Transport for NSW

# Minor works REF addendum memo

| | |
|---|---|
| [redacted] | [redacted] |
| [redacted] | [redacted] |
| **Priority** | ROUTINE |
| **Date** | 19 December 2023 |
| **Subject** | **Minor works review of environmental factors addendum memo for Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Review of environmental factors** |

## Proposed modification

Modification to the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Review of environmental factors

## Background

In April 2018, Transport for NSW (previously Roads and Maritime Services) approved a proposal to upgrade the intersection at Pennant Hills Road and North Rocks Road in Carlingford. The determined project involved the provision of an additional through lane and new intersection configurations on Pennant Hills Road and North Rocks Road, which would ease congestion and improve traffic flow along the corridor. The main features of the determined project are widening Pennant Hills Road to three lanes from the intersection of the North Rocks Road to the BP service station using an existing kerbside merge lane and minor road widening, alterations to lanes and an additional left-turn slip lane at the Pennant Hills Road and North Rocks Road intersection.

Due to insufficient funding, the determined project was placed on hold. In 2020, with additional funding secured, the scope was updated to also include widening of Pennant Hills Road southbound from Woodstock Road to Murray Farm Road and intersection upgrade work at Pennant Hills Road and North Rocks Road west (the proposed modification).

An REF was prepared for the project 'Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Review of environmental factors' and determined in April 2018 (referred to in this addendum REF as the "project REF"). The project REF is provided in Attachment B.

One further addendum REF has been prepared 'Pennant Hills Road and North Rocks Road, Carlingford – Intersection Upgrade Addendum review of environmental factors' and determined in June 2021 (refer Attachment B).

## Purpose

The purpose of this memo is to:

- Describe the proposed modification.
- Document and assess the likely impacts of the proposed modification on the environment.
- Detail protective measures to be implemented.
- Document the recommendation of the Transport Senior Manager Environment and Sustainability (SMES) and the decision by the Transport delegated manager whether or not to determine the modification to the project.

This memo is an addendum to and is to be read in conjunction with the project REF and addendum identified above.

## Description of proposed modification

Transport proposes to modify the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade project to include:

- Removal of 19 additional trees (ID 94, 146, 229, 232, 234, 235, 237, 245, 246, 258, 263, 267, 268, 269, 270, 271, 272, 273 and 296)
- Hauling of Telstra optical fibre cables along four existing cable routes. The works include cabling crews installing draw ropes and hauling through new cables. If the routes are blocked, then localised civil works (excavation and backfill) would be required in order to clear the blockage and allow the cabling to be undertaken. The four routes are as follows:
    - Route 1 – northwest corner of the Pennant Hills Road/North Rocks Road intersection to Telstra pit outside Carlingford High School opposite 440 North Rocks Road via North Rocks Road
    - Route 2 – northwest corner of Pennant Hills Road/North Rocks Road intersection to Telstra pit at the corner of Pennant Parade and North Rocks Road via North Rocks Road
    - Route 3 – northwest corner of Pennant Hills Road/North Rocks Road intersection to Telstra Pit at the end of Roselea Way inside Carlingford High School via North Rocks Road
    - Route 4 – Community Centre to Telstra Pit at 188 Murray Farm Road, Beecroft via Pennant Hills Road and North Rocks Road

The determined project scope is shown in Figure 1. An overview of the proposed modification is shown in Figure 2 and Figure 3.

The proposed modification would not require additional compound facilities. The methodology including plant and equipment required would be consistent with the determined REF and addendum. The proposed modification would not alter the proposed work schedule or duration of works.


*Figure 1. Determined project scope as assessed in project REF (April 2018) and one previous addendum REF (May 2021)*

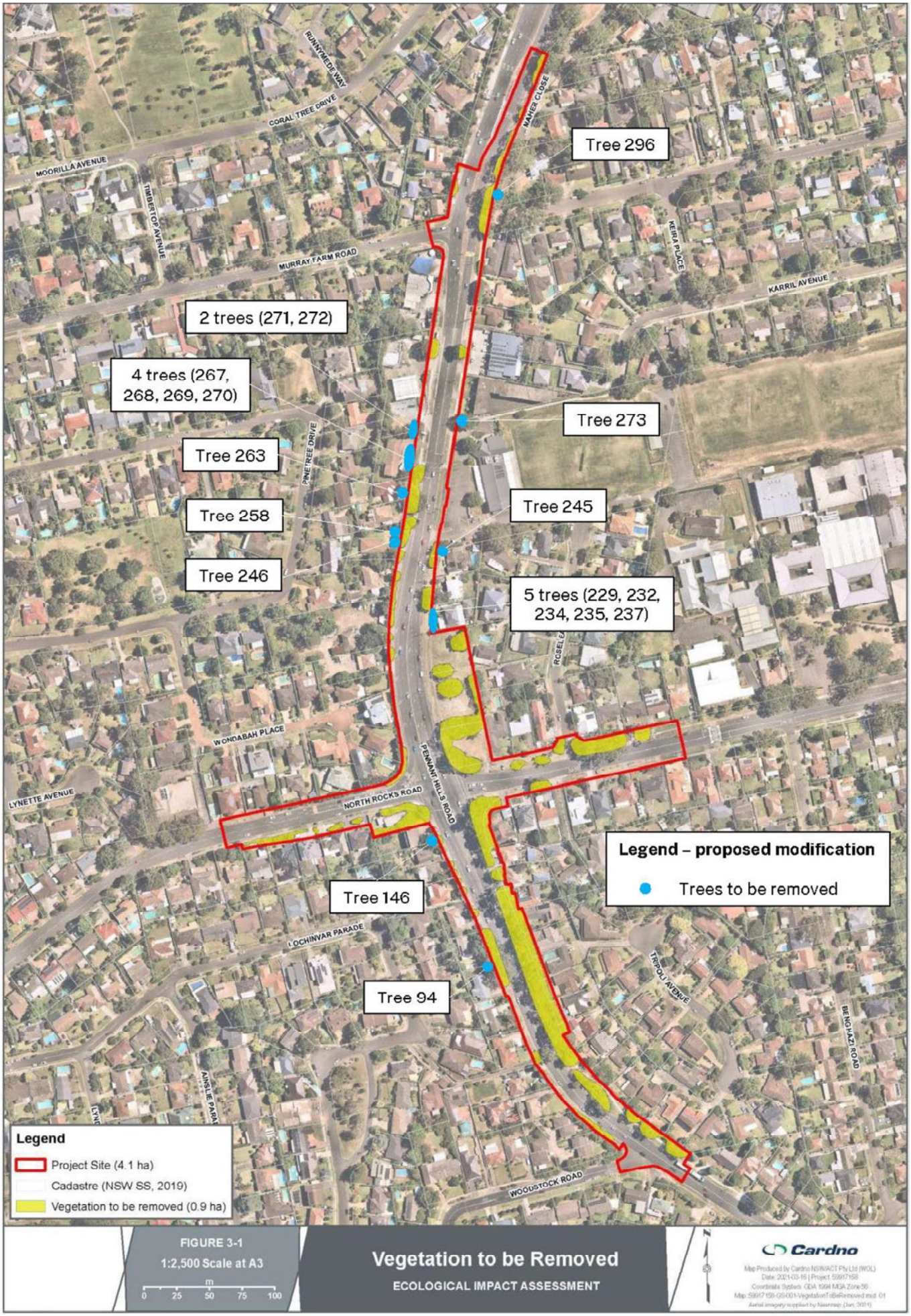



*Figure 2 Proposed modification overview – trees to be removed*

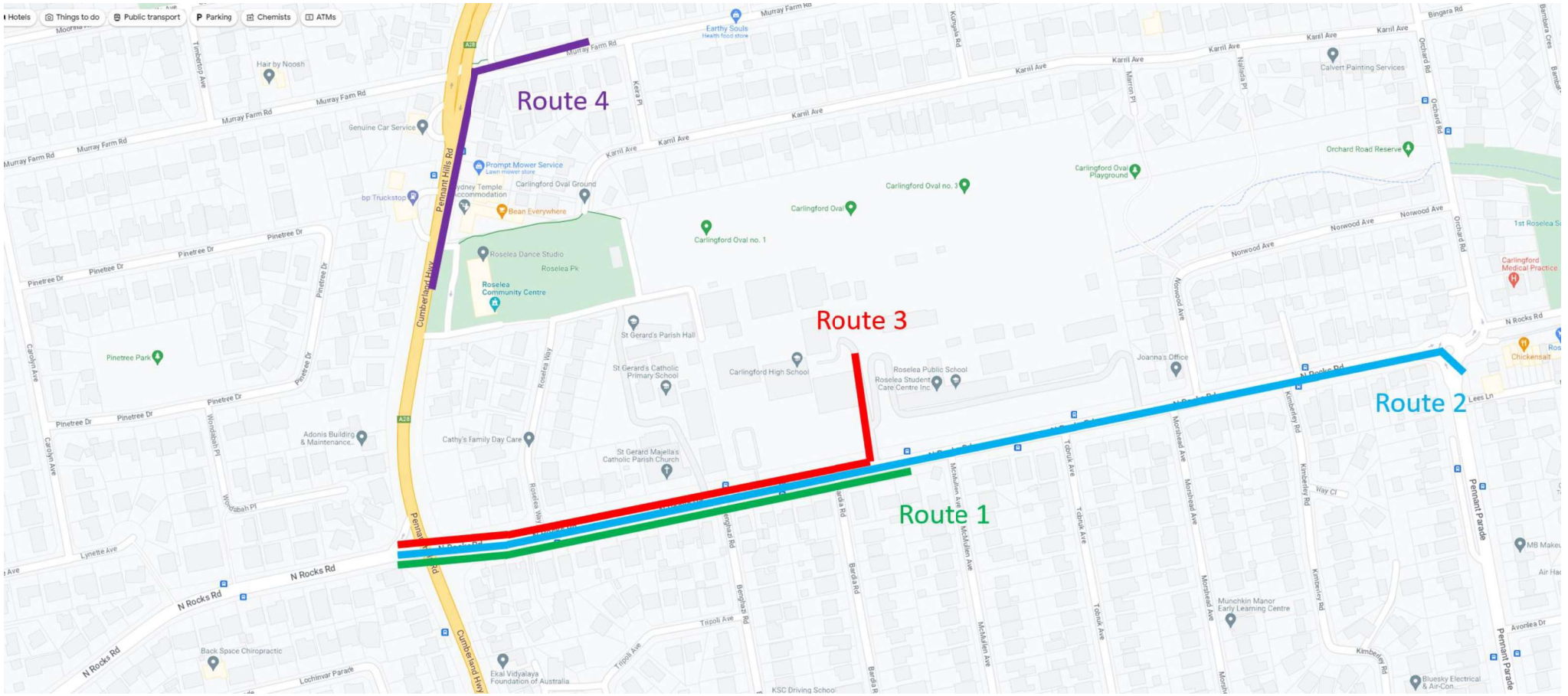



*Figure 3. Proposed modification overview – Telstra optical fibre hauling routes*

## Need for the proposed modification

The determined project's tree clearing extents have been refined following finalisation of the design prior to construction commencement.

The hauling of optical fibre cables often extends outside the footprint of the project as the Utility providers require that the impacted cables be replaced from cable joint to cable joint. Whilst the civil works are isolated to the project footprint generally, the cable relocation extent often extends considerably further to the nearest cable joint location.

## Options considered

The following options were considered for the proposed modification.

- Option 1 – construct the project without proposed modification
- Option 2 – construct the project with proposed modification

Without the proposed optical fibre haul, the cables will not be able to be relocated meaning that the existing communications infrastructure will remain in place, not allowing any further civil works and widening of the roadway. The existing Telstra infrastructure currently clashes with the proposed road widening.

Without the proposed additional tree removal, the trees subject to this proposed modification would experience major encroachment as a result of this proposal and would be at high risk of structural and health failure. This would present an unacceptable safety risk.

As such, Option 1 was discounted and Option 2 is the preferred option.

## Consultation

Key stakeholders of the proposed modification are the property owners of:

- 736 Pennant Hills Road, Carlingford (Tree 94)
- 728A Pennant Hills Road, Carlingford (Tree 146)
- 675 Pennant Hills Road, Beecroft (Trees 229, 232, 234, 235 & 237)
- 673 Pennant Hills Road, Beecroft (Tree 245)
- 716 Pennant Hills Road, Beecroft (Trees 246 & 258)
- 712 Pennant Hills Road, Beecroft (Tree 272)
- 714 Pennant Hills Road, Beecroft (Trees 267, 268, 269, 270, 271)
- 714C Pennant Hills Road, Beecroft (Tree 263)
- 645-671 Pennant Hills Road, Beecroft (Tree 273) – Parramatta City Council

These key stakeholders have been consulted regarding the previously determined scope of tree clearing within the aforementioned properties and would be further consulted regarding the proposed modifications. Property owners would be consulted prior to the clearing of any trees not approved as part of the previously determined REFs within their properties.

## Impact assessment

Attachment A addresses the environmental factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021 and matters of national environmental significance under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act).

### Soil

The proposed modification would involve additional ground disturbance to remove trees and access underground conduits. The extent of ground disturbance would be minor. No additional soil impacts are anticipated. No additional safeguards are proposed.

## Waterways and water quality

No additional waterway or water quality impacts are anticipated. No additional safeguards are proposed.

## Noise and vibration

The proposed optical fibre hauls would be carried out near sensitive receivers not assessed for impact in the project REF or addendum. However, the proposed hauls would not affect a single receiver over more than two nights. As such, the impacts are expected to be minor and no additional safeguards are proposed.

## Air quality

No additional air quality impacts are anticipated. No additional safeguards are proposed.

## Aboriginal cultural heritage

A basic search of Aboriginal Heritage Information Management System (AHIMS) was undertaken on 19 December 2023 of the entire project footprint including proposed modification. No Aboriginal sites or places were identified within 50 metres of the project footprint (refer Attachment C). These results are consistent with the search results of the previous addendum and project REF.

The additional tree removal proposed would not involve additional ground disturbance and would not involve the removal of scarred trees. The proposed optical fibre hauling may involve localised excavation if there are blockages along the existing cable routes the new cables are hauled through. This localised excavation would occur around the existing cable route in previously disturbed ground. As such, the proposed modification is not anticipated to encounter unexpected Aboriginal heritage finds.

## Biodiversity

An arboricultural impact assessment (refer Attachment D) was undertaken in August 2023 to verify the extent of tree clearing required for the project prior to construction commencement. This assessment identified an additional 19 trees subject to major encroachment due to construction of the project which would require removal. These trees are identified in Table 1.

The additional 19 trees proposed for removal are directly adjacent to the study area of the *Ecological Impact Assessment* (March 2021) report prepared for the addendum REF (May 2021) (refer Appendix G of the addendum REF). As such, the report's assessment of the existing environment and impact assessment are expected to apply.

The report identified the project as occurring within a highly modified landscape. Whilst a small number of native trees occurred within the project area, these were considered to not form part of any potentially occurring listed threatened ecological communities (TECs).

The field surveys of the project site did not detect any threatened species listed under the BC Act or EPBC Act. Numerous non-threatened native bird species were detected during the field surveys which were common for the Sydney's urban areas.

Whilst no habitat trees were detected, there is the potential for fauna to move into the project and build a nest/drey. Provided that a suitably qualified ecologist undertakes a pre-clearance check and supervises the felling of all trees with potential fauna nest/drey/hollows to reduce the chances of harming any fauna occupants, no threatened species were assessed as likely to be significantly impacted by the proposed project.

The report concluded that the project may result in a small amount habitat been impacted within the project site. However, with implementation of the safeguards in the determined REFs, the project was assessed as unlikely to remove, modify, fragment or isolate any area of habitat important to the long-term survival of the addressed threatened flora and fauna species, population or ecological communities in the locality.

The proposed modification would result in minor additional clearing to the extent assessed in the ecological impact assessment, however, the conclusions are expected to be consistent.

*Table 1 Additional trees proposed for removal*

| Id. | Botanical name | Height (metres) | DBH Combined (millimetres diameter) | TPZ (metres radius) | Encroachment | % Encroachment within TPZ |
|---|---|---|---|---|---|---|
| **94** | *Liquidambar styraciflua* | 16 | 720 | 8.6 | **Major** | **59%** |
| **146** | *Liquidambar styraciflua* | 16 | 500 | 6.0 | **Major** | **41%** |
| **229** | *Celtis australis* | 12 | 540 | 6.5 | **Major** | **49%** |
| **232** | *Melaleuca quinquenervia* | 9 | 400 | 4.8 | **Major** | **30%** |
| **234** | *Celtis australis* | 7 | 250 | 3.0 | **Major** | **45%** |
| **235** | *Celtis australis* | 16 | 550 | 6.6 | **Major** | **60%** |
| **237** | *Ligustrum lucidum* | 6 | 170 | 2.0 | **Major** | **100%** |
| **245** | *Jacaranda mimosifolia* | 9 | 400 | 4.8 | **Major** | **91%** |
| **246** | *Cupressus sp.* | 9 | 290 | 3.5 | **Major** | **25%** |
| **258** | *Cupressus sp.* | 10 | 250 | 3.0 | **Major** | **61%** |
| **263** | *Araucaria columnaris* | 14 | 450 | 5.4 | **Major** | **37%** |
| **267** | *Cupressus sempervirens* | 4 | 150 | 2.0 | **Major** | **26%** |
| **268** | *Cupressus sempervirens* | 4 | 150 | 2.0 | **Major** | **39%** |
| **269** | *Cupressus sempervirens* | 6 | 150 | 2.0 | **Major** | **28%** |
| **270** | *Cupressus sempervirens* | 8 | 250 | 3.0 | **Major** | **33%** |
| **271** | *Araucaria columnaris* | 20 | 450 | 5.4 | **Major** | **45%** |
| **272** | *Grevillea robusta* | 20 | 450 | 5.4 | **Major** | **29%** |
| **273** | *Melia azedarach* | 22 | 1000 | 12.0 | **Major** | **100%** |
| **296** | *Eucalyptus saligna* | 20 | 1200 | 14.4 | **Major** | **37%** |

## Traffic and transport

The optical fibre hauls would require some traffic control on the local roads comprising the haul routes. Therefore, the proposed modification would have additional construction traffic impacts. However, the hauls are expected to progress from location to location quite rapidly. As such, additional impacts are expected to be minor and no additional safeguards are proposed.

## Social issues

No additional social issues are anticipated. No additional safeguards are proposed.

### Landscape character and visual impacts

No additional air quality impacts are anticipated. No additional safeguards are proposed.

### Waste

The waste streams of the proposed modification would be consistent with those of the determined project REF and addendum. As such, no additional waste impacts are anticipated and no additional safeguards are proposed.

### Cumulative impacts

The proposed modification would not impact the overall duration of the determined project nor its construction-related impacts to noise and traffic. As such, cumulative impacts are not anticipated.

## Summary of additional or revised safeguards

No new safeguards are proposed. Refer to Chapter 7 of the addendum REF (May 2021) for a complete list of safeguards.

## Licences, permits or approvals

All relevant licenses, permits, notifications and approvals needed for the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade and when they need to be obtained are listed in the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade REF (April 2018) and Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Addendum REF (May 2021). There are no changes to these requirements.

## Conclusion

All relevant safeguards identified in the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade REF (April 2018) and Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Addendum REF (May 2021) would be applied to this work. No additional or revised safeguards are required.

Division 5.1 of the *Environmental Planning and Assessment Act 1979* (EP&A Act) applies to the proposed modification. The proposed modification has been reviewed in the context of the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade REF (April 2018) and Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Addendum REF (May 2021) and considered against the requirements of sections 5.5 and 5.7 of the EP&A Act.

In considering the proposed modification this assessment has examined and taken into account to the fullest extent possible, all matters affecting or likely to affect the environment by reason of that activity as addressed in this memo, and associated information. This assessment is considered to be in accordance with the factors specified in section 171 of the Environmental Planning and Assessment Regulation 2021.

The Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade project including the proposed modification described in this memo will have some environmental impacts which can be ameliorated satisfactorily. Having regard to the safeguards and management measures proposed, it is considered that the expected environmental impacts are unlikely to be significant and an environmental impact statement is not required under Division 5.2 of the EP&A Act.

The assessment has considered the potential impacts of the activity on the biodiversity values listed under the *Biodiversity Conservation Act 2016* and the *Fisheries Management Act 1994*.

The Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade project including the proposed modification described in this memo will not significantly affect biodiversity values listed under the *Biodiversity Conservation Act 2016*. Therefore, the concurrence of the Coordinator General of the Environment and Heritage Group of Department of Planning and Environment and a species impact statement or a Biodiversity Development Assessment Report (BDAR) is not required.

In addition to the above, the assessment considered the effect of the activity on:

- Conservation agreements under the *National Parks and Wildlife Act 1974*.
- Plans of management under the *National Parks and Wildlife Act 1974*.
- Biodiversity stewardship sites under the *Biodiversity Conservation Act 2016*.
- Wilderness areas under the *Wilderness Act 1987*.

The assessment has also addressed the potential impacts of the activity on matters of national environmental significance and any impacts on the environment of Commonwealth land and concluded that there will be no significant impacts. Therefore, there is no need for a referral to be made to the Australian Government Department of Climate Change, Energy, the Environment and Water for a decision by the Australian Minister for the Environment on whether assessment and approval is required under the EPBC Act or for application of the EPBC Act strategic assessment for Transport activities assessed under Part 5 of the EPBC Act.

This memo is considered to be of adequate quality and meets all relevant requirements.

The proposed modification has been characterised in the context of the Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade project and is considered to be consistent with that project's objectives and key features. While the proposed modification would increase the overall environmental impacts of the determined project, it is substantially the same as the activity described and assessed in the determined REF and does not constitute an entirely new activity.

## Attachments

Attachment A – Section 171 EP&A Regulation checklists and Matters of National Environmental Significance

Attachment B – Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade REF (April 2018) and Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Addendum REF (May 2021)

Attachment C – AHIMS search results

Attachment D – Arborist report

Please return this paperwork to: Jarita.zeng@transport.nsw.gov.au

# Attachment A: Consideration of State and Commonwealth environmental factors

## Environmental Planning and Assessment Regulation 2021 section 171(2) checklist

The following factors, listed in section 171(2) of the Environmental Planning and Assessment Regulation 2021, have been considered to assess the likely impacts of the proposal on the natural and built environment. This consideration is required to comply with sections 5.5 and 5.7 of the EP&A Act.

| Factor | Description of impact | Duration and extent |
|---|---|---|
| (a) Environmental impact on a community. | • The proposed modification would result in an additional loss of green cover and amenity trees for the community. The impact would be a minor additional impact to that assessed in the previously determined REFs.<br>• The proposal would result in minor additional noise and traffic impacts to sensitive receivers during the optical fibre haul activities. | Short-term, negative |
| (b) The transformation of a locality. | • The proposed modification would not transform the locality. | N/A |
| (c) Environmental impact on the ecosystems of a locality. | • The proposed modification would not impact on the ecosystems of the locality. | N/A |
| (d) Any reduction of the aesthetic, recreational, scientific or other environmental quality or value of a locality. | • The proposed modification would not reduce the aesthetic, recreational, scientific or other environmental quality or value of the locality. | N/A |
| (e) Any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations. | • The proposed modification would not have any effect on a locality, place or building having aesthetic, anthropological, archaeological, architectural, cultural, historical, scientific or social significance or other special value for present or future generations. | N/A |
| (f) Any impact on habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*). | • The proposed modification would not have any impact on habitat of any protected animals (within the meaning of the *Biodiversity Conservation Act 2016*). | N/A |
| (g) Any endangering of any species of animal, plant | • The proposed modification would not endanger any species of animal, plant or other | N/A |

| | | |
|---|---|---|
| or other form of life, whether living on land, in water or in the air. | form of life, whether living on land, in water or in the air. | |
| (h) Any long-term effects on the environment. | • The proposed modification would not have any long-term effects on the environment. | N/A |
| (i) Any degradation of the quality of the environment | • The proposed modification would not result in any degradation of the quality of the environment. | N/A |
| (j) Any risk to the safety of the environment. | • The proposed modification would not have any risk to the safety of the environment. | N/A |
| (k) Any reduction in the range of beneficial uses of the environment. | • The proposed modification would not reduce the range of beneficial uses of the environment. | N/A |
| (l) Any pollution of the environment. | • The proposed modification would not pollute the environment. | N/A |
| (m) Any environmental problems associated with the disposal of waste. | • The proposed modification would not have any environmental problems associated with the disposal of waste. | N/A |
| (n) Any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply. | • The proposed modification would not have any increased demands on resources, natural or otherwise which are, or are likely to become, in short supply. | N/A |
| (o) The cumulative environmental effect with other existing or likely future activities. | • The proposed modification would not have a cumulative environmental effect with other existing or likely future activities. | N/A |
| (p) Any impact on coastal processes and coastal hazards, including those under projected climate change conditions. | • The proposed modification would not have any impact on coastal processes and coastal hazards, including those under projected climate change conditions. | N/A |
| (q) Applicable local strategic planning statements, regional strategic plans or district strategic plans made under the Act, Division 3.1. | N/A | |
| (r) Other relevant environmental factors. | N/A | |

## Matters of National Environmental Significance

| Environmental factor | Impact |
|---|---|
| Any impact on a World Heritage property? | Nil |
| Any impact on a National Heritage place? | Nil |
| Any impact on a wetland of international importance (often called 'Ramsar' wetlands)? | Nil |
| Any impact on nationally threatened species, ecological communities or migratory species? | Nil |
| Any impact on a Commonwealth marine area? | Nil |
| Does the proposal involve a nuclear action (including uranium mining)? | Nil |
| Additionally, any impact (direct or indirect) on the environment of Commonwealth land? | Nil |

# Attachment B: Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade REF (April 2018) and Pennant Hills Road and North Rocks Road, Carlingford Intersection Upgrade Addendum REF (May 2021)

https://www.transport.nsw.gov.au/projects/current-projects/pennant-hills-road-north-rocks-road-carlingford

# Attachment C: AHIMS search results

# AHIMS Web Services (AWS)
## Search Result

Your Ref/PO Number : PHNR 1

**Client Service ID : 850214**

Jarita Zeng

Date: 19 December 2023

10-14 Smith Street
Parramatta New South Wales 2150

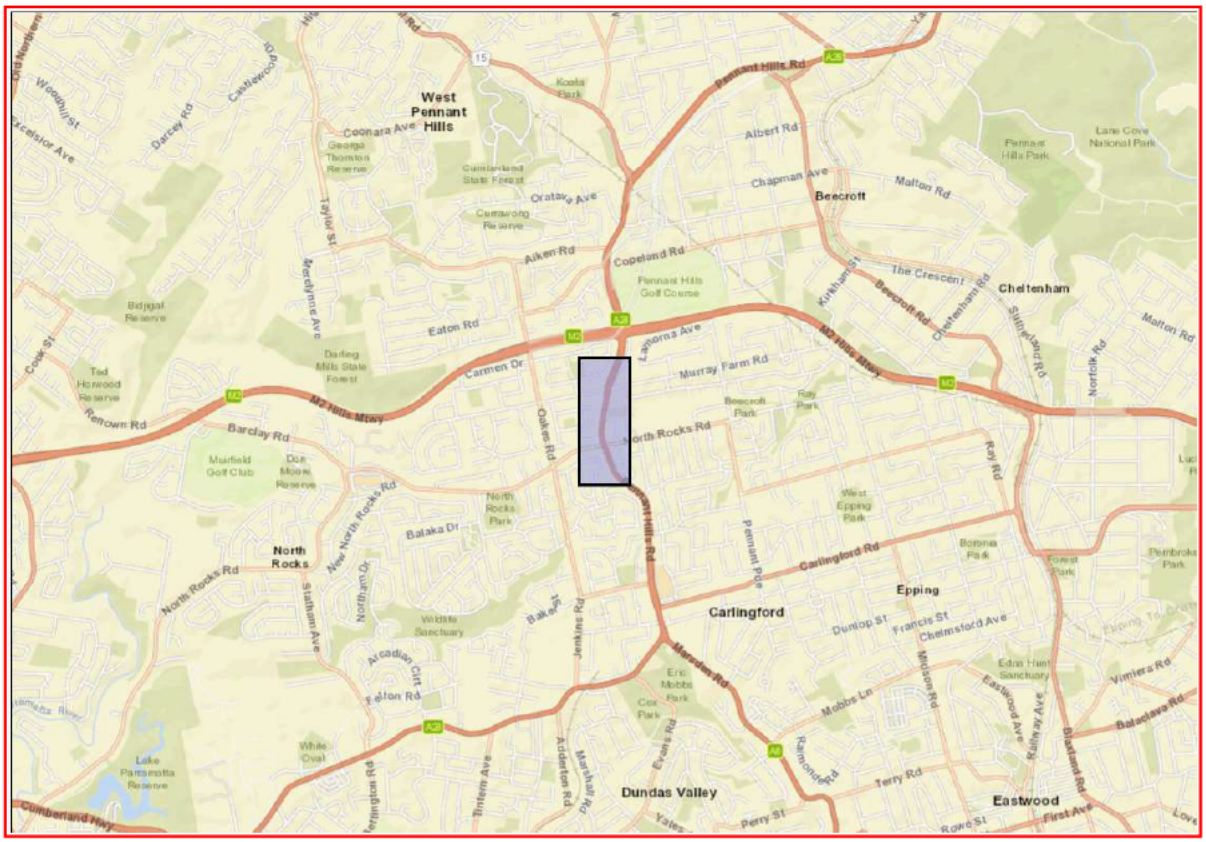
Attention: Jarita Zeng

Email: jarita.zeng@transport.nsw.gov.au

Dear Sir or Madam:

**AHIMS Web Service search for the following area at Lat, Long From : -33.76923, 151.045523 - Lat, Long To : -33.760389, 151.049599, conducted by Jarita Zeng on 19 December 2023.**

**The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.**




A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

| | |
|---|---|
| 0 | Aboriginal sites are recorded in or near the above location. |
| 0 | Aboriginal places have been declared in or near the above location. * |

**If your search shows Aboriginal sites or places what should you do?**

- You must do an extensive search if AHIMS has shown that there are Aboriginal sites or places recorded in the search area.
- If you are checking AHIMS as a part of your due diligence, refer to the next steps of the Due Diligence Code of practice.
- You can get further information about Aboriginal places by looking at the gazettal notice that declared it. Aboriginal places gazetted after 2001 are available on the NSW Government Gazette (https://www.legislation.nsw.gov.au/gazette) website. Gazettal notices published prior to 2001 can be obtained from Heritage NSW upon request

**Important information about your AHIMS search**

- The information derived from the AHIMS search is only to be used for the purpose for which it was requested. It is not be made available to the public.
- AHIMS records information about Aboriginal sites that have been provided to Heritage NSW and Aboriginal places that have been declared by the Minister;
- Information recorded on AHIMS may vary in its accuracy and may not be up to date. Location details are recorded as grid references and it is important to note that there may be errors or omissions in these recordings,
- Some parts of New South Wales have not been investigated in detail and there may be fewer records of Aboriginal sites in those areas. These areas may contain Aboriginal sites which are not recorded on AHIMS.
- Aboriginal objects are protected under the National Parks and Wildlife Act 1974 even if they are not recorded as a site on AHIMS.
- This search can form part of your due diligence and remains valid for 12 months.

