

Kingsford to Centennial Park Walking
and Cycling Improvements

Review of Environmental Factors Addendum

Aug 2021



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August 2021

Prepared by
Andrew Robinson Planning Services Pty Ltd
PO Box 1452
LANE COVE NSW 1595
Ph: 0412 541 657

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Document Review

Version	Date	Revision Description
1.0	19/07/2021	Issued for Review
2.0	30/07/2021	Issued for Approval
3.0	26/08/2021	Issued for Approval

Executive summary

The Addendum

This Addendum has been prepared with respect to the following original project Review of Environmental Factors (hereafter referred to as the original project REF) prepared by Andrew Robinson Planning Services Pty Ltd on behalf of Randwick City Council:

- Streetscape Upgrade and New Cycleway: Centennial Park to Kingsford Light Rail Terminus – Rev 6.0, dated 19 May 2019.

Now known as the Kingsford to Centennial Park Walking and Cycling Improvements project, this new 2.6km long bi-directional cycleway is Stage I of a 4.7km long cycleway that will ultimately link South Coogee with Centennial Park, via the Kingsford Light Rail Terminus.

The purpose of this Addendum is to include three (3) work compounds and the removal of an additional six (6) trees within the scope of the original project REF; to provide an assessment of the likely environmental impacts that might arise for these additional elements of the projects; and to recommend any additional environmental safeguards and mitigation measures not covered by the original project REF that may be necessary in order to minimise or mitigate any environmental impacts arising from these additional elements.

Due to funding arrangements, Transport for NSW (TfNSW) will now be delivering the project (Stage I) on behalf of Randwick City Council and three (3) sites for work compounds have been selected. These are:

- Goodwood Street in Kensington, just west of the intersection with Doncaster Avenue;
- Houston Road in Kensington, just south of Strachan Street; and
- ANZAC Parade in Kingsford, between the two separated carriageways of ANZAC Parade at Bass Street.

Part of the ANZAC Parade compound (northern side of Bass Street) is already in existence and is currently being used as a work compound in association with the Sydney Light Rail construction.

The original Project REF identified the need to remove twenty one (21) trees along the length of the Stage I cycleway route. However, subsequent design documentation has revealed the need to remove an additional six (6) trees. In addition, three (3) trees identified for removal in the project REF are now to be retained, but two (2) trees identified as being retained in the project REF now require removal. As such, the overall loss of trees along the Stage I route has increased from twenty one (21) to twenty seven (27). Notwithstanding, the loss of trees will be compensated for by the planting of eighty nine (89) new trees, representing a cumulative increase of sixty two (62) trees along the route.

One (1) of the six (6) additional trees that are to be removed and were not assessed in the original Arboricultural Impact Assessment and the other five (5) trees were assessed but were

identified as being retained. The Arboricultural Impact Schedule prepared in association with the Route 1: Centennial Park to Kingsford has been updated to include an assessment of the additional trees that are now within the project scope.

Background

Randwick City Council was successful in gaining funding through the NSW Government's Active Transport Program to design and document streetscape improvements and a new cycleway linking Centennial Park with the Kingsford Light Rail Terminus, via Doncaster Avenue, Day Avenue, Houston Road, General Bridges Crescent and Sturt Street and another new cycleway linking the Light Rail Terminus with South Coogee via Sturt Street, Avoca Street and Bundock Street. The provision of the new cycleways also provides an opportunity to enhance the streetscape, improve road safety and strengthen the pedestrian experience along the proposed route. As noted earlier, due to funding arrangements, Transport for NSW (TfNSW) will now be delivering Stage 1 of the project (Centennial Park to Kingsford) on behalf of Randwick City Council

The scope of works for the Centennial Park to Kingsford Light Rail Terminus Cycleway did not include the location and operation of any work compounds that will be necessary during the construction works. In addition, further design has identified that a further six (6) trees that were not contemplated for removal in the original project REF will need to be removed to accommodate the cycleway.

As the works are being undertaken on behalf of Randwick City Council, the works associated with the construction of the cycleway can be considered under *State Environmental Planning Policy (Infrastructure) 2007* and therefore, do not require development consent under Part 4 of the *Environmental Planning & Assessment Act, 1979*. Notwithstanding, the proposed works are subject to environmental impact assessment under Part 5 of the *Environmental Planning & Assessment Act, 1979*.

In order that Randwick City Council, as the determining authority, fulfill its statutory obligations under Clause 111 of the *Environmental Planning & Assessment Act, 1979* to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed works (activity) a Review of Environmental Factors (REF) was prepared by ARPS on behalf of Randwick City Council in May 2016.

The original project REF identified a range of potential environmental impacts arising from the proposed works and made recommendations for a range of environmental safeguards and management measures that should be implemented to ameliorate or minimise the identified potential environmental impacts. The environmental safeguards and management measures are required to be incorporated into a Construction Environmental Management Plan (CEMP) prior to the commencement of works. The CEMP forms a framework for establishing how the safeguards and management measures will be implemented and who will be responsible for their implementation.

Environmental impacts

The main potential environmental impacts arising from the works associated with the construction of the new cycleway identified in the original Project REF include:

- Traffic, parking and access impacts;

- Noise and vibration impacts;
- Air quality impacts;
- Water quality impacts;
- Flooding & stormwater drainage impacts;
- Visual amenity impacts;
- Tree removal and management impacts;
- Heritage impacts; and
- Waste management and minimisation impacts.

This Addendum relates specifically to the additional scope of works including the establishment of three (3) work compounds, as well as the removal of an additional six (6) trees. The increased scope of works is not anticipated to generate any new potential environmental impacts.

Conclusion

The modifications to the scope of works described in this REF Addendum do not alter the environmental safeguards and management measures described in the original project REF and will mitigate or minimise the expected impacts associated with the increased scope.

Despite the modified scope of works, the environmental impacts of the proposal are not likely to be significant and therefore it is not necessary for approval to be sought for the proposal under Part 4 of the *Environmental Planning & Assessment Act 1979*. The proposal will not have a substantial impact on any matters of National environmental significance.

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1 Introduction

1.1 Purpose of the Addendum

This Review of Environmental Factors Addendum has been prepared by Andrew Robinson Planning Services Pty Ltd (ARPS) on behalf of Randwick City Council and is to be read in conjunction with the original project REF titled:

- Streetscape Upgrade and New Cycleway: Centennial Park to Kingsford Light Rail Terminus – Rev 6.0, dated 19 May 2019.

Now known as the Kingsford to Centennial Park Walking and Cycling Improvements project, this new 2.6km long bi-directional cycleway is Stage I of a 4.7km long cycleway that will ultimately link South Coogee with Centennial Park, via the Kingsford Light Rail Terminus.

