

**BEFORE AN INDEPENDENT HEARING COMMISSIONER
APPOINTED BY WHANGĀREI DISTRICT COUNCIL**

IN THE MATTER of the Resource Management Act 1991 (the
Act)

AND

IN THE MATTER of an application by **Whangārei District
Council (Parks and Recreation
Department)** for resource consent to
remove 34 public trees.

**STATEMENT OF EVIDENCE OF CHRISTINE JO-ANNE NIBLOCK
ON BEHALF OF
WHANGĀREI DISTRICT COUNCIL (PARKS AND RECREATION)**

Dated 22 June 2023

1. Introduction, Qualifications and Experience

- 1.1 This evidence has been prepared by Christine Jo-Anne Niblock. I am Team Leader for the Infrastructure Planning Team within the Infrastructure Planning Department of the Whangārei District Council (WDC).
- 1.2 My academic qualifications include a Bachelor of Landscape Architecture from Unitec Institute of Technology (Auckland), and I am working towards completion of a Masters' in Resource and Environment Planning at Massey University, having completed all relevant papers, I am now writing my thesis. I am a student member of the New Zealand Planning Institute.
- 1.3 I have approximately four years of experience working as a Landscape Architect and five years' experience working as a Planner for WDC. My qualifications and experience are complimentary to my role as an Infrastructure Planner for WDC.
- 1.4 My role as an Infrastructure Planner typically involves provision of RMA planning advice relevant to infrastructure and capital works projects and advice on subdivision applications in relation to landscaping and infrastructure assets that may be vested in Council. I prepare planning assessments and resource consent applications, and at times, provide landscape advice including landscape and visual assessment and landscape management input.
- 1.5 I provide both planning and landscape architecture advice and support to all WDC Infrastructure Departments. This includes representation of WDC Roading, Water, Waste and Drainage and the Parks and Recreation Departments on planning matters
- 1.6 I have experience on a range of projects of relevance including the consenting of tree works and removals. I have been involved in community consultation and participation processes of varying scales and complexities.

1.7 I confirm that the evidence I present on planning and landscape matters is within my areas of expertise and that I am not aware of any material facts which might alter or detract from the opinions I express. If I rely on the evidence or opinions of another, my evidence will acknowledge this position.

1.8 I have read and agree to comply with the Code of Conduct for Expert Witnesses as set out in the Environment Court Consolidated Practice Note 2014.

2. Scope of Evidence

2.1 This evidence provided in this statement will cover the following matters;

- Background
- The site and the receiving environment.
- The proposal
- Variations
- Assessment of effects of variation
 - Ecological
 - Amenity
- Submissions
- Statutory requirements
- Resource Management Act 1991, Part 2.
- Proposed conditions of consent.

3. Background

3.1 Residents of Brentwood Avenue and surrounding areas have raised concerns with Council over recurring damage to the Brentwood Avenue footpath, of which the cause is generally accepted to be a conflict with tree roots. Council accepts that the health and safety concerns are substantiated and has considered options to remedy the situation.

3.2 A motion to progress a resource consent was put to Councils Infrastructure Committee 14 July 2022, and the following was determined by way of an amended motion:

- a. staff to apply for a resource consent for the removal of magnolia trees from Brentwood Avenue.

- b. residents to fund removal of the trees, stump grinding and the replacement trees.
- c. WDC to reinstate the footpath following tree removal.

3.3 Several issues have been raised by submitters that fall outside of the jurisdiction of this hearing, this includes funding of the works proposed. Council cannot predetermine how the removal and replacements will be funded without a determination on the proposal itself. However, Council can reassure those interested parties that it will continue to facilitate discussions once this application is determined.

4. The Site and Receiving Environment

4.1 This section seeks to emphasis those aspects of the site and surrounding areas considered to be of key relevance to the proposal.

