Transport for NSW

Sydney Light Rail

CBD AND SOUTH EAST LIGHT RAIL PROJECT

STATE SIGNIFICANT INFRASTRUCTURE APPROVAL (SSI-6042)

Administrative modification – Linking condition B47 to the Tree Report

NOVEMBER 2016

Contents

1. Introduction

This chapter outlines the background to the approved Project and outlines a summary of the proposed modification and why it is required.

1.1 The CSELR Project

The CBD and South East Light Rail (CSELR or Project) Project was identified as a key priority transport infrastructure project for the NSW Government in the NSW Long Term Transport Master Plan. Sydney's Light Rail Future presents the NSW Government's plan to expand light rail in Sydney.

The CSELR Project comprises the construction and operation of a new light rail service in Sydney, covering approximately 12 kilometres of new light rail track from Circular Quay to Central, Kingsford and Randwick via Surry Hills and Moore Park. The approved Project includes:

- 19 light rail stops
- a pedestrian zone on George Street (between Hunter and Bathurst streets)
- approximately 12 substations to provide power for the light rail vehicles (LRVs)
- a Light Rail Vehicle (LRV) stabling facility in Randwick and a maintenance depot in Rozelle.

1.1.1 Project approvals

The CSELR Project was declared Critical State Significant Infrastructure by the NSW Minister for Planning and Infrastructure (now Minster for Planning) on 25 June 2013. The CBD and South East Light Rail Environmental Impact Statement (Transport for NSW, 2013 (CSELR EIS)) was prepared and exhibited from 14 November 2013 to 16 December 2013. A subsequent Submissions Report (incorporating a preferred infrastructure report) was prepared and submitted to the Department of Planning and Infrastructure (now the Department of Planning and Environment (DP&E)) in March 2014.

Planning approval was granted by the Minister for Planning under Part 5.1 of the Environmental Planning and Assessment Act 1979 on 4 June 2014.

Following the approval of the Project on 4 June 2014, five modifications to the approval have been submitted to, and approved by DP&E.

1.2 Overview of the proposed modification

1.2.1 Proposed modification

Transport for NSW is requesting an administrative modification to change condition of approval B47, outlined in red text below.

B47. The Proponent shall, to the greatest extent possible, minimise the removal of vegetation, including at Circular Quay, Moore Park and surrounds, Anzac Parade, Centennial Park and surrounds, Royal Randwick Racecourse (along Alison and Wansey Roads), High Cross Park, Arthur Street, High Street and within the UNSW lands. Where vegetation has been removed, reinstatement and supplement landscaping shall be undertaken in accordance with the

Revegetation Compensation Package required by condition B52. The two mature fig trees located on Centennial Park and Moore Park Trust lands at the end of the heritage listed perimeter fence on the corner of Alison Road and Darley Road shall not be impacted by the SSI unless identified in the Tree Report prepared for B48.

1.2.2 Why is the modification required?

The proposed administrative modification to planning Condition of Approval (CoA) B47 is required to confirm the mechanism for managing the assessment of trees within the Project boundary, and to allow the implementation of the recommendations from the Tree Report required by CoA B48, to be satisfied.

At present there is no link between CoA B47 and CoA B48. For reference CoA B48 is provided below:

B48. The Proponent shall commission an independent arborist, approved by the Secretary, to prepare a comprehensive Tree Report for the SSI. The report shall be prepared in consultation with the UDRG and identify the impacts of the SSI on trees and vegetation within and adjacent to the construction zone. The report shall recommend measures to avoid the removal of trees or minimise damage to existing trees and is to ensure the health and stability of those trees to be protected. This includes details of any proposed canopy or root pruning, excavation works, site controls on waste disposal, vehicular access, storage of materials and protection of public utilities. Where it is found that tree removal is necessary, the arborist shall identify whether trees to be removed can be transplanted within the vicinity of their current locations. The locations shall be determined in consultation with the relevant Council and/or the Centennial Park and Moore Park Trust. A copy of the report shall be submitted to the Secretary prior to the commencement of construction. All recommendations of the report shall be implemented by the Proponent, unless otherwise agreed by the Secretary.

The requirements of CoA B48 have been met, an independent arborist has been commissioned and a comprehensive Tree Report (UTM, October 2015UTM, October 2015) was prepared for the Project. This Tree Report the covers majority of the works to be undertaken as part of Stage 2 of the CSELR. As a result of progression of detailed design, this report excludes High Street and Lilyfield which each have its own report prepared in accordance with the requirements of this condition.

In addition, the proposed change allows for treatment of the two mature fig trees located on Centennial Park and Moore Park Trust lands at the end of the heritage listed perimeter fence on the corner of Alison Road and Darley Road, which are referenced in condition B47, to be pruned in accordance with the recommendations of the Independent Arborist in the Tree Report, unless otherwise agreed by the Secretary. A number of options have been explored during design development to avoid any pruning of the canopy and/or roots of these trees however no suitable option has been identified. Refer to Section 4 for a discussion of this design development. Given the constraints in the area, the design review has provided an option which has minimal impact; however some pruning would still be required.

The proposed change to include a reference to the Tree Report required by CoA B48 provides the mechanism for the independent arborist to assess and recommend appropriate management measures for the specific trees referenced in CoA B47 and all recommendations in the Tree Report (UTM, October 2015) to be satisfied. Linking the two conditions allows for an independent assessment of the design in relation to the tree impacts, and recommendations of appropriate management measures developed based on the health and longevity of each tree.

2. Background

This chapter summarises the background to the relevant planning approval requirements to be complied with for managing tree impacts as a result of the construction and operation of the Project.

2.1 Planning approval conditions

2.1.1 Initial Planning Approval

Environmental Impact Statement (November 2013)

The EIS includes an assessment of existing trees growing along the CSELR corridor, including street trees and trees within parks adjacent to the light rail alignment that could be potentially impacted during the construction and/or operation of the Project. The assessment includes the following:

- identifies the subject trees;
- appraises and assesses the trees' condition, health and structure at the time of inspection
- determines the Safe Useful Life Expectancy (SULE) of the tree
- assesses landscape amenity/significance of individual trees
- identifies trees with extensive exposed roots.

The majority of street trees assessed were found to be healthy, well maintained, in good condition and free from structural defects and faults. The EIS identifies the approximate locations along the CSELR corridor where tree removal and tree impacts are required based on the concept design. Detailed design is required to determine the actual impacts that will result from the construction and operation of the project.