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Email: ahims@environment.nsw.gov.au
Web: www.heritage.nsw.gov.au

# Attachment D: Arborist report

# TREE SURVEY

## ARBORICULTURAL IMPACT ASSESSMENT & TREE PROTECTION PLAN

**Intersection Upgrade**
**Pennant Hills Road & North Rocks Road**
**Version 2**

**Prepared for:**
**Transport for NSW**

**24 August 2023**

# Document information

| | |
|---|---|
| **Title:** | Pennant Hills Road & North Rocks Road Upgrade |
| **Report type:** | Arboricultural Impact Assessment (AIA) & Tree Protection Plan (TPP) |
| **Prepared by:** |  <br>**Phil Witten**<br>Principal Arborist & GIS Analyst<br>Diploma of Arboriculture \| AQF 5<br>Graduate Certificate of Arboriculture \| AQF 8<br>Registered Consulting Arborist No. 2458<br>Advanced QTRA \| TRAQ Qualification |
| **Contact details:** | **Tree Survey Pty Limited**<br>☎ 0425 536 670<br>✉ phil@treesurvey.com.au<br>🖳 www.treesurvey.com.au<br>➢ PO Box 125, Hornsby NSW 1630, Australia |

# Document status

| Document status | Date | Revision description |
|---|---|---|
| Version 1 | 21/08/23 | Minor updates following TfNSW review |
| Version 2 | 24/08/23 | Final version |
| | | |
| | | |
| | | |

# Abbreviations

| Abbreviation | Description |
|---|---|
| AQF | Australian Qualifications Framework |
| AS | Australian Standards |
| DBH | Diameter at Breast Height |
| Id | Identification |
| m | Metre |
| mm | Millimetre |
| NDE | Non-Destructive Excavation |
| NO | Number |
| NSW | New South Wales |
| sp. | Species |
| SRZ | Structural Root Zone |
| TPZ | Tree Protection Zone |
| VTA | Visual Tree Assessment |

# Contents

# 1 Background

## 1.1 Introduction

Tree Survey was commissioned by Transport for NSW to prepare an Arboricultural Impact Assessment (AIA) and Tree Protection Plan (TPP) for the proposed upgrade of Pennant Hills Road and North Rock Road Intersection.

The purpose of this report is to:

- Identify the trees within and adjacent to the proposed disturbance footprint.
- Assess the current health and condition of the subject trees.
- Assess the potential impacts of the development on the subject trees.
- Evaluate the significance of the subject trees and assess their suitability for retention.

## 1.2 Project background

The Pennant Hills Road and North Rocks Road intersection is identified as a pinch point causing traffic congestion. Each day nearly 60,000 vehicles travel through the Pennant Hills Road and North Rocks Road intersection. Motorists experience congestion, slow travel times, and delays when traveling through the intersection. The proposal will increase the capacity of the Pennant Hills Road and North Rocks Road intersection by widening the road, reducing queue lengths, and improving safety for all road users.

The key features of the proposal include:

- Widening Pennant Hills Road between Woodstock Road and Murray Farm Road, adding an extra through lane in each direction.
- Widening North Rocks Road to install a second right turn lane from North Rocks Road onto Pennant Hills Road heading south.
- Removing the left turn slip lane from Pennant Hills Road onto North Rocks Road west, to provide three northbound lanes.
- Installing a new left-turn slip lane from Pennant Hills Road to North Rocks Road heading east.
- Adding an additional right turn lane for road users traveling eastbound on North Rocks Road and turning right into Pennant Hills Road.
- Installing a raised median in the centre of Pennant Hills Road between Woodstock Road and Murray Farm Road.
- Installing a new pedestrian crossing on the southern side of Pennant Hills Road and North Rocks intersection.
- Installing a number of retaining walls along Pennant Hills Road and North Rocks Road where there is a difference in the ground levels.
- Permanently removing five unmarked car parking spaces on the northern side of North Rocks Road between Roselea Way and the pedestrian crossing near St Gerard Majella's Catholic Church
- Installing wide footpaths, where possible, that can be upgraded to shared paths in the future by the City of Parramatta Council
- Relocating two bus stops on Pennant Hills Road, bus stop ID 211831 18 metres south, and bus stop ID 2118174 150 metres south to be nearer to the Roselea Community Centre.
- Resurfacing the road and changing signage.
- Adjusting utilities, street lighting, and drainage.

## 1.3 Documents and plans referenced

The conclusions and recommendations of this report are based on the Australian Standard, AS 4970-2009, Protection of Trees on Development Sites (AS4970), the findings from the site inspections, and analysis of the documents/plans listed in **Table 1**.

**Table 1: Documents and plans**

| Document | Author | Version | Date |
|---|---|---|---|
| General Arrangement Plan | TfNSW | 2 | 22/12/22 |
| Utilities Plan | Supplied by TfNSW as a DWG file | - | - |
| Survey Plan | Supplied by TfNSW as a DWG file | - | - |

The site plan has been used as a map layer in the **Arboricultural Impact Assessment** and **Tree Protection Plan**.

## 1.4 The subject trees

A total of **572** trees were assessed and included in this report. The subject trees were assessed in accordance with a visual tree assessment (VTA) as formulated by Mattheck & Breloer (1994)[1], and practices consistent with modern arboriculture. The following limitations apply to this methodology:

- Trees were inspected from ground level without the use of any invasive or diagnostic tools and testing. Trees within adjacent properties or restricted areas were not subject to a complete visual inspection (i.e., defects and abnormalities may be present but not recorded).
- Diameter at breast height (DBH) has been accurately measured using a diameter tape (where access to the trees was available). Tree height and canopy spread were estimated unless otherwise stated.
- Tree protection zones have been calculated in accordance with Australian Standard, AS 4970-2009, Protection of Trees on Development Sites, using the DBH measurements.

A tree retention assessment has been undertaken in accordance with the Institute of Australian Consulting Aboriculturalists (IACA) Significance of a Tree, Assessment Rating System (see **Appendices**). Further information, observations, and measurements specific to each of the subject trees can be found in **Chapter 3**.

[1] VTA is an internationally recognised practice in the visual assessment of trees as formulated by Mattheck & Breloer (1994). Principle explanations and illustrations are contained within the publication, Field Guide for Visual Tree Assessment by Mattheck, C., and Breloer, H. Arboricultural Journal, Vol 18 pp 1-23 (1994).

# 2 Arboricultural Impact Assessment (AIA)

## 2.1 Impact assessment

The Australian Standard, Protection of Trees on Development Sites (AS4970), describes two zones that need to be considered when undertaking an arboricultural impact assessment:

- **Tree protection zone (TPZ):** The TPZ is the combination of crown and root area that requires protection during the construction process so that the tree can remain viable. The TPZ is calculated by measuring the DBH and multiplying it by twelve (12). The resulting value is applied as a radial measurement from the centre of the trunk to delineate the TPZ.
- **Structural root zone (SRZ):** The SRZ is the area of the root system used for stability, mechanical support, and anchorage of the tree.

Encroachment within the TPZ is acceptable, providing that the arborist can demonstrate that the tree will remain viable. There are three (3) levels of encroachment defined by AS4970:

- **Nil encroachment (0%): No encroachment within the TPZ.**
- **Minor encroachment (<10%): The encroachment is less than 10% of the TPZ.**
- **Major encroachment (>10%): The encroachment is greater than 10% of the TPZ.**

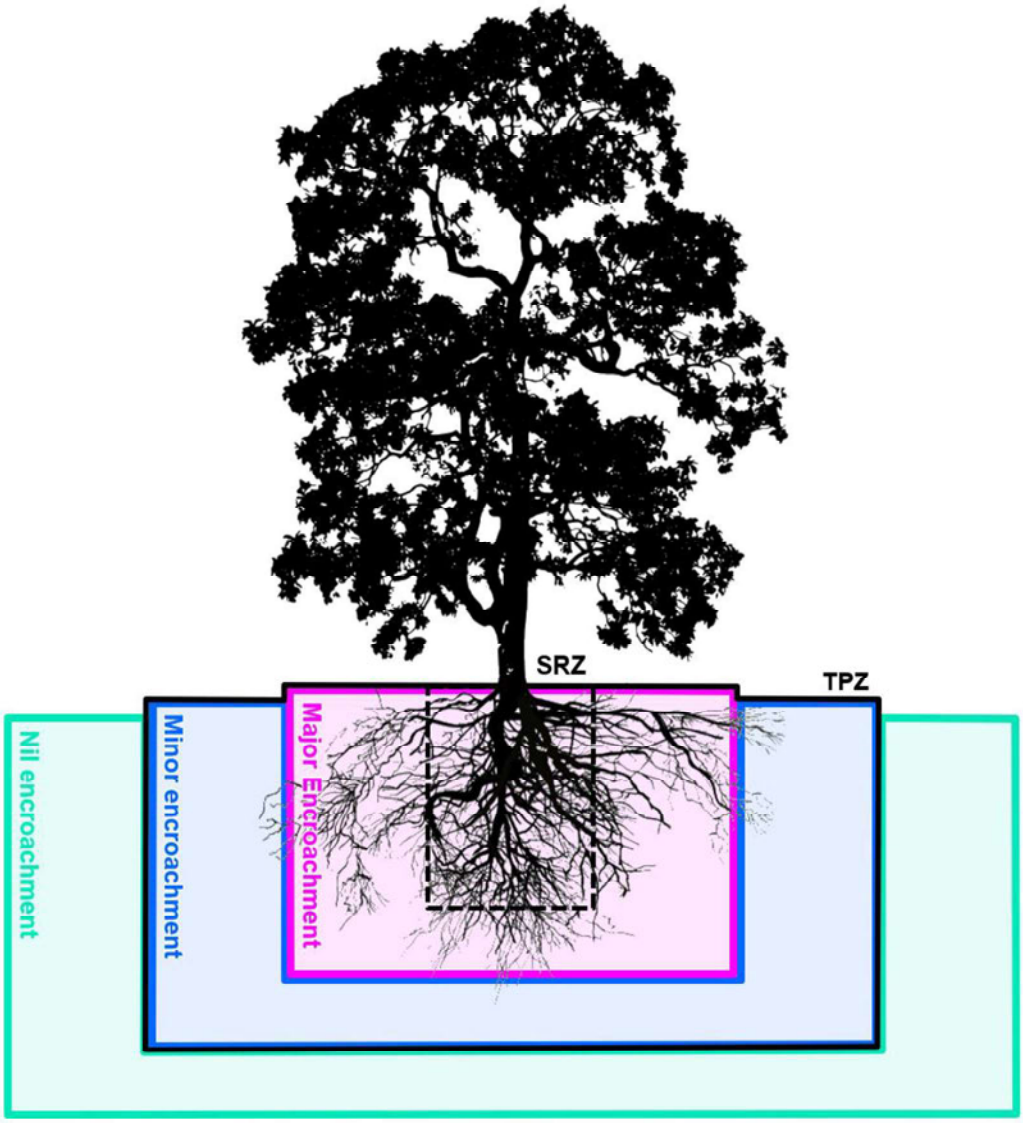


**Figure 1: Three (3) levels of encroachment**

# 3 Results

**Table 2** shows the results of the arboricultural assessment. Key points are:

## 3.1 Encroachment within the TPZ

A summary of trees impacted directly by the proposed construction footprint is outlined below:

- **Nil encroachment (0%):** A total of **102** trees are located outside the construction footprint.
- **Minor encroachment (<10%):** A total of **29** trees will be subject to minor encroachment.
- **Major encroachment (>10%):** A total of **202** trees will be subject to major encroachment.

## 3.2 Tree removal and retention

A summary of the total proposed tree removals is outlined below:

- **Retain:** A total of **163** trees are proposed for retention.
- **Remove:** A total of **170** trees are proposed for removal.