The purpose of the Addendum is to include three (3) work compounds and the removal of an additional six (6) trees within the scope of the original project REF; to provide an assessment of the likely environmental impacts that might arise for these additional elements of the projects; and to recommend any additional environmental safeguards and mitigation measures not covered by the original project REF that may be necessary in order to minimise or mitigate any environmental impacts arising from these additional elements.

Due to funding arrangements, Transport for NSW (TfNSW) will now be delivering the project on behalf of Randwick City Council and three (3) sites for work compounds have been selected. These are:

- Goodwood Street in Kensington, just west of the intersection with Doncaster Avenue;
- Houston Road in Kensington, just south of Strachan Street; and
- ANZAC Parade in Kingsford, between the two separated carriageways at Bass Street.

The ANZAC Parade compound is already in existence and is currently being used as a work compound in association with the Sydney Light Rail construction.

The original Project REF identified the need to remove twenty one (21) trees along the length of the Stage I cycleway route. However, subsequent design documentation has revealed the need to remove an additional six (6) trees. In addition, three (3) trees identified for removal in the project REF are now to be retained, but two (2) trees identified as being retained in the project REF now require removal. As such, the overall loss of trees along the Stage I route has increased from twenty one (21) to twenty seven (27). Notwithstanding, the loss of trees will be compensated for by the planting of eighty nine (89) new trees, representing a cumulative increase of sixty two (62) trees along the route.

One (1) of the six (6) additional trees that are to be removed and were not assessed in the original Arboricultural Impact Assessment and the other five (5) trees were assessed but were identified as being

retained. The Arboricultural Impact Schedule prepared in association with the Route 1: Centennial Park to Kingsford has been updated to include an assessment of the additional trees that are now within the project scope.

For the purposes of the works, Randwick City Council is the proponent and the determining authority under Part 5 of the *Environmental Planning and Assessment Act, 1979*.

The description of the proposed works and associated potential environmental impacts was undertaken in the context of Clause 228 of the *Environmental Planning and Assessment Regulation 2000*, the *Environmental Planning & Assessment Act, 1979* and other relevant environmental legislation including the Commonwealth's *Environment Protection and Biodiversity Conservation Act, 1999*. Despite the change to the scope of works there is no change to the environmental safeguards and management measures as set out in the original Project REF as a consequence of this Addendum.

1.2 Proposal overview and the need for an Addendum

Randwick City Council was successful in gaining funding through the NSW Government's Active Transport Program to design and document streetscape improvements and a new cycleway linking Centennial Park with the Kingsford Light Rail Terminus, via Doncaster Avenue, Day Avenue, Houston Road, General Bridges Crescent and Sturt Street, and another new cycleway linking the Light Rail Terminus with South Coogee via Sturt Street, Avoca Street and Bundock Street. The provision of the new cycleways also provides an opportunity to enhance the streetscape, improve road safety and strengthen the pedestrian experience along the proposed route.

The cycleways are an integral part of the wider Inner Sydney Regional Bicycle Network. The combined 4.7km long sections of cycleway will connect Malabar Road (at the intersection with Bundock Street) with the existing Centennial Park shared path on the northern side of Alison Road, providing a connection to the Sydney CBD. The cycleways contain different typologies in response to the varied built form characteristics along the length of the route, as well as parking and civil engineering issues and community/stakeholder engagement.

As noted earlier, due to funding arrangements, Transport for NSW (TfNSW) will now be delivering Stage I of the project (Kingsford to Centennial Park) on behalf of Randwick City Council

The Kingsford to Centennial Park Walking and Cycling Improvements project comprises a median separated bi-directional separated cycleway that begins at the Kingsford Light Rail Terminus at ANZAC Parade and runs along Sturt Street before crossing Bunnerong Road and continuing along south-western side of General Bridges Crescent (within the Bayside local government area) where it will circuit Dacey Gardens. It then crosses Gardiners Road and re-enters the Randwick City local government area, running along the eastern side of Houston Road to Day Avenue where it will connect with an existing short section of separated cycleway on the northern side of Day Avenue, between Doncaster Avenue and ANZAC Parade. The cycleway then runs along the eastern side of Doncaster Avenue, ending at the intersection of Alison Road and Doncaster Avenue.

The scope of works for the Kingsford to Centennial Park Walking and Cycling Improvements project described in the original project REF did not include the location and operation of any work compounds that will be necessary during the construction works. In addition, further design documentation has identified that a further six (6) trees that were not contemplated for removal in the original project REF will need to be removed to accommodate the cycleway.

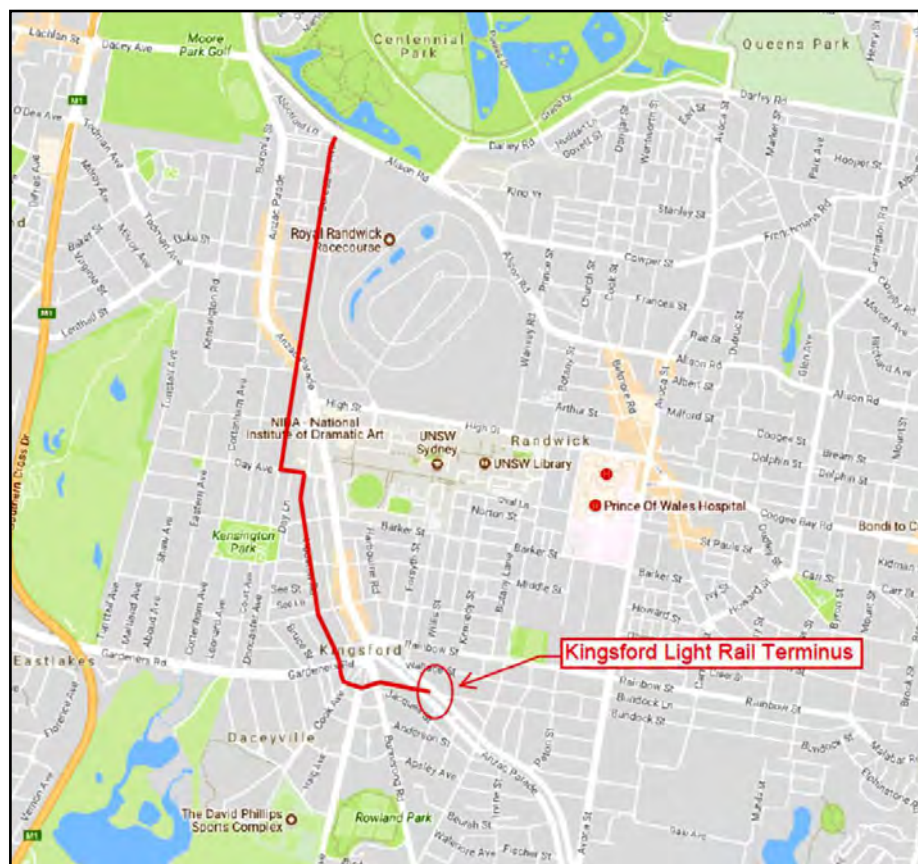
As the works are being undertaken on behalf of Randwick City Council, the works associated with the construction of the cycleway can be considered under *State Environmental Planning Policy (Infrastructure) 2007* and are therefore, do not require development consent under Part 4 of the *Environmental Planning & Assessment Act, 1979*. Notwithstanding, the proposed works are subject to environmental impact assessment under Part 5 of the *Environmental Planning & Assessment Act, 1979*.