Preferred Infrastructure Report (March 2014)

The Preferred Infrastructure Report (PIR) was prepared to identify a preferred alignment for the CSELR. As a result of considering a number of alternatives options a preferred route was identified which meets the operational, design and engineering requirements.

The PIR assessed the planted tree impacts based on the concept design particularly in relation to the Randwick Precinct. The report identified significant impacts to trees along Alison Road (between Anzac Parade and Darley Road), however the assessment also identified that trees could be retained further along Alison Road between Darley and Wansey Road. In addition, the report highlighted that the number of trees potentially retained could be increased through testing of root zones by a suitably qualified arborist during detailed design.

Secretary's Environmental Assessment Report (June 2014)

The Secretary's Environmental Assessment Report identifies that an infrastructure project of this magnitude and complexity, operating in a highly urbanised environment would result in substantial changes in landscape and visual amenity. The report highlights the need to focus the detailed design, on avoiding or minimising visual impacts to the greatest extent possible, therefore the Department recommended conditions to minimise vegetation removal on the Project.

The Secretary's Report acknowledged that there are a number of conditions in the project approval to address minimising vegetation removal and compensatory measures (conditions B47, B48, B51 and B52).

The CSELR Project was then approved as critical State Significant Infrastructure in June 2014 by the Minister for Planning. Through the approval of the first Modification the Department recommended that CoA B48 be revised to require that an independent arborist assess each tree within and adjacent to the construction zone to determine the impacts of the Project on each tree. The independent arborists' role will be to review the design and construction method and recommend measures to avoid the removal of trees or minimise impacts to existing trees to ensure the health and stability of trees which remain. The details of the Independent Arborists' review will be documented in the Tree Report.

2.1.2 Modification one

In December 2014, Transport for NSW proposed a number of changes to the Project following further development of the concept design. One of these changes was realignment along Alison Road and revised flood mitigation at Centennial Park. Initially, the two mature fig trees on the corner of Alison and Darley Road were proposed to be removed at this time.

As part of the consultation with Centennial Park and Moore Park Trust during the exhibition period, Centennial Park and Moore Park Trust highlighted that, while Transport for NSW indicated that removal of these trees may not be required, an objection to the removal of these trees should be noted. Randwick City Council also noted an objection to the trees' removal and highlighted the importance of the high legibility, passive surveillance and accessibility of the pedestrian and cycle shared path.

The Secretary's Environmental Assessment Report recommends that the Proponent (Transport for NSW) work co-operatively with the relevant stakeholders to ensure that the urban design outcomes integrate to the greatest extent practicable with the interface between the parkland and the racecourse. Existing condition B51 is considered appropriate to address this matter.

As part of the modified approval of the CSELR, Condition B48 was amended to its current text as discussed above. It is believed that the intent of this modified condition was to ensure that Transport for NSW adheres to its commitment to progress the design with the aim of retaining these trees.

2.1.3 ALTRAC Tree Report – Stage 1 (October 2015)

The purpose of the report is to identify the impacts of the Project on the trees and vegetation within and adjacent to the construction zone. The Tree Report (UTM, October 2015) recommends measures designed to prevent the removal of trees and to minimise impacts to existing trees through the implementation of tree protection measures.

The scope of the Tree Report (UTM, October 2015) includes:

- Methods to ensure the health and stability of trees to be retained and protected, i.e. positive impacts;
- Provides details of any proposed canopy or root pruning, excavation works and site controls;
- Identifies whether any trees to be removed can be transplanted within the vicinity of their current locations; and

- Identifies the trees to be removed as a result of the CSELR.

CoA B48 requires Secretary's agreement if all recommendations of the Tree Report are not implemented. The initial Tree Report (UTM, October 2015, Rev 4) was based on the concept design and therefore as design is developed, changes to the Tree Report (UTM, October 2015, Rev 4) have been necessary and agreement from the Secretary required. The following process for determining the impacts to existing trees includes:

- Use of 3D modelling of proposed track layout with existing tree locations;
- Consideration of the health of each tree, including its vigour and likely ability to survive in situ pruning;
- Review of the layout by engineers to confirm options to relocate tracks away from trees;
- Considering opportunities to narrow/move footpaths with councils to provide extra offset;
- Where fencing, other ancillary infrastructure or services affect tree retention, relocation or alternative construction methods are considered to reduce impacts (e.g. from strip footings to pier footings for posts).

The implementation of the above process ensures a rigorous assessment of each tree to minimise the number of trees impacted as a result of construction of the Project and is also in line with the requirements of CoA B47. The recommendations of subsequent revisions of the Tree Report (UTM, October 2015) are approved by the Secretary based on the outcome of completing the above process which demonstrates the impacts are required to enable the Project to be constructed.

Trees along the Project alignment to be retained are protected from active construction works. This is done in accordance with the Tree Report (UTM, October 2015). The Tree Report (UTM, October 2015) identifies the tree protection zone (TPZ) and the structural root zone (SRZ) for each tree which are required to manage the viability and stability of each tree during the construction phase. The independent arborist provides advice on the distance of the TPZ and SRZ and applies guidance to the construction team when establishing construction zones. The guidance is in accordance with the Tree Report which references Australian Standard (AS) 4970 Protection of trees on development sites.

Where pruning of the tree canopy and/or roots is required the independent arborist is on site to supervise the works and monitor that pruning is performed in accordance with the Tree Report requirements (which references AS 4373 Pruning of Amenity Trees). The independent arborist also provides advice on the maintenance requirements to maintain the health and vigour of the tree. This includes positive impacts to the tree through the application of mulch and fertiliser on a regular basis to encourage new growth.

The independent arborist audits the application of the maintenance requirements and tree protection measures and confirms the implementation of the recommendations. The audit is conducted in accordance with AS4970. Where necessary the independent arborist provides further advice to ensure the trees within the alignment that have been impacted are maintained appropriately.

The Tree Report has been prepared based on the concept design (Revision 4, October 2105) and submitted to the Department of Planning and Environment. This report identified the need for pruning of the canopy and roots of the two mature figs on the corner of Alison and Darley Road.

3. Associated tree works

The following sections outline the scope of work that is proposed to occur following the provision of the modified condition.

3.1 Trees affected by the modification

Two mature fig trees (TN1701 and TN1702) are located on Centennial Park and Moore Park Trust (CPMPT) lands at the end of the heritage listed perimeter fence on the corner of Alison Road and Darley Road as shown in Figure 1.