**Table 2 Results of the arboricultural assessment**

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | *Eucalyptus saligna* | Yes | 24 | 18 | Good | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Nil | 0% | Trunk wounds. | Retain |
| 2 | *Eucalyptus grandis* | Yes | 24 | 16 | Good | Good | Mature | High | Medium | High | 650 | - | - | 650 | 700 | 7.8 | 2.8 | Nil | 0% | - | Retain |
| 3 | *Fraxinus griffithii* | Yes | 3 | 3 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 4 | *Fraxinus griffithii* | Yes | 3 | 2 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 5 | *Fraxinus griffithii* | Yes | 3 | 3 | Good | Good | Semi-mature | Low | Medium | Low | 100 | 100 | - | 140 | 190 | 2.0 | 1.6 | Nil | 0% | - | Retain |
| 6 | *Fraxinus griffithii* | Yes | 3 | 3 | Good | Good | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Nil | 0% | - | Retain |
| 7 | *Fraxinus griffithii* | Yes | 4 | 4 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 8 | *Eucalyptus saligna* | No | 26 | 18 | Good | Good | Mature | High | Medium | High | 1300 | - | - | 1300 | 1350 | 15.0 | 3.8 | Nil | 0% | - | Retain |
| 9 | *Eucalyptus saligna* | No | 24 | 16 | Good | Good | Mature | High | Medium | High | 900 | - | - | 900 | 950 | 10.8 | 3.2 | Nil | 0% | - | Retain |
| 10 | *Fraxinus griffithii* | Yes | 3 | 3 | Good | Good | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Nil | 0% | - | Retain |
| 11 | *Eucalyptus saligna* | Yes | 24 | 20 | Good | Good | Mature | High | Medium | High | 600 | - | - | 600 | 650 | 7.2 | 2.8 | Nil | 0% | - | Retain |
| 12 | *Eucalyptus saligna* | Yes | 24 | 14 | Fair | Good | Mature | High | Medium | High | 1000 | - | - | 1000 | 1050 | 12.0 | 3.4 | Nil | 0% | Deadwood (>20cm). Epicormic regrowth. Trunk decay. Trunk wounds. | Retain |
| 13 | *Fraxinus griffithii* | Yes | 2 | 1 | Fair | Good | Juvenile | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | Canopy dieback. | Retain |
| 14 | *Acacia sp.* | No | 5 | 3 | Good | Good | Mature | Low | Short | Low | 150 | 100 | - | 180 | 230 | 2 2 | 1 8 | Nil | 0% | - | Retain |
| 15 | *Acacia sp.* | Yes | 5 | 3 | Good | Good | Mature | Low | Short | Low | 150 | 100 | - | 180 | 230 | 2 2 | 1 8 | Nil | 0% | - | Retain |
| 16 | *Eucalyptus saligna* | Yes | 24 | 16 | Good | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Nil | 0% | Epicormic regrowth. Severe trunk wounds. | Retain |
| 17 | *Cupressus sempervirens* | No | 12 | 2 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Nil | 0% | - | Retain |
| 18 | *Jacaranda mimosifolia* | No | 6 | 6 | Fair | Fair | Mature | Medium | Medium | Medium | 250 | 150 | - | 290 | 340 | 3.5 | 2.1 | Nil | 0% | Suppressed canopy. | Retain |
| 19 | *Cupressus sempervirens* | No | 22 | 12 | Good | Good | Mature | High | Medium | High | 1000 | - | - | 1000 | 1050 | 12.0 | 3.4 | Nil | 0% | - | Retain |
| 20 | *Juniperus sp.* | No | 10 | 10 | Good | Good | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Nil | 0% | - | Retain |
| 21 | *Cupressus sp.* | No | 3 | 3 | Good | Poor | Mature | Low | Medium | Medium | 150 | 100 | - | 180 | 230 | 2.2 | 1.8 | Nil | 0% | Internodal pruning. Topped. | Retain |
| 22 | *Cupressus sp.* | No | 3 | 5 | Good | Poor | Mature | Low | Medium | Medium | 150 | 150 | - | 210 | 260 | 2.5 | 1.9 | Nil | 0% | Internodal pruning. Topped. | Retain |
| 23 | *Cupressus x leylandii* | No | 14 | 7 | Good | Good | Mature | High | Medium | High | 650 | - | - | 650 | 700 | 7.8 | 2.8 | Nil | 0% | - | Retain |
| 24 | *Cupressus sp.* | No | 9 | 5 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Nil | 0% | - | Retain |
| 25 | *Chamaecyparis sp.* | Yes | 12 | 8 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Nil | 0% | - | Retain |
| 26 | *Prunus sp.* | Yes | 5 | 6 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Minor | 2% | - | Retain |
| 27 | *Cotoneaster glaucophyllus* | Yes | 5 | 6 | Good | Fair | Mature | Low | Short | Low | 100 | 100 | 100 | 170 | 220 | 2 0 | 1 8 | Nil | 0% | Weed species. | Retain |
| 28 | *Angophora floribunda* | Yes | 6 | 8 | Good | Fair | Mature | Medium | Medium | Medium | 250 | 200 | - | 320 | 370 | 3.8 | 2.2 | Minor | 2% | Internodal pruning. Topped for line clearance. | Retain |
| 29 | *Angophora floribunda* | Yes | 22 | 12 | Good | Good | Mature | High | Medium | High | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Minor | 3% | - | Retain |
| 30 | *Angophora floribunda* | Yes | 20 | 12 | Good | Good | Mature | High | Medium | High | 650 | - | - | 650 | 700 | 7.8 | 2.8 | Major | 17% | - | Retain |
| 31 | *Angophora floribunda* | Yes | 5 | 7 | Good | Poor | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Nil | 0% | Internodal pruning. Regrowth from stump. Topped for line clearance. | Retain |
| 32 | *Angophora floribunda* | Yes | 20 | 9 | Good | Good | Mature | High | Medium | High | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Minor | 5% | - | Retain |
| 33 | *Angophora floribunda* | Yes | 6 | 7 | Good | Fair | Mature | Medium | Medium | Medium | 200 | 100 | 100 | 240 | 290 | 2.9 | 2.0 | Minor | 5% | Internodal pruning. Topped for line clearance. | Retain |
| 34 | *Prunus sp.* | No | 6 | 6 | Good | Good | Mature | Medium | Medium | Medium | 200 | 200 | 100 | 300 | 350 | 3.6 | 2.1 | Major | 19% | - | Retain |
| 35 | *Jacaranda mimosifolia* | No | 6 | 5 | Good | Good | Mature | Medium | Medium | Medium | 200 | 150 | 100 | 270 | 320 | 3.2 | 2.1 | Major | 73% | - | Retain |
| 36 | *Angophora floribunda* | Yes | 16 | 7 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Minor | 3% | - | Retain |
| 37 | *Angophora floribunda* | No | 6 | 7 | Good | Fair | Mature | Medium | Medium | Medium | 300 | 100 | 100 | 330 | 380 | 4.0 | 2.2 | Minor | 1% | Internodal pruning. Topped for line clearance. | Retain |
| 38 | *Eucalyptus saligna* | Yes | 18 | 14 | Good | Good | Mature | High | Medium | High | 500 | 500 | - | 710 | 760 | 8.5 | 2.9 | Major | 16% | - | Retain |
| 39 | *Cinnamomum camphora* | No | 9 | 9 | Good | Good | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 58% | - | Retain |
| 40 | *Pittosporum undulatum* | No | 8 | 4 | Fair | Good | Mature | Low | Medium | Low | 250 | 200 | - | 320 | 370 | 3.8 | 2.2 | Major | 59% | 50% of the tree is dead. | Retain |
| 41 | *Angophora floribunda* | Yes | 6 | 6 | Good | Fair | Mature | Medium | Medium | Medium | 100 | 100 | 100 | 170 | 220 | 2.0 | 1.8 | Nil | 0% | Internodal pruning. Topped for line clearance. | Retain |
| 42 | *Angophora floribunda* | Yes | 14 | 4 | Good | Fair | Mature | Medium | Medium | Medium | 300 | 250 | - | 390 | 440 | 4.7 | 2.3 | Minor | 4% | - | Retain |
| 43 | *Dead tree* | Yes | 8 | 1 | Poor | Poor | Dead | Low | Dead | Low | 150 | - | - | 150 | 200 | 2 0 | 1.7 | Nil | 0% | Dead tree. | Retain |
| 44 | *Pittosporum undulatum* | No | 8 | 5 | Good | Good | Mature | Low | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 46% | - | Retain |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 45 | *Acacia sp.* | Yes | 5 | 2 | Good | Good | Juvenile | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 46 | *Angophora floribunda* | Yes | 5 | 6 | Good | Fair | Mature | Medium | Medium | Medium | 150 | 100 | - | 180 | 230 | 2.2 | 1.8 | Nil | 0% | Internodal pruning. Topped for line clearance. | Retain |
| 47 | *Angophora floribunda* | Yes | 18 | 12 | Good | Good | Mature | High | Medium | High | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Minor | 5% | - | Retain |
| 48 | *Angophora floribunda* | Yes | 20 | 10 | Good | Good | Mature | High | Medium | High | 450 | 300 | - | 540 | 590 | 6.5 | 2.7 | Minor | 8% | - | Retain |
| 49 | *Cinnamomum camphora* | No | 8 | 9 | Fair | Good | Mature | Medium | Medium | Medium | 250 | 250 | 200 | 410 | 460 | 4.9 | 2.4 | Major | 46% | Canopy dieback. | Retain |
| 50 | *Cinnamomum camphora* | No | 9 | 6 | Fair | Fair | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 53% | Canopy dieback. Trunk decay. Trunk wounds. | Retain |
| 51 | *Eucalyptus saligna* | Yes | 18 | 14 | Good | Good | Mature | High | Long | High | 500 | 450 | - | 670 | 720 | 8 0 | 2 9 | Major | 80% | - | Remove |
| 52 | *Angophora floribunda* | Yes | 6 | 3 | Good | Poor | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 100% | Internodal pruning. Topped for line clearance. | Remove |
| 53 | *Angophora floribunda* | No | 8 | 5 | Good | Fair | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 65% | Internodal pruning. Topped for line clearance. | Remove |
| 54 | *Angophora floribunda* | Yes | 5 | 3 | Good | Poor | Mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | Internodal pruning. Topped for line clearance. | Remove |
| 55 | *Angophora floribunda* | Yes | 6 | 4 | Good | Poor | Mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | Internodal pruning. Topped for line clearance. | Remove |
| 56 | *Angophora floribunda* | Yes | 6 | 7 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | - | Remove |
| 57 | *Angophora floribunda* | Yes | 5 | 6 | Good | Fair | Mature | Medium | Medium | Medium | 250 | 200 | 100 | 340 | 390 | 4.1 | 2.2 | Major | 100% | Internodal pruning. Topped for line clearance. | Remove |
| 58 | *Eucalyptus scoparia* | Yes | 16 | 10 | Good | Good | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 19% | Deadwood (>10cm). | Retain |
| 59 | *Cupressus sp.* | No | 10 | 6 | Good | Good | Mature | High | Medium | High | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 65% | - | Retain |
| 60 | *Eucalyptus scoparia* | Yes | 20 | 16 | Fair | Good | Mature | Medium | Medium | High | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 19% | - | Retain |
| 61 | *Cupressus sp.* | No | 10 | 5 | Good | Good | Mature | High | Medium | High | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 67% | - | Retain |
| 62 | *Eucalyptus saligna* | Yes | 8 | 4 | Fair | Poor | Mature | Low | Medium | Low | 300 | 200 | - | 400 | 450 | 4.8 | 2.4 | Major | 100% | Tree has been lopped below wires | Remove |
| 63 | *Casuarina cunninghamiana* | Yes | 20 | 12 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Nil | 0% | - | Retain |
| 64 | *Eucalyptus punctata* | Yes | 24 | 16 | Good | Good | Mature | Medium | Medium | High | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 83% | - | Remove |
| 65 | *Eucalyptus saligna* | Yes | 24 | 14 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 76% | - | Remove |
| 66 | *Eucalyptus saligna* | Yes | 30 | 18 | Good | Poor | Mature | Medium | Medium | Medium | 1100 | - | - | 1100 | 1200 | 12.6 | 3.6 | Major | 93% | Severe trunk decay | Remove |
| 67 | *Cupressus x leylandii* | No | 16 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Nil | 0% | - | Retain |
| 68 | *Cupressus x leylandii* | No | 16 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Nil | 0% | - | Retain |
| 69 | *Cupressus x leylandii* | No | 16 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Nil | 0% | - | Retain |
| 70 | *Eucalyptus punctata* | Yes | 30 | 16 | Good | Good | Mature | Medium | Medium | High | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 92% | - | Remove |
| 71 | *Cupressus x leylandii* | No | 16 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Minor | 1% | - | Retain |
| 72 | *Eucalyptus punctata* | Yes | 30 | 16 | Good | Good | Mature | Medium | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 87% | - | Remove |
| 73 | *Eucalyptus scoparia* | No | 22 | 16 | Good | Good | Mature | High | Medium | High | 550 | - | - | 550 | 600 | 6.6 | 2.7 | Major | 31% | 1.5 from boundary | Remove |
| 74 | *Cupressus x leylandii* | No | 16 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Minor | 6% | - | Retain |
| 75 | *Eucalyptus punctata* | Yes | 30 | 16 | Good | Good | Mature | Medium | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 94% | - | Remove |
| 76 | *Eucalyptus sp.* | No | 26 | 18 | Good | Good | Mature | High | Medium | High | 900 | - | - | 900 | 950 | 10.8 | 3.2 | Major | 47% | 1m from boundary | Remove |
| 77 | *Eucalyptus saligna* | Yes | 16 | 10 | Good | Fair | Semi-mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | - | Remove |
| 78 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 80% | - | Remove |
| 79 | *Eucalyptus nicholii* | Yes | 16 | 16 | Fair | Good | Mature | Medium | Medium | Medium | 900 | - | - | 900 | 950 | 10.8 | 3.2 | Major | 27% | Canopy dieback. | Retain |
| 80 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 84% | - | Remove |
| 81 | *Eucalyptus saligna* | Yes | 24 | 16 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 82 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 65% | - | Remove |
| 83 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 78% | - | Remove |
| 84 | *Eucalyptus saligna* | Yes | 24 | 16 | Good | Poor | Mature | Low | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 100% | Severe basal decay | Remove |
| 85 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 77% | - | Remove |
| 86 | *Syagrus romanzoffiana* | Yes | 9 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 16% | - | Retain |
| 87 | *Eucalyptus punctata* | Yes | 26 | 16 | Good | Good | Mature | High | Medium | High | 550 | - | - | 550 | 600 | 6.6 | 2.7 | Major | 100% | - | Remove |
| 88 | *Eucalyptus saligna* | Yes | 20 | 14 | Good | Good | Mature | Medium | Medium | Medium | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 100% | - | Remove |
| 89 | *Eucalyptus saligna* | No | 32 | 18 | Good | Good | Mature | High | Medium | High | 800 | - | - | 800 | 850 | 9.6 | 3.1 | Major | 76% | 1m from fence | Remove |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 90 | *Eucalyptus saligna* | Yes | 16 | 8 | Good | Poor | Semi-mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | Tree has been pruned below powerlines poor form | Remove |
| 91 | *Eucalyptus saligna* | Yes | 16 | 8 | Good | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 100% | - | Remove |
| 92 | *Eucalyptus saligna* | Yes | 14 | 16 | Good | Good | Mature | High | Medium | High | 1100 | 900 | - | 1420 | 1470 | 15.0 | 3.9 | Major | 70% | Epicormic regrowth. Minor canopy dieback. | Remove |
| 93 | *Eucalyptus saligna* | Yes | 16 | 8 | Good | Poor | Semi-mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 100% | - | Remove |
| 94 | *Liquidambar styraciflua* | Yes | 16 | 16 | Good | Good | Mature | Medium | Medium | Medium | 600 | 400 | - | 720 | 770 | 8.6 | 3.0 | Major | 59% | - | Remove |
| 95 | *Eucalyptus saligna* | No | 26 | 16 | Good | Good | Mature | Medium | Medium | High | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 97% | 500 from fence | Remove |
| 96 | *Eucalyptus saligna* | No | 34 | 18 | Good | Good | Mature | High | Medium | High | 700 | - | - | 700 | 750 | 8.4 | 2.9 | Major | 67% | On fenceline | Remove |
| 97 | *Eucalyptus saligna* | Yes | 6 | 5 | Fair | Poor | Semi-mature | Low | Short | Low | 200 | - | - | 200 | 250 | 2.4 | 1 9 | Major | 100% | Lopped below line | Remove |
| 98 | *Eucalyptus saligna* | Yes | 30 | 16 | Good | Fair | Mature | Medium | Medium | Medium | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 100% | Trunk decay | Remove |
| 99 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Fair | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 84% | - | Remove |
| 100 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Fair | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 88% | - | Remove |
| 101 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Fair | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 83% | - | Remove |
| 102 | *Dead tree* | No | 10 | 5 | Poor | Poor | Dead | Low | Dead | Low | 250 | - | - | 250 | 300 | 3 0 | 2 0 | Major | 89% | Dead tree. | Remove |
| 103 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Fair | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 85% | - | Remove |
| 104 | *Eucalyptus punctata* | Yes | 18 | 8 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | - | Remove |
| 105 | *Melaleuca quinquenervia* | Yes | 16 | 9 | Good | Good | Mature | Medium | Medium | Medium | 650 | - | - | 650 | 700 | 7.8 | 2.8 | Major | 24% | - | Retain |
| 106 | *Ficus obliqua* | No | 18 | 22 | Good | Good | Mature | High | Medium | High | 600 | 550 | 550 | 980 | 1000 | 11.8 | 3.3 | Major | 72% | - | Remove |
| 107 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Fair | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 90% | - | Remove |
| 108 | *Cupressus x leylandii* | Yes | 8 | 4 | Fair | Fair | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 81% | - | Remove |
| 109 | *Corymbia maculata* | Yes | 28 | 16 | Good | Good | Mature | Medium | Medium | High | 650 | - | - | 650 | 700 | 7.8 | 2.9 | Major | 62% | - | Remove |
| 110 | *Ligustrum sinense* | Yes | 5 | 6 | Good | Good | Mature | Low | Short | Low | 100 | 100 | 100 | 170 | 220 | 2 0 | 1 8 | Major | 19% | Weed species. | Retain |
| 111 | *Photinia robusta* | Yes | 6 | 6 | Fair | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Nil | 0% | - | Retain |
| 112 | *Unknown species* | Yes | 9 | 8 | Good | Good | Mature | Low | Short | Low | 150 | - | - | 150 | 200 | 2 0 | 1.7 | Nil | 0% | No access, obscured line of sight. | Retain |
| 113 | *Casuarina glauca* | No | 22 | 8 | Fair | Fair | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 92% | Right next to ficus on road side of fence | Remove |
| 114 | *Ficus microcarpa* | Yes | 24 | 20 | Good | Good | Mature | Medium | Medium | High | 750 | - | - | 750 | 800 | 9.0 | 3.0 | Major | 53% | - | Remove |
| 115 | *Casuarina cunninghamiana* | Yes | 22 | 10 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 83% | - | Remove |
| 116 | *Corymbia maculata* | Yes | 28 | 12 | Good | Good | Mature | Medium | Medium | High | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 72% | - | Remove |
| 117 | *Eucalyptus saligna* | Yes | 30 | 18 | Good | Good | Mature | High | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 66% | - | Remove |
| 118 | *Lophostemon confertus* | Yes | 9 | 6 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 58% | - | Remove |
| 119 | *Gordonia axillaris* | Yes | 6 | 6 | Good | Fair | Semi-mature | Low | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 88% | - | Remove |
| 120 | *Corymbia citriodora* | Yes | 26 | 16 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 100% | - | Remove |
| 121 | *Corymbia citriodora* | Yes | 36 | 26 | Good | Good | Mature | High | Medium | High | 900 | - | - | 900 | 950 | 10.8 | 3.2 | Major | 77% | - | Remove |
| 122 | *Liquidambar styraciflua* | Yes | 14 | 8 | Fair | Fair | Mature | Low | Medium | Low | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | Lopped below lines | Remove |
| 123 | *Lophostemon confertus* | Yes | 9 | 6 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 58% | - | Remove |
| 124 | *Lophostemon confertus* | Yes | 8 | 6 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 59% | - | Remove |
| 125 | *Pinus patula* | Yes | 20 | 14 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 100% | - | Remove |
| 126 | *Lophostemon confertus* | Yes | 8 | 5 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 65% | - | Remove |
| 127 | *Brachychiton acerifolius* | Yes | 10 | 4 | Good | Good | Semi-mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 37% | - | Remove |
| 128 | *Cupressus sp.* | Yes | 10 | 7 | Fair | Fair | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 100% | - | Remove |
| 129 | *Dead tree* | Yes | 1 | 2 | Poor | Poor | Dead | Low | Dead | Low | 100 | 100 | 100 | 170 | 220 | 2 0 | 1 8 | Nil | 0% | Dead tree. | Retain |
| 130 | *Lophostemon confertus* | Yes | 8 | 5 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 56% | - | Remove |
| 131 | *Callistemon sp.* | Yes | 3 | 3 | Good | Good | Mature | Low | Medium | Low | 100 | 100 | 100 | 170 | 220 | 2.0 | 1.8 | Nil | 0% | - | Retain |
| 132 | *Pinus radiata* | Yes | 16 | 8 | Fair | Fair | Mature | Low | Medium | Low | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 100% | - | Remove |
| 133 | *Nerium oleander* | Yes | 2 | 1 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Minor | 9% | - | Retain |
| 134 | *Nerium oleander* | Yes | 2 | 1 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Minor | 9% | - | Retain |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 135 | *Nerium oleander* | Yes | 2 | 1 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Minor | 9% | - | Retain |
| 136 | *Lophostemon confertus* | Yes | 9 | 7 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 58% | - | Remove |
| 137 | *Pittosporum undulatum* | Yes | 7 | 5 | Fair | Fair | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Nil | 0% | - | Retain |
| 138 | *Cupressus sp.* | Yes | 7 | 5 | Fair | Fair | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Minor | 4% | - | Retain |
| 139 | *Jacaranda mimosifolia* | Yes | 16 | 12 | Good | Fair | Semi-mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 140 | *Lophostemon confertus* | Yes | 26 | 16 | Good | Good | Mature | High | Medium | High | 800 | - | - | 800 | 850 | 9.6 | 3.1 | Major | 56% | - | Remove |
| 141 | *Lagerstroemia indica* | Yes | 6 | 4 | Good | Good | Juvenile | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 86% | - | Remove |
| 142 | *Lagerstroemia indica* | Yes | 6 | 4 | Good | Good | Juvenile | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 83% | - | Remove |
| 143 | *Cinnamomum camphora* | No | 3 | 2 | Good | Good | Juvenile | Low | Medium | Low | 100 | - | - | 100 | 100 | 2.0 | 1.5 | Major | 95% | - | Remove |
| 144 | *Lophostemon confertus* | No | 10 | 4 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | - | Remove |
| 145 | *Cinnamomum camphora* | No | 3 | 2 | Good | Good | Juvenile | Low | Medium | Low | 100 | - | - | 100 | 100 | 2.0 | 1.5 | Major | 95% | - | Remove |
| 146 | *Liquidambar styraciflua* | No | 16 | 12 | Good | Good | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 41% | - | Remove |
| 147 | *Cryptomeria japonica* | No | 12 | 10 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 77% | - | Remove |
| 148 | *Platycladus orientalis* | No | 2 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 149 | *Cedrus deodara* | Yes | 18 | 8 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | - | Remove |
| 150 | *Platycladus orientalis* | No | 2 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 151 | *Corymbia maculata* | Yes | 22 | 18 | Good | Good | Mature | High | Medium | High | 750 | - | - | 750 | 800 | 9.0 | 3.0 | Nil | 0% | - | Retain |
| 152 | *Platycladus orientalis* | No | 2 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 153 | *Platycladus orientalis* | No | 2 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 154 | *Platycladus orientalis* | No | 2 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 155 | *Corymbia maculata* | Yes | 22 | 12 | Good | Good | Mature | Medium | Medium | Medium | 700 | - | - | 700 | 750 | 8.4 | 2.9 | Nil | 0% | Minor canopy dieback. | Retain |
| 156 | *Corymbia maculata* | Yes | 24 | 12 | Good | Good | Mature | High | Medium | High | 650 | - | - | 650 | 700 | 7.8 | 2.8 | Nil | 0% | - | Retain |
| 157 | *Lophostemon confertus* | No | 7 | 4 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 97% | - | Remove |
| 158 | *Leptospermum sp.* | Yes | 6 | 6 | Good | Good | Mature | Low | Medium | Medium | 200 | 150 | 100 | 270 | 320 | 3.2 | 2.1 | Nil | 0% | - | Retain |
| 159 | *Tibouchina sp.* | No | 7 | 5 | Good | Good | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.9 | Major | 69% | - | Remove |
| 160 | *Corymbia maculata* | Yes | 22 | 14 | Good | Good | Mature | High | Medium | High | 750 | - | - | 750 | 800 | 9.0 | 3.0 | Nil | 0% | - | Retain |
| 161 | *Cinnamomum camphora* | No | 4 | 3 | Good | Good | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 162 | *Camellia sasanqua* | No | 2 | 1 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 100 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 163 | *Platycladus orientalis* | No | 3 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 164 | *Platycladus orientalis* | No | 3 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 165 | *Platycladus orientalis* | No | 3 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 166 | *Jacaranda mimosifolia* | Yes | 16 | 16 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 30% | - | Remove |
| 167 | *Platycladus orientalis* | No | 3 | 2 | Fair | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 168 | *Eucalyptus saligna* | Yes | 36 | 24 | Good | Good | Mature | High | Medium | High | 800 | - | - | 800 | 850 | 9.6 | 3.1 | Major | 55% | - | Remove |
| 169 | *Eucalyptus saligna* | Yes | 22 | 12 | Good | Good | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 91% | - | Remove |
| 170 | *Lagunaria petersonii* | Yes | 14 | 8 | Fair | Fair | Semi-mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 100% | - | Remove |
| 171 | *Eucalyptus sp.* | Yes | 18 | 8 | Poor | Poor | Dead | Low | Dead | Low | 300 | - | - | 300 | 350 | 3 6 | 2.1 | Major | 100% | - | Remove |
| 172 | *Sequoia sempervirens* | Yes | 14 | 5 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 173 | *Syncarpia glomulifera* | Yes | 7 | 6 | Good | Fair | Semi-mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 100% | - | Remove |
| 174 | *Cinnamomum camphora* | Yes | 14 | 12 | Good | Good | Semi-mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 31% | - | Remove |
| 175 | *Cinnamomum camphora* | Yes | 14 | 12 | Good | Good | Semi-mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 91% | - | Remove |
| 176 | *Eucalyptus robusta* | Yes | 9 | 10 | Good | Fair | Mature | Medium | Medium | Medium | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 41% | Poorly pruned for line clearance. | Remove |
| 177 | *Eucalyptus microcorys* | Yes | 20 | 16 | Good | Good | Mature | High | Medium | High | 900 | - | - | 900 | 950 | 10.8 | 3.2 | Major | 50% | - | Remove |
| 178 | *Syncarpia glomulifera* | Yes | 7 | 5 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Minor | 8% | - | Retain |
| 179 | *Syncarpia glomulifera* | Yes | 8 | 6 | Fair | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Minor | 1% | Epicormic regrowth. Minor canopy dieback. | Retain |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 180 | *Callistemon sp.* | Yes | 5 | 6 | Good | Good | Mature | Low | Medium | Low | 150 | 100 | 100 | 210 | 260 | 2.5 | 1.9 | Major | 100% | - | Remove |
| 181 | *Cinnamomum camphora* | Yes | 10 | 12 | Fair | Good | Mature | Medium | Medium | Medium | 550 | 150 | - | 570 | 620 | 6.8 | 2.7 | Major | 100% | Minor canopy dieback. | Remove |
| 182 | *Cedrus deodara* | Yes | 7 | 5 | Fair | Fair | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 100% | Canopy dieback. Suppressed canopy. | Remove |
| 183 | *Callistemon sp.* | Yes | 5 | 5 | Good | Good | Mature | Low | Medium | Low | 100 | 100 | 100 | 170 | 220 | 2.0 | 1.8 | Major | 100% | - | Remove |
| 184 | *Cinnamomum camphora* | Yes | 7 | 6 | Good | Good | Mature | Medium | Medium | Medium | 200 | 200 | - | 280 | 330 | 3.4 | 2.1 | Major | 100% | - | Remove |
| 185 | *Cedrus deodara* | Yes | 5 | 2 | Good | Poor | Semi-mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Major | 100% | Internodal pruning. Topped. | Remove |
| 186 | *Cupressus sp.* | Yes | 10 | 4 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 187 | *Eucalyptus microcorys* | Yes | 18 | 12 | Good | Good | Mature | High | Medium | High | 550 | - | - | 550 | 600 | 6.6 | 2.7 | Major | 100% | - | Remove |
| 188 | *Quercus robur* | Yes | 6 | 8 | Good | Good | Mature | Low | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 189 | *Jacaranda mimosifolia* | Yes | 5 | 4 | Good | Fair | Semi-mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Major | 100% | Suppressed canopy. | Remove |
| 190 | *Lophostemon confertus* | Yes | 7 | 4 | Good | Fair | Semi-mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 78% | - | Remove |
| 191 | *Melaleuca sp.* | Yes | 5 | 6 | Good | Good | Mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Major | 72% | - | Remove |
| 192 | *Quercus robur* | Yes | 6 | 8 | Good | Good | Mature | Low | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 193 | *Quercus robur* | Yes | 8 | 10 | Good | Good | Mature | Medium | Medium | Medium | 550 | - | - | 550 | 600 | 6.6 | 2.7 | Major | 100% | - | Remove |
| 194 | *Eucalyptus pilularis* | Yes | 24 | 14 | Good | Good | Mature | High | Medium | High | 1000 | 500 | - | 1120 | 1300 | 13.4 | 3.7 | Major | 54% | - | Remove |
| 195 | *Erythrina x sykesii* | Yes | 10 | 10 | Good | Good | Mature | Medium | Medium | Medium | 300 | 250 | - | 390 | 440 | 4.7 | 2.3 | Major | 100% | - | Remove |
| 196 | *Eucalyptus pilularis* | Yes | 26 | 14 | Good | Good | Mature | High | Medium | High | 650 | - | - | 650 | 750 | 7.8 | 2.9 | Major | 63% | - | Remove |
| 197 | *Pinus radiata* | Yes | 10 | 8 | Good | Good | Mature | Low | Medium | Low | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 198 | *Eucalyptus saligna* | Yes | 14 | 10 | Good | Good | Mature | Medium | Medium | Medium | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 33% | - | Retain |
| 199 | *Eucalyptus saligna* | No | 24 | 18 | Good | Good | Mature | High | Medium | High | 950 | - | - | 950 | 1000 | 11.4 | 3.3 | Major | 35% | - | Retain |
| 200 | *Eucalyptus pilularis* | Yes | 16 | 14 | Good | Good | Mature | High | Medium | High | 600 | - | - | 600 | 650 | 7.2 | 2.8 | Major | 42% | - | Remove |
| 201 | *Jacaranda mimosifolia* | Yes | 8 | 7 | Good | Fair | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 100% | Internodal pruning. | Remove |
| 202 | *Eucalyptus pilularis* | No | 18 | 16 | Good | Good | Mature | High | Medium | High | 700 | 500 | - | 860 | 910 | 10.3 | 3.2 | Nil | 0% | Deadwood (>20cm). | Retain |
| 203 | *Ceratopetalum gummiferum* | No | 7 | 4 | Poor | Poor | Mature | Low | Short | Low | 200 | 200 | - | 280 | 330 | 3.4 | 2.1 | Nil | 0% | Canopy dieback. Internodal pruning. Lopped. | Retain |
| 204 | *Eucalyptus grandis* | Yes | 16 | 12 | Good | Good | Mature | High | Medium | High | 500 | - | - | 500 | 550 | 6.0 | 2.6 | Major | 100% | - | Remove |
| 205 | *Acacia sp.* | No | 1 | 1 | Good | Good | Mature | Low | Short | Low | 100 | - | - | 100 | 150 | 2 0 | 1 5 | Nil | 0% | - | Retain |
| 206 | *Syagrus romanzoffiana* | Yes | 10 | 6 | Good | Good | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 100% | - | Remove |
| 207 | *Callistemon sp.* | No | 3 | 5 | Good | Good | Mature | Low | Medium | Low | 100 | 100 | - | 140 | 190 | 2.0 | 1.6 | Nil | 0% | - | Retain |
| 208 | *Eucalyptus pilularis* | Yes | 22 | 18 | Fair | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Minor | 2% | - | Retain |
| 209 | *Acacia sp.* | Yes | 10 | 4 | Good | Good | Mature | Low | Short | Low | 250 | - | - | 250 | 300 | 3 0 | 2 0 | Nil | 0% | - | Retain |
| 210 | *Ligustrum lucidum* | Yes | 8 | 9 | Good | Good | Mature | Low | Short | Low | 200 | 200 | 100 | 300 | 350 | 3 6 | 2.1 | Major | 100% | Weed species. | Remove |
| 211 | *Cinnamomum camphora* | Yes | 16 | 16 | Good | Good | Mature | High | Medium | High | 650 | 550 | - | 850 | 900 | 10.2 | 3.2 | Major | 57% | - | Remove |
| 212 | *Erythrina x sykesii* | Yes | 12 | 12 | Good | Good | Mature | Low | Medium | Medium | 850 | - | - | 850 | 900 | 10.2 | 3.2 | Major | 100% | - | Remove |
| 213 | *Nerium oleander* | Yes | 4 | 4 | Good | Good | Mature | Low | Medium | Low | 100 | - | - | 100 | 450 | 2.0 | 2.4 | Major | 100% | - | Remove |
| 214 | *Cinnamomum camphora* | Yes | 3 | 3 | Good | Good | Juvenile | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Major | 100% | - | Remove |
| 215 | *Melaleuca linariifolia* | Yes | 7 | 7 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Nil | 0% | - | Retain |
| 216 | *Eucalyptus sp.* | Yes | 22 | 0 | Good | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Nil | 0% | - | Retain |
| 217 | *Eucalyptus pilularis* | Yes | 16 | 12 | Good | Good | Mature | High | Medium | High | 500 | 350 | - | 610 | 660 | 7.3 | 2.8 | Nil | 0% | Suppressed canopy. | Retain |
| 218 | *Eucalyptus pilularis* | Yes | 20 | 16 | Good | Good | Mature | High | Medium | High | 650 | 650 | 300 | 970 | 1020 | 11.6 | 3.3 | Nil | 0% | - | Retain |
| 219 | *Cinnamomum camphora* | Yes | 12 | 16 | Fair | Good | Mature | High | Medium | High | 750 | - | - | 750 | 800 | 9.0 | 3.0 | Major | 100% | Canopy dieback. Deadwood (>10cm). Epicormic regrowth. | Remove |
| 220 | *Eucalyptus saligna* | Yes | 24 | 18 | Good | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Nil | 0% | - | Retain |
| 221 | *Cinnamomum camphora* | Yes | 14 | 10 | Good | Good | Mature | High | Medium | High | 350 | 450 | 300 | 640 | 690 | 7.7 | 2.8 | Major | 24% | - | Remove |
| 222 | *Lophostemon confertus* | No | 8 | 5 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 77% | - | Remove |
| 223 | *Lophostemon confertus* | No | 9 | 6 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 98% | - | Remove |
| 224 | *Lophostemon confertus* | No | 8 | 4 | Good | Fair | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 67% | Pruned for utility clearance. | Remove |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 225 | *Lophostemon confertus* | Yes | 7 | 5 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 55% | - | Remove |
| 226 | *Lophostemon confertus* | Yes | 7 | 4 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 56% | - | Remove |
| 227 | *Lophostemon confertus* | Yes | 7 | 4 | Good | Good | Mature | Medium | Medium | Medium | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Major | 54% | - | Remove |
| 228 | *Fraxinus excelsior* | Yes | 5 | 4 | Good | Fair | Mature | Low | Medium | Low | 150 | 150 | - | 210 | 260 | 2.5 | 1.9 | Major | 100% | Internodal pruning. | Remove |
| 229 | *Celtis australis* | Yes | 12 | 7 | Poor | Poor | Over-mature | Low | Short | Low | 500 | 150 | 150 | 540 | 590 | 6 5 | 2.7 | Major | 49% | 75% of the tree is dead. | Remove |
| 230 | *Dead tree* | Yes | 16 | 10 | Poor | Poor | Dead | Low | Dead | Low | 500 | - | - | 500 | 550 | 6 0 | 2 6 | Minor | 4% | Dead tree. | Retain |
| 231 | *Lophostemon confertus* | Yes | 8 | 6 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 57% | - | Remove |
| 232 | *Melaleuca quinquenervia* | Yes | 9 | 6 | Fair | Poor | Mature | Low | Short | Low | 400 | - | - | 400 | 450 | 4 8 | 2.4 | Major | 30% | Internodal pruning. Vine established in crown. | Remove |
| 233 | *Liquidambar styraciflua* | Yes | 16 | 9 | Good | Good | Mature | Low | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Nil | 0% | - | Retain |
| 234 | *Celtis australis* | Yes | 7 | 5 | Fair | Fair | Mature | Low | Short | Low | 200 | 150 | - | 250 | 300 | 3.0 | 2.0 | Major | 45% | Internodal pruning. Vine established in crown. | Remove |
| 235 | *Celtis australis* | Yes | 16 | 12 | Good | Good | Mature | Medium | Medium | Medium | 550 | - | - | 550 | 600 | 6.6 | 2.7 | Major | 60% | Multiple included bark junctions. | Remove |
| 236 | *Lophostemon confertus* | Yes | 8 | 4 | Good | Good | Mature | Medium | Medium | Medium | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Major | 52% | - | Remove |
| 237 | *Ligustrum lucidum* | Yes | 6 | 6 | Good | Good | Mature | Low | Short | Low | 100 | 100 | 100 | 170 | 400 | 2 0 | 2 3 | Major | 100% | Weed species. | Remove |
| 238 | *Lophostemon confertus* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 49% | - | Remove |
| 239 | *Jacaranda mimosifolia* | Yes | 9 | 8 | Good | Good | Mature | High | Medium | High | 350 | 300 | - | 460 | 510 | 5.5 | 2.5 | Major | 81% | - | Remove |
| 240 | *Agathis robusta* | Yes | 16 | 6 | Good | Good | Mature | Medium | Medium | Medium | 600 | - | - | 600 | 650 | 7.2 | 2.8 | Major | 18% | - | Retain |
| 241 | *Podocarpus elatus* | Yes | 12 | 4 | Good | Good | Mature | Low | Medium | Medium | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Nil | 0% | - | Retain |
| 242 | *Melia azedarach* | Yes | 10 | 7 | Good | Good | Mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Minor | 3% | - | Retain |
| 243 | *Lophostemon confertus* | Yes | 9 | 4 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 19% | - | Retain |
| 244 | *Syzygium sp.* | Yes | 10 | 9 | Good | Good | Mature | Low | Medium | Low | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Minor | 1% | - | Retain |
| 245 | *Jacaranda mimosifolia* | Yes | 9 | 8 | Good | Good | Mature | High | Medium | High | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 91% | - | Remove |
| 246 | *Cupressus sp.* | Yes | 9 | 5 | Good | Good | Mature | Medium | Medium | Medium | 250 | 150 | - | 290 | 340 | 3.5 | 2.1 | Major | 25% | - | Remove |
| 247 | *Lophostemon confertus* | Yes | 9 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | 250 | - | 390 | 440 | 4.7 | 2.3 | Major | 75% | - | Remove |
| 248 | *Cupressus sp.* | Yes | 8 | 3 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Minor | 9% | - | Retain |
| 249 | *Cupressus sp.* | Yes | 8 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Major | 12% | - | Retain |
| 250 | *Cupressus sp.* | Yes | 9 | 5 | Good | Good | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 19% | - | Retain |
| 251 | *Lophostemon confertus* | Yes | 9 | 5 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Major | 94% | - | Remove |
| 252 | *Cupressus sp.* | Yes | 9 | 4 | Good | Good | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 19% | No access, obscured line of sight. | Retain |
| 253 | *Cupressus sp.* | Yes | 8 | 4 | Good | Good | Mature | Low | Medium | Low | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Nil | 0% | - | Retain |
| 254 | *Cupressus sp.* | Yes | 7 | 4 | Poor | Fair | Mature | Low | Short | Low | 200 | - | - | 200 | 250 | 2.4 | 1 8 | Nil | 0% | 50% of the tree is dead. | Retain |
| 255 | *Cupressus sp.* | Yes | 6 | 4 | Poor | Fair | Mature | Low | Short | Low | 200 | - | - | 200 | 250 | 2.4 | 1 8 | Nil | 0% | 50% of the tree is dead. | Retain |
| 256 | *Cupressus sp.* | Yes | 9 | 5 | Good | Good | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Minor | 4% | - | Retain |
| 257 | *Lophostemon confertus* | Yes | 10 | 5 | Good | Good | Mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 96% | - | Remove |
| 258 | *Cupressus sp.* | Yes | 10 | 7 | Good | Good | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 61% | - | Remove |
| 259 | *Grevillea robusta* | Yes | 16 | 7 | Good | Good | Mature | Medium | Medium | Medium | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Major | 100% | - | Remove |
| 260 | *Lophostemon confertus* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 250 | 250 | - | 350 | 400 | 4.2 | 2.3 | Major | 100% | - | Remove |
| 261 | *Angophora floribunda* | Yes | 10 | 9 | Poor | Fair | Mature | Low | Short | Low | 400 | - | - | 400 | 450 | 4 8 | 2.4 | Major | 78% | Severe canopy dieback. Tree is in decline. | Remove |
| 262 | *Jacaranda mimosifolia* | Yes | 10 | 7 | Good | Fair | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 52% | Suppressed canopy. | Remove |
| 263 | *Araucaria columnaris* | Yes | 14 | 5 | Good | Good | Mature | Low | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 37% | - | Remove |
| 264 | *Liquidambar styraciflua* | Yes | 16 | 12 | Good | Good | Mature | High | Medium | High | 450 | 400 | 400 | 720 | 770 | 8.6 | 3.0 | Major | 71% | - | Remove |
| 265 | *Pinus radiata* | Yes | 10 | 8 | Poor | Fair | Mature | Low | Short | Low | 450 | - | - | 450 | 500 | 5.4 | 2 5 | Minor | 7% | 50% of the tree is dead. Tree is in decline. | Retain |
| 266 | *Eucalyptus scoparia* | Yes | 14 | 10 | Fair | Good | Mature | Medium | Medium | Medium | 600 | - | - | 600 | 650 | 7.2 | 2.8 | Major | 100% | Deadwood (>10cm). Minor canopy dieback. | Remove |
| 267 | *Cupressus sempervirens* | Yes | 4 | 1 | Good | Good | Mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Major | 26% | - | Remove |
| 268 | *Cupressus sempervirens* | Yes | 4 | 1 | Good | Good | Mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Major | 39% | - | Remove |
| 269 | *Cupressus sempervirens* | Yes | 6 | 1 | Good | Good | Mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Major | 28% | - | Remove |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 270 | *Cupressus sempervirens* | Yes | 8 | 2 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Major | 33% | - | Remove |
| 271 | *Araucaria columnaris* | Yes | 20 | 4 | Good | Good | Mature | High | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 45% | - | Remove |
| 272 | *Grevillea robusta* | Yes | 20 | 8 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 29% | - | Remove |
| 273 | *Melia azedarach* | No | 22 | 18 | Good | Good | Mature | Medium | Medium | Medium | 1000 | - | - | 1000 | 1050 | 12.0 | 3.4 | Major | 100% | - | Remove |
| 274 | *Platanus x acerifolia* | Yes | 10 | 12 | Good | Fair | Mature | High | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Major | 94% | Internodal pruning. Poorly pruned for line clearance. | Remove |
| 275 | *Eucalyptus microcorys* | Yes | 24 | 22 | Good | Good | Mature | High | Medium | High | 700 | - | - | 700 | 750 | 8.4 | 2.9 | Major | 49% | - | Remove |
| 276 | *Cupressus x leylandii* | Yes | 10 | 7 | Good | Good | Mature | Medium | Medium | Medium | 250 | 200 | 200 | 380 | 450 | 4.6 | 2.4 | Major | 38% | - | Retain |
| 277 | *Cupressus x leylandii* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 35% | - | Retain |
| 278 | *Cupressus x leylandii* | No | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 250 | 200 | 100 | 340 | 390 | 4.1 | 2.2 | Major | 39% | - | Retain |
| 279 | *Cupressus x leylandii* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 37% | - | Retain |
| 280 | *Cupressus x leylandii* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 30% | - | Retain |
| 281 | *Cupressus x leylandii* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 28% | - | Retain |
| 282 | *Cupressus x leylandii* | Yes | 10 | 6 | Good | Good | Mature | Medium | Medium | Medium | 250 | 200 | 100 | 340 | 390 | 4.1 | 2.2 | Major | 44% | - | Retain |
| 283 | *Melaleuca sp.* | Yes | 4 | 2 | Good | Good | Mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Nil | 0% | - | Retain |
| 284 | *Melaleuca sp.* | Yes | 3 | 2 | Good | Good | Mature | Low | Medium | Low | 150 | - | - | 150 | 200 | 2.0 | 1.7 | Nil | 0% | - | Retain |
| 285 | *Melaleuca sp.* | Yes | 3 | 2 | Good | Good | Mature | Low | Medium | Low | 150 | 100 | 100 | 210 | 260 | 2.5 | 1.9 | Nil | 0% | - | Retain |
| 286 | *Eucalyptus saligna* | Yes | 22 | 14 | Good | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Nil | 0% | Cavity (>20cm). Previous failure. | Retain |
| 287 | *Casuarina glauca* | Yes | 12 | 5 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Major | 62% | - | Remove |
| 288 | *Grevillea robusta* | Yes | 10 | 7 | Good | Good | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Nil | 0% | - | Retain |
| 289 | *Eucalyptus saligna* | Yes | 24 | 12 | Good | Good | Mature | High | Medium | High | 1100 | - | - | 1100 | 1150 | 13.2 | 3.5 | Nil | 0% | Trunk decay. | Retain |
| 290 | *Eucalyptus sp.* | Yes | 12 | 8 | Poor | Fair | Mature | Low | Short | Low | 300 | - | - | 300 | 350 | 3 6 | 2.1 | Major | 36% | Severe canopy dieback. Tree is in severe decline. | Remove |
| 291 | *Eucalyptus saligna* | Yes | 26 | 16 | Good | Good | Mature | High | Medium | High | 1300 | - | - | 1300 | 1350 | 15.0 | 3.8 | Nil | 0% | - | Retain |
| 292 | *Eucalyptus saligna* | Yes | 12 | 10 | Good | Fair | Mature | High | Medium | High | 550 | 300 | - | 630 | 680 | 7.6 | 2.8 | Major | 49% | Pruned for line clearance. | Remove |
| 293 | *Camellia japonica* | Yes | 3 | 3 | Good | Good | Mature | Low | Medium | Low | 100 | 100 | 100 | 170 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 294 | *Eucalyptus saligna* | Yes | 18 | 10 | Good | Fair | Mature | High | Medium | High | 650 | 350 | - | 740 | 790 | 8.9 | 3.0 | Nil | 0% | - | Retain |
| 295 | *Jacaranda mimosifolia* | Yes | 12 | 12 | Good | Good | Mature | Medium | Medium | Medium | 400 | 300 | - | 500 | 550 | 6.0 | 2.6 | Nil | 0% | - | Retain |
| 296 | *Eucalyptus saligna* | Yes | 20 | 18 | Good | Good | Mature | High | Medium | High | 1200 | - | - | 1200 | 1250 | 14.4 | 3.6 | Major | 37% | - | Remove |
| 297 | *Eucalyptus saligna* | Yes | 24 | 12 | Good | Good | Mature | High | Medium | High | 1000 | - | - | 1000 | 1050 | 12.0 | 3.4 | Nil | 0% | - | Retain |
| 298 | *Eucalyptus pilularis* | Yes | 12 | 10 | Good | Fair | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Major | 18% | Trunk failure or lop at 10m. | Retain |
| 299 | *Callistemon citrinus* | Yes | 2 | 2 | Good | Good | Semi-mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 300 | *Callistemon citrinus* | Yes | 3 | 3 | Good | Good | Mature | Low | Medium | Low | 100 | 100 | 100 | 170 | 220 | 2.0 | 1.8 | Nil | 0% | - | Retain |
| 301 | *Callistemon citrinus* | Yes | 3 | 3 | Good | Good | Mature | Low | Medium | Low | 100 | 100 | 100 | 170 | 220 | 2.0 | 1.8 | Nil | 0% | - | Retain |
| 302 | *Callistemon citrinus* | Yes | 3 | 3 | Fair | Good | Mature | Low | Medium | Low | 100 | 100 | - | 140 | 190 | 2.0 | 1.6 | Nil | 0% | - | Retain |
| 303 | *Corymbia citriodora* | Yes | 12 | 8 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Nil | 0% | - | Retain |
| 304 | *Eucalyptus sp.* | Yes | 5 | 1 | Poor | Poor | Semi-mature | Low | Short | Low | 100 | - | - | 100 | 150 | 2 0 | 1 5 | Nil | 0% | Regrowth from stump. | Retain |
| 305 | *Corymbia citriodora* | Yes | 14 | 16 | Good | Good | Mature | Medium | Medium | Medium | 600 | - | - | 600 | 650 | 7.2 | 2.8 | Minor | 7% | - | Retain |
| 306 | *Eucalyptus saligna* | Yes | 8 | 6 | Good | Good | Semi-mature | Medium | Medium | Medium | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Nil | 0% | - | Retain |
| 307 | *Corymbia citriodora* | Yes | 9 | 6 | Good | Good | Semi-mature | Medium | Medium | Medium | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Nil | 0% | - | Retain |
| 308 | *Corymbia citriodora* | No | 22 | 20 | Good | Good | Mature | High | Medium | High | 850 | - | - | 850 | 900 | 10.2 | 3.2 | Nil | 0% | - | Retain |
| 309 | *Corymbia citriodora* | Yes | 12 | 9 | Good | Good | Mature | Medium | Medium | Medium | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Nil | 0% | - | Retain |
| 310 | *Corymbia citriodora* | Yes | 10 | 7 | Good | Good | Semi-mature | Medium | Medium | Medium | 200 | - | - | 200 | 250 | 2.4 | 1.8 | Nil | 0% | - | Retain |
| 311 | *Acacia sp.* | Yes | 7 | 4 | Good | Good | Semi-mature | Low | Short | Low | 100 | 100 | - | 140 | 190 | 2 0 | 1 6 | Minor | 9% | - | Retain |
| 312 | *Jacaranda mimosifolia* | Yes | 8 | 7 | Good | Fair | Mature | Medium | Medium | Medium | 250 | 150 | - | 290 | 340 | 3.5 | 2.1 | Nil | 0% | - | Retain |
| 313 | *Syagrus romanzoffiana* | Yes | 8 | 5 | Good | Good | Mature | Medium | Medium | Medium | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Nil | 0% | - | Retain |
| 314 | *Syagrus romanzoffiana* | Yes | 9 | 5 | Good | Good | Mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Nil | 0% | - | Retain |

| Id. | Botanical name | Tree surveyed (yes/no) | Height (metres) | Spread (metres diameter) | Health | Structure | Age class | Tree significance | Useful life expectancy | Priority for retention | DBH 1 (millimetres diameter) | DBH 2 (millimetres diameter) | DBH 3 (millimetres diameter) | DBH Combined (millimetres diameter) | DRB (millimetres diameter) | TPZ (metres radius) | SRZ (metres radius) | Encroachment | % Encroachment within TPZ | Other notes | Proposal |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 315 | *Corymbia maculata* | Yes | 9 | 6 | Good | Good | Semi-mature | Medium | Medium | Medium | 200 | 100 | - | 220 | 270 | 2.6 | 1.9 | Nil | 0% | - | Retain |
| 316 | *Eucalyptus sideroxylon* | Yes | 14 | 10 | Good | Good | Mature | Medium | Medium | Medium | 400 | - | - | 400 | 450 | 4.8 | 2.4 | Nil | 0% | - | Retain |
| 317 | *Acacia parramattensis* | No | 5 | 3 | Good | Good | Semi-mature | Low | Short | Low | 100 | 100 | 100 | 170 | 220 | 2 0 | 1 8 | Nil | 0% | - | Retain |
| 318 | *Jacaranda mimosifolia* | Yes | 7 | 7 | Good | Good | Mature | Medium | Medium | Medium | 200 | 200 | 150 | 320 | 370 | 3.8 | 2.2 | Nil | 0% | - | Retain |
| 319 | *Corymbia maculata* | Yes | 8 | 9 | Good | Good | Semi-mature | Medium | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Minor | 1% | - | Retain |
| 320 | *Jacaranda mimosifolia* | No | 6 | 4 | Good | Good | Semi-mature | Low | Short | Low | 100 | 100 | 100 | 170 | 220 | 2 0 | 1 8 | Nil | 0% | Vine constricting trunk. | Retain |
| 321 | *Corymbia citriodora* | Yes | 10 | 7 | Good | Good | Semi-mature | Medium | Medium | Medium | 150 | 150 | - | 210 | 260 | 2.5 | 1.9 | Nil | 0% | - | Retain |
| 322 | *Jacaranda mimosifolia* | Yes | 9 | 6 | Fair | Fair | Mature | Low | Short | Low | 150 | 150 | - | 210 | 260 | 2.5 | 1.9 | Nil | 0% | Creeping fig established in crown. | Retain |
| 323 | *Ficus benjamina* | Yes | 14 | 12 | Good | Good | Mature | High | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Minor | 1% | - | Retain |
| 324 | *Grevillea sp.* | Yes | 4 | 1 | Good | Good | Mature | Low | Medium | Low | 100 | - | - | 100 | 150 | 2.0 | 1.5 | Nil | 0% | - | Retain |
| 325 | *Acacia sp.* | Yes | 7 | 6 | Good | Good | Mature | Low | Short | Low | 250 | - | - | 250 | 300 | 3 0 | 2 0 | Nil | 0% | - | Retain |
| 326 | *Corymbia citriodora* | Yes | 10 | 6 | Good | Fair | Mature | Medium | Medium | Medium | 200 | 150 | 100 | 270 | 320 | 3.2 | 2.1 | Nil | 0% | - | Retain |
| 327 | *Ficus benjamina* | Yes | 14 | 18 | Good | Good | Mature | High | Medium | High | 450 | - | - | 450 | 500 | 5.4 | 2.5 | Nil | 0% | - | Retain |
| 328 | *Eucalyptus grandis* | Yes | 18 | 10 | Good | Good | Mature | Medium | Medium | Medium | 400 | 250 | - | 470 | 520 | 5.6 | 2.5 | Nil | 0% | - | Retain |
| 329 | *Eucalyptus saligna* | Yes | 12 | 7 | Good | Fair | Mature | Medium | Medium | Medium | 350 | - | - | 350 | 400 | 4.2 | 2.3 | Nil | 0% | Severely assymetrical crown due to clearance pruning. Suppressed canopy. | Retain |
| 330 | *Syagrus romanzoffiana* | Yes | 9 | 6 | Good | Good | Mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Nil | 0% | - | Retain |
| 331 | *Syagrus romanzoffiana* | Yes | 7 | 5 | Good | Good | Mature | Low | Medium | Low | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Nil | 0% | - | Retain |
| 332 | *Syagrus romanzoffiana* | Yes | 8 | 6 | Good | Good | Mature | Low | Medium | Low | 250 | - | - | 250 | 300 | 3.0 | 2.0 | Nil | 0% | - | Retain |
| 333 | *Syagrus romanzoffiana* | Yes | 9 | 6 | Good | Good | Mature | Low | Medium | Medium | 300 | - | - | 300 | 350 | 3.6 | 2.1 | Nil | 0% | - | Retain |

# 4 Discussion

## 4.1 Nil encroachment

A total of **102** trees will be subject to nil encroachment within the TPZ:

- **Retain:** A total of **102** trees are located outside of the proposed construction footprint. No impacts on these trees are foreseeable under the current proposal.
- **Remove:** No trees within the category of "nil encroachment" are proposed for removal.