In order that Randwick City Council, as the determining authority, fulfill its statutory obligations under Clause 111 of the *Environmental Planning & Assessment Act, 1979* to examine and take into account to the fullest extent possible all matters affecting or likely to affect the environment by reason of the proposed works (activity) a Review of Environmental Factors (REF) for the Stage 1 cycleway was prepared by ARPS on behalf of Randwick City Council, dated May 2016.

The original project REF identified a range of potential environmental impacts arising from the proposed works and made recommendations for a range of environmental safeguards and management measures that should be implemented to ameliorate or minimise the identified potential environmental impacts. The environmental safeguards and management measures are required to be incorporated into a Construction Environmental Management Plan (CEMP) prior to the commencement of works. The CEMP forms a framework for establishing how the safeguards and management measures will be implemented and who will be responsible for their implementation.

The route of the Kingsford to Centennial Park Walking and Cycling Improvements project is shown in *Figure 1.1* below:

Figure 1.1: Location of the Kingsford to Centennial Park Walking and Cycling Improvements



Source: nearmap.com.au

2 Description of additional project scope

2.1 Additional project scope

As described above, the scope of works for the Kingsford to Centennial Park Walking and Cycling Improvements project did not include the location and operation of any work compounds that will be necessary during the construction works. In addition, further design documentation has identified that a further six (6) trees that were not contemplated for removal in the original project REF will need to be removed to accommodate the cycleway.

2.1.1 Work compounds

Three (3) sites have been selected for the establishment of work compounds and these are described below:

Compound I - Goodwood Street, Kensington

This work compound is proposed to be established on Goodwood Street in Kensington, adjacent to Kokoda Memorial Park, just west of the intersection with Doncaster Avenue. The compound will occupy an area currently providing 22 x 90 degree angle linemarked parking spaces (including a dedicated car share space) on the southern side of Goodwood Street, as shown in *Figure 2.1* below:

Figure 2.1 Location of the Goodwood Street Work Compound



These linemarked car spaces are signposted as 2P 8am – 8pm Mon – Sun – Permit Holders Excepted (Area KN2). As such, they provide unrestricted parking for resident permit holders, as well as short term (max. 2 hour) parking for the use of the general public. This section of Goodwood Street provides a trafficable lane in each direction, with parallel kerbside parking on the northern side and 90 degree angle parking on the southern side (including the area to be utilised for the work compound).

The area to be occupied by the proposed Goodwood Street work compound is approximately 52.5m long and 5m wide (262.5m² in area) and is proposed to be occupied by Site Offices, Lunchrooms and an Ablutions Block (although not all of these may be utilised by the contractor at this location).

Compound 2 - Houston Road, Kensington

This compound is proposed to be established on Houston Road just west of Strachan Street in Kensington and will occupy an area currently providing 90 degree rear to kerb angle parking spaces on the eastern side of Houston Road. The parking area is not linemarked, however, it is estimated that it occupies approximately 18 parking spaces. The location of this compound is shown in Figure 2.2 below:

Figure 2.2: Location of the Houston Road Work Compound



This area is signposted as P90 minute 8am – 8pm Mon – Sun – 90 degree angle parking Rear to Kerb. As such, they provide restricted (max. 90 minutes) rear to kerb parking for the use of the general public. This section of Houston Road provides a trafficable lane and on-road cycleway in each direction with parallel kerbside parking on the western side and 90 degree angle parking on the eastern side (including the area to be utilised for the work compound).

The area to be occupied by the proposed Houston Road work compound is approximately 40m long and 5m wide (200m² in area) and is proposed to be occupied by Site Offices, Lunchrooms and an Ablutions Block (although not all of these may be utilised by the contractor at this location).

Compound 3 - ANZAC Parade, Kingsford

This compound is proposed to be located in the road reserve between the two separated carriageways of ANZAC Parade at the intersection with Bass Street in Kingsford. This is the largest of the three (3) compounds and proposes to utilise an area of approximately 2,500m² to the north and south of Bass Street, as shown in Figure 2.3 below:

Figure 2.3: Location of the ANZAC Parade Work Compound



This compound is proposed to be occupied by Site Offices, Lunchrooms and an Ablutions Block, as well as being used for materials stockpiling and processing and plant and equipment storage.

As noted earlier, part of the proposed compound on the northern side of Bass Street is currently being used as a work compound associated with the construction of the Sydney Light Rail.

The three (3) works compounds are intended to be established and used for approximately seventeen (17) months, with construction due to be completed by April 2023. However, this may need to be extended due to the current COVID-19 restrictions. The compounds will be enclosed by standard temporary fencing panels covered with shade cloth or similar material to minimise visual impacts.

Goodwood Street and Houston Road are both local roads owned by Randwick City Council. ANZAC Parade is a State Road owned by TfNSW and approval has been given by the TfNSW Road Corridors Team (as landowner) for the use of the site as a work compound. Randwick City Council has also given approval subject to the sites being made good following completion of the works period for the cycleways.

Bass Street will remain open to traffic for the duration of the use of the road reserve for the work compound.

The existing condition of the three (3) sites for the proposed work compounds is shown in the photographs below:



Photograph 1: View of the proposed site for the Goodwood Street compound.



Photograph 2: View of the proposed site for the Houston Road compound.



Photograph 3: View of the proposed site for the ANZAC Parade compound on the northern side of Bass Street, currently being used in conjunction with the Sydney Light Rail construction.

2.1.2 Additional tree removals

The Project REF for the Kingsford to Centennial Park Walking and Cycling Improvements described the need to remove a total of twenty one (21) trees along the cycleway route. The Arboricultural Impact Assessment prepared by treeiQ to inform the project REF provided an assessment of one hundred and forty five (145) along the route and identified all of these trees as being suitable for removal.