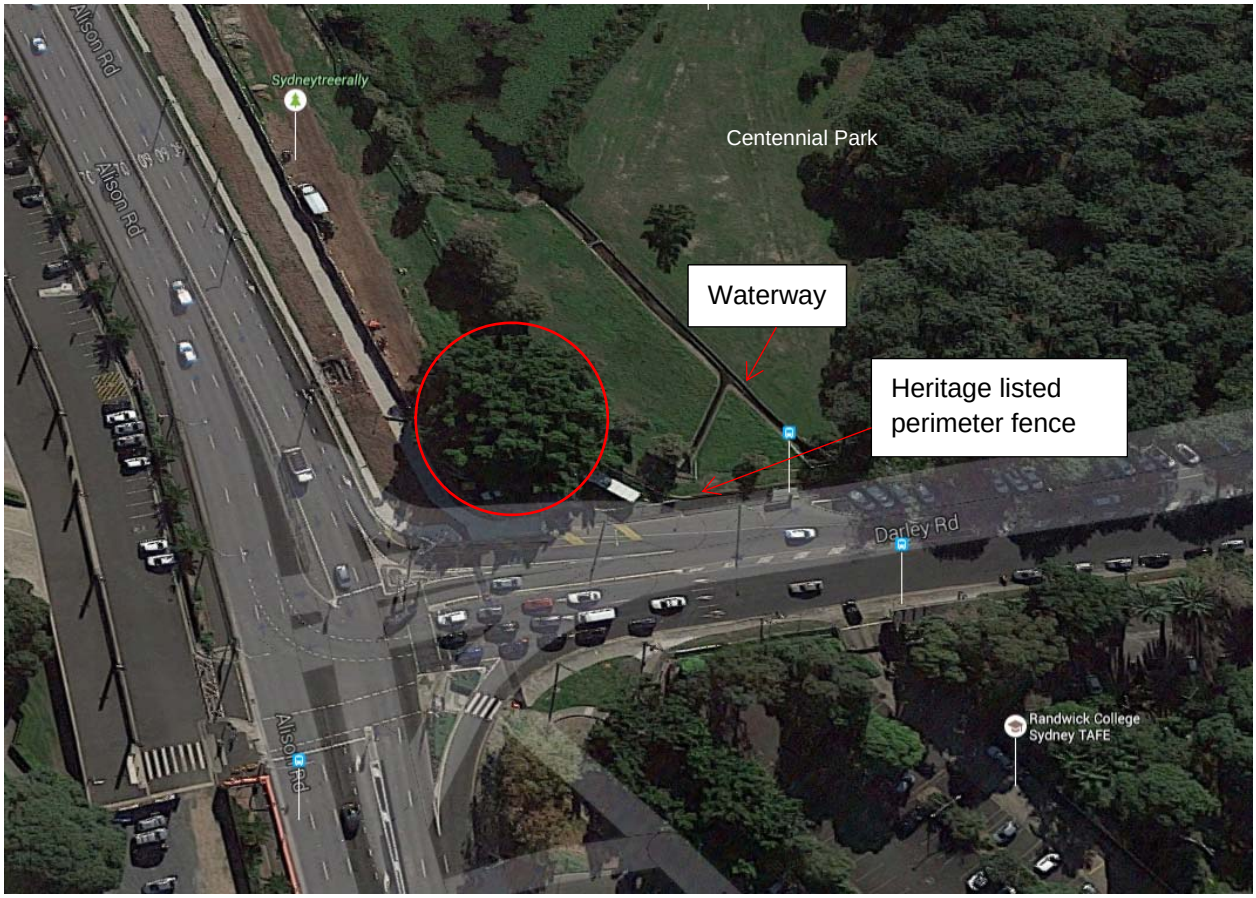

Figure 1 – Location of the two mature trees on the corner of Alison and Darley Road shown in red.

The two trees are of the species *Ficus macrocarpa var. hilli* (Hill's weeping figs). They are both mature trees of around 13 metres height with a canopy spread of around 12 metres. Hill's weeping figs are native to Australia, endemic to Queensland and would generally grow up to 15-20 metres high and 12-15 metres in the width of the canopy.

The trees appear to have been planted around fifty years ago. Prior to commencement of CSELR construction, the trees were occasionally pruned to maintain access for both pedestrians and vehicles within this area.

Following the commitment to attempt to retain the trees, Transport for NSW progressed detailed design through exploration of a range of options to avoid the trees. Within a highly constrained area, the preferred alignment provides for sufficient space to retain the trees in situ, however

some pruning would be required. This was outlined in the Tree Report (UTM, October 2015). This administrative modification would allow for pruning to be undertaken in construction and operation of the light rail in this area.

3.2 Tree works

The Independent Arborist for the project has assessed the impact of the preferred option on the two trees, TN1701 and 1702, from construction through to operation. The arborists recommendation is included in the Tree Report (UTM, October 2015) and is discussed further below.

The proposed works would require the removal of less than 10% of the crown from each tree to allow for construction of the shared path as outlined in Figure 2 below. Minor pruning would be required in future, to maintain the three metre clearance around the overhead wires of the light rail line.

Figure 2 – Approximate tree pruning proposed as outlined in grey (subject to supervision and advice of the independent arborist during pruning works)

The pruning requirements would satisfy *AS4373 (2007) Pruning of Amenity Trees*. The pruning would be supervised by the Independent Arborist to ensure the impact to the trees would be minimised.

Root pruning is also required for the construction of the shared path and potentially the track slab, refer Figure 3. A deep excavation is required to construct the track slab of the light rail track which includes some utilities below the tracks themselves. As a result of this deep excavation, the excavation either side needs to be battered out to a 1.5 to 1 slope. While within

the Tree Protection Zone of the two mature fig trees, this excavation would not be within the Structural Root Zone. Management measures such as mulching, fertilising and watering of the trees prior to and during these works as well as minimising access within the remaining Tree Protection Zone would maximise health and longevity of these trees despite some minor root pruning.

As such the extent of the impact to the trees is limited to approximately 10% pruning of the overhead canopy for both construction and operation and minor root pruning during construction. Mitigation measures such as mulching, fertilising and watering during works would be implemented with the advice of the Independent Arborist to minimise impact to the trees. As such long term impact to the health and vigour of the two mature trees is not anticipated as a result of these pruning works.