## 4.2 Minor encroachment

A total of **29** trees will be subject to a minor encroachment of less than 10% within the TPZ:

- **Retain:** A total of **29** trees will be subject to a minor encroachment of less than 10% within the TPZ. The encroachment will not impact the SRZ and is highly unlikely to impact the overall health or condition of these trees. Under the current proposal, these trees can be successfully retained.
- **Remove:** No trees within the category of "minor encroachment" are proposed for removal.

## 4.3 Major encroachment

A total of **202** trees will be subject to a major encroachment of greater than 10% within the TPZ:

- **Retain:** A total of **32** trees will be subject to a major encroachment but are unlikely to be significantly impacted by the encroachment. The encroachments comprise primarily low-level landscaping and grading. Several site-specific mitigations for these encroachments have been outlined in the Tree Protection Plan. Under the current proposal, these trees can be successfully retained.
- **Remove:** A total of **170** trees will be subject to a major encroachment within the TPZ. These trees are located within, or directly adjacent to the proposed construction footprint and cannot be retained under the current proposal.


Arboricultural Impact Assessment
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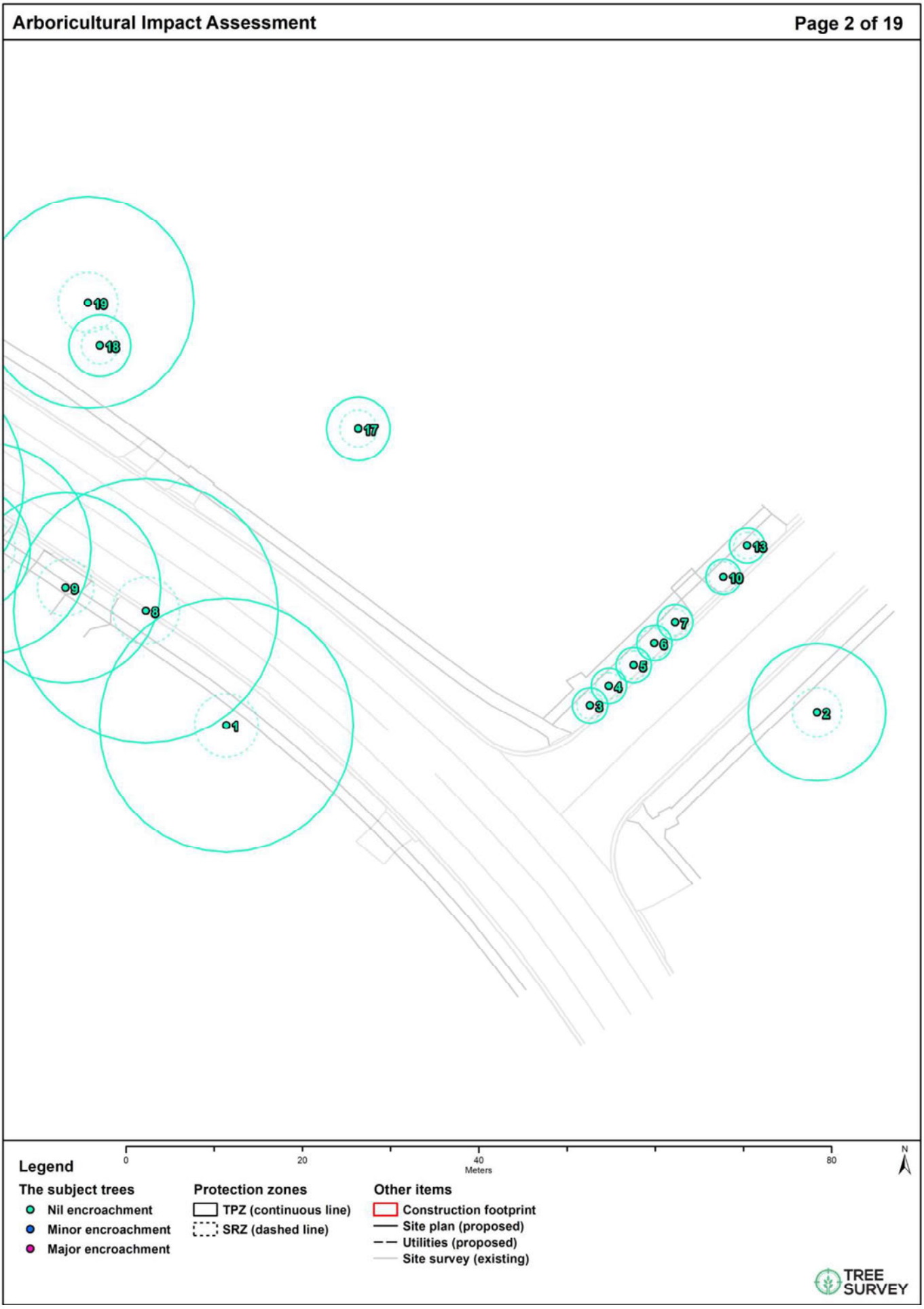
Legend
0
170
340
Meters
680
N
The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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5
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3
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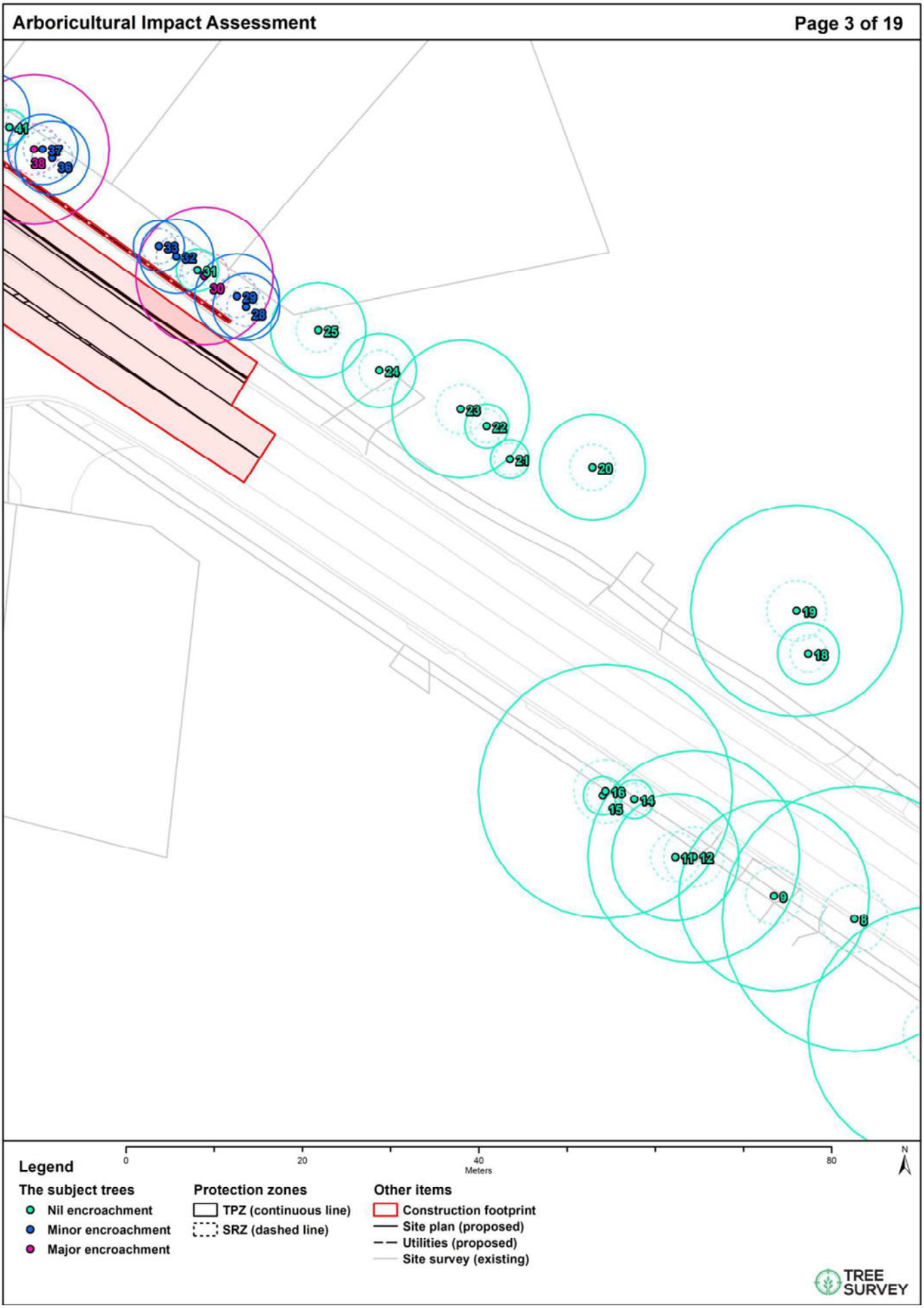
Legend
0
20
40
Meters
80
N
The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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Major encroachment
Protection zones
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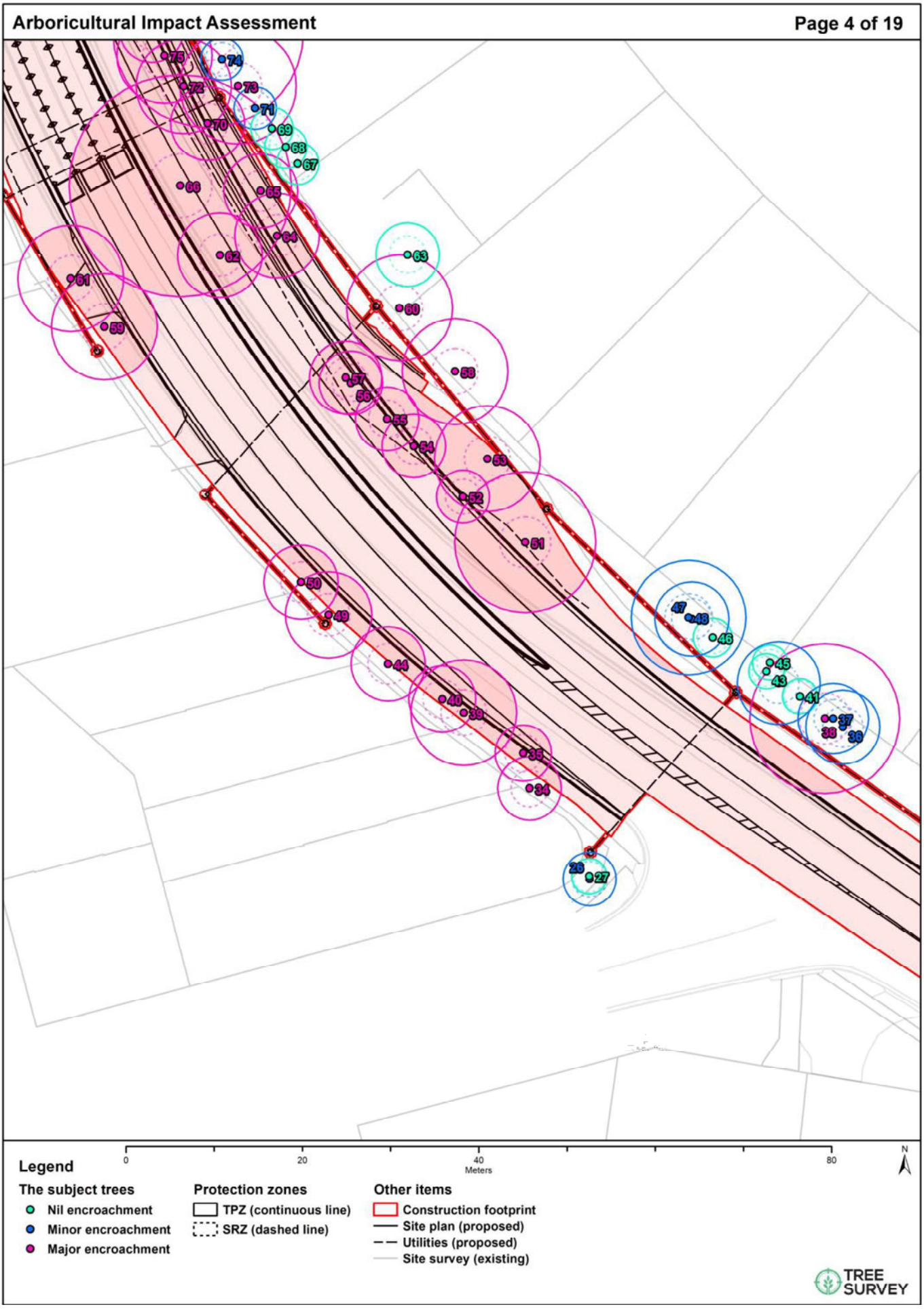
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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Major encroachment
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Utilities (proposed)
Site survey (existing)
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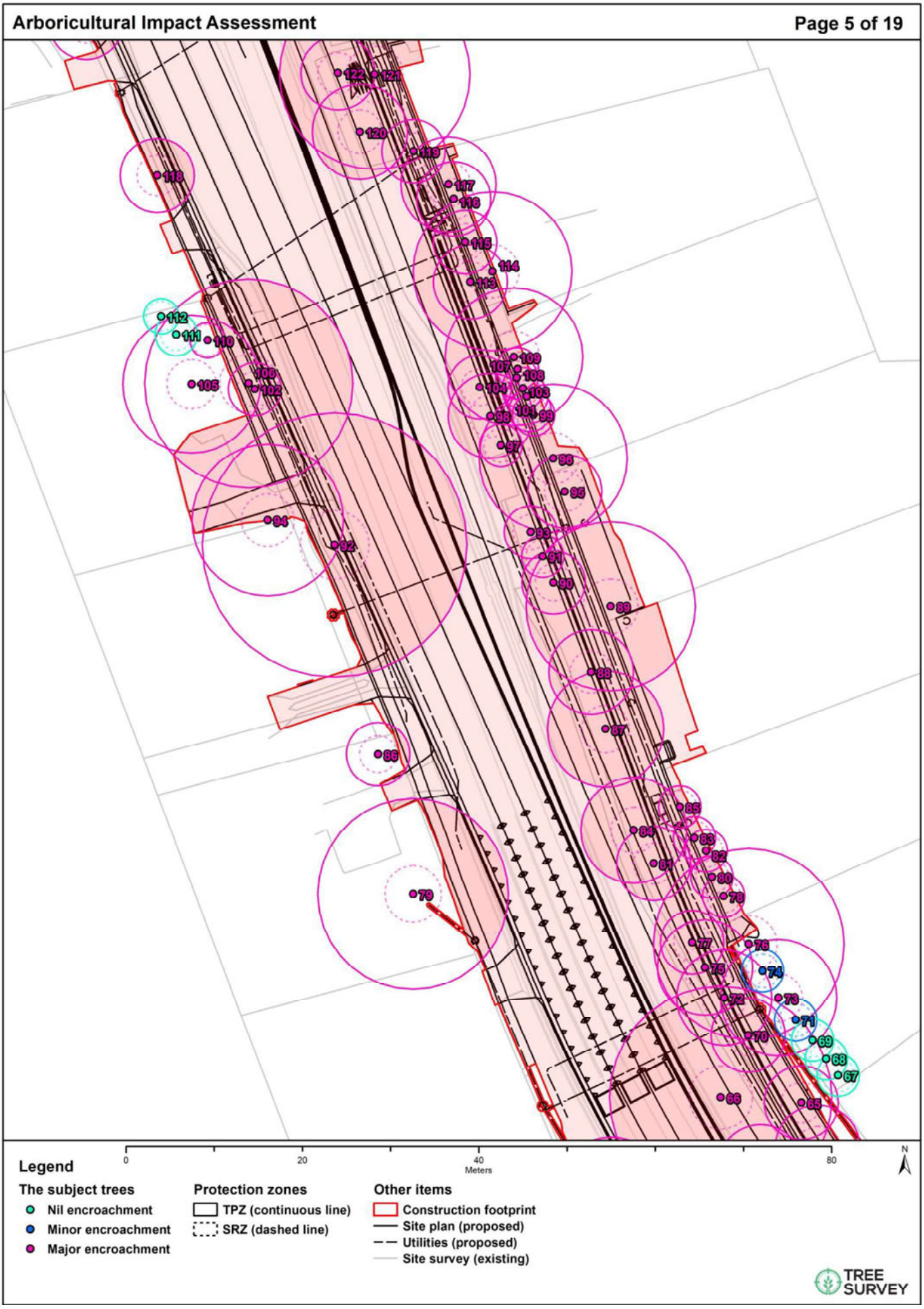
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Major encroachment
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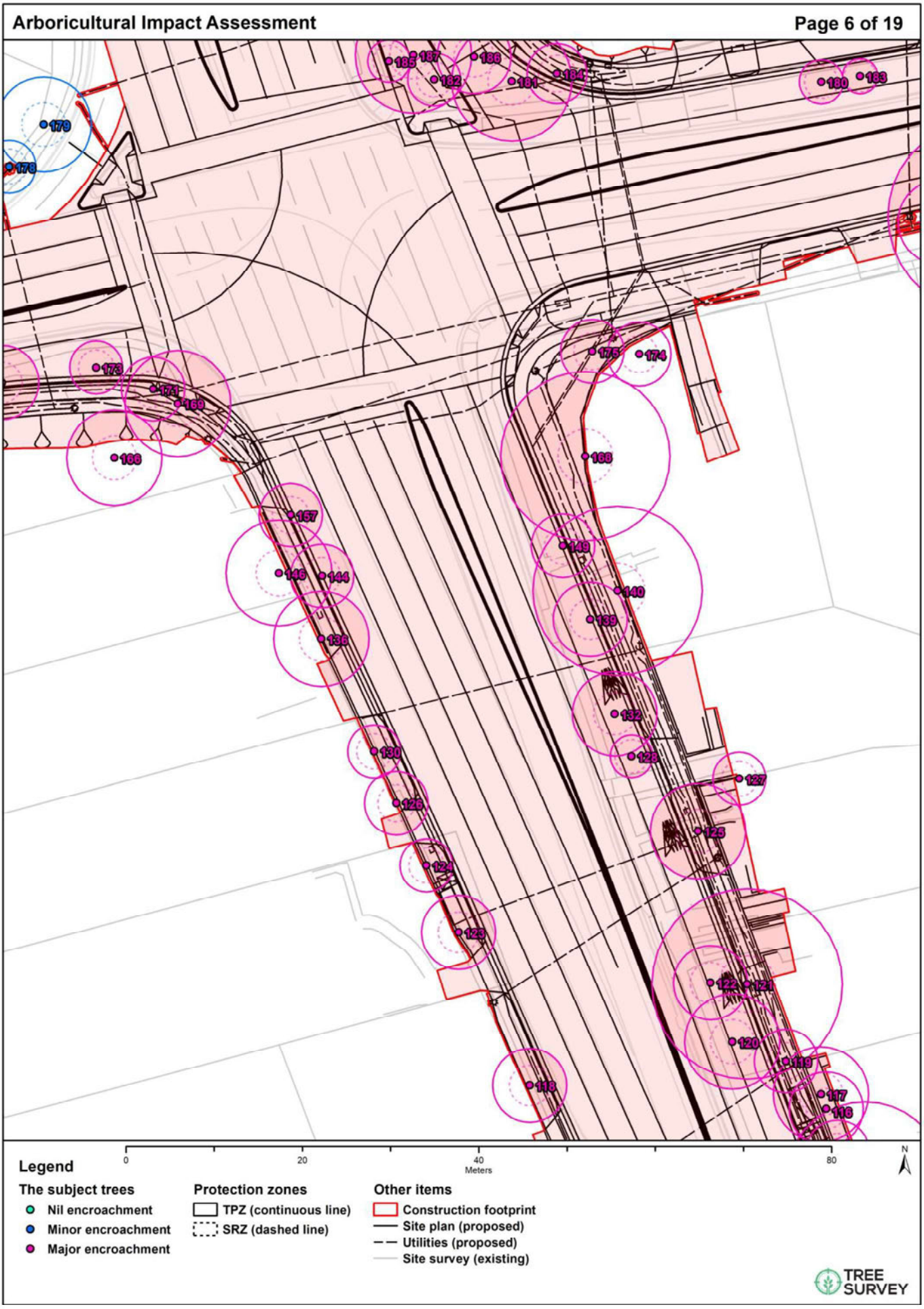
Utilities (proposed)
Site survey (existing)
TREE SURVEY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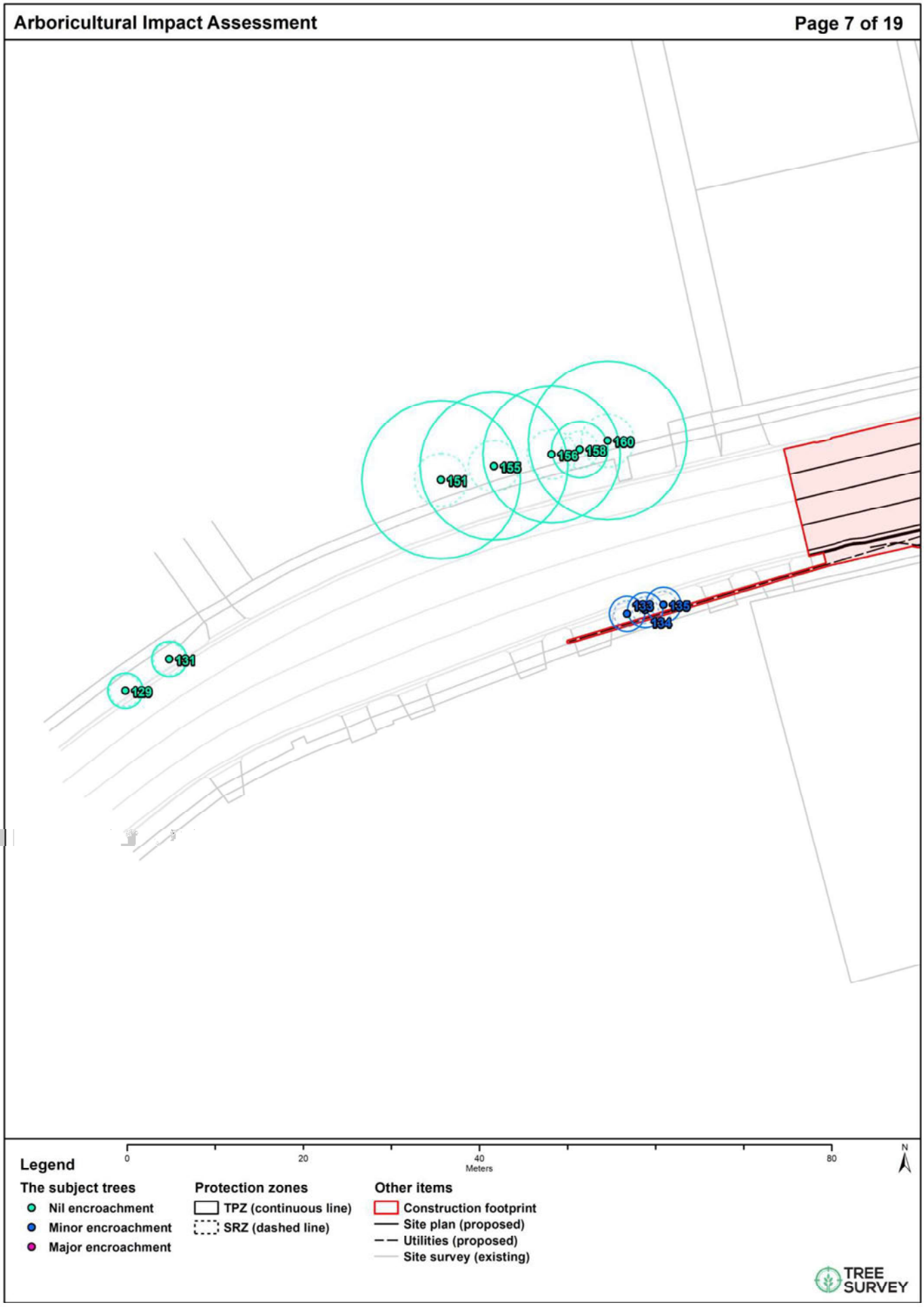
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The subject trees
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Minor encroachment
Major encroachment
Protection zones
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Construction footprint
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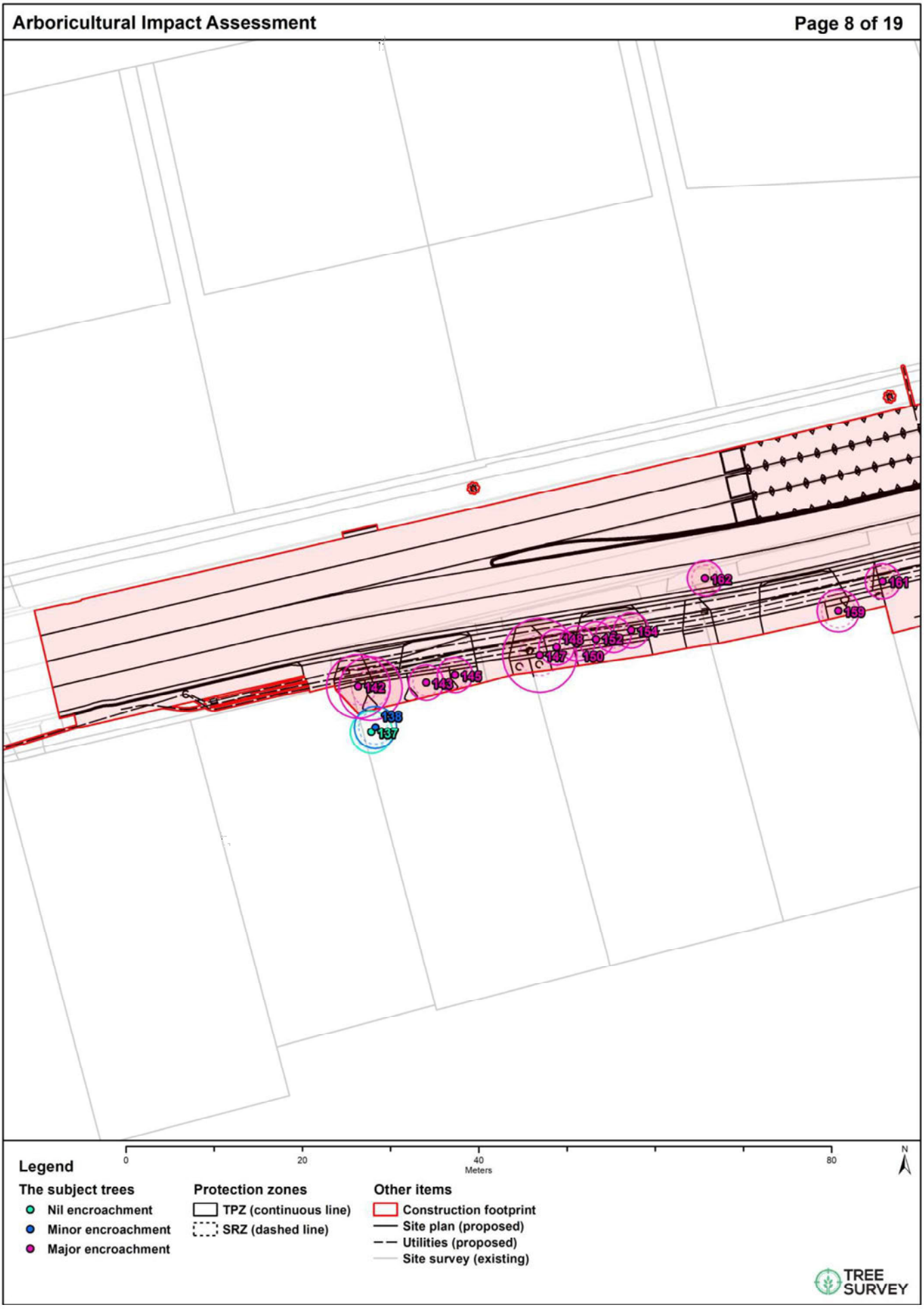
Utilities (proposed)
Site survey (existing)
TREE SURVEY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The subject trees
Nil encroachment
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Major encroachment
Protection zones
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SRZ (dashed line)
Other items
Construction footprint
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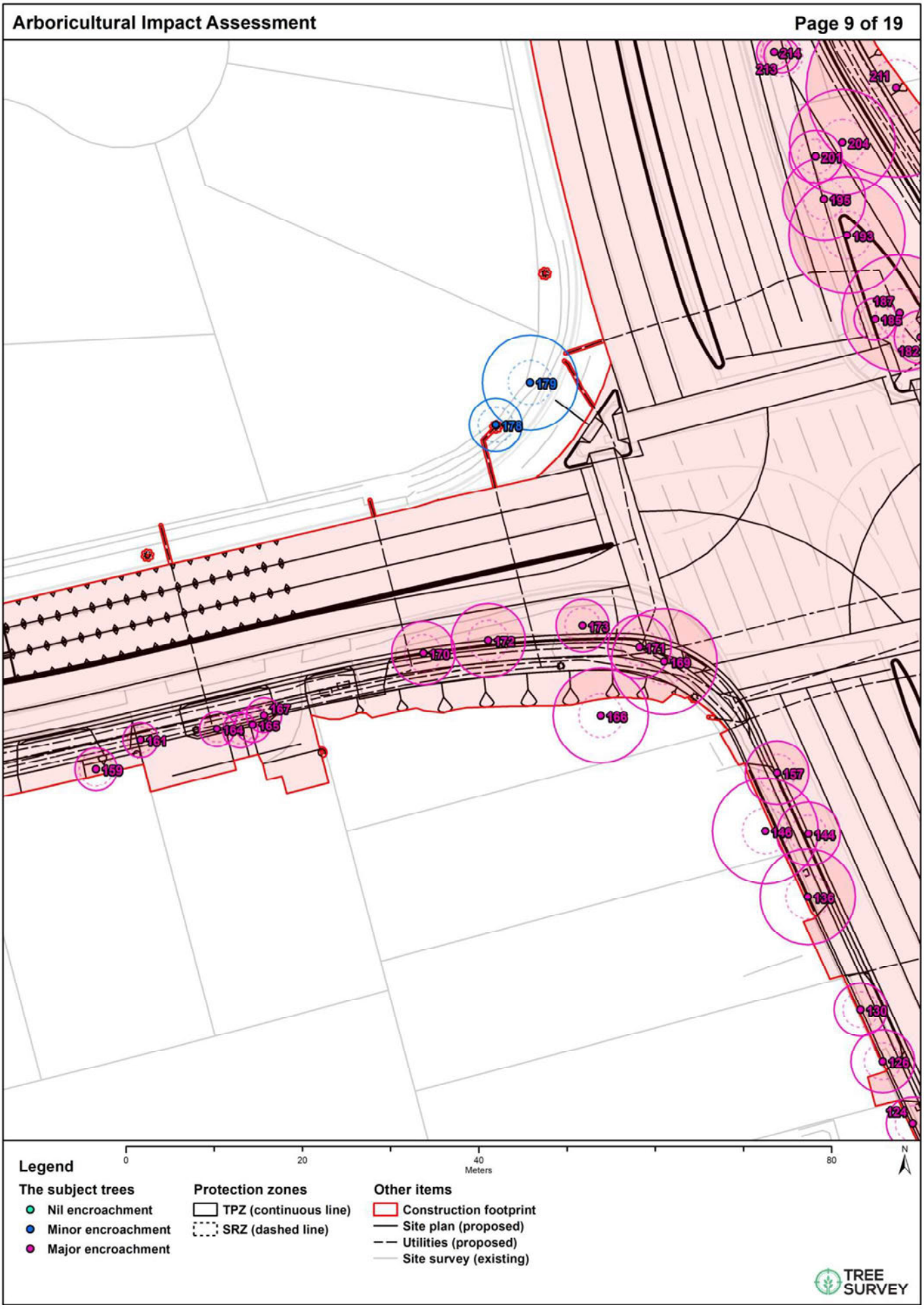
Utilities (proposed)
Site survey (existing)
TREE SURVEY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The subject trees
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Major encroachment
Protection zones
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SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY


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Page 10 of 19
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Legend
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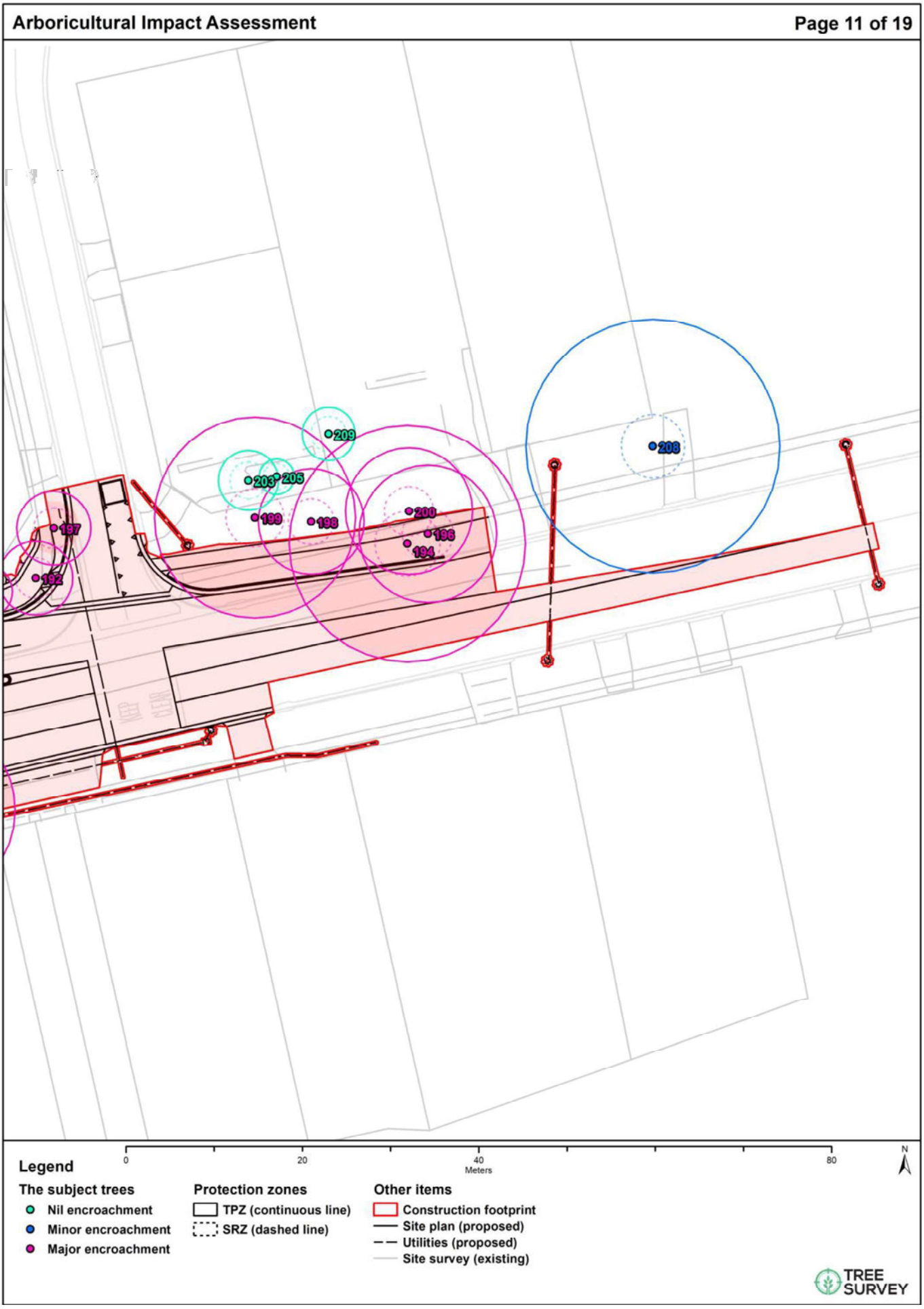
The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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Meters
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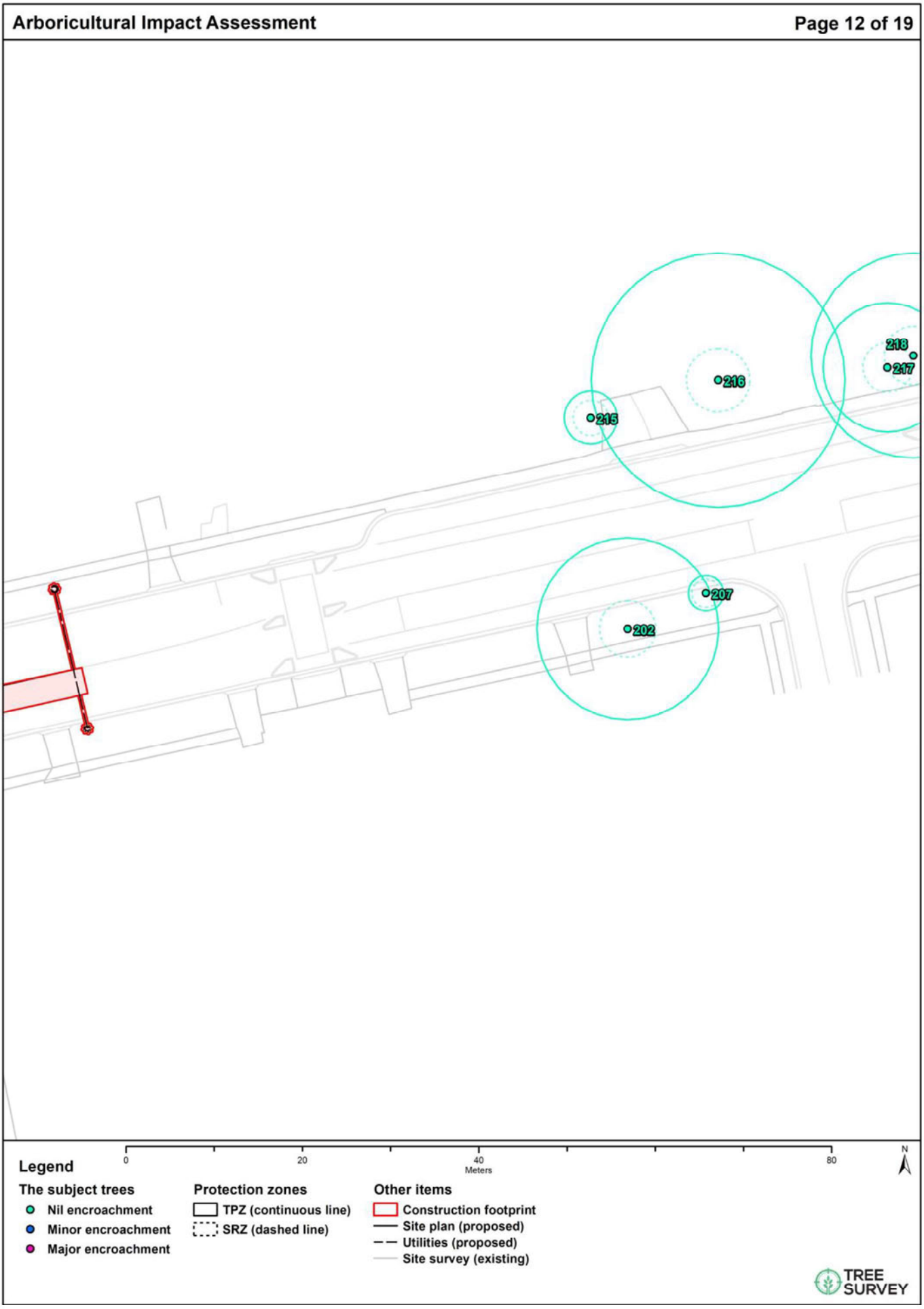
Legend
The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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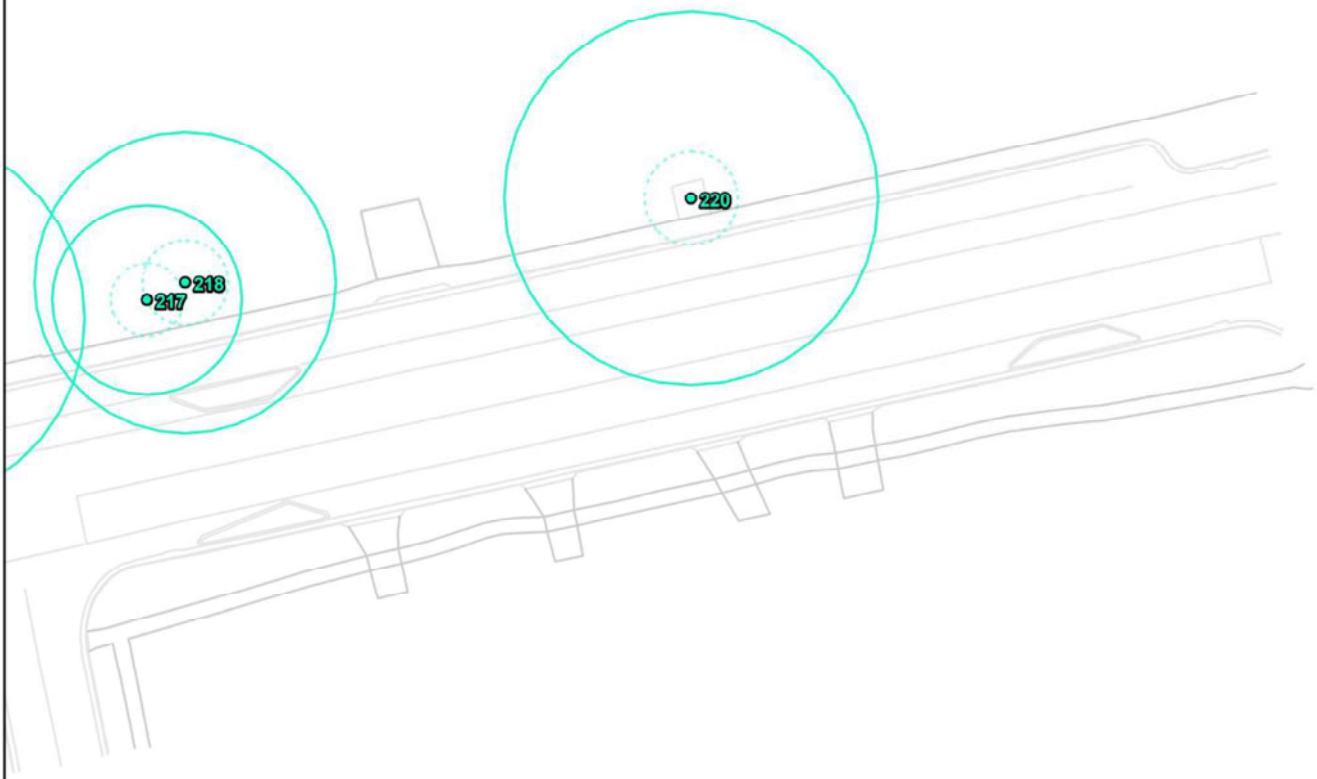
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY

**Arboricultural Impact Assessment** **Page 13 of 19**




**Legend**

0 20 40 80
Meters

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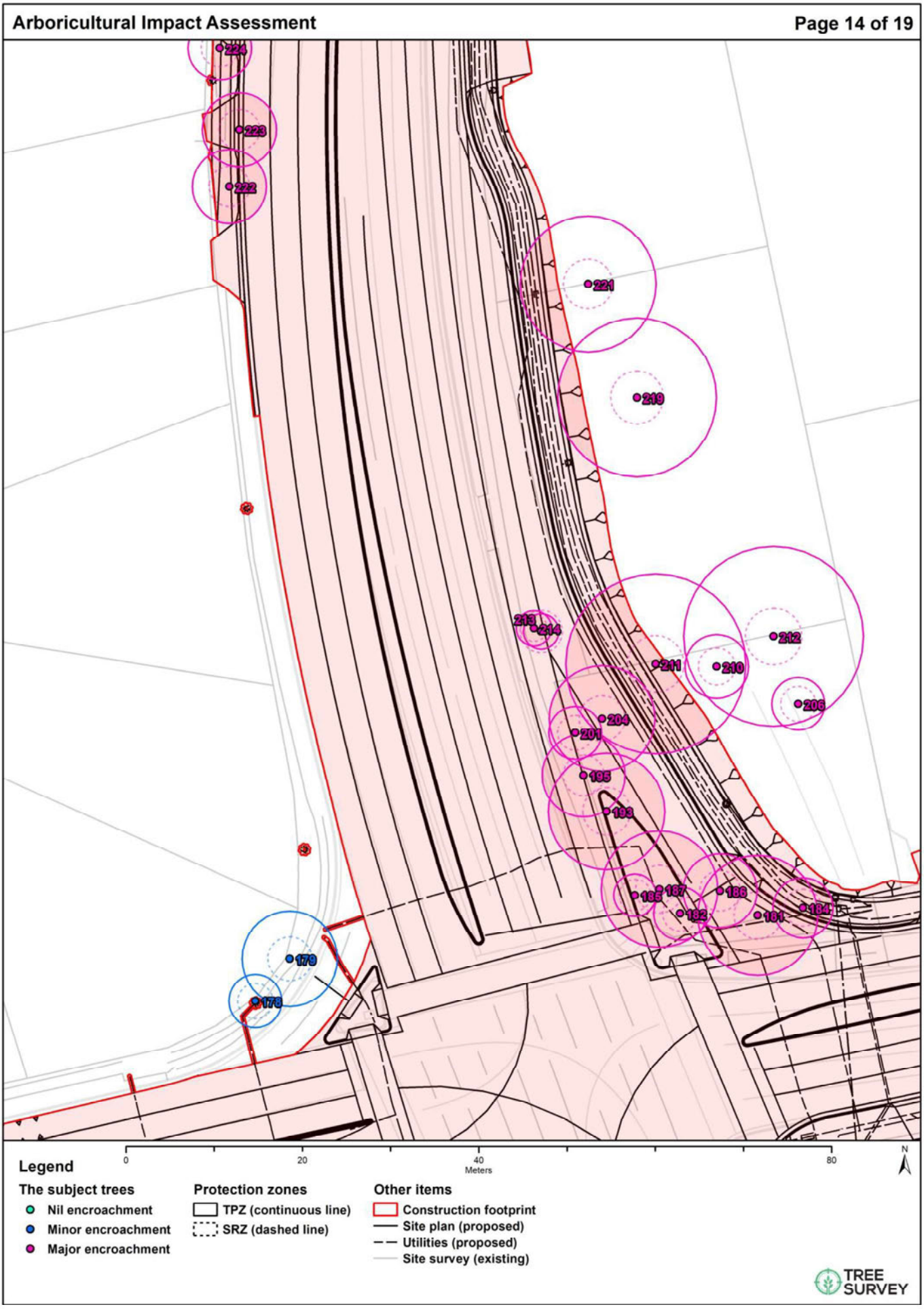
**The subject trees**
- Nil encroachment
- Minor encroachment
- Major encroachment

**Protection zones**
- TPZ (continuous line)
- SRZ (dashed line)

**Other items**
- Construction footprint
- Site plan (proposed)
- Utilities (proposed)
- Site survey (existing)

TREE SURVEY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The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
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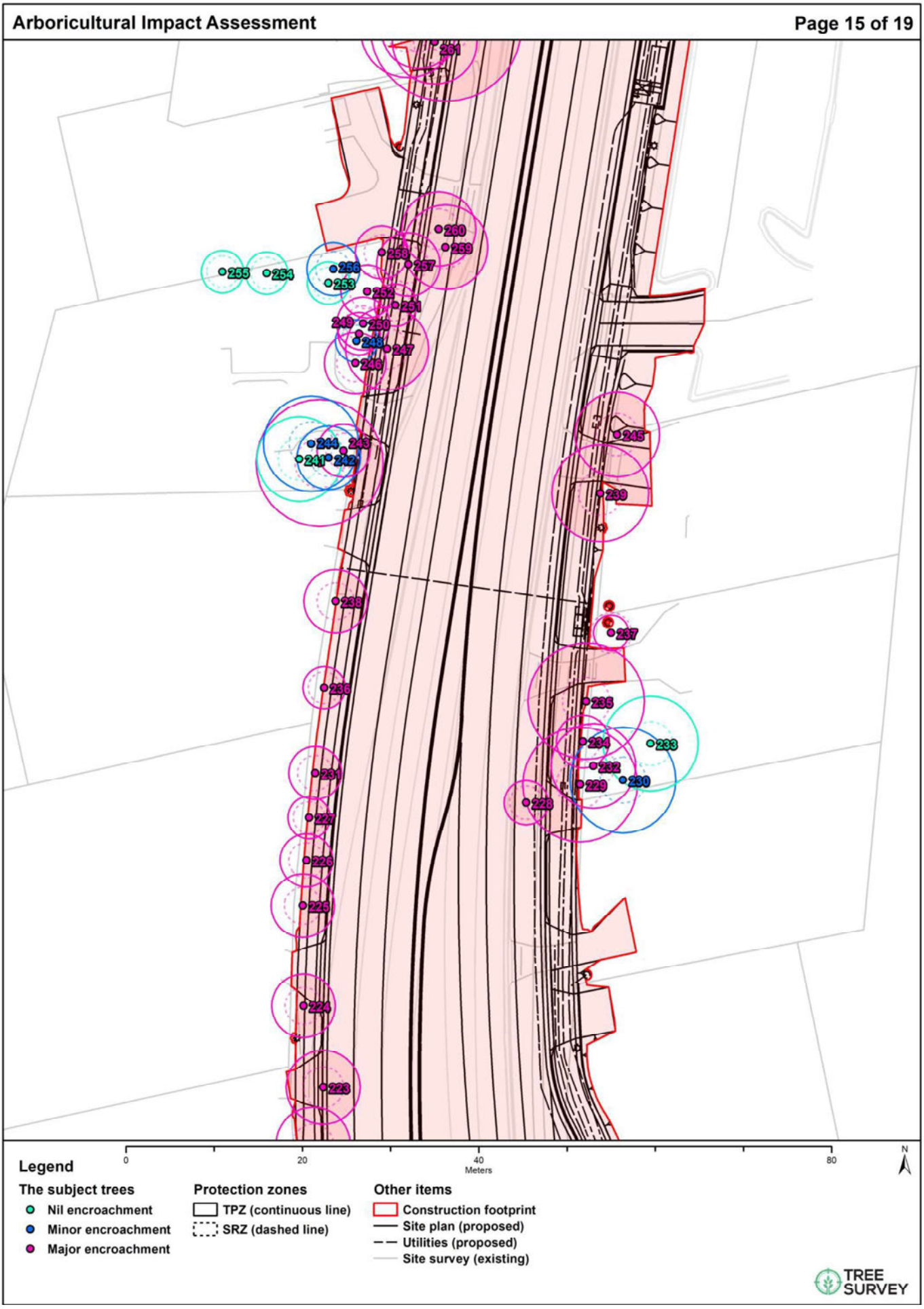
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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The subject trees
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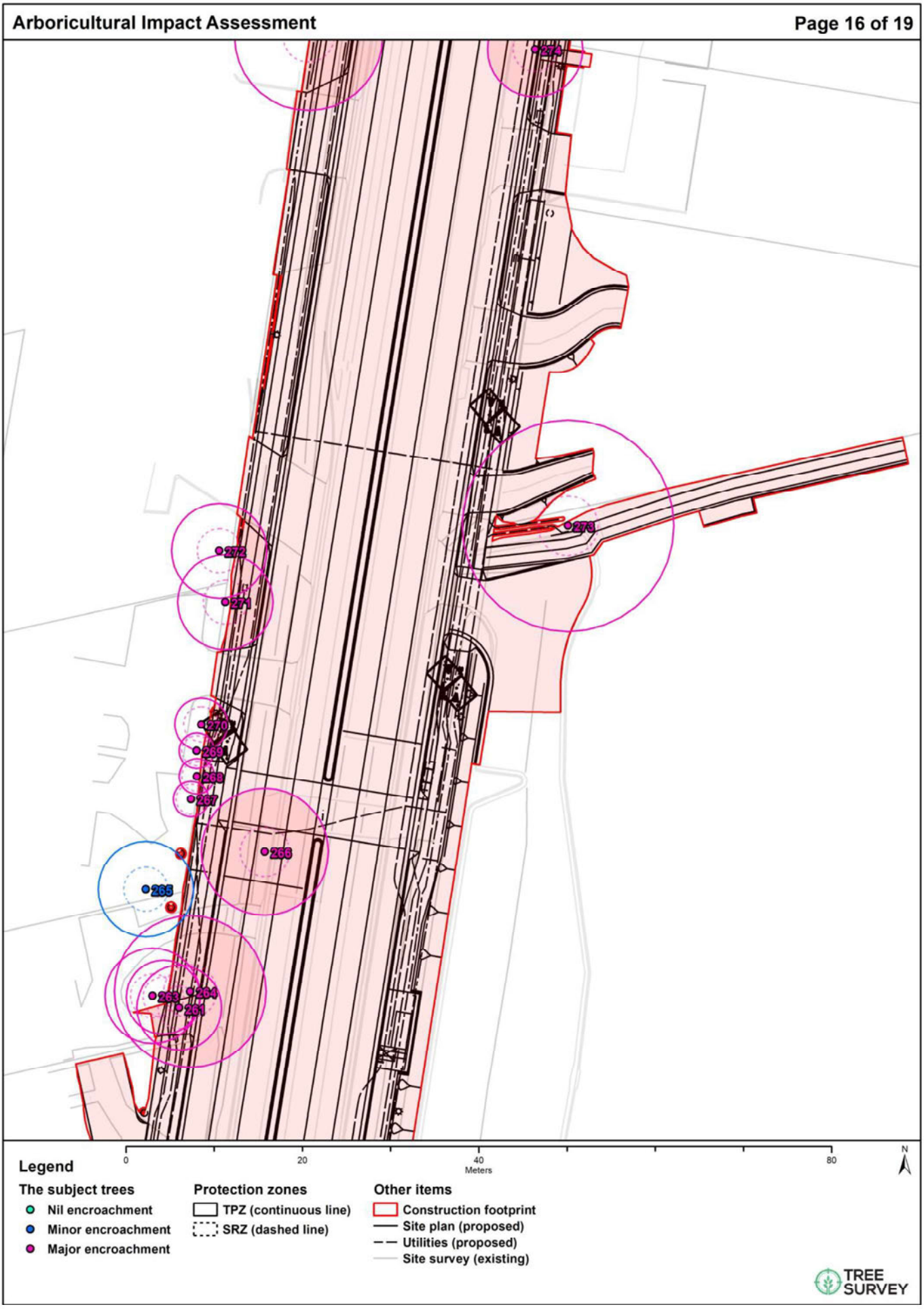
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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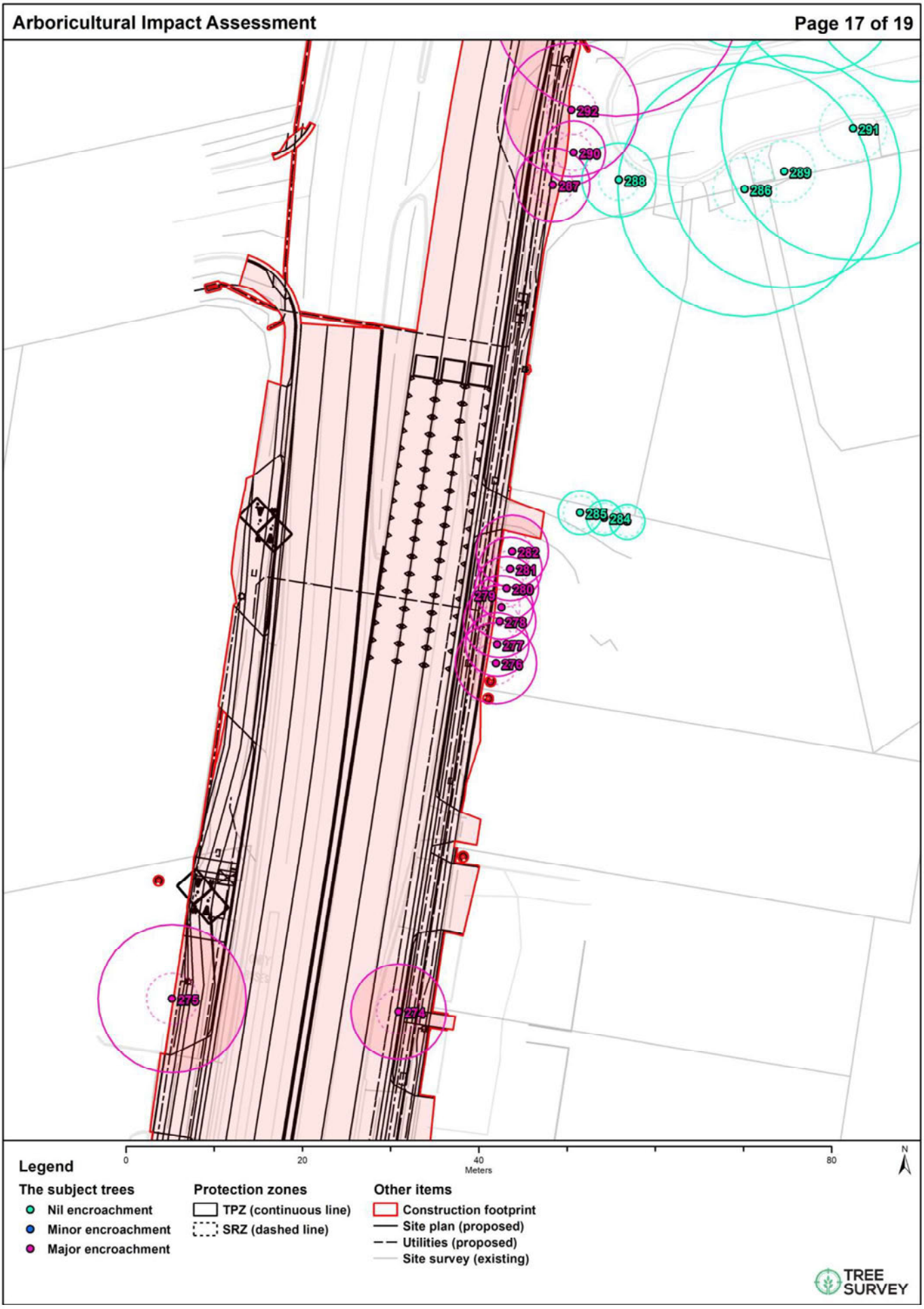
The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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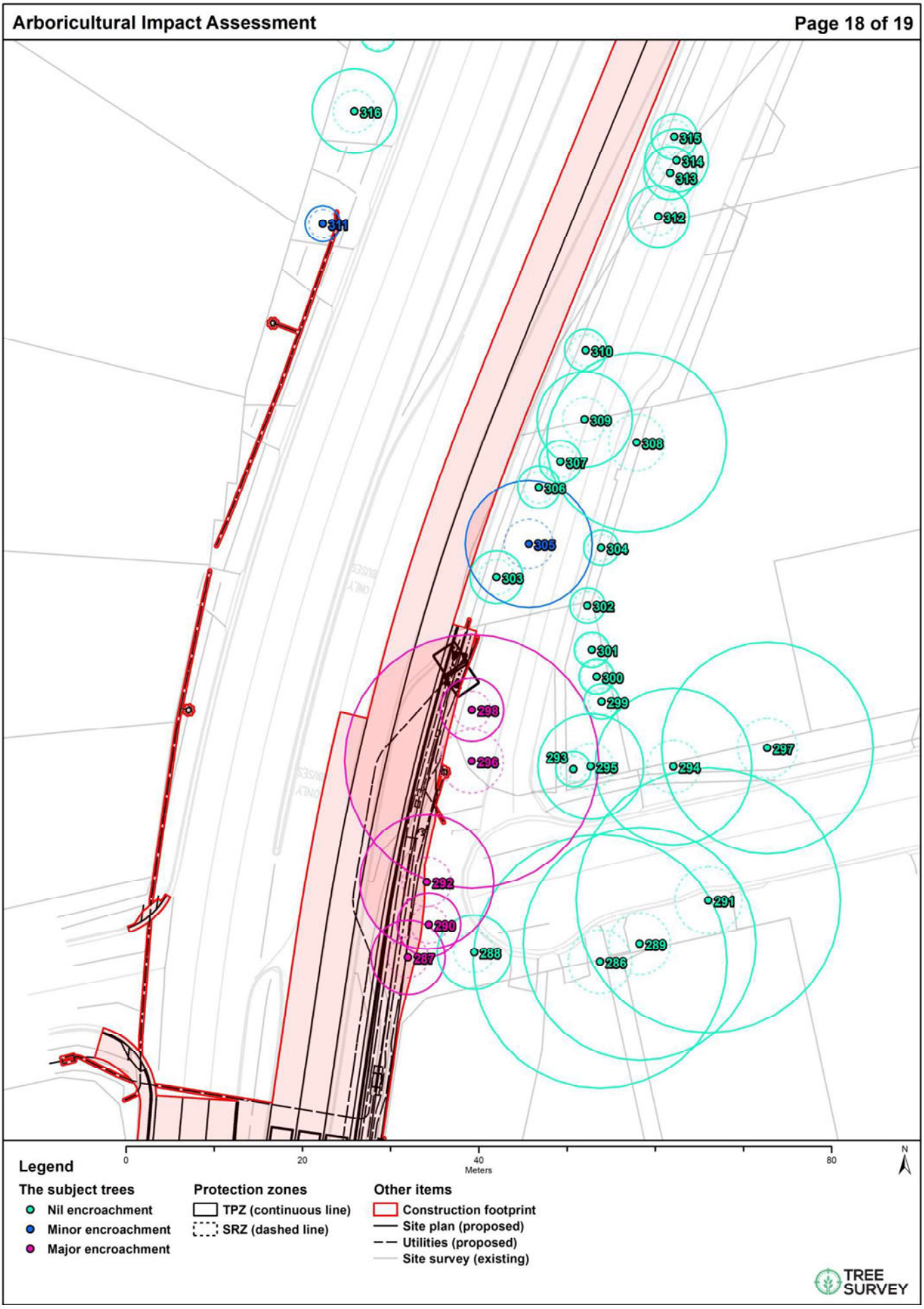
The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
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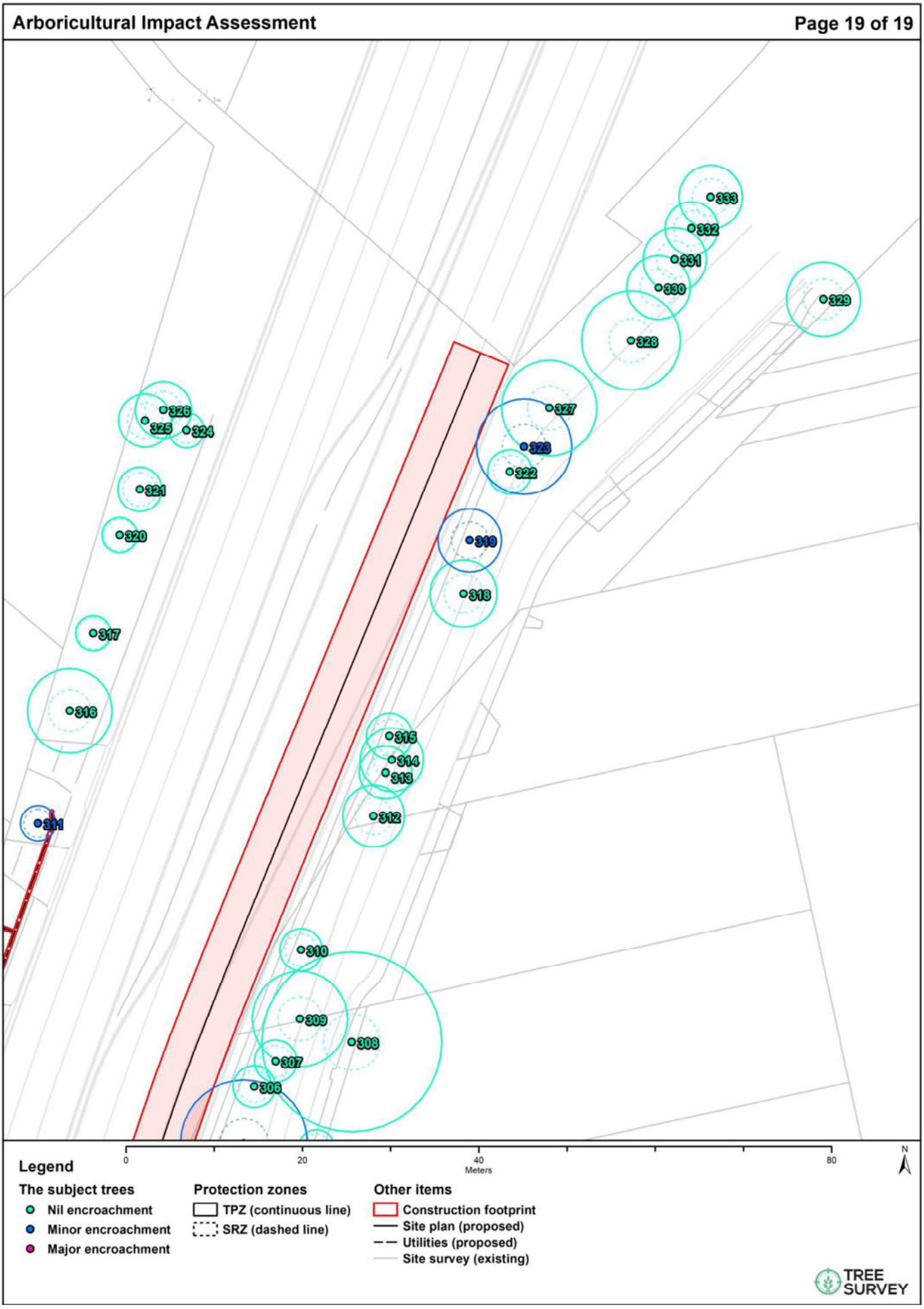
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY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The subject trees
Nil encroachment
Minor encroachment
Major encroachment
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Other items
Construction footprint
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
TREE SURVEY