However, further design development has identified the need to remove a further six (6) trees along the route to accommodate this cycleway. Two (2) of these trees were included in the original Arboricultural Impact Assessment and it was recommended that they be considered for retention. These trees were identified as Tree 99, an 8m high Cabbage Tree Palm located in the centre of the roundabout at the intersection of Houston Road (round-about is being removed) and Barker Street and Tree 118, a 4m high Water Gum on the north-western corner of the intersection of Houston Road and Gardiners Lane.

A further one (1) tree that was not included in the original Arboricultural Impact Assessment that has now been identified for removal is a 3m high Peppercorn tree on the western side of Doncaster Avenue outside Kensington Public School and closest to the Todman Avenue intersection.

The Arboricultural Impact Schedule prepared in association with the Route 1: Centennial Park to Kingsford has been updated and these additional one (1) tree identified as Tree 148 in the Tree Schedule.

A further three (3) trees were assessed in the treeiQ assessment but were identified as being retained in the original project REF. However, these trees need to be removed to accommodate the cycleway. These trees are identified in the Arboricultural Impact Schedule as Tree 6, a 2m high Peppercorn located in the footpath between Nos. 15 & 17 Doncaster Avenue; Tree 110, a 2m high Port Wine Magnolia on the south-western corner of the intersection of Houston Road and See Lane, and Tree 117, a 5m high Willow Myrtle located in the footpath outside No. 101 Houston Road.

Tree 6 was recommended as a priority for removal due to its poor condition and Trees 110 and 117 were recommended for removal due to their useful life expectancy (ULE) being less than 5 years.

As such, a total of twenty seven (27) trees are to be removed to accommodate the cycleway. However, the loss of these trees will be compensated for by eighty nine (89) new trees to be planted, representing an overall increase of sixty two (62) trees along the route.

In addition, Trees 35, 36, 37 and 38 located on Doncaster Avenue just south of the intersection with Ascot Street were identified as being removed in the original project REF. However, these trees are now able to be retained. Conversely, Trees 81, 83, 87 and 93 located near the intersections of Doncaster Avenue / Day Avenue and Day Avenue / Houston Road were identified as being retained in the original project REF. However, these trees will now require removal to accommodate the cycleway. Notwithstanding, this does not affect the cumulative total of trees to be removed.

3 Environmental assessment

This section of the REF Addendum provides a detailed description of the potential environmental impacts associated with the additional scope of works and identifies whether any additional site-specific safeguards may be necessary in order to minimise or ameliorate the identified potential impacts.

3.1 Work compounds

3.1.1 Existing environment

The sites for all three (3) work compounds are primarily surrounded by residential land uses and to a lesser extent, non-residential land uses. The majority of premises surrounding the Goodwood Street and Houston Road sites are multiple occupancy residential buildings of 2, 3 and 4 storeys. However, it is noted that the Goodwood Street compound is to be located adjacent to Kokoda Memorial Park, thereby minimising the number of residential premises to be impacted. The ANZAC Parade compound is primarily surrounded by single dwellings, as well as a Dan Murphy's retail outlet and a Liquor Stax retail outlet.

3.1.2 Potential impacts

The work compounds in Goodwood Street and Houston Road will be used for offices, lunchrooms and amenities for construction workers, but will not be used for materials deliveries and/or stockpiling, such that the potential for adverse air quality impacts is considered negligible. However, the use of these compounds will generate noise and traffic movements associated with construction workers coming and going throughout the workday and using the facilities within the compounds. However, these impacts are not expected to have a significant impact on the amenity of the locality and the existing safeguards and mitigation measures in the original project REFs restrict work to between 7.30am and 5.30pm Monday to Friday and between 7.30am and 3.00pm on Saturdays, with no work on Sundays and Public Holidays.

The most significant impact associated with the establishment of the compounds in Goodwood Street and Houston Road will be the loss of on-street parking, with twenty two (22) linemarked spaces (including a dedicated car share space) in Goodwood Street and an estimated eighteen (18) spaces in Houston Road being lost for the duration of the works period (estimated to be a minimum of five (5) months). Notwithstanding, this is a relatively short term impact and there is other on-street parking in the locality of both sites that will be available to cater for the additional demand for on-street parking that will be created during the works period. In particular, on-street parking in Ascot Street and Elsmere Street with respect of the Goodwood Street compound and further south of the compound in Houston Road. Existing parallel and 90 degree parking in both Elsmere Street and Ascot Street is signposted IP 8am to 8pm Mon-Sun – Permit Holders excepted. In Houston Road, there is a continuation of the P90 minute 8am – 8pm Mon – Sun – 90 degree angle parking - Rear to Kerb to Borrodale Road, providing approximately 130m (say 45 spaces) of rear to kerb 90 minute parking.

In relation to the operation of the ANZAC Parade compound, in addition to noise and traffic impacts, as this site will also be used for materials storage and stockpiling and the storage of machinery and equipment, there is also potential for air quality and water quality (stormwater runoff) impacts associated with windblown dust and erosion and sedimentation during rain events if stockpiles are not appropriately contained and/or covered and erosion and sediment controls are not in place.

3.1.3 Safeguards and management measures

The Project REFs include safeguards and mitigation measures with respect to traffic, parking and access; noise and vibration; air quality; visual amenity; and waste management and minimisation that provide adequate measures to minimise the potential impacts arising from the use of the work compounds and no additional measures are considered necessary.

In relation to the need to make good the compound sites following completion of the cycleways, this is a contractual matter between Randwick City Council and TfNSW that will be dealt with separate to this REF.

3.2 Tree removal

3.2.1 Existing environment

The aesthetic quality of the streetscape along the route is significantly enhanced by the variety of street trees that align both sides of the streets along which the Stage 1 cycleway will run. The street trees comprise a range of tree species, sizes, age and condition. A total of 145 existing street trees located along the route of the Centennial Park to Kingsford Light Rail Terminus cycleway were assessed by the project Arborist to inform the design process and the original project REF. The trees identified for removal were assessed in terms of their condition, useful life expectancy and retention value in the Arboricultural Assessment prepared by treeiQ. Twenty one (21) of these trees were proposed to be removed to accommodate the cycleway.

However following further design development, five (5) of the trees originally assessed, together with one (1) trees along the route that were not seen to be impacted and therefore were not assessed, are now proposed to be removed.

The Tree Schedule that accompanies the original Arboricultural Assessment has been updated to include and provide an assessment of these additional trees, identified as trees 146 & 147. A copy of the updated Tree Schedule is provided at *Appendix A* of this REF Addendum.