4.2 The site spans the road corridor of Brentwood Avenue, Kamo. The road reserve was vested in Council in the mid 1990's upon subdivision (SD89/028). There is no registered title. The road corridor - including the footpath, berm, and street trees - is managed and maintained by Council. The maintenance of private vehicle crossings is the responsibility of respective property owners.

4.3 33 bull bay magnolia (*Magnolia grandiflora*) trees were planted along the road berm of Brentwood Avenue as part of the initial subdivision. The trees are now approaching 30 years of age and are approximately 6-7m tall, meeting the definition of a Public Tree under the Whangārei District Plan. There is also one rewarewa tree (*Knightia excelsa*) identified along the road berm. Council is responsible for maintenance of all trees located within the road reserve.

4.4 Of key consideration to this proposal is the location of Brentwood Avenue in relation to the Jane Mander Retirement Village, a residence for elderly people. Brentwood Avenue forms part of a

key walking route that is used by residents and visitors of the Jane Mander Retirement Village (refer image 1). There is direct access into the retirement village from the cul-de-sac end (east-end) of Brentwood Ave.



Image 1: Pedestrian link through Jane Mander Retirement Village

- 4.5 A small neighborhood reserve (approximately 6,689m²) known as Brentwood Reserve, abuts the road reserve at the cul-de-sac end of Brentwood Avenue (images 2-3). The reserve was vested in Council as part of the original subdivision in the 1990s and is managed and maintained by Council. Approximately half of the reserve is tree-covered, primarily consisting of mature totara (Vilde, 2023). The other half is an open grassed area (approximately 2,873m²).



Image 2: Brentwood Reserve



Image 3: Brentwood Reserve open space (June 2023)

- 4.6 A pedestrian link is provided through Brentwood Reserve that links Brentwood Avenue and Sequoia Place. This creates another walking route for residents of the surrounding area. Brentwood Avenue forms part of a series of well-used walking routes used by locals including potentially vulnerable members of the elderly community.
- 4.7 The footpaths along Brentwood Avenue is a mosaic of patchwork repairs [Refer Appendix 1: Photos](#). The Whangārei roading sector of the Northland Transport Alliance (NTA) have carried out more than 12 ‘temporary failure repairs’ over the three-year period between 2019-2021 on the footpath of Brentwood Avenue. [Refer Appendix 2: Path Temporary Failure Repairs](#).
- 4.8 A temporary repair most commonly involves the forming of a hot-mix fillet to smooth the hazard and ‘make safe’. Being a *temporary* fix, the results are short term, and the underlying cause of the damage may not be remedied. In the case of tree roots, the paving may continue to move and trip hazards recur; this is evident along Brentwood Avenue where tree roots are a recurring cause of the pavement shifting. [Refer Appendix 1: Photos](#).

5. The Proposal

- 5.1 The application, as lodged, seeks to remove 34 trees located within the road reserve of Brentwood Avenue, Kamo; 33 trees are bull bay magnolia and 1 is a rewarewa.
- 5.2 The removal of all 34 trees is considered a long-term approach to address the existing conflicts between the trees, roading, infrastructure assets and private properties. Because some conflicts are creating trip hazards and there are vulnerable users, health and safety has been a key consideration in the determination of this option.
- 5.3 Of the 35 trees assessed by arborist, Jon Redfern of Arborlab, 27 conflicts were identified with 19 of the trees assessed qualified as having a 'moderate' to 'major' disruption on Council infrastructure and/or roading assets. These are outlined in detail in Table 1 of the Arborist's report that was provided with the original application.
- 5.4 The original proposal, as lodged, applied for the trees removed to be replaced at a ratio of 3:1 (102 trees total). This ratio was suggested by Mr. Redfern and supported by the ecologist, Madara Vilde of Wild Ecology, in seeking to off-set the loss of benefits from removal within a 10-year timeframe.
- 5.5 It is generally accepted by all parties that due to limited space within the road corridor, a replacement ratio of 1:1 is all that can be accommodated within the road reserve.
- 5.6 Mr. Redfern acknowledged in his arborist report that the 68 additional replacement trees would not be able to be accommodated within Brentwood Reserve, and to consider a broader area to accommodate the number of trees suggested. However, this was unfortunately omitted in the original application, and it was suggested the reserve would be able to accommodate all 68 replacement trees offered. This is now considered unfeasible, likely having a negative effect including overcrowding and loss of recreational space.

