIDENTIAL AMENITY – GROUND-BORNE VIBRATION, GROUND-BORNE NOISE AND AIRBORNE NOISE

9.1 PLR Stage 2 context

PLR Stage 2 runs through approximately 2km of low density residential streets, including some 400m of linear green space behind houses and through Ken Newman Park (see Figure 10*)* and approximately 2km of existing high density residential - not including any future high density residential at Camellia. The built environment context is quite different to Stage 1, which is primarily commercial development and an existing heavy rail corridor.

Figure 10 Narrow, linear utility corridor and green space between South Street & Boronia Street

Creating a new light rail line through existing residential roads and green space will require design led solutions and the best possible noise and vibration mitigation and visual amenity measures. This includes:

- Engineering out as much noise and vibration as possible through physical measures.
- Best practice modelling/simulations to predict airborne noise, ground borne vibration and ground-born noise.
- Reducing light rail vehicle speed to a minimum in impacted areas.
- Employing world class, efficient and readily constructible rail fastening systems and dampers for high vibration isolation (to minimise ground-borne vibration and noise), employ mini sound protection walls close to the track for air-borne noise attenuation, employ noise attention panels as backyard fences, and the like.
- Avoiding high, visually intrusive noise barriers to streets, back fences and green spaces

The importance of the above innovations and measures to protect residential amenity cannot be overstated. It is critical for the Stage 2 light rail line to generate confidence in the measures employed to protect residential amenity, and cement the credibility and practicality of light rail as a public transport mode.

In reviewing the EIS, Council obtained a peer review from Renzo Tonin & Associates (TN092-01F01 PEER REVIEW (R1), of Chapter 10 and Technical Paper 3 of the EIS. The findings and recommendations of that review are discussed below.

9.2 Light rail noise – sleep disturbance

The Renzo Tonin peer review notes the following.

The operational noise trigger levels for light rail projects are only triggered if the LAeq(period) AND LAmax noise levels are exceeded, but not triggered if only one of these noise parameters is exceeded.

The EIS identified that noise levels are predicted to exceed the LAeq(9hour) night-time noise trigger level of 50 dBA at 149 properties. However, since the LAmax noise levels are predicted to be below 80 dB(A) at all receivers, there are no locations where the LAeq(9hour) and LAmax noise levels are both above the noise trigger levels. The EIS therefore concludes, based on the RING, that further consideration of noise mitigation measures is not required.

Based on guidelines reviewed in this section, and the LAeq(9hour) noise predictions, it is evident that there are many properties adjacent the PLR Stage 2 alignment where sleep disturbance could occur as a result of light rail operations.

It is not immediately evident in the RING why the LAmax AND LAeq(period) noise trigger levels need to be

exceeded for light rail projects, but the LAmax OR LAeq(period) noise trigger levels need to be exceeded for heavy rail projects.

Council understands, based on advice that on the CBD and South East light rail project the provision of noise mitigation measures for light rail operations may have been implemented based on an interpretation that the LAmax OR LAeq(period) noise trigger levels were exceeded.

It seems incongruous that light rail should be effectively subject to a lesser noise trigger standard than heavy rail. Why should almost 150 properties in Rydalmere, Ermington and Wentworth Point be subject to adverse night time noise conditions, without mitigation?

And, if it is the case, why should Stage 2 of the Parramatta Light Rail, and the Parramatta Light Rail generally, be treated any different to properties adjoining the CBD and South East light rail project?

These matters should be examined carefully in the EIS Addendum, or at the minimum, prior to any planning approval, to ensure that properties along Stage 2 of the light rail are subject to' acceptable' noise emission from the light rail, noting again that there are many properties PLR Stage 2 alignment 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, and no rail line.

This world class light rail Project should do what is necessary to protect the amenity of impacted residents.

Recommendation 11 – TfNSW must confirm as part of the EIS Addendum report whether the CBD and South East light rail project has been implemented based on an interpretation that the LAmax OR LAeq(period) noise trigger levels were exceeded, and the same standard and noise mitigation principles applied to PLR Stage 2.

9.3 Operational noise and vibration – ground borne noise

Renzo Tonin notes as follows, (in relation to Rydalmere, Ermington and Melrose Park).

Ground-borne noise levels are predicted to be higher than the airborne noise levels inside 129 residential properties and above the LAmax 35 dBA noise trigger level.

The modelling results in the below figure are based on a "normal" embedded slab track (refer Section C-4 of noise and vibration technical paper), without mitigation. During the detailed design stage of the project, higher performance track forms are likely to be required in areas where the ground-borne noise levels are predicted to be higher than the airborne noise levels.