The additional one (1) tree is assessed as being of fair condition with a low retention value and their removal is considered acceptable. The other five (5) trees were identified as Trees 6, 99, 110, 117 and 118 in the original Arboricultural report and were to be retained. As such, no further assessment beyond the identification of the trees and the required TPZ was provided. As noted above, the Tree Schedule has been updated and Tree 99 has been assessed as being of good condition with a moderate retention value, however needs to be removed in conjunction with the removal of the round-about at the intersection of Houston Road and Barker Street. Tree 118 has been assessed as being of good condition, but with a low retention value and Trees 6, 110 and 117 have been recommended for removal due to their useful life expectancy (ULE) being assessed as less than 5 years.

Notwithstanding, it is noted that the proposed overall removal of twenty seven (27) trees along the route is to be compensated through the planting of eighty nine (89) new trees within the footpath reserves alongside the cycleway. This compensatory planting will result in an overall increase of sixty two (62) trees and a substantial improvement to the tree canopy and visual quality along the cycleway route.

3.2.2 Potential impacts

Potential environmental impacts associated with the removal of an additional six (6) trees are considered negligible, with short term noise, air quality and visual impacts likely to occur as each tree is removed. There may also be short term traffic impacts during the felling and removal of the trees.

There is also the potential for the trees along the route that are to be retained to be damaged during the course of the works.

3.2.3 Safeguards and management measures

The Project REF for the Kingsford to Centennial Park Walking and Cycling Improvements project contains safeguards and management measures with respect to the need to protect trees within the work site at all times during the works in accordance with the Council's Tree Preservation Order and AS4970 – 2009 Protection of Trees on Development Sites; and to ensure that trees and their Tree Protection Zones (TPZs) are not impacted by the use of machinery in the vicinity of the trees.

No additional safeguards or management measures are considered necessary.

4 Conclusion

The modifications to the scope of works described in this REF Addendum do not alter the environmental safeguards and management measures described in the original project REF and will mitigate or minimise the expected environmental impacts associated with the increased scope.

Despite the modified scope of works the environmental impacts of the proposal are not likely to be significant and therefore it is not necessary for approval to be sought for the proposal under Part 4 of the *Environmental Planning & Assessment Act 1979*. The proposal will not have a substantial impact on any matters of National environmental significance.

Having regard to the above, it is concluded that the proposed modifications described in this REF Addendum are not likely to significantly affect the environment within the meaning of Section 5.7 of the *Environmental Planning & Assessment Act, 1979*.

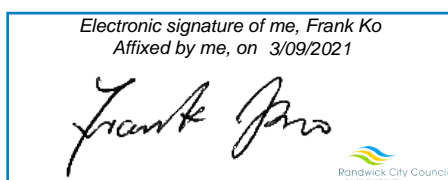
5 Certification

This Review of Environmental Factors Addendum provides a true and fair review of the additional scope with respect to the establishment of three (3) work compounds and the removal of an additional six (6) trees and the environmental safeguards and management measures deemed necessary in order to minimise or mitigate the potential effects on the environment. It addresses to the fullest extent possible all matters affecting or likely to affect the environment as a result of the additional scope of works as described in this Addendum.



Andrew Robinson MPIA
Director
Andrew Robinson Planning Services Pty Ltd
Date: 30 July 2021

I have examined this Review of Environmental Factors Addendum and the certification by Andrew Robinson Planning Services Pty Ltd and accept it on behalf of Randwick City Council.



Name: Frank Ko
Position: Manager Development Assessment
Date: 3 September 2021

Appendix A

Randwick Cycleway Tree Schedule

Route 1: Centennial Park to Kingsford

June 2018 Revision to 5 x trees June 2021 – treeIQ

RANDWICK CYCLEWAY

tree schedule

ROUTE 1: CENTENNIAL PARK TO KINGSFORD

p. 0404 424 264

f. 02 9012 0924

po box 146 summer hill 2130

info@treeiQ.com.au

abn 62 139 088 832

treeiQ.com.au

June 2018

Revision to 5x trees

June 2021



treeiQ



Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
1	<i>Lophostemon confertus</i> (Brush Box)	375	6	4							5	2.2
2	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	225	5	4	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 50-75%. Small (<25mm ϕ) & medium (25-75mm ϕ) epicormic growth in high volumes. Wound(s), no visible sign of decay. Structures within SRZ.	5-15	Low	Consider for Removal	3	1.8
3	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	225	6	4	Good	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Small (<25mm ϕ) & medium (25-75mm ϕ) epicormic growth in moderate volumes. Pruned/lopped for powerline clearance. Wound(s), early signs of decay. Structures within SRZ.	5-15	Moderate	Consider for Retention	3	1.8



TREE 4



TREE 5



TREE 6

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
4	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	100	4	3	Good	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 75-95%. Wound(s), no visible sign of decay. Structures within SRZ.	5-15	Low	Consider for Removal	2	1.5
5	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	225	5	4	Good	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 75-95%. Small (<25mm \emptyset) epicormic growth in moderate volumes. Pruned/lopped for powerline clearance. Structures within SRZ.	5-15	Moderate	Consider for Retention	3	1.8
6	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	50	2	2	Fair	Poor	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Lost central leader. Crown density 75-95%. Small (<25mm \emptyset) & medium (25-75mm \emptyset) epicormic growth in high volumes. Wound(s), early signs of decay. Structures within SRZ.	<5	Low	Priority for Removal	2	1.5



TREE 31



TREE 32



TREE 33

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
31	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	425	6	7							5	2.3
32	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	250	6	5							3	1.8
33	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	450	7	7	Good	Good	<p>TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY</p> <p>Crown density 75-95%. Small (<25mmϕ) & medium (25-75mmϕ) epicormic growth in moderate volumes. Pruned/lopped for powerline clearance. Wound(s), no visible sign of decay. Structures within SRZ.</p>	15-40	Moderate	Consider for Retention	5	2.4



TREE 34



TREE 35



TREE 36

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
34	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	100	6	3	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 50-75%. Small (<25mm ϕ) & medium (25-75mm ϕ) epicormic growth in high volumes. Wound(s), no visible sign of decay. Structures within SRZ. Phototrophic lean, moderate.	5-15	Low	Consider for Removal	2	1.5
35	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	375	6	6	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 75-95%. Small (<25mm ϕ) deadwood in moderate volumes. Small (<25mm ϕ) epicormic growth in high volumes. Mechanical damage to exposed surface roots. Structures within SRZ. Adaptive growth.	5-15	Moderate	Consider for Retention	5	2.2
36	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	250	6	5	Good	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Small (<25mm ϕ), medium (25-75mm ϕ) & large (>75mm ϕ) epicormic growth in moderate volumes. Pruned/lopped for powerline clearance. Wound(s), early signs of decay. Structures within SRZ.	5-15	Moderate	Consider for Retention	3	1.8