- 5.7 As such, it is requested that a variation is made to the original proposal. In an effort to provide more certainty it is proposed to reduce the number of additional replacement trees – those above the street replacement ratio of 1:1 – to a number that is actually able to be accommodated within Brentwood Reserve.
- 5.8 WDC Parks Officer and qualified Arborist Paul Leyland has provided advice as to the number of trees able to be accommodated without causing adverse effect on the amenity value of the park. He has recommended that 10 trees are planted within the grassed area of Brentwood Reserve. Refer [Appendix 3](#). Supplementary evidence supplied by Mr. Redfern, provided as [Appendix 4](#), supports this approach.
- 5.9 The trees are proposed to be removed in one stage, with replacement of the street trees occurring as soon as practicable. Removal of the trees will allow for Council's Roading department to undertake a thorough assessment of the condition of the footpath and consider options for a permanent repair solution. There are no immediate commitments and due process will be followed once the condition of the carriageway has been assessed.

6. Variations

It is requested the proposal is varied and the total ratio of replacement trees reduced to that which is able to be accommodated with certainty. This would include a 1:1 ratio within the road reserve, and an additional 10 trees to be planted within Brentwood Reserve (Lot 6 DP 107035 and Lot 17 DP 137989).

- 6.1. Council is also accepting of a variation to the planting pallet, as recommended and provided as attachment 3A of the s42A Hearing Report. It is anticipated that further discussions with the residents of Brentwood Avenue would be facilitated by Council, with the final selection to be approved by a representative from WDC Parks and Recreation Department.

7. **Assessment of Effects of Variation**

Ecological Effects

The site is considered to have “distinctly low existing ecological value” (Ecological Report pg. 5) and the trees themselves low ecological value, primarily valued for their visual amenity qualities. The Arborist supports this, commenting “there’s unlikely to be any ecological or historical value to these trees” (Arborist Report pg. 16).

- 7.1. Mr. Redfern’s report notes that replacement trees, assumed to be at a ratio of 1:1, would eventually offset the loss of the existing trees within a period of 15-20 years (Arborist Report pg.15). “Using more replacement trees initially, will off-set the benefits in a shorter timeframe” (Arborist Report pg. 17). He suggests a greater replacement ratio of 3:1 would provide for a reasonable off-set benefit within a shorter timeframe of 10 years but acknowledged this may not be feasible and that consideration of the planting of trees throughout the wider area could be undertaken.
- 7.2. To enable the planting of 68 additional trees in a manner that does not cause adverse effects, the consent would need to provide a wider area and some flexibility to accommodate planting in various locations throughout the wider Whangārei District in alignment with Councils existing street tree work program. This presents issues in terms of conditions of consent and monitoring; the locations and timing of the replacement trees will be difficult to distinguish from the wider street tree program for the purpose of condition sign-off.
- 7.3. In an effort to provide more certainty it is proposed to reduce the number of additional replacement trees – those above the street replacement ratio of 1:1 – to a number that is actually able to be accommodated within Brentwood Reserve (Lot 6 DP 107035 and Lot 17 DP 137989).