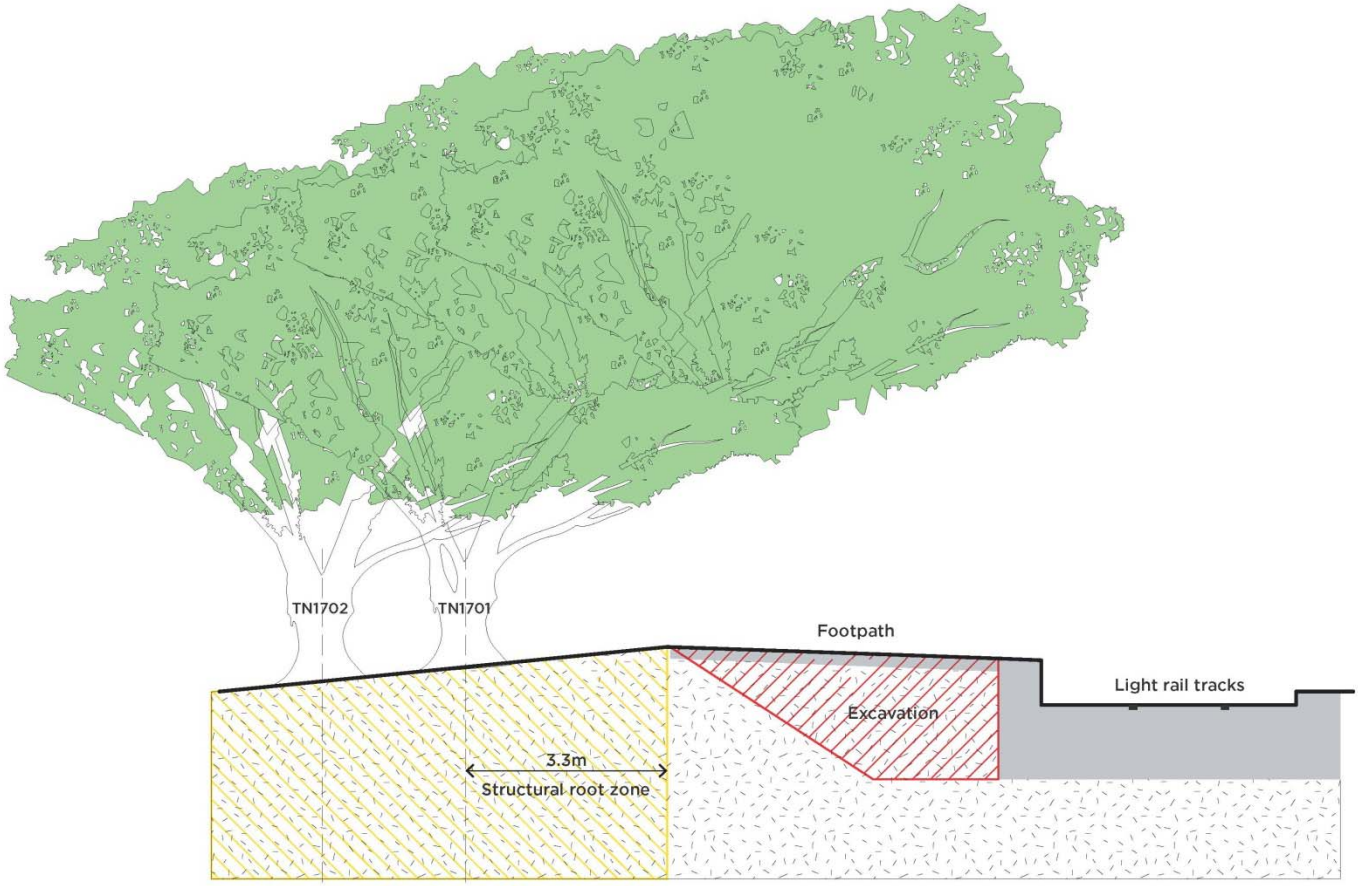

Figure 3 – Root pruning proposed to facilitate excavation shown in red (subject to supervision and advice of the independent arborist during pruning works).

4. Design Development

The following sections discuss the development of the design undertaken to avoid impact to the two mature fig trees on the corner of Alison and Darley Road.

4.1 Design constraints

4.1.1 Stakeholders

The following stakeholders are relevant to the design development in this location:

- CPMPT as the location of the two trees are within the CPMPT land. Design of pedestrian infrastructure also needs to be developed in accordance with the requirements of CoA B86A which requires the Proponent to appropriately connect and integrate within the CPMPT Masterplan 2040 (2013).
- Roads and Maritime Services (RMS) as the maintainer of the Alison/Darley Road intersection.
- Randwick City Council and TafeNSW as having interest in cyclist and pedestrian management in this area particularly to and from the Randwick Tafe Campus.
- Australian Turf Club (ATC) as having interest in pedestrian management to the racecourse during regular and special event operations.

4.1.2 Shared pedestrian and cycle path

The shared path in this location is highly used and well regarded by users of this area.

Pedestrian and cyclist movements within the area include commuter movements in a western direction towards the city and an eastern direction parallel to Alison Road towards Randwick. In addition, recreational users (i.e. pedestrians and cyclists) travel to and from Centennial Parklands along this route.

Compliance with CoA B27, which requires connectivity, efficiency and convenience to be maximised at light rail stop locations, and B86A is required when developing the design of the shared path.

The approved design includes a pedestrian path between Alison Road and the LRV corridor to provide both thoroughfare and to service the light rail stop. It also includes a shared path for cyclists and pedestrians on the embankment (northern side of the LRV corridor).

4.1.3 Operation of the light rail infrastructure

The following needs to be considered in developing the track alignment and associated light rail infrastructure in this area:

- Straight and curved lengths of rail track associated with the third track and the crossing of Alison Road at the Darley Road intersection
- Line speed in relation to track geometry
- Clearance of views between stationary light rail vehicles and signals

- Requirements around the distances between the bottom of ramps to nearby pedestrian crossings.

4.1.4 Intersection operation and road geometry

The Alison Road and Darley Road intersection will increase in complexity. Timing of the signal phasing requirements will determine the efficiency of the intersection for light rail vehicles, road vehicles, pedestrians and cyclists. Optimal performance is a high priority to ensure efficiency and to minimise potential safety issues as a result of frustration from various users.

Changes to the timing of the signal phasing of the intersection can also affect the level of service at the Doncaster Avenue intersection.

Where the intersection requires amendments, the geometry of the road may also require changes to ensure safe movements of vehicles through the intersection. This could lead to additional land take on either side of the intersection and flow on impacts to land uses.

Changes to the road geometry may also affect utilities and drainage in this area.