TREE 40



TREE 41



TREE 42

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
40	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	450	7	7							5	2.4
41	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	250	6	4	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 50-75%. Small (<25mm ϕ) & medium (25-75mm ϕ) epicormic growth in high volumes. Mechanical damage to exposed surface roots. Structures within SRZ.	5-15	Low	Consider for Removal	3	1.8
42	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	400	6	6	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 75-95%. Small (<25mm ϕ) & medium (25-75mm ϕ) epicormic growth in moderate volumes. Mechanical damage to exposed surface roots. Pruned/lopped for powerline clearance. Wound(s), advanced stages of decay.	5-15	Moderate	Consider for Retention	5	2.3



TREE 64



TREE 65



TREE 66

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
64	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	280	5	4							3	1.9
65	<i>Eriobotrya japonica</i> (Loquat)	50	2	1							2	1.5
66	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	146	3	2			TREE RECOMMENDED FOR REMOVAL DUE TO ULE	<5			2	1.5



TREE 79



TREE 80

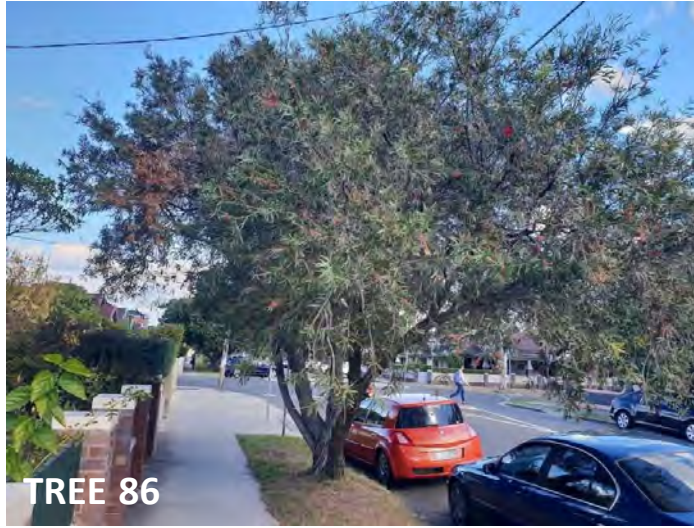


TREE 81

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
79	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	275	6	6							3	1.9
80	<i>Schinus molle</i> var. <i>areira</i> (Peppercorn Tree)	506	7	6							6	2.5
81	<i>Agonis flexuosa</i> (Willow Myrtle)	600	5	7			TREE RECOMMENDED FOR REMOVAL DUE TO ULE	<5			7	2.7



TREE 85



TREE 86



TREE 87

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
85	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	230	4	3							3	1.8
86	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	432	6	8							5	2.3
87	<i>Agonis flexuosa</i> (Willow Myrtle)	600	6	5			TREE RECOMMENDED FOR REMOVAL DUE TO ULE	<5			7	2.7



TREE 88



TREE 89



TREE 90

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
88	<i>Eucalyptus scoparia</i> (Willow Gum)	600	8	6							7	2.7
89	<i>Tristaniopsis laurina</i> (Water Gum)	283	4	3							3	1.9
90	<i>Eucalyptus scoparia</i> (Willow Gum)	225	4	3			TREE RECOMMENDED FOR REMOVAL DUE TO ULE	<5			3	1.8



Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
97	<i>Tristaniaopsis laurina</i> (Water Gum)	375	5	4							5	2.2
98	<i>Callistemon viminalis</i> (Weeping Bottlebrush)	237	5	3			TREE RECOMMENDED FOR REMOVAL DUE TO ULE	<5			3	1.8
99	<i>Livistonia australis</i> (Cabbage Tree Palm)	300	8	3	Good	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY No access to base due to traffic.	15-40	Moderate	Consider for Retention	4	



TREE 115

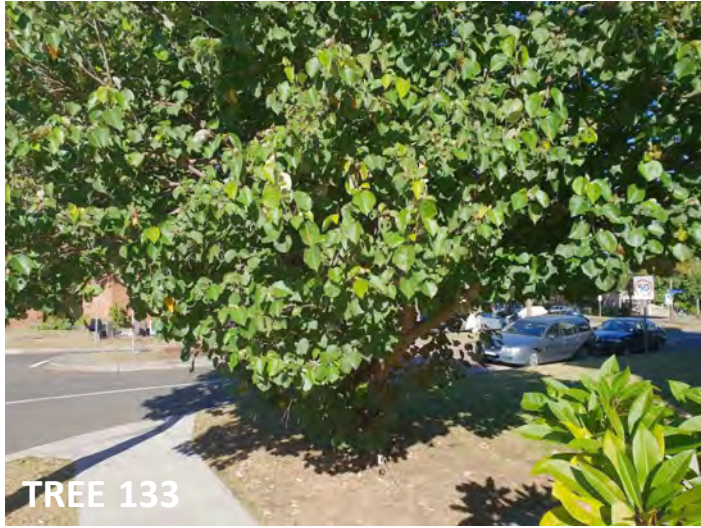


TREE 116



TREE 117

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
115	<i>Cupaniopsis anacardioides</i> (Tuckeroo)	50	2	1							2	1.5
116	<i>Callistemon salignus</i> (Willow Bottlebrush)	386	6	4							5	2.2
117	<i>Agonis flexuosa</i> (Willow Myrtle)	800	5	6			TREE RECOMMENDED FOR REMOVAL DUE TO ULE	<5			10	3.0



TREE 133



TREE 134



TREE 135

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
133	<i>Cercis</i> sp. (Judas Tree)*	325	7	8							4	2.1
134	<i>Eucalyptus robusta</i> (Swamp Mahogany)	650	14	8					High		8	2.8
135	<i>Eucalyptus robusta</i> (Swamp Mahogany)	900	16	11					High		11	3.2



TREE 136

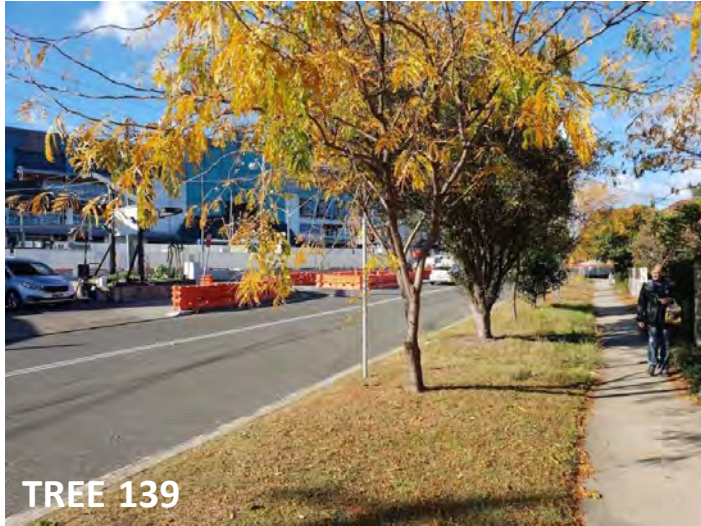


TREE 137



TREE 138

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
136	<i>Eucalyptus robusta</i> (Swamp Mahogany)	900	16	12					High		11	3.2
137	<i>Eucalyptus robusta</i> (Swamp Mahogany)	475	12	8							6	2.4
138	<i>Gleditsia triacanthos</i> cvs (Honey Locust)	75	7	4	Dormant. No rating.	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Wound(s), early signs of decay.	5-15	Low	Consider for Removal	2	1.5