# 5 Tree Protection Plan (TPP)

## 5.1 Tree removal and retention

A summary of the total proposed tree removals is outlined below :

- **Retain:** A total of **163** trees are proposed for retention.
- **Remove:** A total of **170** trees are proposed for removal.

## 5.2 Tree removal

All tree removal work is to be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture, in accordance with Australian Standard AS4373-2007, Pruning of Amenity Trees (AS4373), the Work Health and Safety Act 2011, and Work Health and Safety Regulations 2017.

## 5.3 Tree pruning

Minor vegetation trimming may be required to accommodate construction clearances. Standard pruning specifications are outlined below:

- Pruning must not exceed 10% of the overall canopy volume.
- No limbs greater than 50mm in diameter are to be removed.
- The final pruning cut shall be at the branch collar or growth point in accordance with AS4373.
- All tree pruning work is to be carried out by an arborist with a minimum AQF Level 3 qualification in Arboriculture, in accordance with AS4373 and the NSW WorkCover Code of Practice for the Amenity Tree Industry (1998).

If the proposed vegetation trimming does not meet the specifications outlined above, the project arborist must undertake an assessment of impacts on a case-by-case basis.

## 5.4 Tree protection fencing

Tree protection fencing must be installed to protection trees that will be retained. Existing fencing, site hoarding, or structures (such as a wall or building) may be used as tree protection fencing, providing the TPZ remains isolated from the construction footprint. Tree protection fencing must be installed prior to site establishment and remain intact until the completion of works. Once erected, protective fencing must not be removed or altered without the approval of the project arborist. Specifications for the tree protection fencing are as follows:

- Temporary mesh panel fencing (minimum height of 1.8m).
- Installed prior to site establishment and remain intact until the completion of works.
- Protective fencing must not be removed or altered without the approval of the project arborist.
- Prominently signposted with 300mm x 450mm boards stating, “NO ACCESS - TREE PROTECTION ZONE.”
- Certified and inspected by the project arborist.

If tree protection fencing is not practical due to site constraints, tree protection delineation must be installed as an alternative. Specifications for tree protection barriers are as follows:

- Star pickets spaced at 2m intervals,
- Connected by a continuous high-visibility barrier/hazard mesh or flagging rope.
- Maintained at a minimum height of 1m.

Where approved works are required within the TPZ, fencing may be setback to provide construction access. Trunk, branch, and ground protection shall be installed and must comply with AS4970. Any additional construction activities within the TPZ of the subject trees must be assessed and approved by the project arborist.

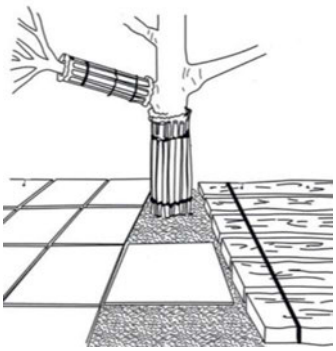
## 5.5 Restricted activities within the TPZ

The TPZ is an area that is isolated from the work zone to ensure no disturbance or encroachment occurs in this zone. Activities generally excluded from the TPZ (unless otherwise approved under the development consent) include, but are not limited to:

- Machine excavation and trenching.
- Ripping or cultivation of the soil.
- Storage of building materials, waste, and waste receptacles.
- Disposal of waste materials and chemicals, including paint, solvents, cement slurry, fuel, oil, and other toxic liquids.
- Movement and storage of plant, equipment, and vehicles.
- Soil level changes, including the placement of fill material.
- Mechanical removal of vegetation.
- Affixing of signage or hoardings to trees.
- Other physical damage to the trunk or root system.
- Any other activity that is likely to cause damage to the tree.

## 5.6 Trunk protection

Where the provision of tree protection fencing is impractical or must be temporarily removed, trunk protection shall be installed to avoid accidental mechanical damage.



Specifications for trunk protection are as follows:

- A thick layer of carpet underfelt, geotextile fabric, or similar wrapped around the trunk to a minimum height of 2m.
- 1.8m lengths of softwood timbers aligned vertically and spaced evenly around the trunk (with a small gap of approximately 50mm between the timbers).
- The timbers must be secured using galvanised hoop strap (aluminium strapping).

The timbers shall be wrapped around the trunk but not fixed to the tree, as this will cause injury/damage to the tree.

## 5.7 Ground protection

If temporary access for vehicle, plant, or machinery is required within the TPZ, ground protection shall be installed. The purpose of ground protection is to prevent root damage and soil compaction within the TPZ. Where possible, areas of the existing pavement shall be used as ground protection.

Specifications for light traffic access (<3.5 tonne) are as follows:

- Permeable membrane such as geotextile fabric.
- A layer of mulch or crushed rock (at a minimum depth of 100mm)

Specifications for heavy traffic access (>3.5 tonne) are as follows:

- Permeable membrane such as geotextile fabric.
- A layer of lightly compacted road base (at a minimum depth of 200mm)
- Geotextile fabric shall extend a minimum of 300mm beyond the edge of the road base.
- Heavy vehicle track mats, road plates, access mats, or similar.

Pedestrian, vehicular, and machinery access within the TPZ shall be restricted solely to areas where ground protection has been installed.

## 5.8 Mulch

The area within the TPZ should be mulched (where practical) with good-quality composted wood chip/leaf mulch and should be maintained at a depth of 150mm-200mm. Mulching around the base of the tree will provide nutrients and organic matter to the soil as it breaks down, improving and maintaining the overall health of the trees.

## 5.9 Demolition

The demolition of all existing structures inside or directly adjacent to the TPZ of trees to be retained must be undertaken in consultation with the project arborist. Any machinery is to work from inside the footprint of the existing structures or outside the TPZ, to minimise soil disturbance and compaction. If it is not feasible to locate demolition machinery outside the TPZ of trees to be retained, ground protection will be required. The demolition should be undertaken inwards into the footprint of the existing structures, sometimes referred to as the ‘top-down, pull back’ method.

## 5.10 Excavations

The project arborist must supervise and certify that all excavations and root pruning are in accordance with AS4373 and AS4970. All excavations (including root investigations) within the TPZ must be carried out using tree-sensitive methods under the supervision of the project arborist (see **Tree Protection Plan**). These methods may include:

- **Manual excavation:** Use of hand tools such as spades, trowels, and brushes.
- **Air spade:** Use of a pressurised air device that blows the soil away and leaves roots intact.
- **Hydro-vacuum excavation:** Use of pressurised water to remove soil from around roots.

The recommended techniques for common types of excavations have been outlined below:

- **Continuous strip footings:** Manual excavation, air spade, or hydro-vacuum is utilised excavation lines within the TPZ prior to the commencement of mechanical excavation. Excavation should be a depth of 1 metre (or to unfavourable root growth conditions such as bedrock or heavy clay, if agreed by the project arborist). Any conflicting roots shall be pruned using clean, sharp secateurs or a pruning saw to ensure a clean cut, free from tears. All root pruning must be documented and carried out by the project arborist. After all root pruning is completed, machine excavation is permitted within the footprint of the structure.
- **Post or pier footings:** Manual excavation, air spade, or hydro-vacuum is utilised at the location of pier footings within the TPZ. Any conflicting roots shall be pruned using clean, sharp secateurs or a pruning saw to ensure a clean cut, free from tears. All root pruning must be documented and carried out by the project arborist. After all root pruning is completed, machine excavation is permitted within the footprint of the structure.

No over-excavation, battering, or benching shall be undertaken beyond the footprint of any structure unless approved by the project arborist.

## 5.11 Underground services

Where possible, underground services should be routed outside of the TPZ. If underground services need to be installed within the TPZ, they must be installed using tree-sensitive excavation methods under the supervision of the project arborist. Alternatively, boring methods such as horizontal directional drilling (HDD) may be used for underground service installation, providing the installation is at a minimum depth of 800mm below grade. Excavations for entry/exit pits must be located outside the TPZ.

## 5.12 Root pruning

Any conflicting roots greater than 50mm in diameter identified during the supervised excavations shall be pruned using clean, sharp secateurs or a pruning saw to ensure a clean cut, free from tears. All root pruning (>50mm) must be documented and carried out by the project arborist.

## 5.13 Site inspections

In accordance with AS4970, inspections must be conducted by the project arborist at the following key project stages:

- Prior to any work commencing on-site (including demolition, earthworks, or site clearing) and following the installation of tree protection.
- During any excavations, building works, and any other activities carried out within the TPZ of any tree to be retained & protected.
- A minimum of once per 12 weeks (every 3 months) during the construction phase for trees with a major encroachment within the TPZ.
- After all major construction has ceased, following the removal of tree protection.

It shall be the responsibility of the project manager to notify the project arborist prior to any works within the TPZ of any protected tree at a minimum of 48 hours' notice. To ensure the tree protection plan is implemented, hold points have been specified in the schedule of work (**Table 4**).

**Table 4: Schedule of work**

| Construction stage | Hold point | Description |
|---|---|---|
| Pre-construction | 1 | Tree protection (for trees that will be retained) shall be installed prior to demolition and site establishment. This may include the mulching of areas within the TPZ. The project arborist shall inspect and certify tree protection. |
| During Construction | 2 | Project arborist to supervise and document any significant works carried out within the TPZ of trees to be retained. |
| | 3 | Scheduled inspection of trees by the project arborist should be undertaken approximately every 12 weeks (3 months) during the construction period. |
| Post Construction | 4 | Final inspection of trees by project arborist. |


Tree Protection Plan
Page 1 of 19
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170
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Meters
680
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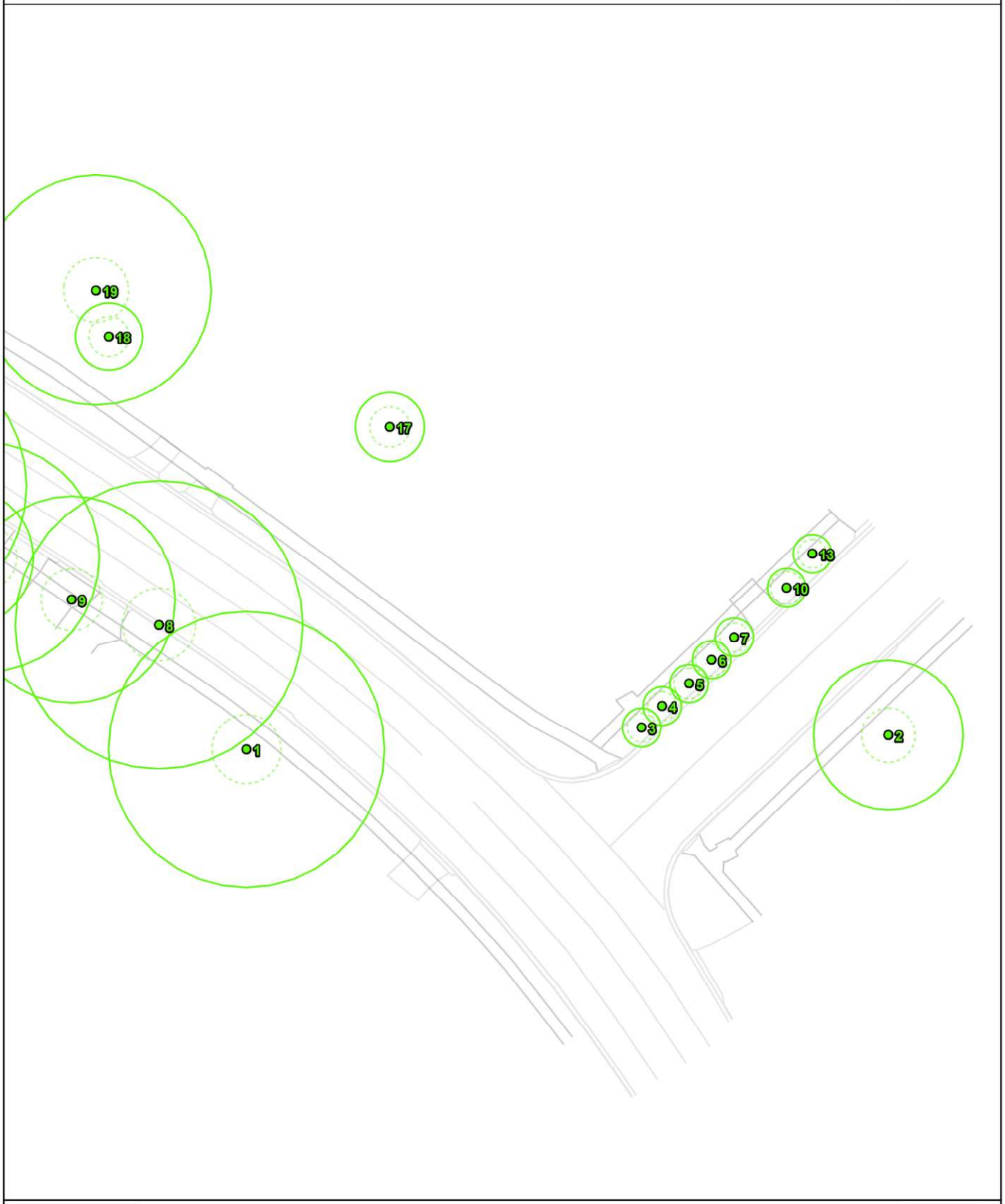
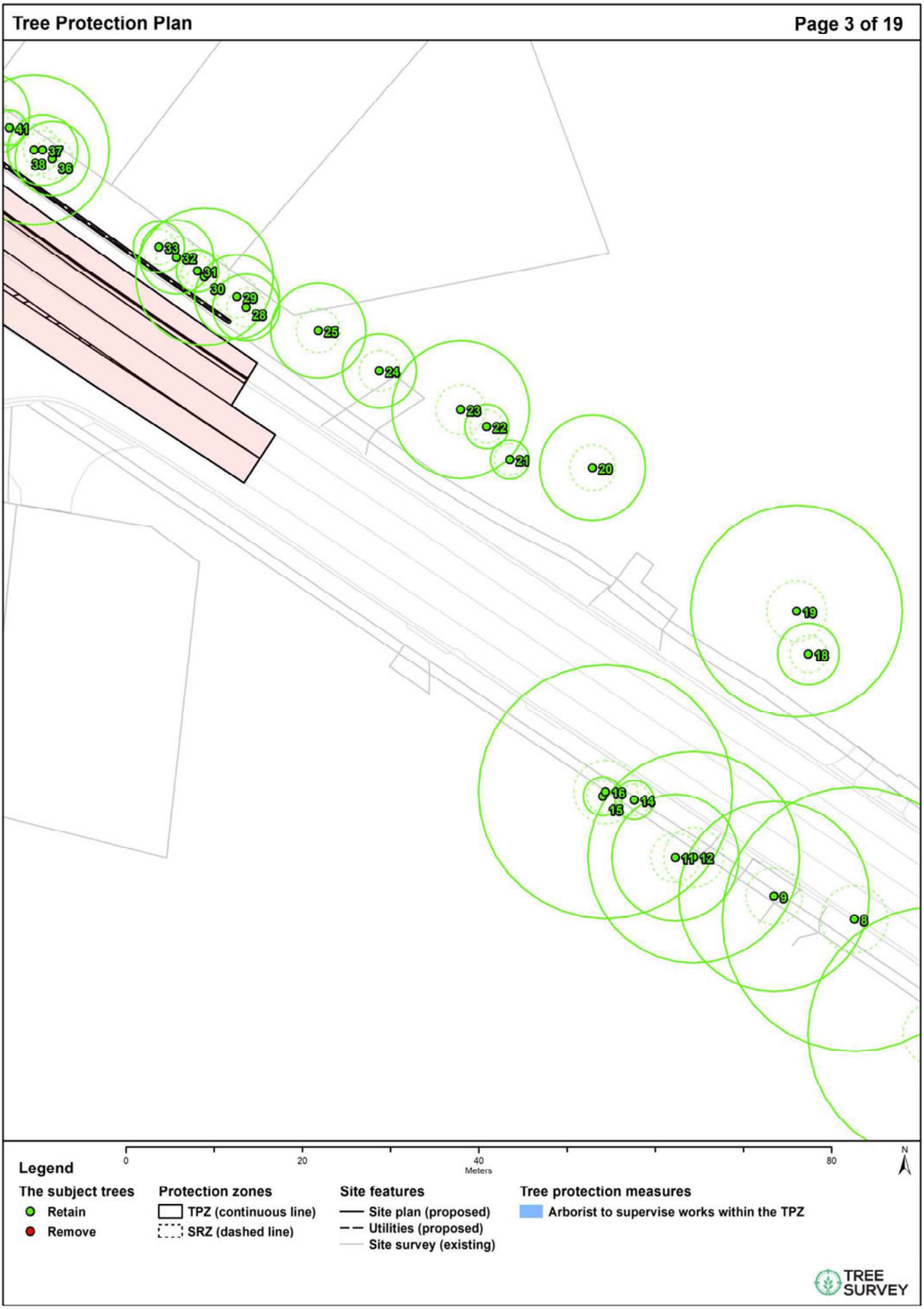
Legend
The subject trees
Retain
Remove
Protection zones
TPZ (continuous line)
SRZ (dashed line)
Site features
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
Tree protection measures
Arborist to supervise works within the TPZ
TREE SURVEY