- 7.4. Offsetting, in this instance, seeks to achieve a gain in ecological outcomes, or at minimum, no net loss. While the initial offer of 68 additional replacement trees would provide for off-setting within a shorter time period, it is considered the provision of a lesser number of additional trees (10) would still provide an ecological outcome that is greater than the existing situation, albeit over a longer period of time.
- 7.5. Mr. Redfern concludes with the following in his evidence report provided as [Appendix 4](#); “given the equal substitution within the streetscape and planting of an additional 10 large canopy trees within the reserve, over time, the loss of the Bull Bay Magnolia and Rewarewa trees will be adequately compensated from an amenity and urban forest perspective.”
- 7.6. Based on the above-mentioned considerations, the level of effects relevant to a reduction of replacement trees remains to be no more than minor. There is still a gain in ecological value through the planting of additional trees within the reserve.
- 7.7. Amenity Effects
The trees proposed for removal are primarily valued for their visual amenity, forming an avenue along the road reserve. The variation proposed to reduce the replacement ratio is targeted at the additional replacement trees outside of the road reserve environment. There will be no change in the level of effects on amenity value relevant to the road reserve, as these trees will still be replaced at a 1:1 ratio.
- 7.8. With regards to the additional replacement planting within Brentwood Reserve, the effects remain to be generally positive. There are potential negative effects if too many trees are planted in the reserve, a reduced number is more feasible and with considered placement, there will be no adverse effect on the amenity values associated with the park with retention of the grassed open space area.

8. Submissions

A total of 33 submissions were received. One person has submitted twice on the matter and two did not formally identify their position; although, it could be inferred that these submissions are generally in support of the proposal when considering the information provided within the submissions.

8.1. A majority of submitters support the proposal, with some suggestions for amendment or other concerns raised. Matters considered outside of the scope of the Resource Management Act 1991 have been omitted. Matters raised by submitters and addressed in this report include:

- Replacement planting species
- Replacement planting ratio
- Character and amenity value
- Health and safety
- Infrastructure damage

8.2. Of the two submissions in opposition, the following matters were raised and are addressed in this report:

- Character and amenity value
- Precedent

8.3. Replacement Planting Species

Submissions in support of the proposal raised concerns and/or suggestions for replacement tree species, particularly those selected for use within the road reserve. The plant pallet as provided with the application has been endorsed by two experts, being Ms Vilde, Principal Ecologist and Mr Redfern, Arborist.

8.4. I agree with the response provided by the reporting planner at paragraph 62 of the s42A hearings report. As noted in the s42A report, Ms Vilde has suggested limiting native species to titoki (*Alectryon excelsus*) or Pohutukawa 'Māori Princess' (*Metrosideros excelsa*). Council is accepting of this variation to the planting pallet, as provided as attachment 3A of the s42A report.

8.5. Replacement Planting Ratio

A number of submitters in support of the application have raised concerns over the ratio of replacement planting proposed. While submitters are generally supportive of the ratio of replacement planting for the street trees within the road reserve as 1:1, some have concerns with the additional replacement trees offered.

8.6. On reflection, it is accepted that not all 68 replacement trees can be accommodated in this reserve without negative impact such as overcrowding. As mentioned previously, it is requested that the total ratio of replacement trees should be reduced to that which is able to be accommodated with certainty. This would include a 1:1 ratio within the road reserve, and approximately 10 large trees within Brentwood Reserve (Lot 6 DP 107035 and Lot 17 DP 137989).

8.7. Character and Amenity Value

I agree with the response provided by the reporting planner relevant to character and amenity effects, as detailed in the s42A hearings report. Visual effects and loss of amenity will be very noticeable in the first instance; however, this is likely to reduce over time as replacement trees mature and reform the characteristic tree-lined avenue that Brentwood Avenue features.



Image 4: Brentwood Avenue magnolia trees (June 2023)

8.8. Health and Safety

Of particular concern to many of the submitters is the uplifting of the footpath from tree roots creating potential trip hazards. Trip hazards can be particularly dangerous for vulnerable users including the elderly and those with limited abilities.