TREE 139



TREE 140



TREE 141

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
139	<i>Gleditsia triacanthos</i> cvs (Honey Locust)	122	7	7	Dormant. No rating.	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Wound(s), early signs of decay. Borer.	5-15	Low	Consider for Removal	2	1.5
140	<i>Syzygium paniculatum</i> (Brush Cherry)	350	6	6	Good	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crossing branches. Crown density 75-95%. Small (<25mm \emptyset) deadwood in moderate volumes. Small (<25mm \emptyset) & medium (25-75mm \emptyset) epicormic growth in moderate volumes. Wound(s), early signs of decay. Structures within SRZ.	5-15	Low	Consider for Removal	4	2.1
141	<i>Gleditsia triacanthos</i> cvs (Honey Locust)	100	5	4	Dormant. No rating.	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Wound(s), no visible sign of decay.	5-15	Low	Consider for Removal	2	1.5



TREE 142



TREE 143



TREE 144

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
142	<i>Syzygium paniculatum</i> (Brush Cherry)	106	4	3	Good	Poor	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Small (<25mmØ) epicormic growth in high volumes. Co-dominant inclusions, major.	<5	Low		2	1.5
143	<i>Gleditsia triacanthos</i> cvs (Honey Locust)	125	5	4	Dormant. No rating.	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Wound(s), no visible sign of decay.	5-15	Low	Consider for Removal	2	1.5
144	<i>Gleditsia triacanthos</i> cvs (Honey Locust)	189	6	7	Dormant. No rating.	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Wound(s), early signs of decay.	5-15	Low	Consider for Removal	2	1.6



TREE 145



TREES 146 & 147



TREE 148

Tree No.	Species	DBH (mm)	Height (m)	Radial Crown Spread (m)	Health Rating	Structural Rating	Comments	ULE (years)	L/Sign	Retention Value	TPZ (m)	SRZ (m)
145	<i>Gleditsia triacanthos cvs</i> (Honey Locust)	75	3	3	Dormant. No rating.	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Lost central leader. Wound(s), early signs of decay.	<5	Low	Priority for Removal	2	1.5
146	<i>Melaleuca linariifolia</i> (Snow in Summer)	250	6	3	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 50-75%. Small (<25mmø) deadwood in high volumes. Wound(s), early signs of decay. Co-dominant inclusions, major. Structures within SRZ.	5-15	Low	Consider for Removal	3	1.9
147	<i>Melaleuca linariifolia</i> (Snow in Summer)	300	7	4	Fair	Fair	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 50-75%. Small (<25mmø) deadwood in high volumes. Wound(s), early signs of decay. Co-dominant inclusions, major. Structures within SRZ.	5-15	Low	Consider for Removal	3.6	2.0
148	<i>Schinus molle var. areira</i> (Peppercorn Tree)	75	3	2	Fair	Good	TREE PROPOSED FOR REMOVAL TO ACCOMMODATE CYCLEWAY Crown density 75-95%. Small (<25mmø) deadwood in high volumes. Wound(s), early signs of decay.	5-15	Low	Consider for Removal	2	1.5

RANDWICK CYCLEWAY

general tree protection specification

ROUTE 1: CENTENNIAL PARK TO KINGSFORD

p. 0404 424 264

f. 02 9012 0924

po box 146 summer hill 2130

info@treeiQ.com.au

abn 62 139 088 832

treeiQ.com.au

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INSTITUTE OF AUSTRALIAN
CONSULTING ARBORICULTURISTS
IACA
MANAGING URBAN TREES™



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Site Fencing

Site fencing shall be installed around each work zone where above ground works are to be undertaken. Trees shall be located outside of fenced work zones so that the fencing of individual Tree Protection Zone (TPZ) areas will not be required. Where above ground works are undertaken outside of fenced work zones and within a TPZ area, trunk and ground protection shall be installed as outlined below. Site fencing shall not be relocated without approval from the Project Arborist.

Trunk & Branch Protection

Trunk protection shall be installed by wrapping padding (either carpet underlay or 10mm thick jute geotextile mat) around the trunk and first order branches to a minimum height of 2m. Timber battens (90 x 45mm) spaced at 150mm centres shall be strapped together and placed over the padding. Timber battens must not be fixed to the trees. Refer to Typical Tree Protection Details (3). As required, lower branches which could be subject to mechanical damage shall be protected in a similar manner as detailed above.