4.1.5 Environmental Factors

Other impacts associated with the location of the light rail alignment and associated infrastructure (i.e. shared path) are considered during design development.

To the north of the two fig trees within CPMPT land and outside the project footprint is a heritage listed perimeter fence. In accordance with CoA B55, the design aims to minimise heritage impacts to the greatest extent practicable during construction and operation. CoA B62 requires agreement from the Secretary for any modification or physical effect on heritage items outside the approved project alignment.

A waterway runs from under Darley Road and drains into Kensington Ponds within proximity of the two mature fig trees. Refer Figure 1 above for an outline of these items in proximity to the two mature fig trees.

4.2 Options considered

Five design options were assessed with the objective of realigning the light rail and associated infrastructure to avoid any pruning (crown or root) of the two mature fig trees on the corner of Alison and Darley Road.

4.2.1 Option one

This option is identified in the first modification report (concept design), refer Figure 4. As discussed above, the Modification Report initially identified these trees for removal, however following consultation Transport for NSW committed to progressing the design with the intent to avoid removal of these trees. Significant pruning would be required and some root pruning within the Structural Root Zone would potentially be required for this option.

The impact to the intersection is minimal with limited encroachment into CPMPT land. The shared path runs perpendicular to Darley Road requiring moderate amount of pruning to the crown and roots of the two mature fig trees. A sharp right turn would be required for pedestrians travelling east which would potentially see pedestrians and cyclists cutting this corner entering the light rail alignment.

No additional land take from CPMPT is required. No changes to the geometry or timing of the intersection would be required. No impact to the waterway or to the heritage listed perimeter fence would be anticipated as a result of this option.

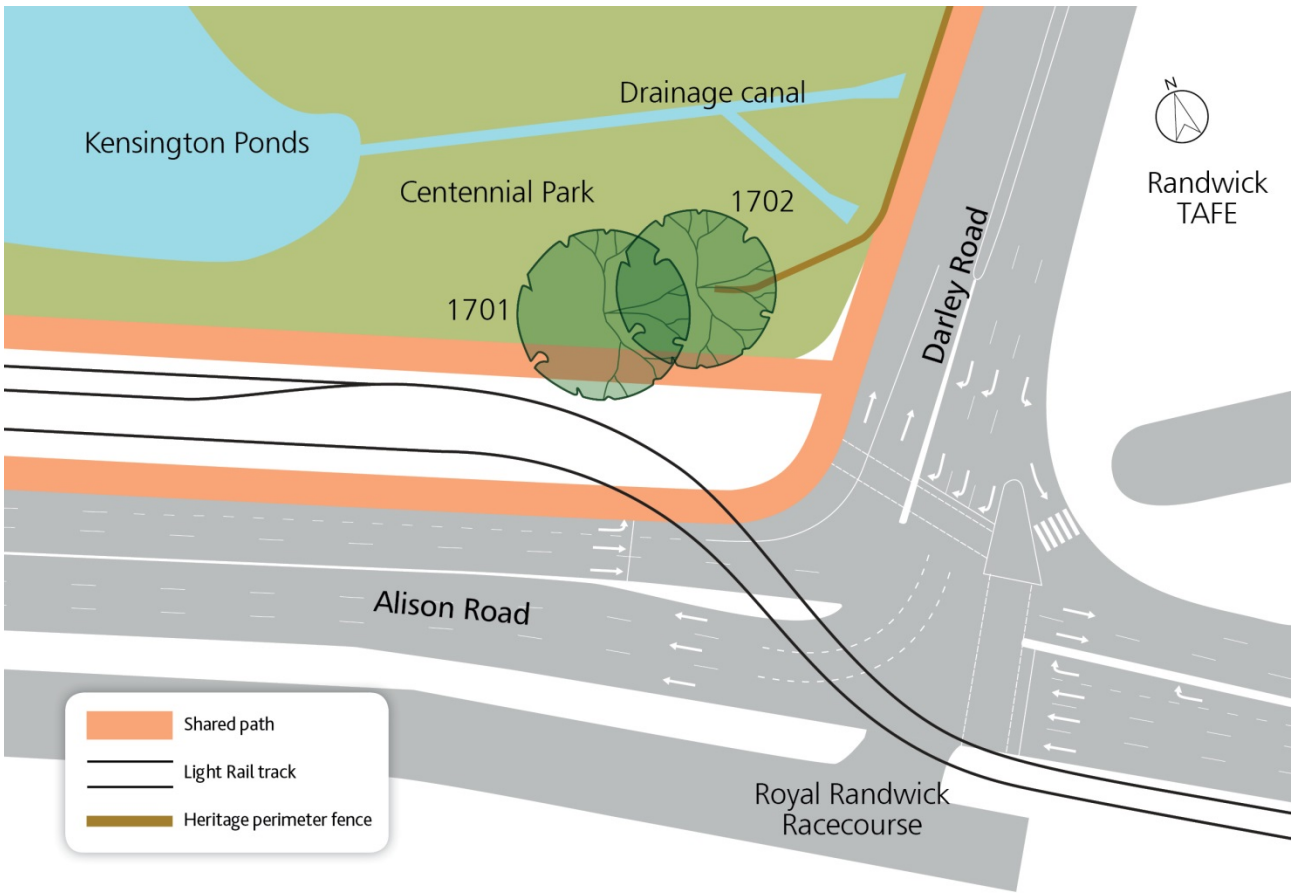

Figure 4 – Proposed layout of Option one where the shared path runs perpendicular to Darley Road (not to scale).

4.2.2 Option two

Option two allows for a shared path which is locally narrowed in proximity to the two trees (to maximum 3.5 metres in total). It also identifies the shared path as closer to the alignment, improving site lines and increasing the distance from the tree with a greater distance at the tree closer to Darley Road (Tree 1702). This option is consistent with Randwick City Council's response to Modification one highlighting the importance of highly legible shared path in this location.

No additional land take from CPMPT is required. No changes to the geometry or timing of the intersection would be required. No impact to the waterway or to the heritage listed perimeter fence would be anticipated as a result of this option.

Around 10% of the canopy of the trees would be required to be pruned and some root pruning required during construction. Ongoing minor pruning of the canopy may be required to maintain clearances of the overhead wires.