These track forms are likely to comprise embedded track encapsulated within highly resilient boots and/or floating slab track. Both systems are designed to reduce the ground-borne noise levels within nearby buildings. Based on past project experience, it is expected that feasible light rail track-form designs are available to reduce the ground-borne noise levels so that they are not higher than the airborne noise levels within dwellings.

Recommendation 12 – The Department apply a condition of planning approval requiring the use of higher performance track forms in those parts of the track where ground-borne noise levels are predicted to be higher than the airborne noise levels inside residential properties and above the LAmax 35 dBA noise trigger level, as well as higher performance track forms for the existing green space between River Road and Spurway Street as a matter of course (notwithstanding the above standard).

9.4 Out of hours work for construction

The Renzo Tonin review notes:

The EIS identifies that OOHW will be required, primarily to limit the potential impacts on public infrastructure such as the local road network. The ICNG notes that that strong justification is required to perform construction works outside of the recommended standard hours.

Detailed noise predictions for standard and OOHW periods are provided in Section 3.4 and Appendix F of the EIS noise and vibration technical report. Construction noise contour plots are provided for each construction scenario so that the "worst case assessment" and "with mitigation assessment" noise levels can be obtained at each receiver.

The results indicate that the potential noise impacts are expected to be highest for the following construction scenarios: Scenario 05 - Construction of the track, Scenario 08 – Construction of the bridges and Scenario 09 – Construction of the road interface.

Worst case NML exceedances greater than 20 dB are predicted for the above scenarios during all relevant assessment periods.

Renzo Tonin note the importance of effective community engagement in relation to noise and out of hours work

Effective community engagement will include:

- Informing the community of upcoming works and the potential impacts of those works
- Explain justification for OOHW and the proposed mitigation / management measures that will be utilised to minimise impacts on the community
- Provide the community with direct point of contact for complaints / feedback
- Manage / adjust construction works, based on community feedback
- Provide appropriate respite for impacted receivers

It is anticipated that the Department will apply a suitable condition to any planning approval.

9.5 Operational road traffic noise modelling

Renzo Tonin notes:

That the results of the operational road traffic noise modelling indicates that 32 receivers are predicted to experience an increase in noise level greater than 2 dB and receive noise levels above the RNP controlling noise criteria. All identified receivers are located north of South Street and Boronia Street where the eastbound lane would move closer to the residences to allow for the centre-running light rail track. 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.

Recommendation 13 – 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 receive noise levels above the RNP controlling noise criteria.

9.6 Operational noise levels and future residential development

Renzo Tonin notes:

The EIS notes that operational noise levels are likely to exceed the noise criteria at the nearest receivers within the future Camellia town centre and the Melrose Park north and south precincts. The EIS notes that the developers of these buildings would be required to ensure that the designs comply with Clause 87 of the Transport and Infrastructure SEPP.

Notwithstanding the usual protocol for future residential development, it is completely unacceptable for the Project to kick responsibility for operational noise to future developers, who will have to pass on the cost of noise mitigation to hundreds of future dwelling (apartment) owners in these strategic growth corridors.

The strategic context of PLR Stage 2 is that the Camellia Rosehill Place Strategy has now been approved by the Department, and the Department is proceeding apace with rezoning and a civil assets brief, along with other rezoning studies. The Melrose Park south rezoning and development process is well established, with a new bridge to be constructed to link Melrose Park and Wentworth Point.

These developments should be protected from operational noise above policy triggers, by exercising the precautionary principle, and in consideration of the part of the costs of a publicly funded light rail not being passed on to future private property owners. It would be sensible to construct the light rail in a manner that meets operational noise criteria in a strategic residential growth corridor(s), at public funding cost, and in a manner that recognises the required amenity of these high density living areas (that is, no high noise walls or the like).

Recommendation 14 – TfNSW commit 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 in the scope and performance requirements of the design and construct contract for the Project.

And, the Department apply a condition of planning approval requiring those mitigation measures to occur, consistent with the amenity required of a substantial Town Centre, eg no high noise walls. This may require some retrofitting of the Camellia track.

9.7 Operational noise from light rail stops

There are several stops where residential receivers are within 25m of the stop, with strong potential for nuisance/annoying noise from PA announcements. The Renzo Tonin peer review recommends that no regular PA system announcements should be made during the evening (6pm to 10pm) and night-time (10pm to 7am) periods, where light rail stops are close to residents. PA System announcements should only be utilised in emergency situations during these periods.