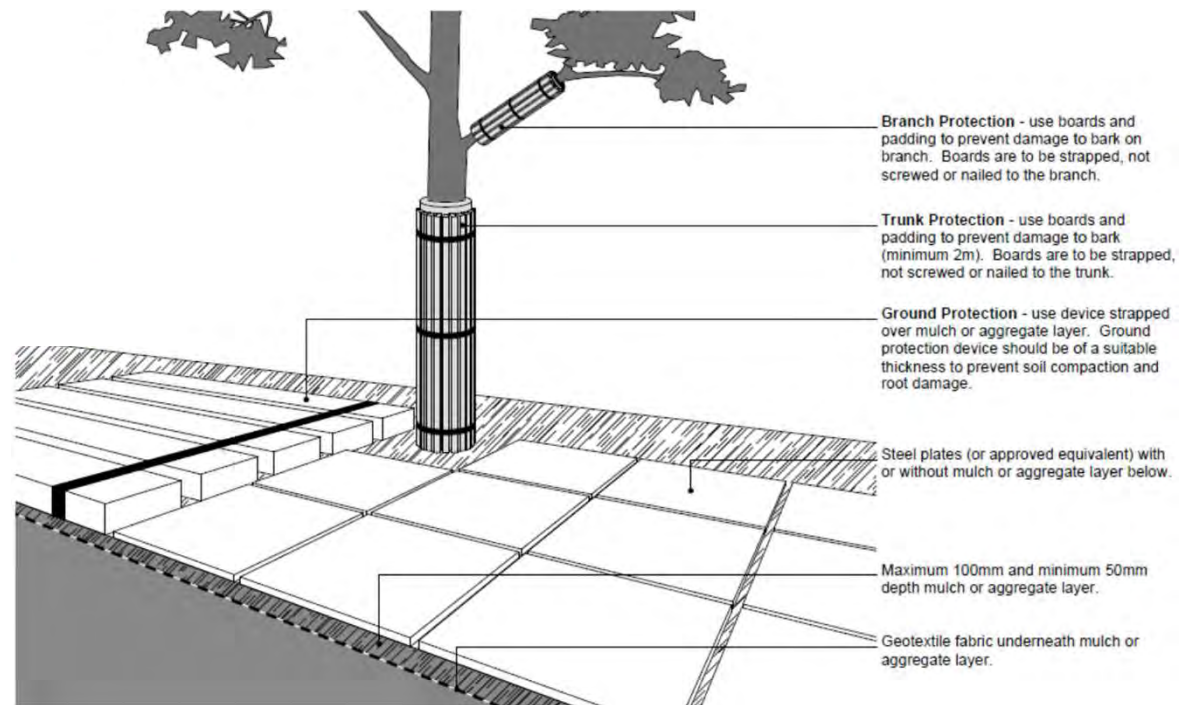
Ground Protection

Ground protection in the form of HDPE ground mats, 25mm plywood sheeting or road plates shall be installed where works are located within a TPZ. Areas of existing pavement are considered suitable as ground protection. Vehicular and machinery access within a TPZ shall be restricted solely to areas where ground protection has been installed.

Working within a Tree Protection Zone

Works within a TPZ shall be supervised by the Project Arborist. Machinery working in close proximity to the trees shall work in conjunction with a spotter to ensure that adequate clearance from trees is maintained at all times. Machinery should not contact the tree's roots, trunk, branches and crown.

Typical Detail showing Trunk & Ground Protection



Demolition of Existing Pavements & Structures

Demolition machinery shall be excluded from a TPZ unless operating from existing slabs, pavements or areas of ground protection. Machinery shall work in conjunction with a spotter to guide the machinery operator and ensure that the ground surface/tree roots beneath the pavement/structure are not disturbed/damaged by demolition works. Waste materials shall be removed by hand where tree roots are present below the pavement/structure. Roots (>25mm \emptyset) encountered during the demolition works shall be retained in an undamaged condition and advice sought from the Project Arborist. Structures (i.e footings, pipes, rocks etc.) below grade shall be retained where deemed necessary by the Project Arborist.

Existing pavements/slabs to be demolished shall be lifted by working backwards out of the TPZ to ensure machinery remains on un-demolished sections of pavement/slab at all times. Where pavement cutting is required within a TPZ, the depth of the pavement surface shall be established by a series of trial cuts undertaken outside of the TPZ. No over-cutting of the existing pavement surface within the TPZ shall be undertaken. Existing sub-base materials within a TPZ shall remain in-situ and (and reused) if possible. If the existing sub-base is to be removed, these works shall be undertaken by hand/hand tools ensuring that tree roots are retained and protected.

Small structures to be demolished within a TPZ shall be carefully broken up in small sections using a hand-operated pneumatic/electric breaker. Large structures to be demolished within the TPZ shall be undertaken within the footprint of the existing structure ('top down, pull back') and away from the trees.

The trees shall be hosed down following any significant accumulation of dust where deemed necessary by the Project Arborist.

Excavations, Root Protection & Root Pruning

Excavation works within a TPZ shall supervised by the Project Arborist and utilise tree sensitive methods. These methods include hand or hydrovac excavation. Excavation using compact machinery (<3t) fitted with a flat bladed bucket is permissible when approved by the Project Arborist. Excavation using compact machinery shall be undertaken in small increments and guided by a spotter who is to look for and prevent damage to roots (>25mm \emptyset). The excavator should work in a radial direction away from the trees. When undertaking hydro-vacuum excavation, the tip of the high-pressure lance is not to be pointed directly at roots at close range to avoid the removal or damage to bark. It is essential that the bark of roots remain intact.

No over-excavation, battering or benching shall be undertaken beyond the footprint of any pavement/structure unless approved by the Project Arborist.

Exposed roots shall be protected from direct sunlight, drying out and extremes of temperature by covering with jute mat/hessian, followed by a layer of plastic membrane. Coverings shall be weighted to secure them in place. The mat/hessian shall be kept in a damp condition at all times.

Roots (>25mm \emptyset) shall be pruned by the Project Arborist only. Root pruning shall be undertaken with clean, sharp secateurs or a pruning saw to ensure a smooth wound face, free from tears. Damaged roots shall be pruned behind the damaged tissues with the final cut made to an undamaged part of the root.

Underground Service Installation

The installation of underground services and associated infrastructure shall be located outside of a TPZ. Where this is not possible, they shall be installed using tree sensitive methods with the services/infrastructure located around/below roots (>25mm \varnothing) or as deemed necessary by the Project Arborist.

Boring methods may be used for underground service installation where the installation depth is greater than 1500mm below existing grade (measured from top of pipe) throughout the entire length of the excavation within a TPZ. Excavations for starting and receiving pits for boring equipment shall be located outside of the TPZ or located to avoid roots (>25mm \varnothing) where deemed necessary by the Project Arborist. Boring techniques involving external lubrication of the boring head with materials other than water (e.g. oil, bentonite, etc.) shall be avoided.

Pavement/Kerb & Gutter Installation

New pavement surfaces (and sub-base materials) shall be placed at or above grade. Sub-base layers shall be either, thinned or finished pavement levels amended to enable the retention of roots (>25mm \varnothing) as deemed necessary by the Project Arborist. Light compaction machinery only (e.g. mini plate compactor) shall be used where roots are located within modified sub base layers and shall not to be directly run over the top of exposed roots.

Roots to be retained (within existing sub base layers or within the soil profile immediately beneath the new pavement surface) shall be protected with either a 25mm thick polystyrene board, 2 layers of Abelflex or a 25mm cover of lightly compacted, washed river sand installed over the root to maintain separation between the root and the underside of the pavement. Pavement slab thickness/reinforcing shall be modified to enable the retention of roots.

New kerbs within a TPZ should be modified to bridge tree roots (>25mm \varnothing) where deemed necessary by the Project Arborist. The basal flare/buttressing of each tree should be taken into account when constructing pavements and kerbs in close proximity to the trees.

Soft Landscaping

The installation of plants within a TPZ shall be undertaken using hand tools and roots (>25mm \varnothing) shall be protected. No mechanical cultivation/ripping of soils should be undertaken within a TPZ. Other than the installation of soil conditioners to a maximum depth of 50mm above the existing soil profile, excavation and installation of imported soil mixes should be excluded from a TPZ.