8.9. I generally agree with the s42A report that the proposal does not cover, include, or direct any subsequent remediation of the road environment; due process will be followed once the trees are removed, and the condition of the carriageway assessed and options for long-term remediation considered. Nonetheless, the removal of the trees will prevent the situation from worsening and allow the opportunity to replant more appropriate species, providing a long-term solution to what has been a recurring issue.

8.10. Infrastructure Damage

Almost all submitters agree there is conflict between the street trees, public infrastructure and private property. This is evidenced in the photos provided as appendix 1.

8.11. Precedent

The reporting planner provides an assessment of precedent through paragraphs 88-93 of the s42A hearings report. I agree with this assessment.

8.12. Council accepts the proposal does not align with its own tree policy nor complies with the rules of the district plan. Council has sought to maintain transparency throughout the consent application process by seeking public notification. No privilege has been afforded to Council in its application for a resource consent.

9. Other Matters

9.1. WDC Engineering Standards - Street Tree Planting Clearance

Paragraph 98 of the s42A hearing report notes submitters' reference to replanting being undertaken in accordance with 'Street Tree Planting Clearance'. This is a reference to Sheets

56-57 of the WDC Engineering Standards (ES) and is provided as [Appendix 5](#) of this report. The ES is the WDC's minimum acceptable technical specification.

- 9.2. These details provide guidance on the planting of specimen trees within a park or reserve and include clearances from infrastructure, driveways, and signage for street trees. While it is best practice to meet the suggested clearances, every site has unique attributes and the final street tree clearances are considered and approved on a case-by-case basis.

10. Statutory Requirements

- 10.1. In alignment with the application as lodged and the s42A hearing report, resource consent is required under rule TREE-R6 of the Whangārei District Plan. The activity, removal of any public tree, holds a Discretionary activity status.
- 10.2. An assessment of effects has been carried out as part of the original application, with further assessment provided in this report relevant to a change in measures proposed to offset the effects. These assessments have been carried out in accordance with s104 of the Resource Management Act 1991. Overall, the level of effects is considered not more than minor.
- 10.3. The proposal otherwise aligns with the objectives and policies considered to be of relevance within the Whangārei District Plan, this is supported by further analysis of the objectives and policies of the Notable and Public Tree chapter by the processing planner, as provided within the s42A report.
- 10.4. I agree with the reporting planner's assessment that the proposal is consistent with the purpose of the Act, being the sustainable management of natural and physical resources, as well as Sections 6, 7 and 8 of Part 2 of the RMA 1991.

11. Proposed Conditions of Consent

11.1. Council's reporting officer has recommended 12 conditions, as provided in Appendix 3 of the s42A report. While I am generally supportive of the conditions as provided, I request condition 8 is amended to reflect a reduction in the replacement tree ratios.

11.2. Condition 8, suggested amendments:

Every Public Tree that is removed, must be replaced at a ratio of ~~1~~:1 by a tree which is of the species identified in Attachment A – Palette of Replacement Trees.

~~Each One~~ replacement tree must be located in the same or similar location as the tree being removed and shall be a minimum size of PB95/140L.

~~Ten (10) additional trees shall be planted The two additional replacement trees (for every tree removed) are to be located~~ within the reserve on Brentwood Avenue, being Lot 6 DP 107035 and Lot 17 DP 137989.

12. Conclusion

12.1. Overall, my assessment generally aligns with that of the Council's reporting officer. My assessment relies on evidence or support provided by technical experts including:

- Arboricultural – Mr. Jon Redfern (Arborlab)
- Ecological – Ms. M Vilde (Wild Ecology)
- Parks Technical Officer/Arborist – Mr. Paul Leyland (WDC)

12.2. I am of the opinion the associated effects created by the tree removals are able to be mitigated or offset to a level that is considered appropriate, with effects reducing overtime as the replacement trees mature. I consider the level of effects relevant to the proposal will be no more than minor overall.

12.3. The majority of submitters are in support of the proposal. It is my opinion that consent should be granted for this application subject to conditions of consent.