## Tree Protection Plan



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Protection zones
TPZ (continuous line)
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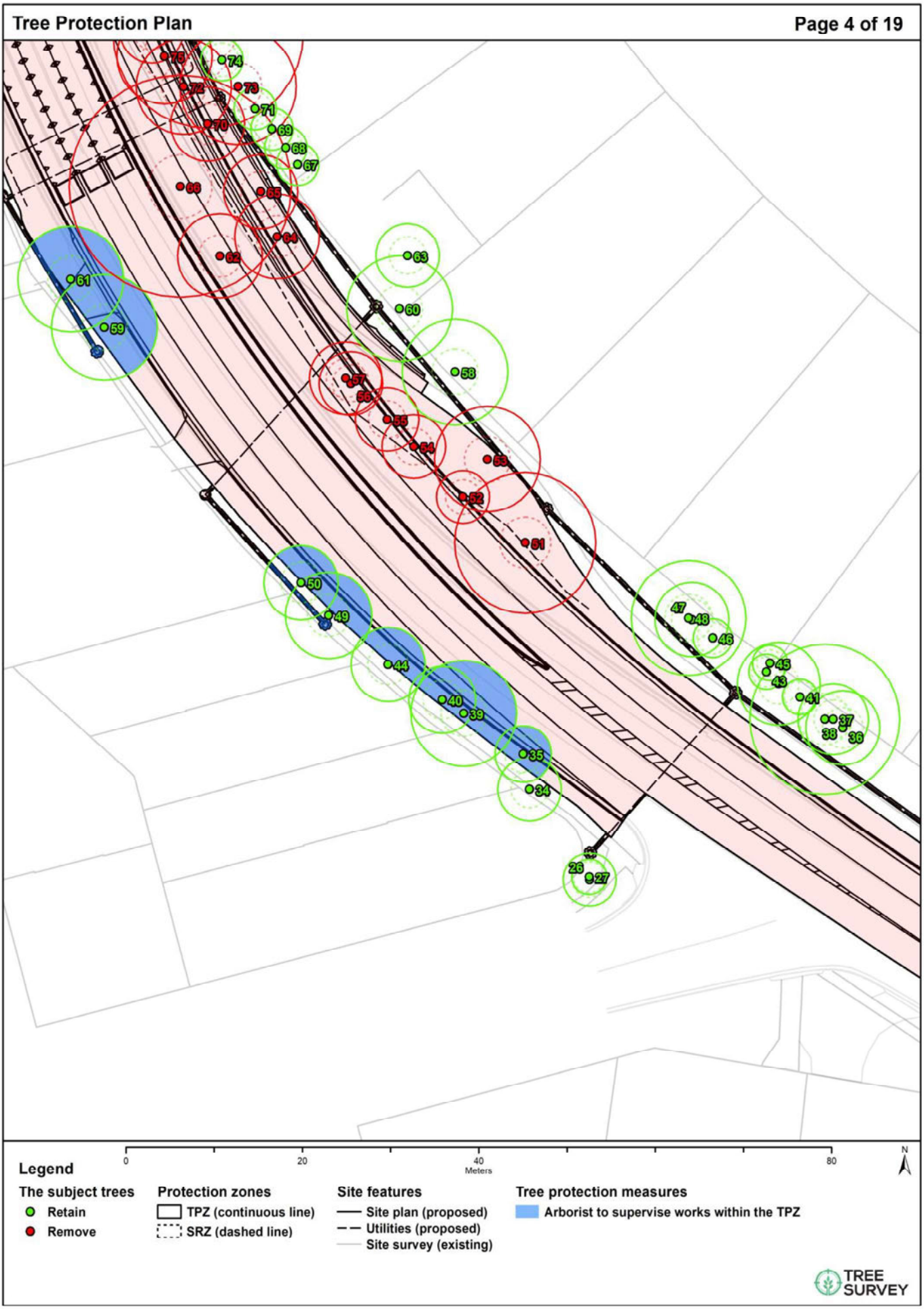
Site features
Site plan (proposed)
Utilities (proposed)
Site survey (existing)
Tree protection measures
Arborist to supervise works within the TPZ
TREE SURVEY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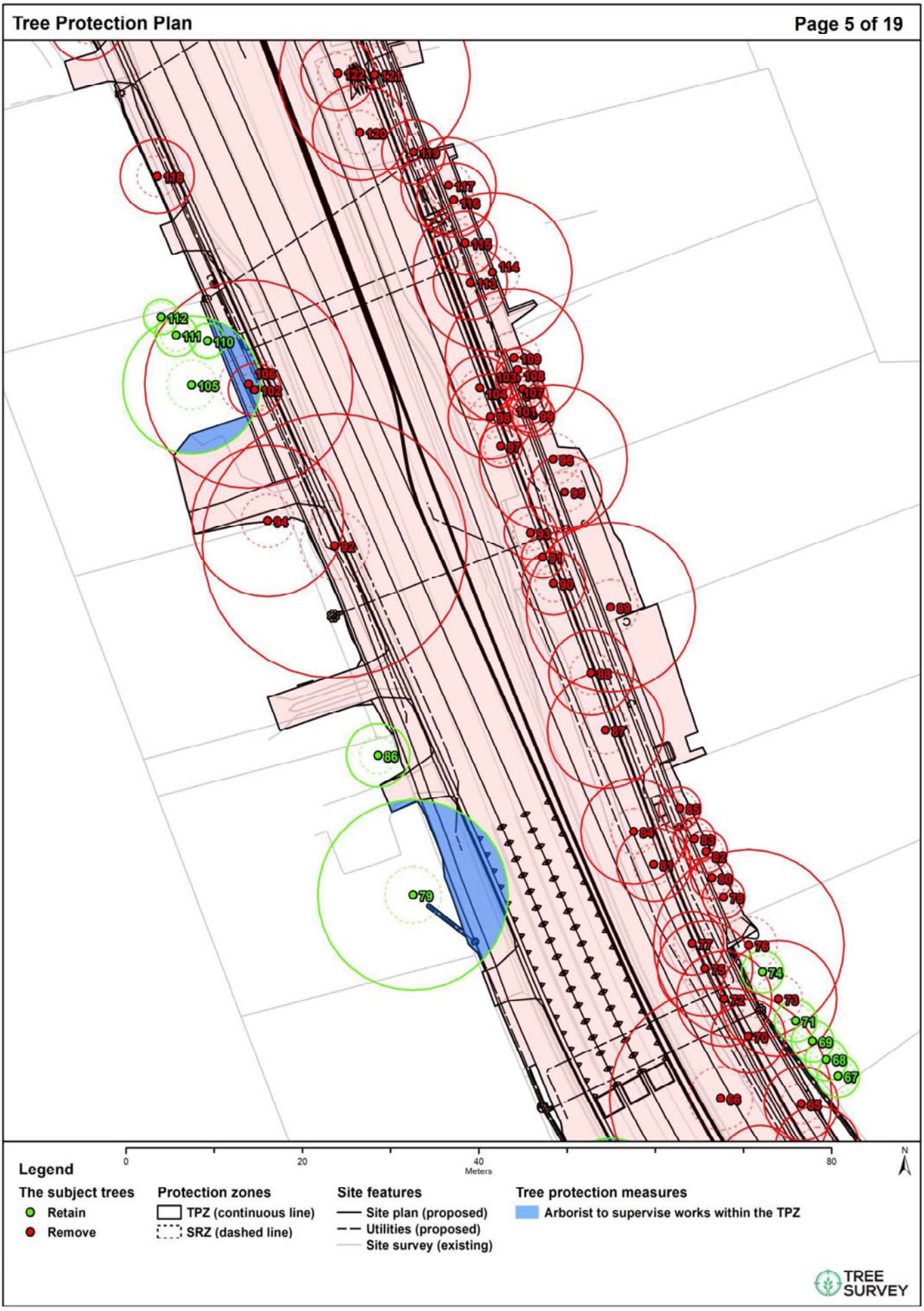
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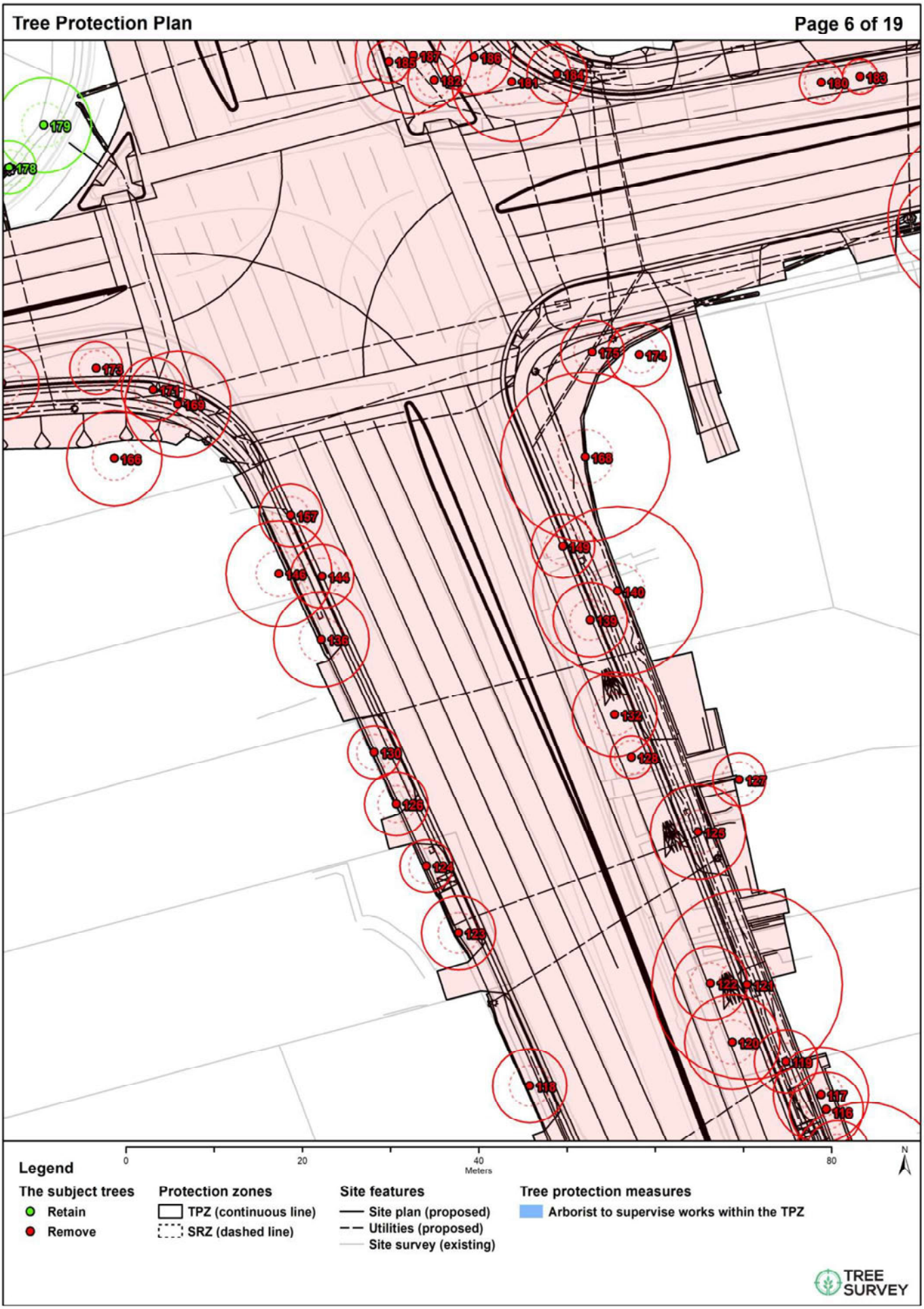
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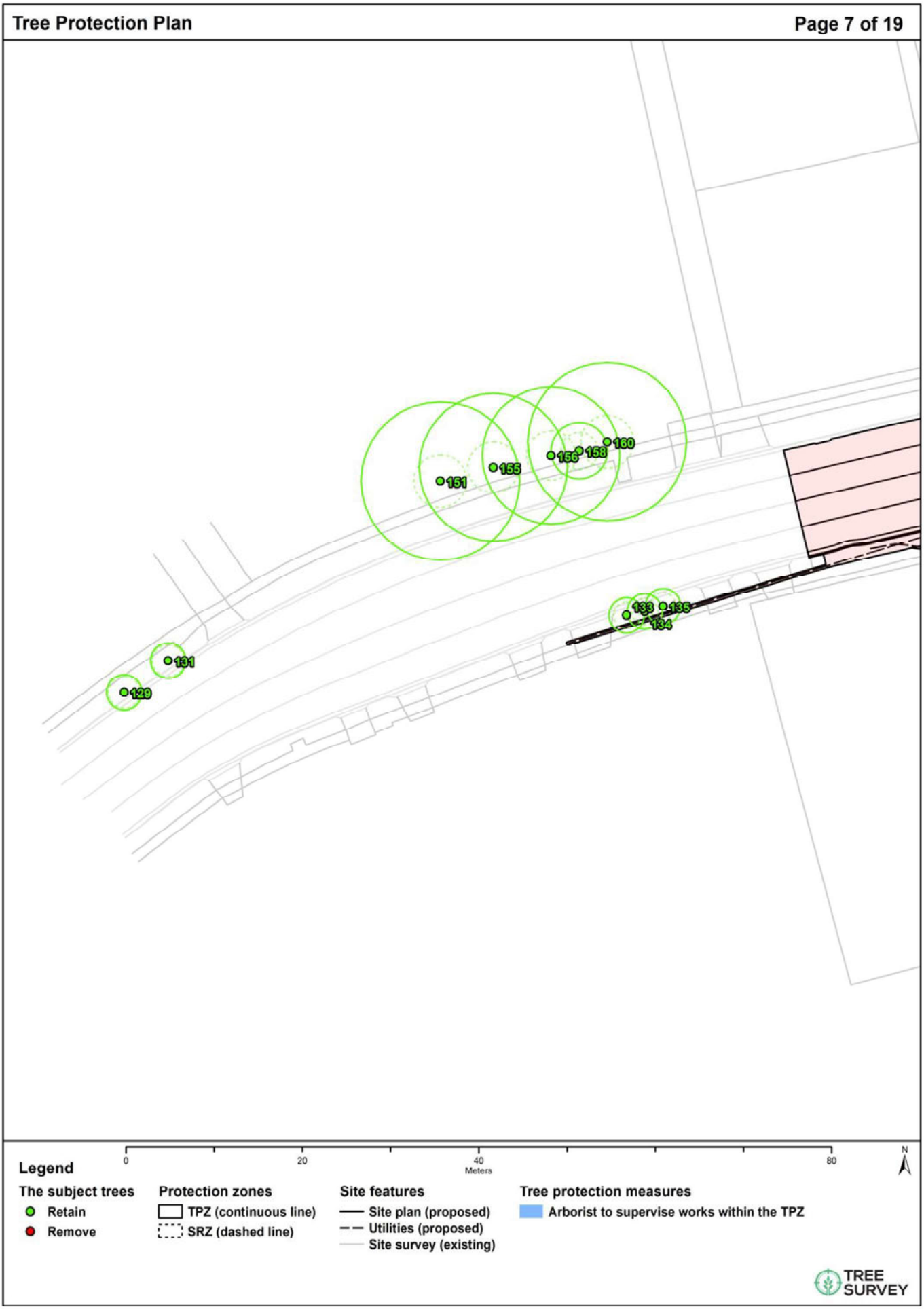
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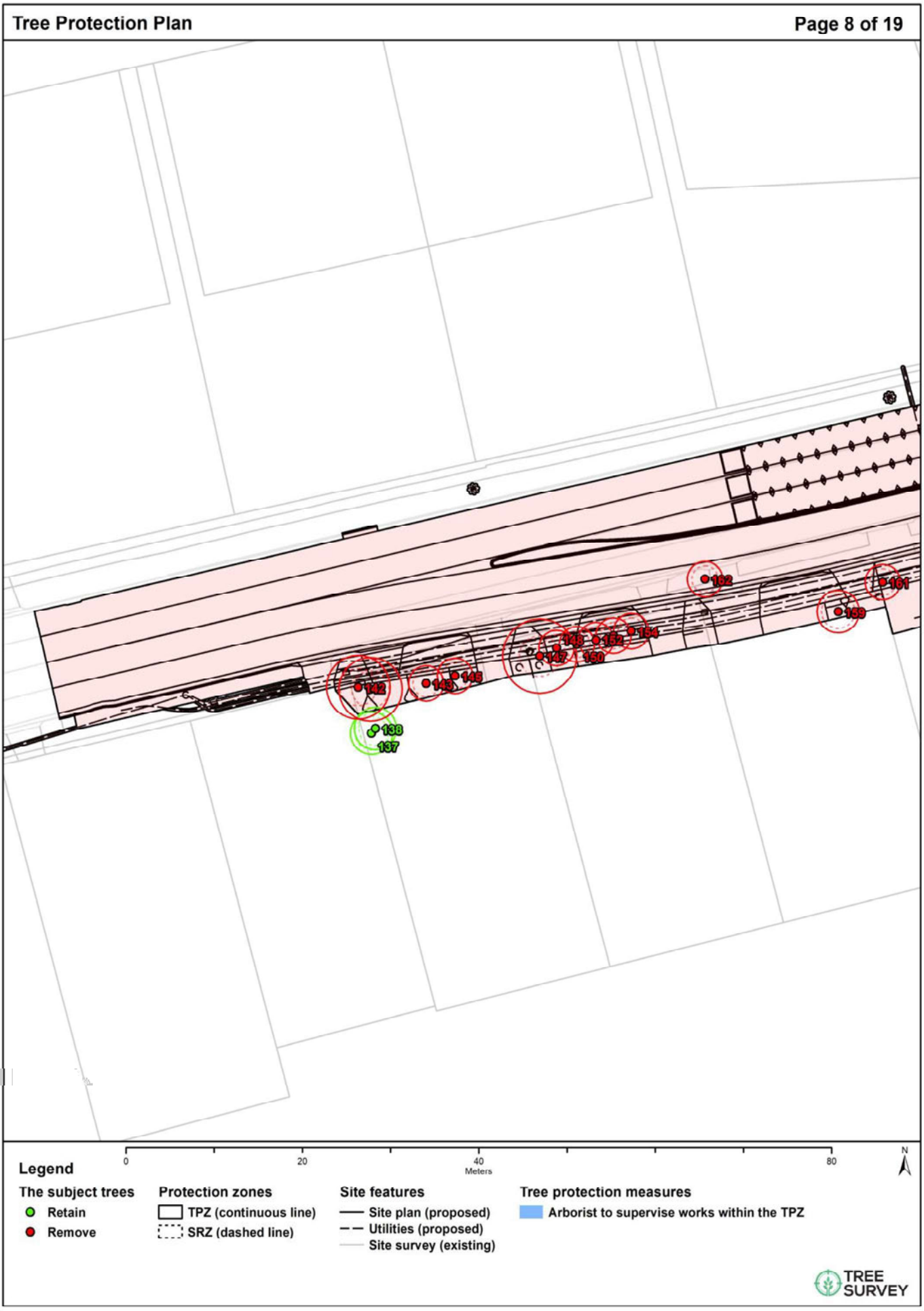
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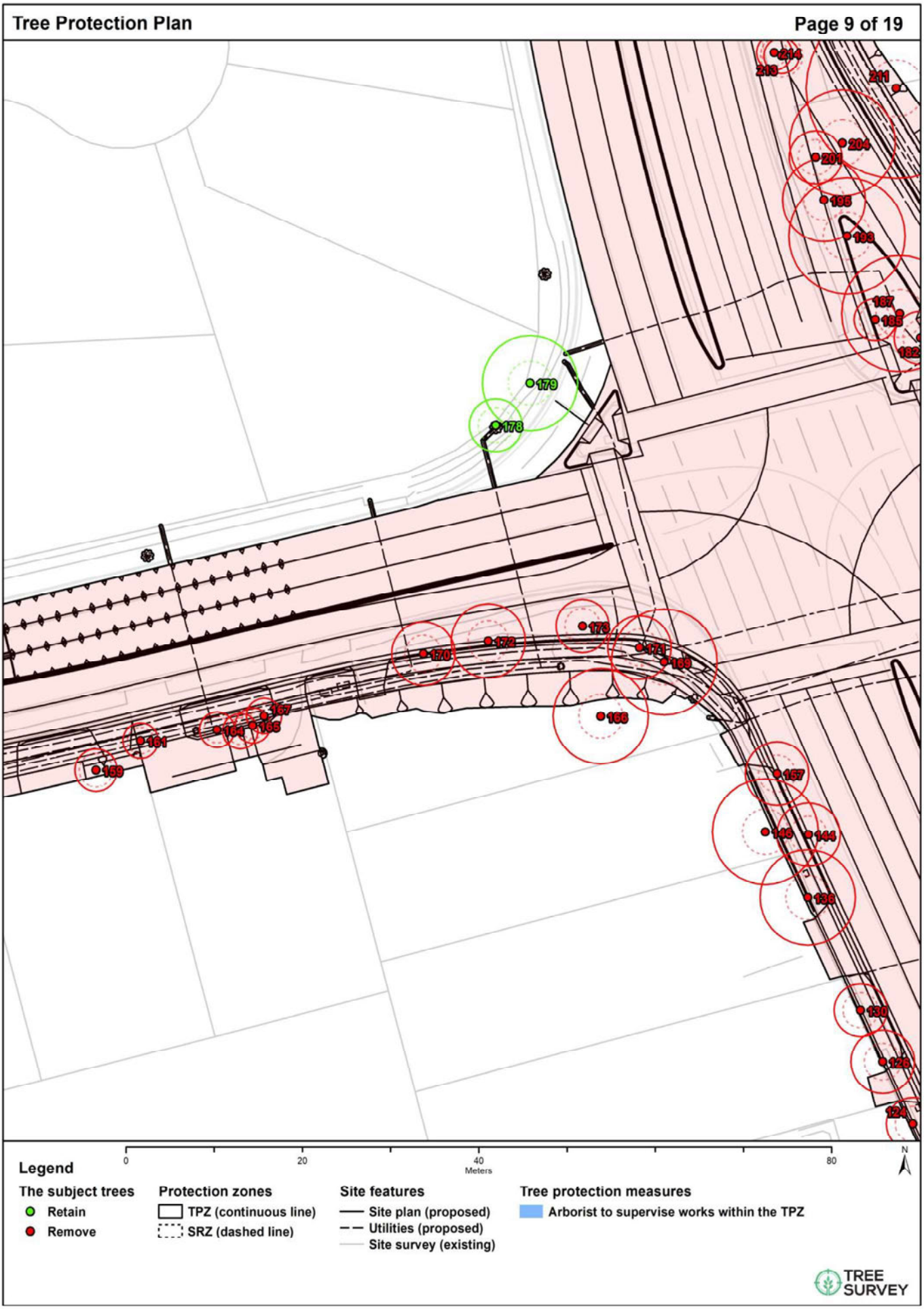
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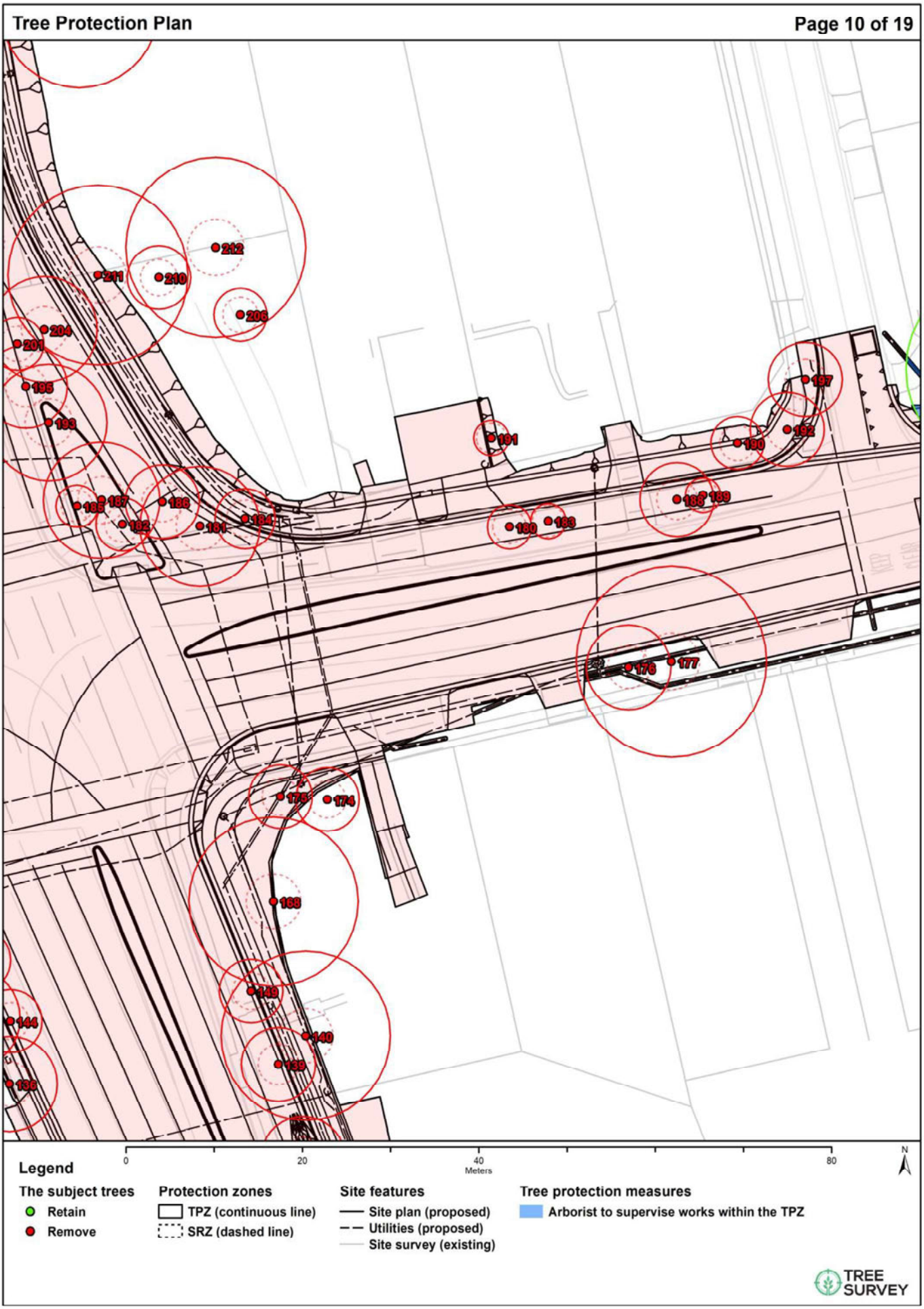
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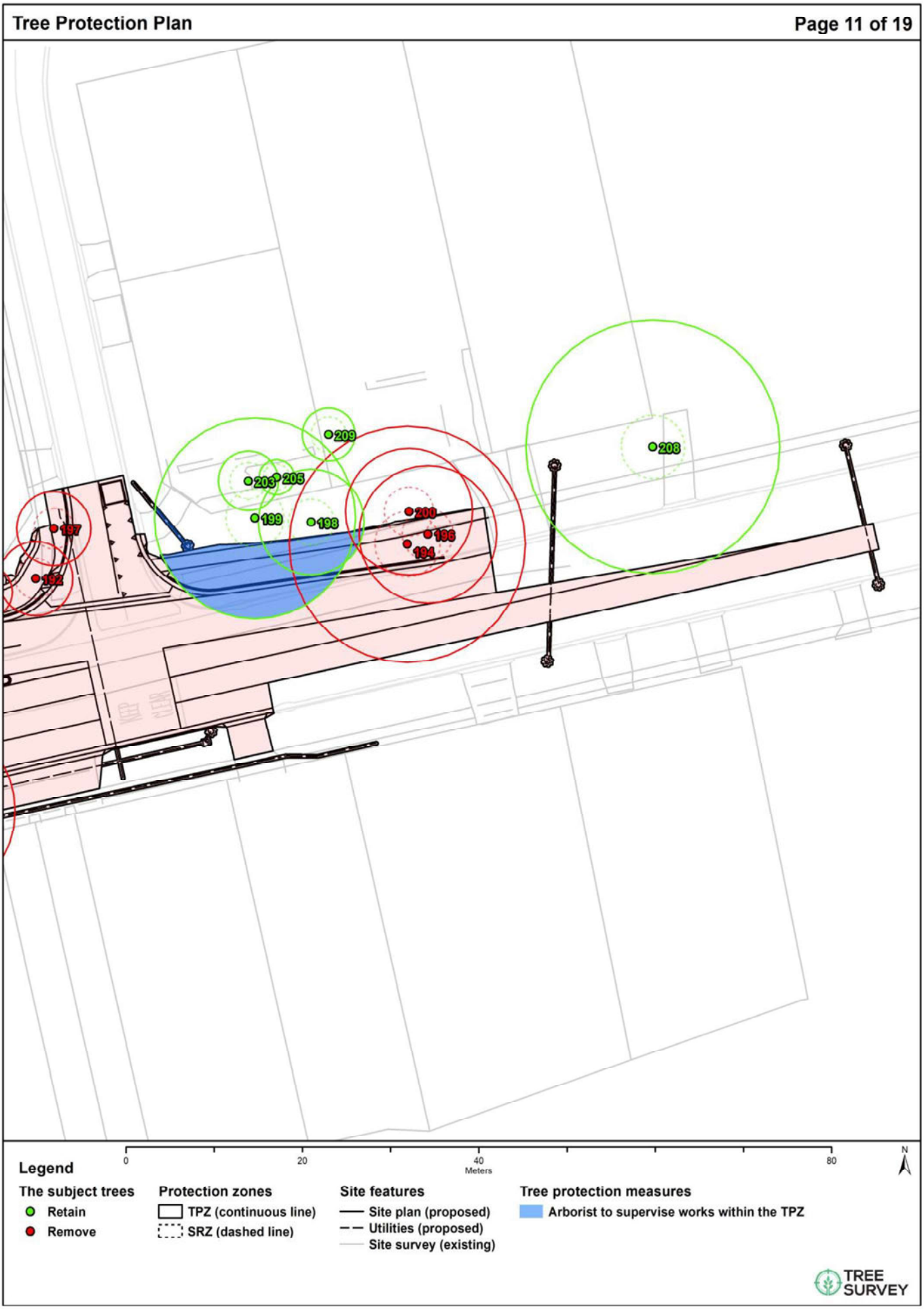
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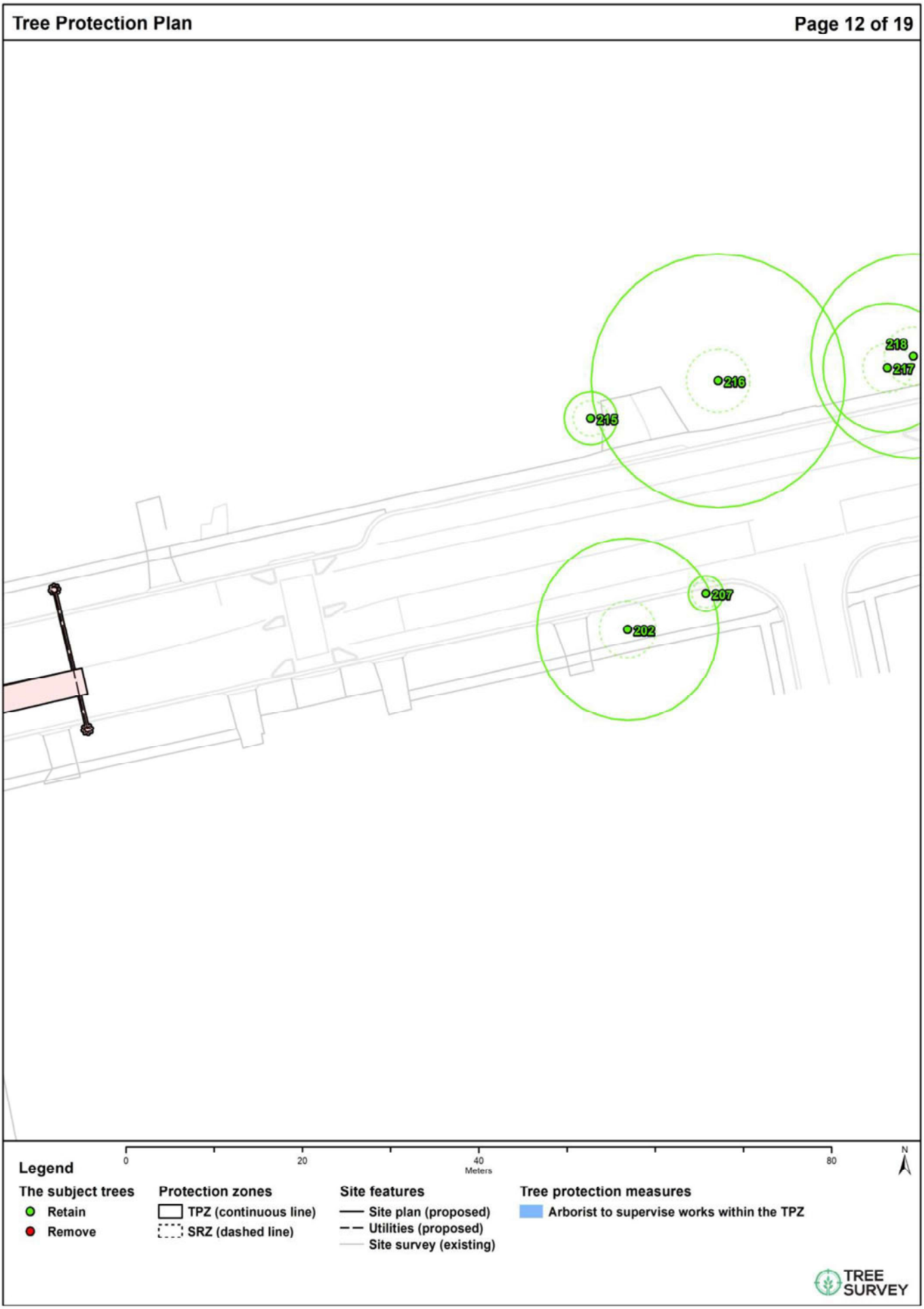
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Protection zones
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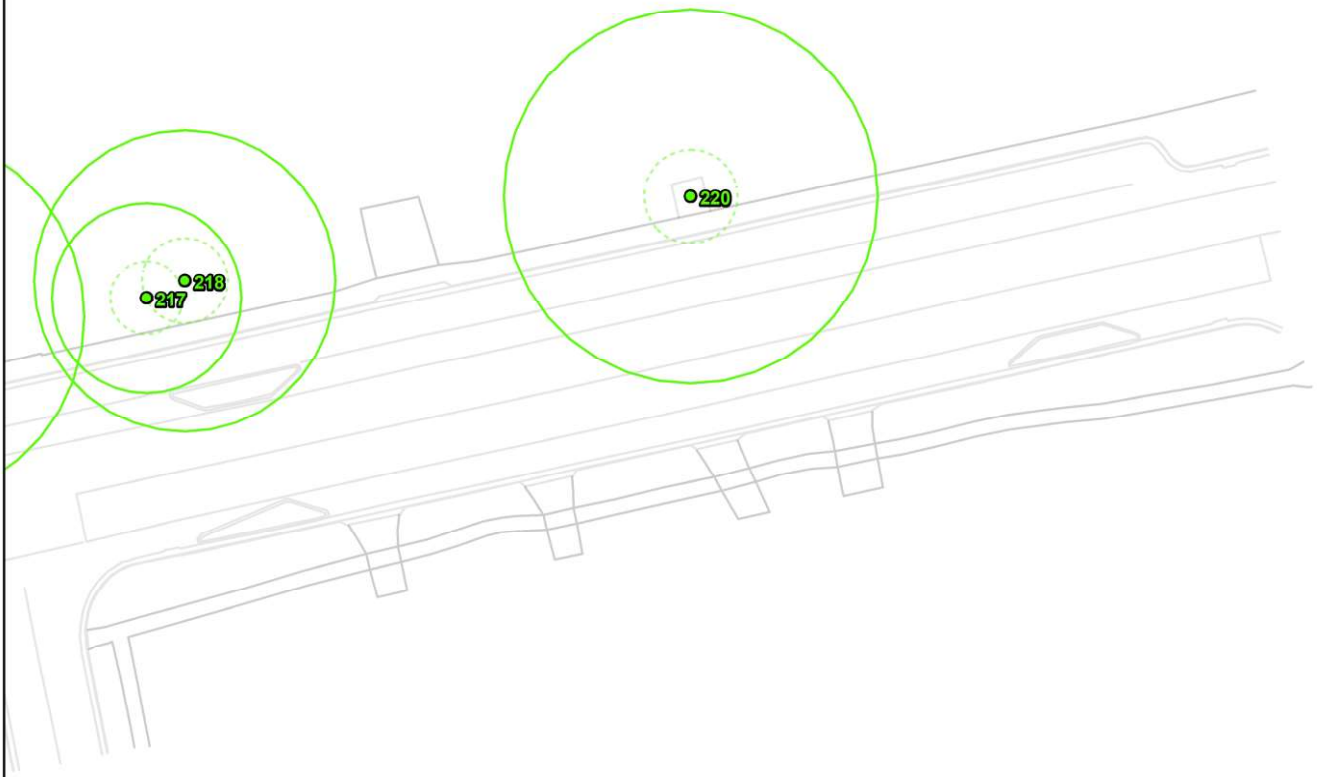


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**The subject trees**
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- Remove