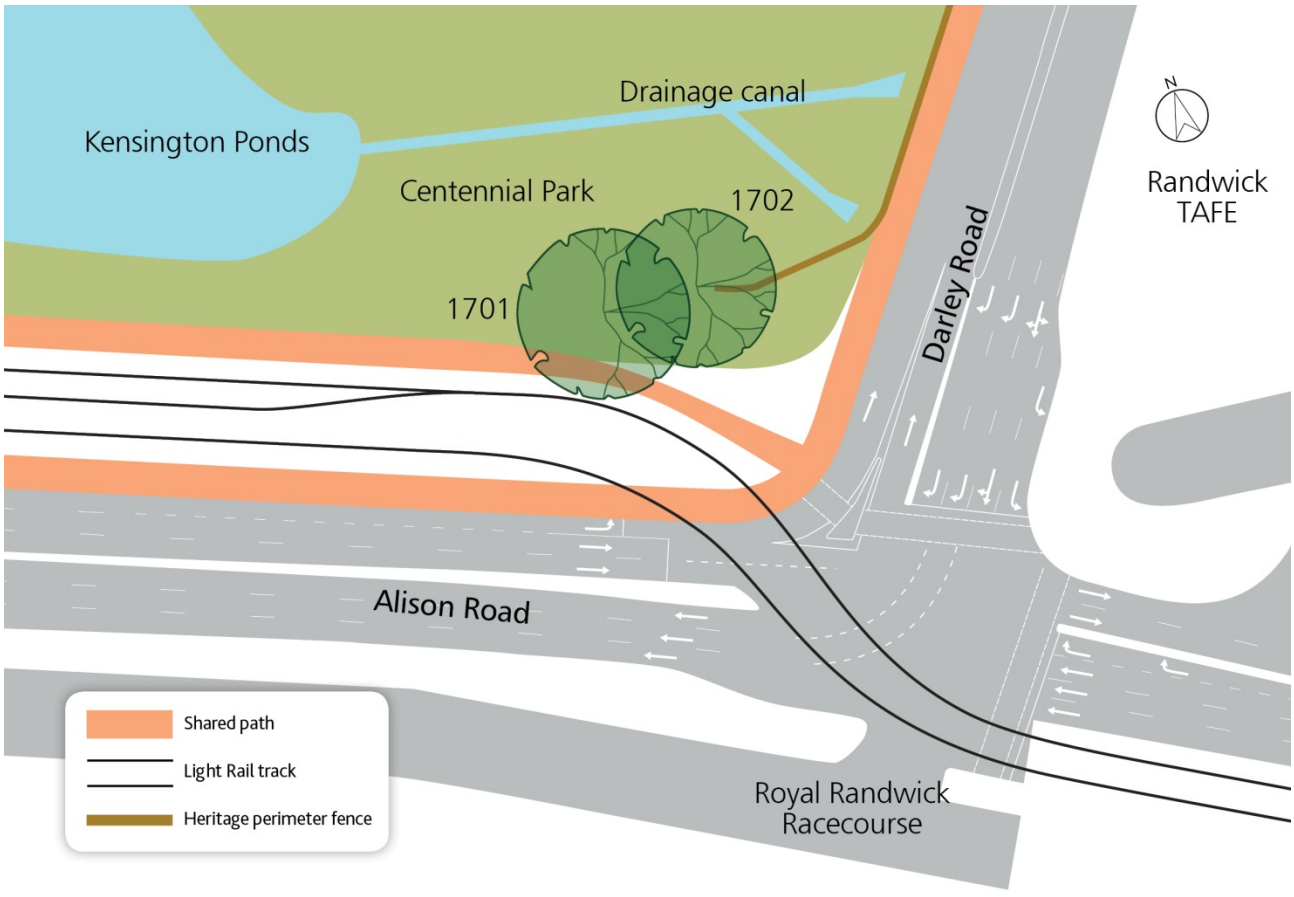

Figure 5 – Proposed layout of Option two where the shared path runs adjacent to the track (not to scale).

4.2.3 Option three

This option sees a revised track alignment on the western side of the Alison and Darley Road intersection. The track alignment is further away from the two fig trees with a sharper turn as it crosses Alison Road. With the shared path close to the alignment it too is further from the trees and allows good site lines. It also requires the extent of the third track to be shifted west of its proposed location.

In order to reduce potential interaction between road vehicles and light rail vehicles, the hold line for cars travelling east along Alison Road would also shift to the west. The geometry of the intersection would therefore lengthen and this will increase clearance times for vehicles. This would lead to a requirement to increase the phasing time of the light rail vehicles crossing this intersection which reduces the level of service of the intersection and efficiency of the light rail operation.

The intersection and adjacent areas north of and along Alison Road would also need to be re-graded, thus impacting on drainage further afield and requiring existing utilities to be relocated.

No additional land take from CPMPT is required. It is unlikely that pruning of the canopy of the two mature fig trees would be required. No impact to the waterway or to the heritage listed perimeter fence would be anticipated as a result of this option.

This option was considered favourable by Centennial Park and Moore Park Trust as it would reduce the extent of canopy and root pruning required, however given the impacts to the level of service to the intersection and efficiency of the light rail, it was not considered to be preferable by Transport for NSW.