Christine Jo-Anne Niblock

Team Leader Infrastructure Planning
Whangārei District Council

Dated this 22 day of June 2023.

ANNEXURES:

1. Appendix 1: Photos of Brentwood Avenue Footpath
2. Appendix 2: Path Temporary Failure Repair Process
3. Appendix 3: Correspondence – Paul Leyland
4. Appendix 4: Supplementary Evidence – Arborlab
5. Appendix 5: WDC Engineering Standards Sheets 56-57

APPENDIX 1

Photos of Brentwood Avenue footpath as of 20 June 2023. Taken by Christine Niblock.









APPENDIX 2

FP01 PATH TEMPORARY FAILURE REPAIRS

General

Temporary Failure Repairs are defined as treatments to the path surface that do not improve the structural integrity of the path but aims to make the path safe to use until more permanent, structural repairs can be undertaken.

Scope of Work

The following sets out the scope and extent of work that is expected when undertaking this activity.

- Temporary repair of tripping hazards, which may be caused by differential settlement of concrete slabs, tree roots, sunken, protruding or missing pavers, or any other cause.
- The Contractor is to ensure that the path surface is levelled to minimise the trip hazard.

Programming

- All complaints are to be dealt with within 24 hours.
- A dispatch shall be raised for the permanent repair.

Performance Criteria

Path Temporary Failure Repairs must meet the following criteria to the satisfaction of the Engineer:

1. All urgent call-outs are attended to within the specified response time.
2. The surface is level or trip hazard has been minimised.

Basis of Payment

1. Temporary Failure Repairs

Payment for this item shall be by way of an all-inclusive lump sum per month. The payment will be full compensation for all expenses incurred by the Contractor in fulfilling his obligations under this activity.

APPENDIX 3

From: [Paul Leyland](#)
To: [Christine Niblock](#)
Subject: Brentwood Ave Tree Ratio Proposal
Date: Wednesday, 21 June 2023 3:10:58 pm
Attachments: [image001.png](#)

Hi Christine

Upon review of the proposal to plant an additional 68 trees in Brentwood Reserve in response to the removal of street trees along Brentwood Avenue, I have concerns that this is not feasible due to the limited space available within the reserve. The retention of green space in this area is an important contributor to the amenity values of the area, planting too many trees will result in overcrowding of the trees, increase shading in the area and change the way the reserve is able to be used.

Based on my experience, I would consider no more than 10 additional trees are able to be accommodated within the park without negative impact.

Many Thanks

Paul Leyland

Technical Officer | Parks & Recreation Department

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Work Hours: 7.00 AM – 3.00 PM				
Mon	Tue	Wed	Thurs	Fri
In Office	In Office	In Office	In Office	WFH

Memorandum

Prepared for: Whangārei District Council
Christine Niblock

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Job Ref. 38354

Date: 22 June 2023

RE Brentwood Avenue Tree Removal

Summary

1. Whangārei District Council (WDC) have progressed a notified resource consent process for the proposed removal of 33 Bull Bay Magnolia (*Magnolia grandiflora*) and 1 Rewarewa (*Knightia excelsa*) street trees growing within road reserve at Brentwood Avenue, Kamo, Whangārei.
2. The trees have been the subject of ongoing community focus particularly for residents of Brentwood Avenue, Timandra Place and the Jane Mander Retirement Village.
3. Over time residents have raised concerns about the influence of the trees' root activity upon footpaths, driveways and infrastructure. Lifting footpath sections have resulted in a number of slip, trip and fall harm incidents.
4. At the July 2022 meeting the Whangārei District Council Infrastructure Committee resolved approvals for;
 - i) Staff to progress applications for resource consent for the removal of magnolia trees from Brentwood Avenue, Kamo.
 - ii) Support for local residents funding the removal of the trees, stump grinding the remains and replanting with a suitable tree species that is agreeable to both parties.
 - iii) Reinstatement by the Council of the footpath after tree removal has taken place.
5. A limited public notification and resource consent process has subsequently been progressed to remove 34 street trees with submissions closing on 9 May 2023.
6. In October 2022 Arborlab Consultancy Services provided an assessment of the trees, with recommendations. The report concluded that mitigation replacement planting for tree removal should be undertaken at a ratio of 1:3, a total of 102 trees, and that a broader planting area be considered, not exclusive to Brentwood Avenue road corridor but extending into the reserve at the southern / southeastern end of Brentwood Avenue.
7. On consideration of Arborlab Consultancy Service's recommended replacement ratio, the ratio could be reduced if a number of the replacement trees included species with the capability of