**Protection zones**
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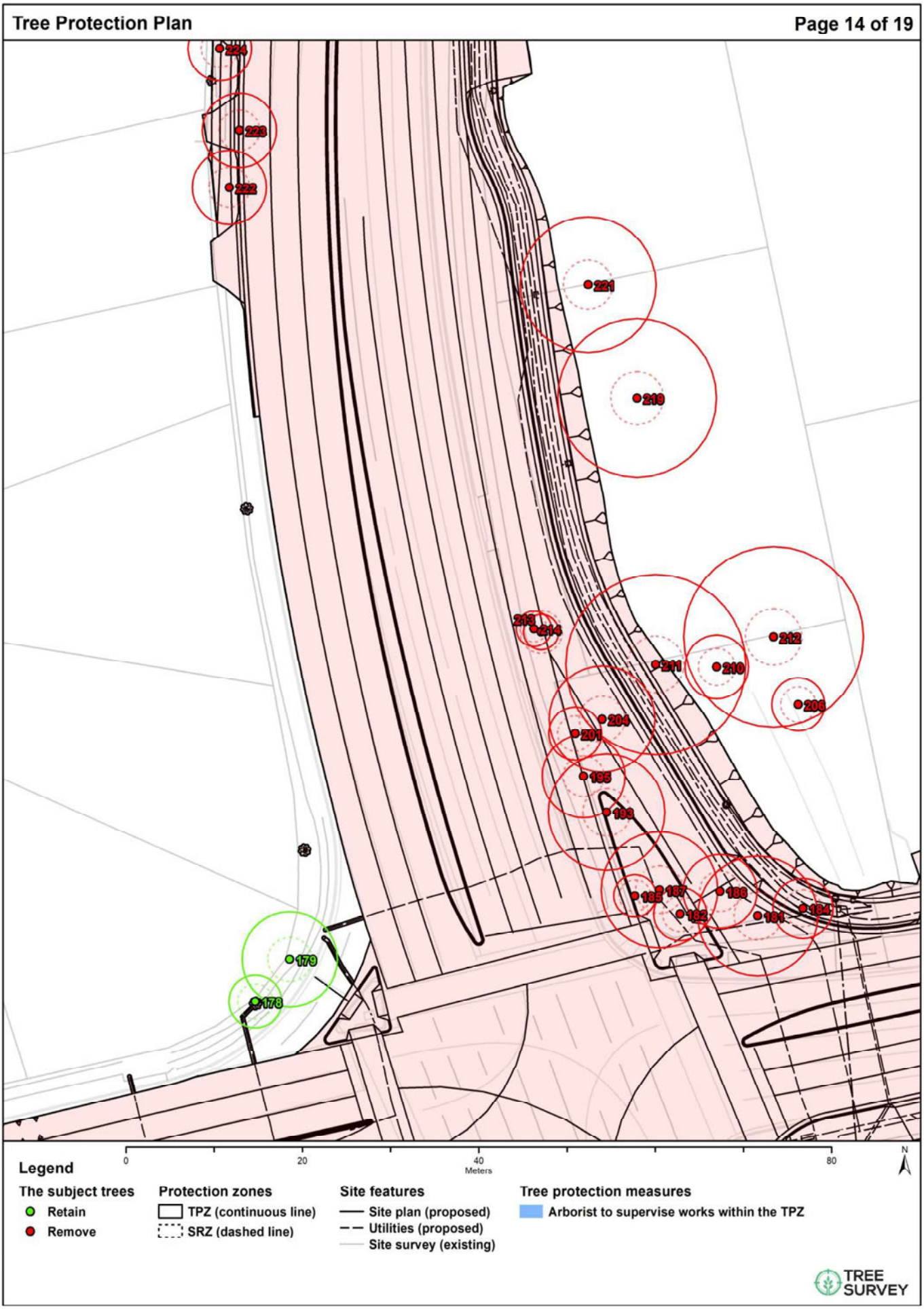
- SRZ (dashed line)

**Site features**
- Site plan (proposed)
- Utilities (proposed)
- Site survey (existing)

**Tree protection measures**
- Arborist to supervise works within the TPZ

TREE SURVEY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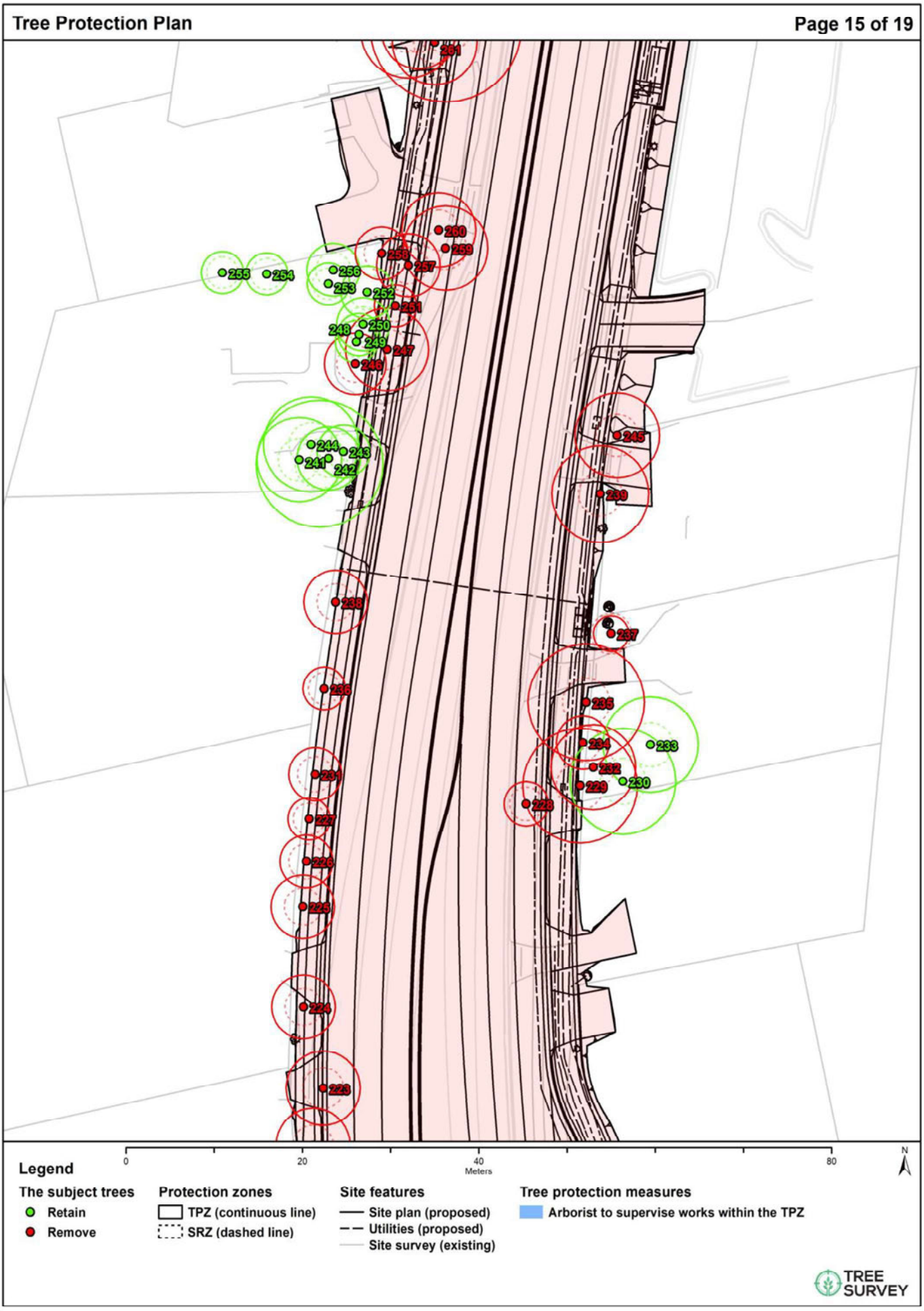
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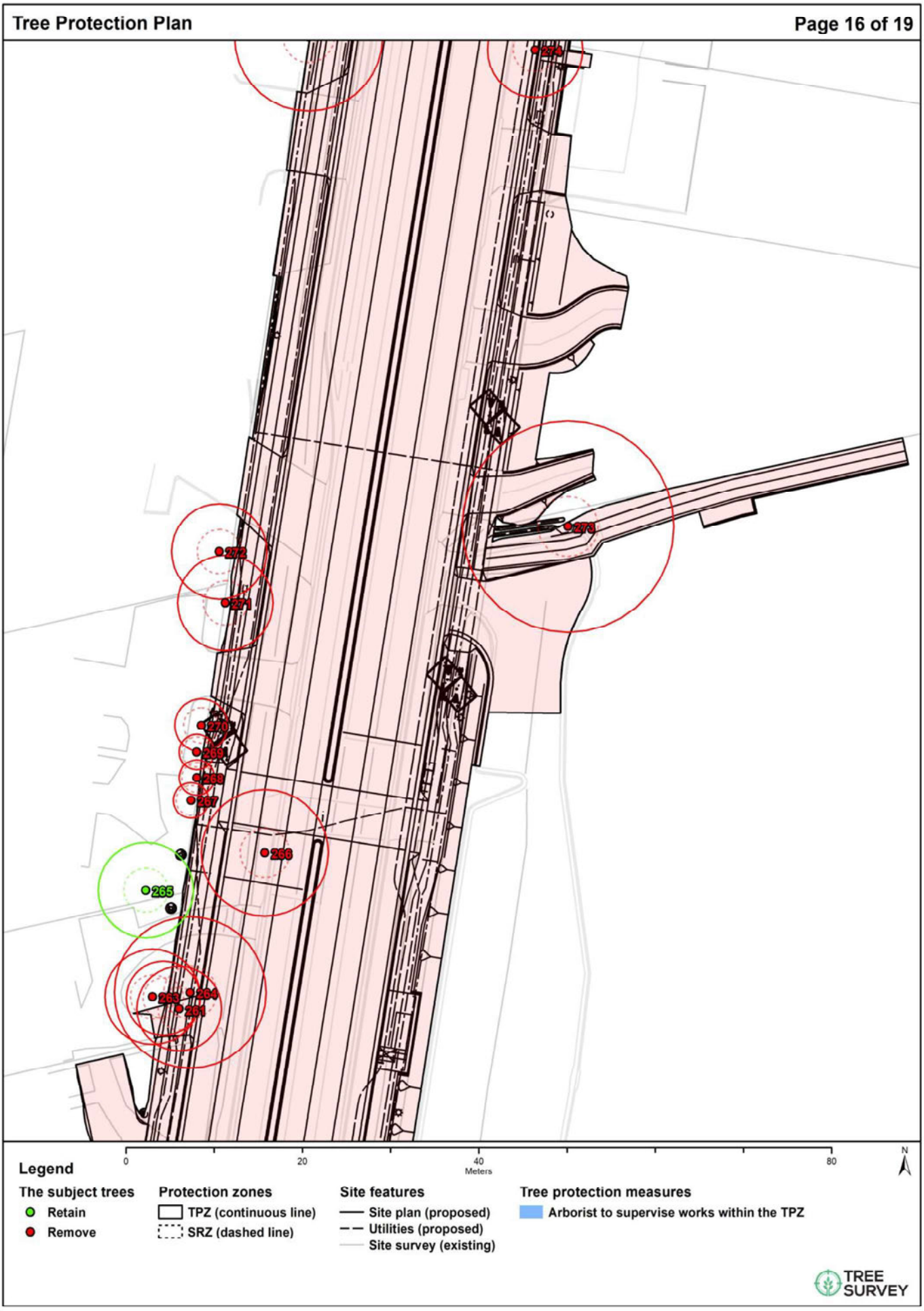
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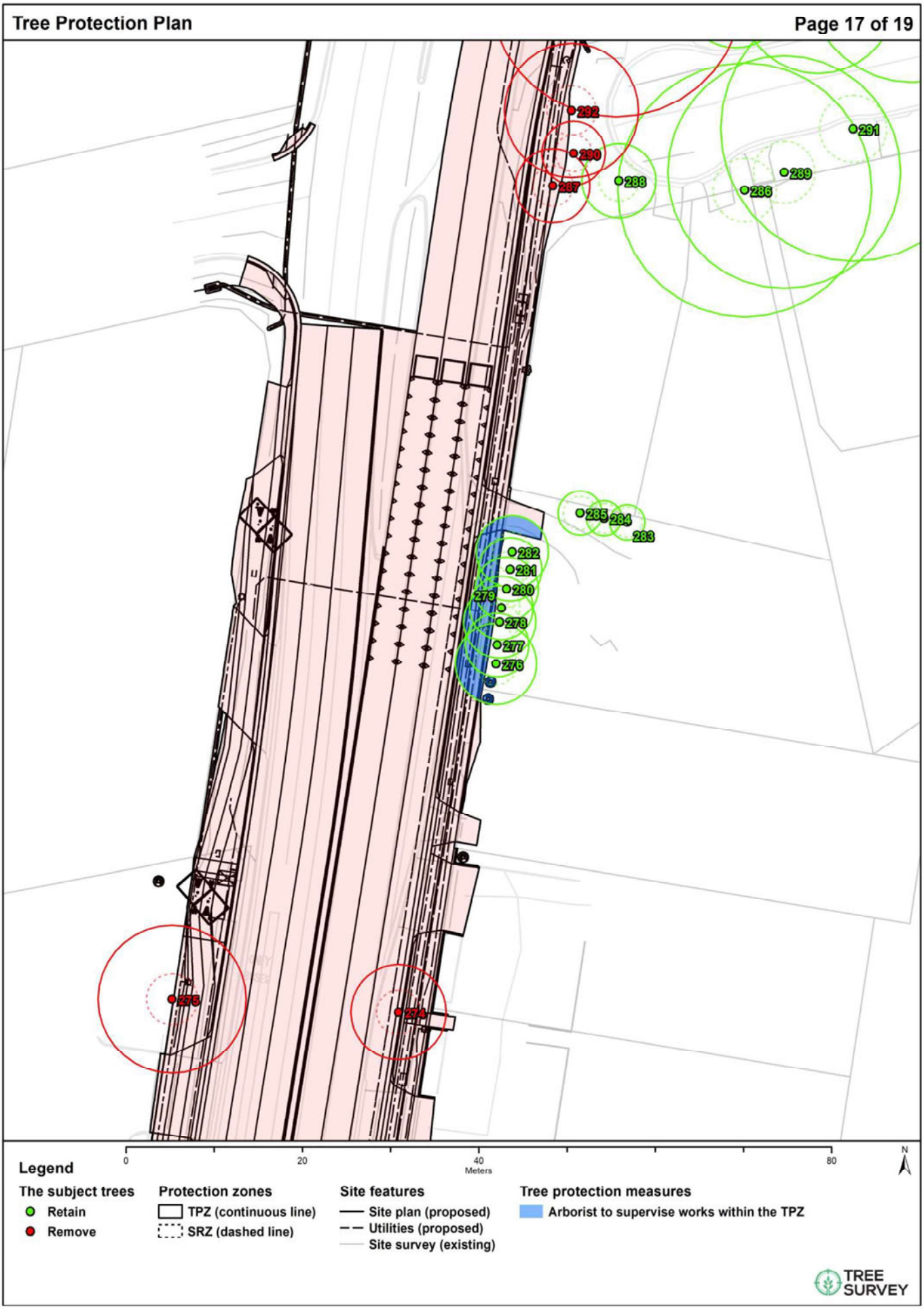
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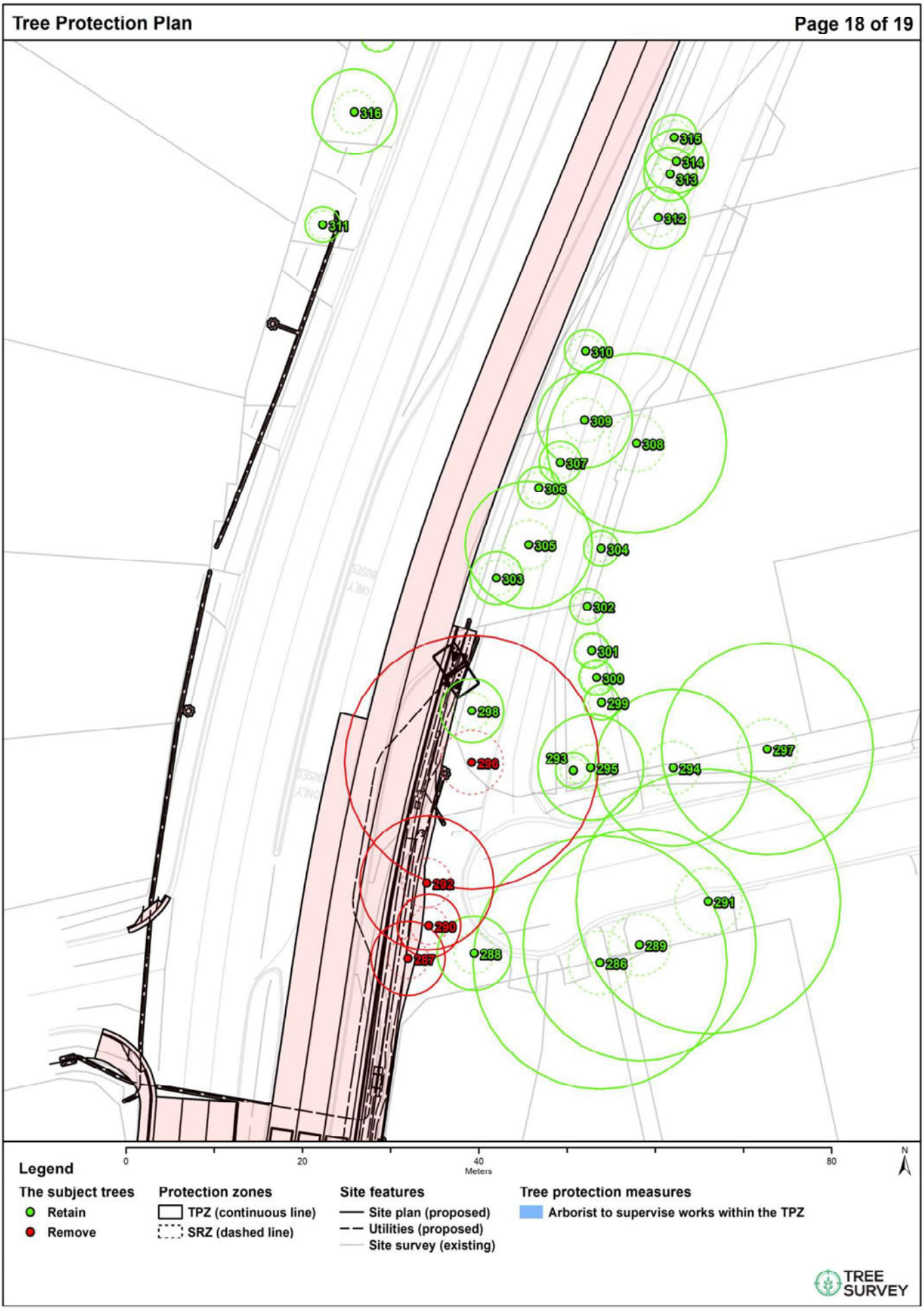
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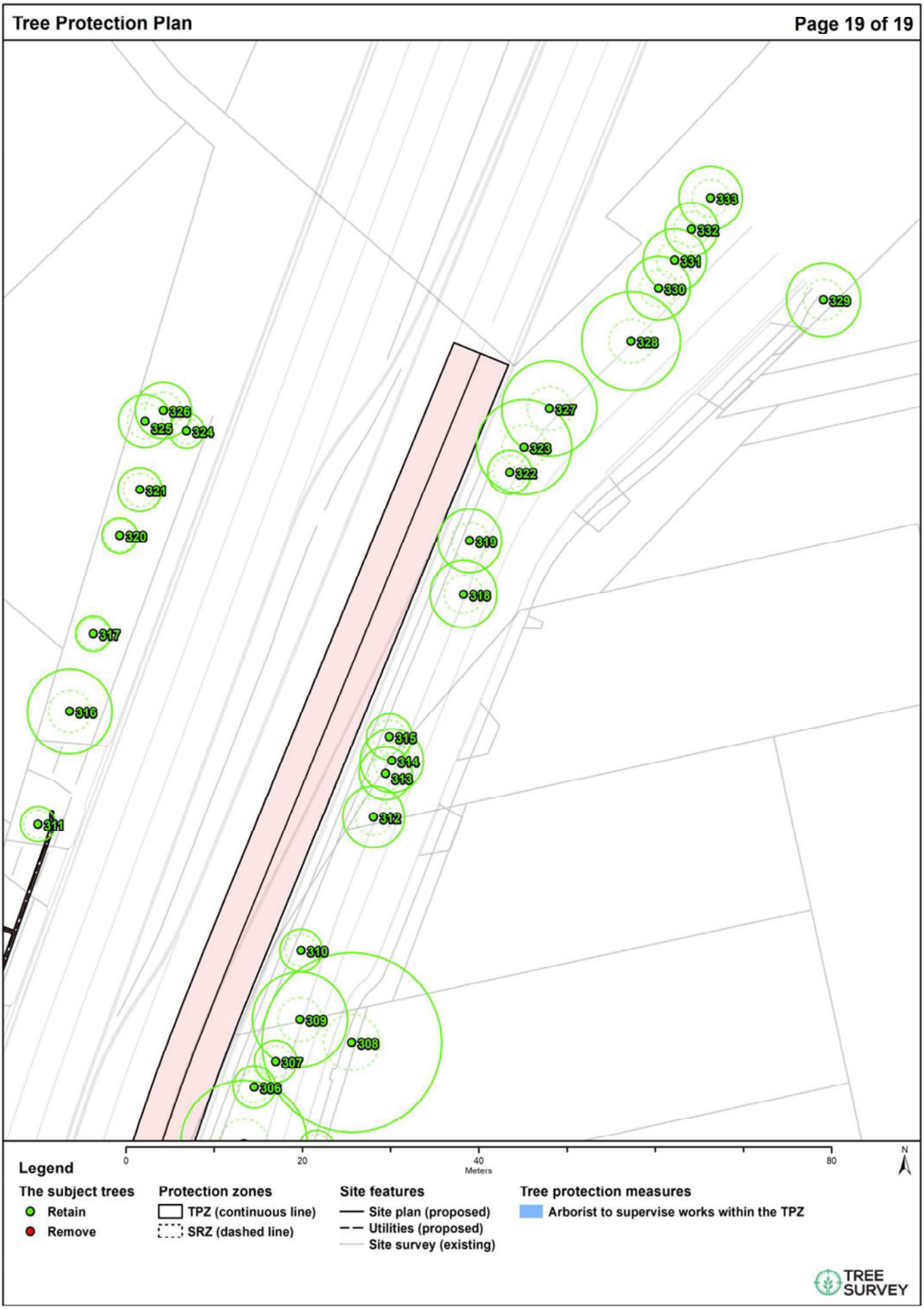
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TREE SURVEY

# References

Australian Standard, AS 4970-2009, Protection of Trees on Development Sites

Australian Standard, AS 4373-2007, Pruning of Amenity Trees.

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Mattheck, C., Bethge, K. and Weber, K. (2015). The body language of trees. Karlsruhe: Karlsruher Inst. fuÌˆr Technologie.

Mattheck, C., Lonsdale, D. and Breloer, H. (1994). The body language of trees. London: H.M.S.O.

Roberts, J., Jackson, N. and Smith, D. (2006). Tree roots in the built environment.

# Appendix I - STARS© assessment matrix

The retention value of a tree or group of trees is determined using a combination of environmental, cultural, physical, and social values.

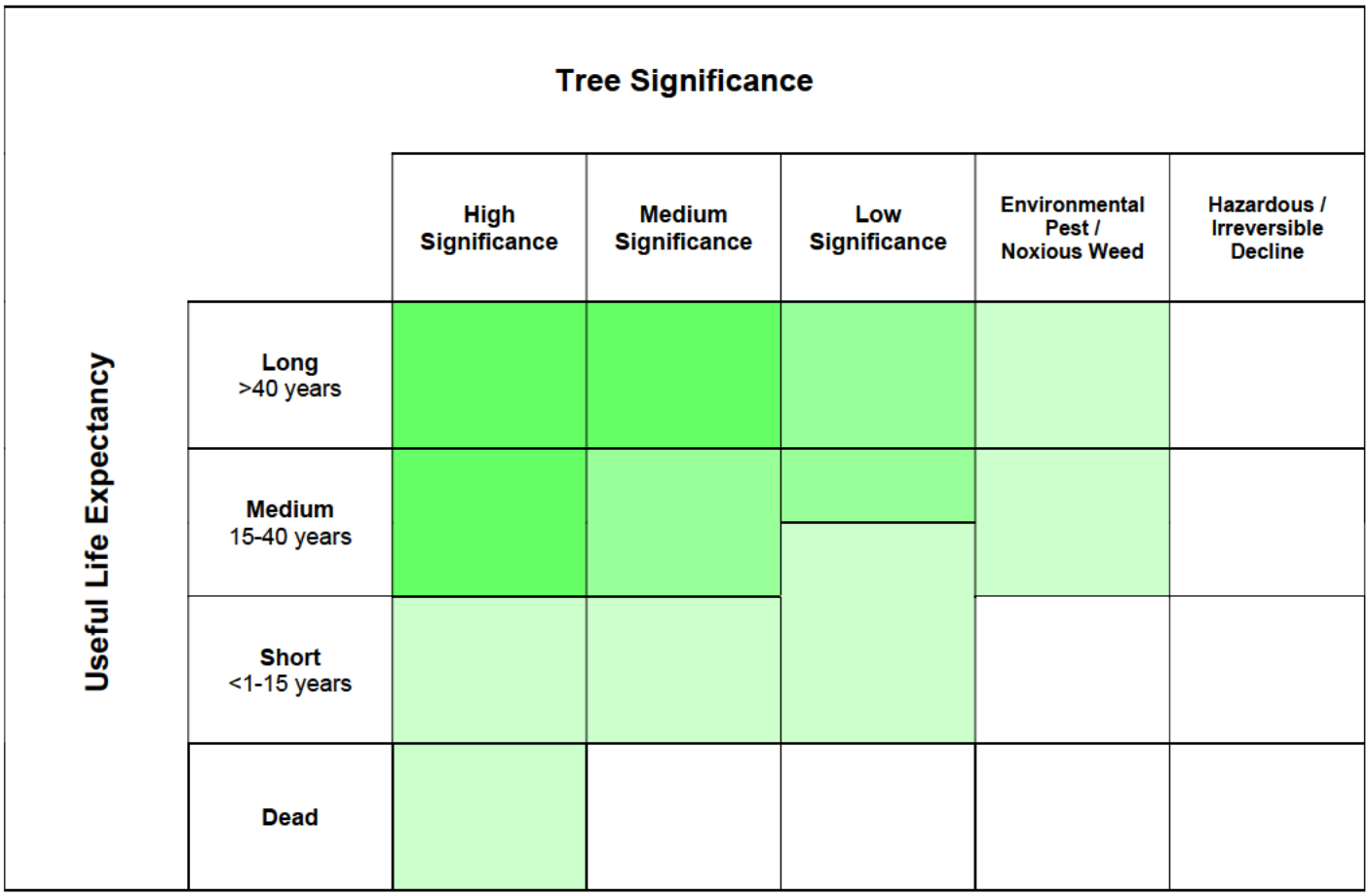
- **Low:** These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention.
- **Medium:** These trees are moderately important for retention. Their removal should only be considered if adversely affecting the proposed building/works, and all other alternatives have been considered and exhausted.
- **High:** These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by Australian Standard, AS4970-2009 Protection of trees on development sites.

This tree retention assessment has been undertaken in accordance with the Institute of Australian Consulting Aboriculturalists (IACA) Significance of a Tree, Assessment Rating System (STARS). The system uses a scale of High, Medium, and Low significance in the landscape. Once the landscape significance of a tree has been defined, the retention value can be determined. Each tree must meet a minimum of three (3) assessment criteria to be classified within a category.

## Tree Significance - Assessment Criteria

| Low Significance | Medium Significance | High Significance |
|---|---|---|
| The tree is in fair-poor condition and good or low vigour.<br><br>The tree has form atypical of the species<br><br>The tree is not visible or is partly visible from the surrounding properties or obstructed by other vegetation or buildings<br><br>The tree provides a minor contribution or has a negative impact on the visual character and amenity of the local area<br><br>The tree is a young specimen which may or may not have reached dimensions to be protected by local Tree Preservation Orders or similar protection mechanisms and can easily be replaced with a suitable specimen<br><br>The tree's growth is severely restricted by above or below ground influences, unlikely to reach dimensions typical for the taxa in situ – tree is inappropriate to the site conditions<br><br>The tree is listed as exempt under the provisions of the local Council Tree Preservation Order or similar protection mechanisms<br><br>The tree has a wound or defect that has the potential to become structurally unsound. | The tree is in fair to good condition<br><br>The tree has form typical or atypical of the species<br><br>The tree is a planted locally indigenous or a common species with its taxa commonly planted in the local area<br><br>The tree is visible from surrounding properties, although not visually prominent as partially obstructed by other vegetation or buildings when viewed from the street<br><br>The tree provides a fair contribution to the visual character and amenity of the local area<br><br>The tree's growth is moderately restricted by above or below ground influences, reducing its ability to reach dimensions typical for the taxa in situ | The tree is in good condition and good vigour<br><br>The tree has a form typical for the species<br><br>The tree is a remnant or is a planted locally indigenous specimen and/or is rare or uncommon in the local area or of botanical interest or of substantial age.<br><br>The tree is listed as a heritage item, threatened species or part of an endangered ecological community or listed on council's significant tree register<br><br>The tree is visually prominent and visible from a considerable distance when viewed from most directions within the landscape due to its size and scale and makes a positive contribution to the local amenity.<br><br>The tree supports social and cultural sentiments or spiritual associations, reflected by the broader population or community group, or has commemorative values.<br><br>The tree's growth is unrestricted by above and below ground influences, supporting its ability to reach dimensions typical for the taxa in situ – tree is appropriate to the site conditions. |
| **Environmental Pest / Noxious Weed** | | |
| The tree is an environmental pest species due to its invasiveness or poisonous/allergenic properties.<br><br>The tree is a declared noxious weed by legislation | | |
| **Hazardous / Irreversible Decline** | | |
| The tree is structurally unsound and/or unstable and is considered potentially dangerous.<br><br>The tree is dead, or is in irreversible decline, or has the potential to fail or collapse in full or part in the immediate to short term. | | |

| Useful Life Expectancy - Assessment Criteria | | | |
|---|---|---|---|
| **Remove** | **Short** | **Medium** | **Long** |
| Trees with a high level of risk that would need removing within the next 5 years.<br><br>Dead trees.<br><br>Trees that should be removed within the next 5 years.<br><br>Dying or suppressed or declining trees through disease or inhospitable conditions.<br><br>Dangerous trees through instability or recent loss of adjacent trees.<br><br>Dangerous trees through structural defects, including cavities, decay, included bark, wounds, or poor form.<br><br>Damaged trees that considered unsafe to retain.<br><br>Trees that could live for more than 5 years but may be removed to prevent interference with more suitable individuals or to provide space for new planting.<br><br>Trees that will become dangerous after removal of other trees for the reasons. | Trees that appear to be retainable with an acceptable level of risk for 5-15 years.<br><br>Trees that may only live between 5 and 15 more years.<br><br>Trees that may live for more than 15 years but would be removed to allow the safe development of more suitable individuals.<br><br>Trees that may live for more than 15 years but would be removed during the course of normal management for safety or nuisance reasons.<br><br>Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term. | Trees that appear to be retainable with an acceptable level of risk for 15-40 years.<br><br>Trees that may only live between 15 and 40 more years.<br><br>Trees that may live for more than 40 years but would be removed to allow the safe development of more suitable individuals.<br><br>Trees that may live for more than 40 years but would be removed during the course of normal management for safety or nuisance reasons.<br><br>Storm damaged or defective trees that require substantial remedial work to make safe and are only suitable for retention in the short term. | Trees that appear to be retainable with an acceptable level of risk for more than 40 years.<br><br>Structurally sound trees located in positions that can accommodate future growth.<br><br>Storm damaged or defective trees that could be made suitable for retention in the long term by remedial tree surgery.<br><br>Trees of special significance for historical, commemorative, or rarity reasons that would warrant extraordinary efforts to secure their long-term retention. |




## Legend for Matrix Assessment

| | |
|---|---|
| | **Priority for retention (High):** These trees are considered important for retention and should be retained and protected. Design modification or re-location of building/s should be considered to accommodate the setbacks as prescribed by the Australian Standard AS4970 Protection of trees on development sites. Tree sensitive construction measures must be implemented if works are to proceed within the Tree Protection Zone. |
| | **Consider for retention (Medium):** These trees may be retained and protected. These are considered less critical; however, their retention should remain priority with the removal considered only if adversely affecting the proposed building/works, and all other alternatives have been considered and exhausted. |
| | **Consider for removal (Low):** These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention. |
| | **Priority for removal (Low):** These trees are not considered important for retention, nor require special works or design modification to be implemented for their retention. |

### Reference

IACA, 2010, IACA Significance of a Tree, Assessment Rating System (STARS)
Institute of Australian Consulting Arboriculturists
Australia, www.iaca.org.au