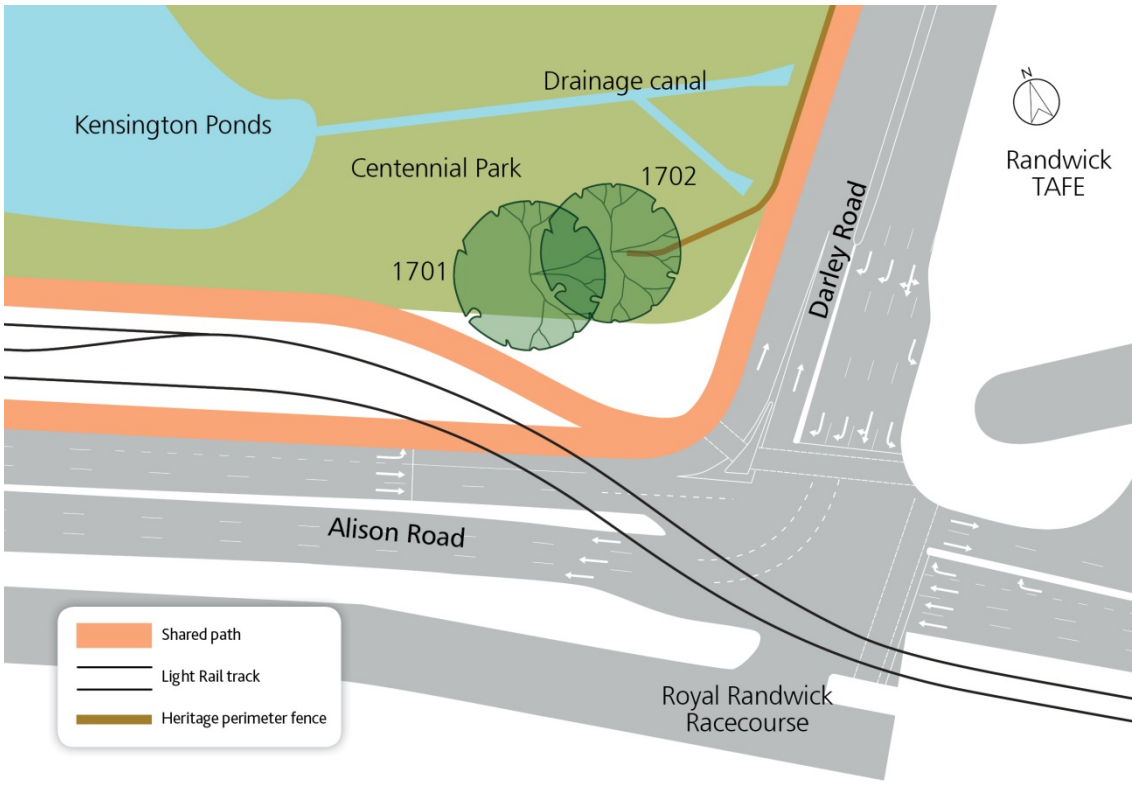

Figure 6 – Proposed layout of Option three where the track takes a sharper turn to cross Alison Road (not to scale).

4.2.4 Option four

This option sees the diversion of the shared path around the northern side of the two mature fig trees. The shared path would see pedestrians and cyclists travel behind the trees, connect with the Darley Road footpath to access the pedestrian crossing at the corner of Alison and Darley Road. This route would not reflect the line of site for users. It is likely that users will be compelled to follow the most direct path. In this case it means users would follow the light rail alignment passing in front of the trees. This would pose a significant safety risk; particularly when there are large groups of people using this shared path particularly in peak commuter periods and during special events.

Work would encroach further into CPMPT land, additional land may be required. No changes to the geometry or timing of the intersection would be required.

Minor pruning of the canopy of the mature trees would likely be required to facilitate construction of the shared path. Ongoing minor pruning of the canopy may be required to maintain clearances of the overhead wires.

In this location, the land dips to facilitate the waterway and as such the shared path would also follow the contour of the land and would likely be occasionally inundated with water. The shared path could be raised as a boardwalk which could present some safety issues. Safety concerns could be mitigated through the introduction of railings, however these would contribute to visual clutter in this area.

There would be some impact to the heritage perimeter fence to allow for connection of the footpath at Darley Road.

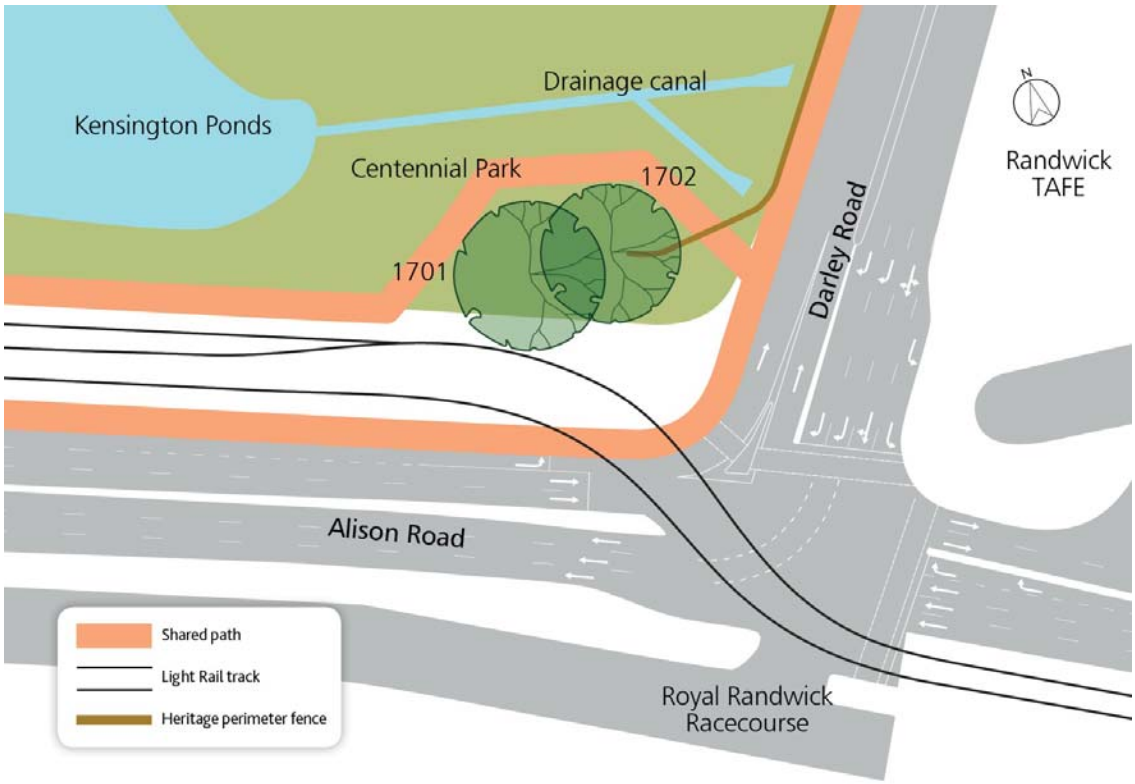

Figure 7 – Proposed layout of Option four where the shared path is diverted around into Centennial Park (not to scale).

4.2.5 Option five

This option slews the main outbound line onto the Turnback Track alignment before the intersection, in an attempt to sharpen the curve (reduce the radius of the track), and increase the distance between the main outbound line and the trees.

The revised alignment of the third track and the turnout would see additional wear and tear of the turnback, a reduced customer experience as the 'S' bend is likely to be felt through the vehicle passing in this location, and a reduction in speed of LRV's through the intersection. This option effectively creates reverse curves within the main outbound line Alignment which has the result of reducing speed and increasing carriage movement which is more notable to passengers. This is considered poor track design and is usually only allowed in low speed environments. This will result in a longer clearance time for the light rail vehicle to pass through the intersection therefore adding to the intersections poor level of service.

The track alignment is further away from the two mature fig trees. With the shared path close to the alignment it too is further from the trees and exhibits good site lines. It is anticipated that this option may see minor pruning of the canopy and roots of the two mature fig trees required for clearance of the overhead wires.