large dimensions at maturity. The larger trees could be planted within the local Brentwood Avenue reserve.

8. In managing mitigation for the loss of the street trees it has been proposed that like-for-like replanting is undertaken in Brentwood Avenue with 34 street trees.
9. Due to the risk of overcrowding and losing recreational open space, which was raised in submissions, it is now recommended that an additional 10 trees with large canopy capabilities be planted within the Brentwood Avenue reserve.
10. Pursuant to the resource consent and submissions process Arborlab Consultancy Services have been engaged to review the submission information and provide concluding advice to inform the Public Hearing scheduled for 7 July 2023.
11. The following information therefore seeks to:
 - i) review and address submissions, specifically where submitters have specified arboricultural matters, and
 - ii) provide comment on the proposed tree species selection and mitigation.

Submissions received

12. A total of 33 submissions were received. Of the submissions received, 29 were in support of the application, 2 submissions opposed the application, and 2 did not identify their position. It is noted that submission number 17 and 31 are by the same persons and hold the same position in both submissions.
13. In general, the majority of submissions reiterated the substantiated concerns about root influences upon footpath, private property and infrastructure and associated health and safety matters. Some submitters also commented on the proposed replacement planting species selection, location and ratios.
14. Submitters also raised questions about the funding of tree removal and replacement.
15. Through the notified process interested parties were offered the opportunity to select and submit replacement tree options from a Palette of Replacement Trees. Some submitters provided replacement tree selection suggestions and some submitters provided suggestions beyond the palette which included, Horoeka (*Pseudopanax crassifolius*) and Makamaka (*Akama rosifolia*).

Tree selection

16. We have limited our recommended replacement street tree selection to species included within the Palette of Replacement Trees.
17. Acknowledging that regular users of Brentwood Avenue are residents at the Jane Mander Retirement Home, the replacement trees must have characteristics which reduce risk to pedestrian thoroughfare and potential damage to infrastructure and property.
18. To ensure that there is a low residual risk of future root interference with footpaths and property within the Brentwood Avenue streetscape and not to exacerbate slip / trip hazards our recommended tree selection criteria when applied to the Palette of Replacement Trees considered;