Recommendation 15 – The Department apply a planning approval condition that regular PA 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. PA System announcements should only be utilised in emergency situations during these periods.

10.0 CYCLING AND PEDESTRIAN CONNECTIONS

Within Stage 1 of the PLR, a considerable number of intersection and cycling links were cut, notwithstanding practical solutions being available if the construction contract had placed more emphasis on trip continuity. Cycling approaches to intersections were restricted to right angle and similar crossings, on a safety basis, so that narrow wheels did not get caught in the rail flange gap in the road.

In Europe and other countries, rail authorities have the use of rubber track inserts (Figure 11A & 11B) which can significantly eliminate this issue. Light rail systems in NSW do not have this solution. The light rail and public domain infrastructure should not be designed with transport continuity cross-purposes. TfNSW should develop within PLR Stage 2 an innovative track insert to assist the Project to provide seamless, coherent, visible, and safe pedestrian and cycle access throughout and adjacent to the PLR corridor.

Figures 11A & 11B Example of rubber track inserts

Recommendation 16- TfNSW develop within PLR Stage 2 a suitable track insert to assist the Project to provide seamless, coherent, visible, and safe pedestrian and cycle access throughout and adjacent to the PLR corridor.

11.0 FLOOD AFFECTED LAND AND STORMWATER CONTROLS WITHIN THE CORRIDOR

The corridor has various flood affected lands, specifically foreshore areas of the Parramatta River. Experience from Stage 1 of the PLR indicates that the light rail track has strict tolerances for stormwater, requiring upgrade of local stormwater systems in some instances

It is likely that stormwater systems along Hill Road will require significant upgrades. Council is also proposing stormwater works as part of the Hill Road Masterplan. Careful engagement and work programing should occur to precent duplication of infrastructure work.

The EIS provides that increases in flood management levels can be built into the Project. This will have the effect of lessening Council's existing flood management controls, and will have cumulative impacts with other projects, such as Sydney Metro West. Increases in flood levels by the Project are not acceptable on private land.

A particular concern is Hill Road Wentworth Point, currently suffering regular floods at low intervals. The EIS contains a climate change assessment in Appendix I, which indicates rising sea levels over the operation of this Project. The stormwater drains in Hill Road do not function effectively due to their level relative to the Parramatta River. The Project must avoid structures such as embankments adjoining Hill Road which will divert and/or retain stormwater to the detriment of road users and adjoining properties.

Recommendation 17- For operational flood levels in events up to the 1%AEP council can only support an increase in flood levels up to:

0mm in residential land
0mm in commercial land
10mm in public land.

Council cannot support flood management objectives that will cause increased risk to private landowners in Parramatta. The Project should 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.

12.0 PUBLIC ART AND HERITAGE INTERPRETATION

It is the Council officer view that public art and heritage interpretation in Stage 1 of the PLR was not realised to its full potential. There were adequate Planning Approval conditions, however public art and interpretation was split by TfNSW into obligations across a number of contractors, the contractors were not required to coordinate their work, different consultants were used, the local Council experts had little influence and generally the strategies produced were defined by a budget and a contract condition, rather than a comprehensive approach to achieve a great result.

Recommendation 18- The Department provide a modified planning approval condition which requires TfNSW to develop within PLR Stage 2 a comprehensive public art and interpretation strategy for the whole alignment, using a consistent consultant scope, engaging closely with Council, and requiring coordination between TfNSW, contractors and stakeholders to provide an integrated approach.

13.0 CABINET LOCATION AND DISABILITY ACCESS

One of the lessons learned from PLR Stage 1 was that electrical, traffic signal and other cabinets located in footpaths can unacceptably obstruct the clear path of travel for people with disability and vision impairment. The cabinets can create unnecessary visual clutter and dominance in the streetscape. The positioning of cabinets in the public domain needs careful contextual design to achieve the least offensive outcome for the path of travel and visual amenity.

Figure 12 Multiple utility cabinets at North Parramatta and utility cabinets on the footpath

Condition E80 of the Stage 1 Planning Approval required the Proponent to design and construct the Project in a manner that reduced visual and heritage setting impacts and ensured consolidation and rationalisation of kerbside infrastructure to avoid visual clutter. This did not occur.

Whilst it is noted that utility providers have fixed requirements for location and setbacks of cabinets, and it is difficult to consolidate cabinets from separate providers, stronger public domain controls are required in the Project documentation to oblige the contractor to work harder to avoid visual clutter.

Recommendation 19 – The Department condition the planning approval for the Project Urban Design Requirements (Blue Book) 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.