No additional land take from CPMPT is required. No impact to the waterway or to the heritage listed perimeter fence would be anticipated as a result of this option.

This option was considered favourable by Centennial Park and Moore Park Trust as it would reduce the extent of canopy and root pruning required, however given the impacts to the operation of the light rail in this area that would result from this design (efficiency and wear and tear of the light rail tracks), it was not considered to be preferable by Transport for NSW.

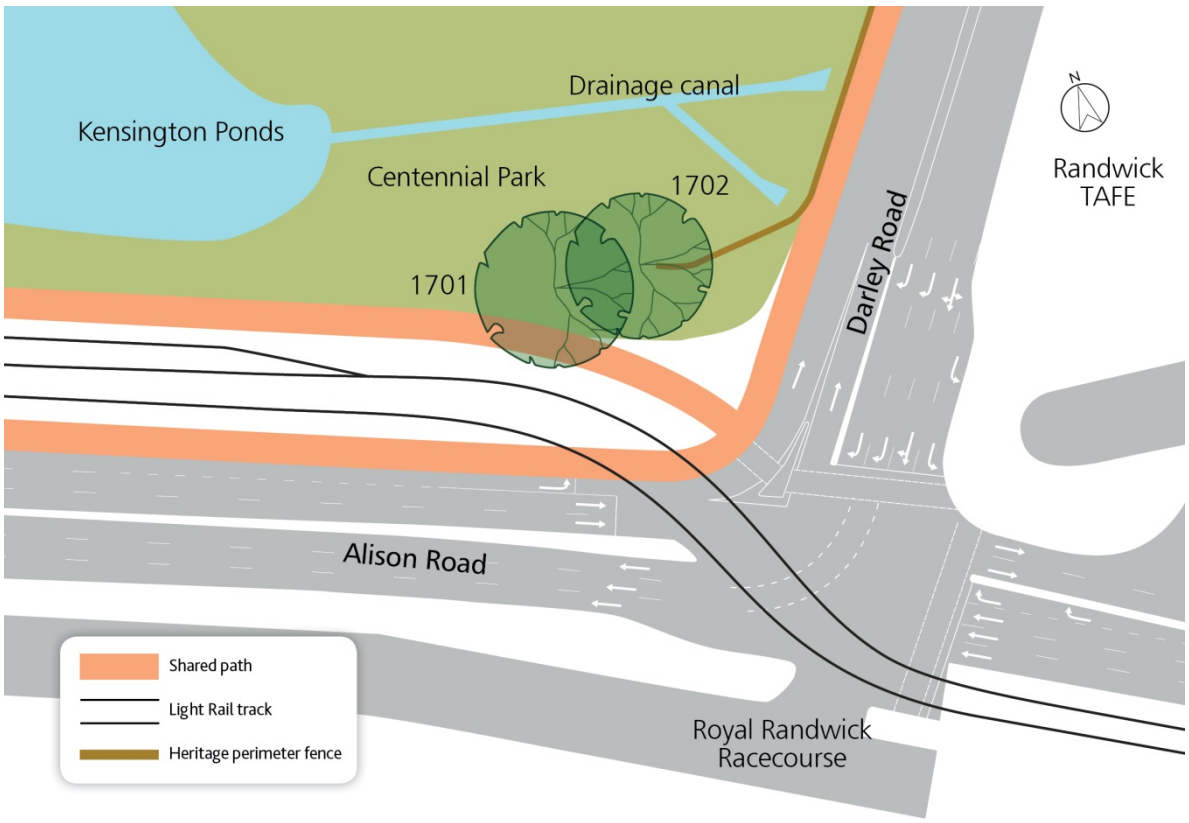

Figure 8 – Proposed layout of Option five where the main outbound line is slewed onto the turnback track (not to scale).

4.2.6 Preferred Option

Option two is the preferred option as there is no impact to operational requirements; traffic phasing and road geometry; and heritage and visual impacts. The overall impact to the two trees as a result of root and crown pruning will be less than 10%. Long term impact to the health and vigour of the two mature trees is not anticipated as a result of these pruning works.

In addition access to the surrounding facilities (TafeNSW, Centennial Parklands) along the share pathway is aligned along desire lines.

Option one has a greater impact on the trees than Option two because the shared path does not follow the curve of the track and is aligned perpendicular to Darley Road.

Option three has major impacts to the Alison Road and Darley Road intersection by increasing the width of an already busy intersection. This option also impacts track geometry through the third track and Alison Road Stop impacting required clearances to LRV signals.

Option four provides a path that does not follow desire lines. Pedestrian and cyclist behaviour would likely lead to an unofficial path being created between the track and the trees as the quickest way past the trees onto the shared path. In addition, impacts to the heritage fence are incurred and further assessment of these impacts would be required. Pruning of branches would be required to allow construction of the SLR and routine maintenance pruning would be required during operations.

Option five is not considered to be acceptable as it imposes a reduction in LRV speed without removing the impact to the trees. This option also introduces undesirable track geometry with the mainline movement through a turnout impacting LRV passenger comfort.

5. Stakeholder involvement

During the development of the design consultation with the stakeholders was undertaken. This included discussions on the operation of the intersection, including traffic phasing and road geometry considerations to determine the optimal outcome during operation.

Initial consultation with CPMPT has been undertaken regarding the pruning requirements for the two trees during the construction of the project. Consultation with Roads and Maritime Services focused on discussions around what impacts to the Alison and Darley Road intersection would be, if any.

Results of this consultation have been considered in the discussion of options above.

6. Conclusion

The administrative modification request to link CoA B47 and B48 provides a mechanism for managing the assessment of trees within the Project boundary based on the advice provided by the independent arborist. This report outlines the role of the independent arborist, a requirement of CoA B48, in terms of managing and minimising tree impacts, a requirement of CoA B47, and this is documented in the Tree Report.

As a result of this modification, some pruning of the two mature fig trees on the corner of Darley and Alison Road would be undertaken in accordance with the Tree Report prepared in accordance with CoA B48. A number of design options have been explored to avoid the need for any pruning and the preferred option has been selected as it would have minimal impact on the operation of the light rail, urban design of the shared path and while some pruning would be required, these trees would be retained in situ.

Linking CoA B47 with CoA B48 is therefore considered necessary so that both conditions can be satisfied as all recommendations of the Tree Report must be implemented, unless otherwise agreed by the Secretary.