14.0 CAR PARKING STRATEGY DURING CONSTRUCTION

Experience with Parramatta Light Rail Stage 1 construction was that there were continuous complaints from residents and businesses about construction workers occupying local parking along and adjacent the alignment. Notwithstanding, the main infrastructure contractor did have a worker parking policy to minimise loss of local parking, however the scale of the Project makes worker parking impacts inevitable.

In Stage 2 this situation will be considerably exacerbated, due to the lack of CBD multi-level car parks, the occupation of residential street parking for the track construction and dispersal of existing vehicles, and construction work in locations where parking is already over-subscribed and limited to short term, particularly Wentworth Point.

The construction worker parking requirements in Table 5 of Technical Paper 2 'Transport and Traffic' require further explanation. When the main infrastructure contractor was working in the Parramatta CBD during Stage 1 construction there were regularly over 300 workers at any one time. Table 5.5 does not give any indication of how workers will not drive to alignment construction sites, having regard to existing public transport availability.

Technical Paper 2 does indicate that a Parking Management Strategy would be prepared as part of a wider Traffic and Access Management Plan for the Project, and the contractor would be expected to provide further initiatives to keep worker parking out of resident spaces. The Parking Strategy should require the contractor to provide shuttle buses to worksites

Recommendation 20 – The Department condition the planning approval to require TfNSW and contractors to provide shuttle buses to alignment worksites, as part of the Parking Management Strategy within the Traffic and Access Management Plan, to minimise impacts on residential parking.

15.0 ASSESSMENT OF LIGHTING IMPACTS

The EIS does not provide an assessment of the impact of track and stop lighting on adjoining properties.
The Ken Newman Park green space complex will have a new track behind existing dwellings, with track lighting and the potential for light throw over lower elevations.

Recommendation 21 – The EIS Addendum report carry out a detailed assessment of lighting impacts along the alignment.

16.0 RESIDUAL LAND STRATEGY

Residual land is discussed in Chapter 6.9.2 and Chapter 13.7.1 of the EIS.

The premise of the proposed ongoing design development and residual land management plan is reasonable, however experience from PLR Stage 1 indicates that 18 months after approved for construction design drawings for the Project, there has been no clear indication of the future of residual land. There has been little engagement with Council as a key stakeholder.

Chapter 6.9.2 identifies the following:

It is estimated that the residual land would comprise a total of about 17,700 square metres (1.77 hectares) with most of the residual land located:

- *west of the John Street stop, Rydalmere*
- *in the vicinity of the Atkins Road stop, Melrose Park*
- *north of Hope Street west of Melrose Park stop, Melrose Park*
- *at the south-east corner of Hope and Waratah streets, Melrose Park*

The EIS identifies local loss of street parking as an important issue, and recognises the loss of some commuter car parking during construction and operation.

Notwithstanding the loss of commuter parking, the EIS is silent on replacement of or additional commuter parking to encourage use of the light rail.

The future use of residual land should be considered at the same time as the preparation of the Urban Design Guidelines, and scope and performance requirements, so that it contributes effectively to the Project.

Rather than residual land be held for some undetermined use or redevelopment by TfNSW, the land should be used for commuter parking or similar public use as part of this major public transport Project.

Recommendation 22 - The future use of residual land should be considered at the same time as the preparation of the Urban Design Guidelines, so that it contributes effectively to Project impacts and needs. Residual land should be used for commuter parking or similar public use as part of this major public transport project. The Department is encouraged to apply a condition of planning approval to require this action by the proponent.

17.0 TREE REMOVAL

There is a significant amount of tree removal proposed - 4,089 trees as per the Arboricultural Report. This is more than double the number of trees removed in PLR Stage 1 (~1,600 trees removed). Given the significant amount of tree removal, it is critical that the document outline measures to preserve mature canopy, provide full justification for tree removal in a tree register along with possible design mitigation measures.

Council has also recently planted trees along South Street that aren't incorporated in the tree survey as they are under three metres in height. GIS shapefile and species information has been provided to TfNSW. By the time of pre-works / construction these tree will be of significant height. These were planted under the Greening Our City Program and will need to be replaced or relocated. This will further increase the number of trees to be removed.

In addition a clear breakdown of the number of trees in private property vs public domain is needed to understand the impacts to Council's assets.

Recommendation 23 – The EIS Addendum report outline measures to preserve mature canopy, provide full justification for tree removal in a tree register along with possible design mitigation measures, with a condition of planning approval if this is not carried out.

ATTACHMENT A – COPC_PLR2_EIS DETAILED COMMENT REGISTER_15122022