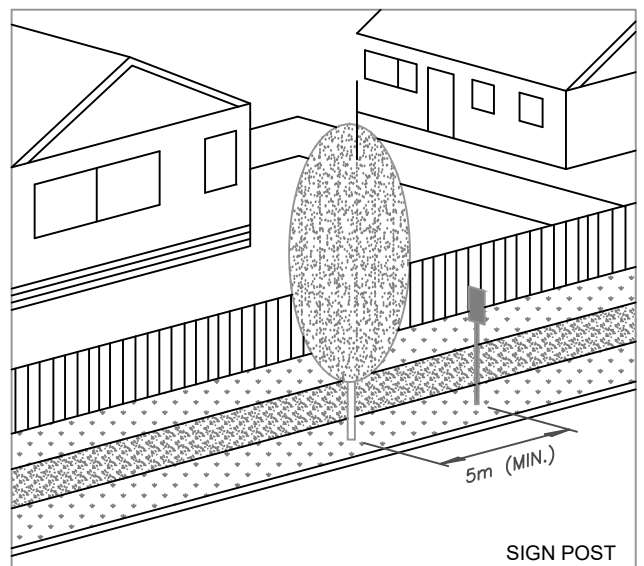
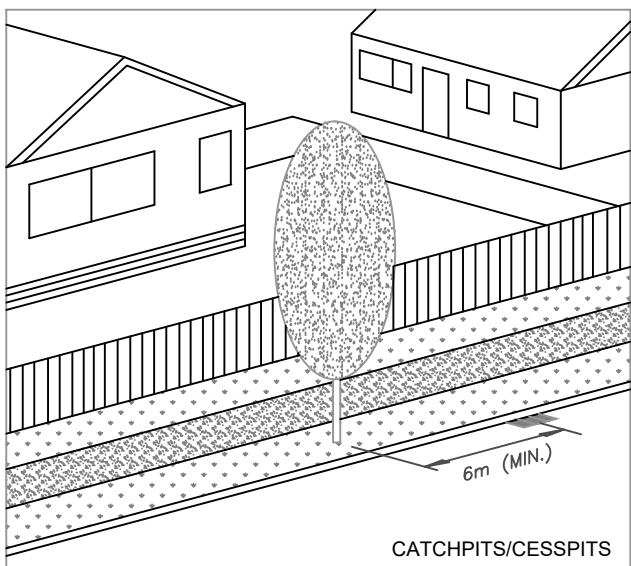
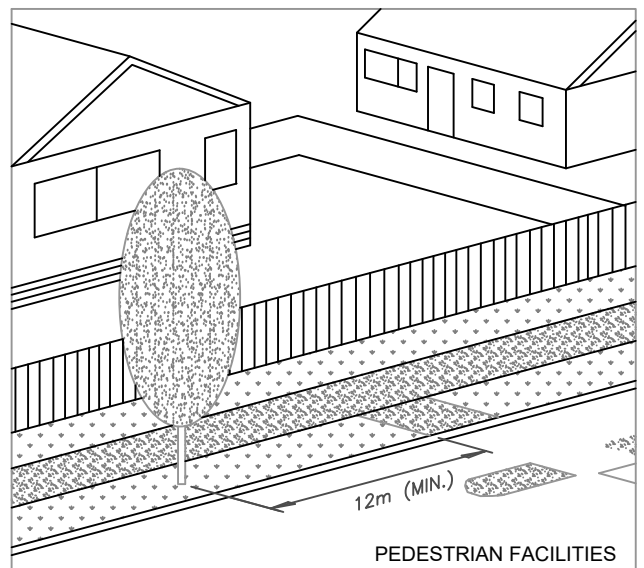
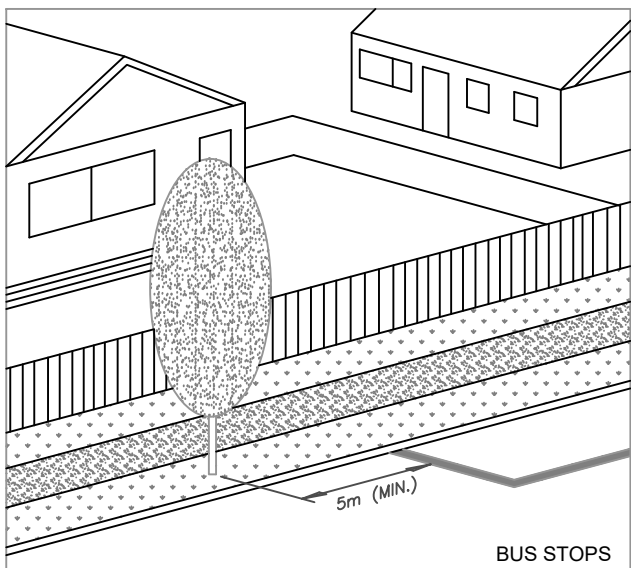
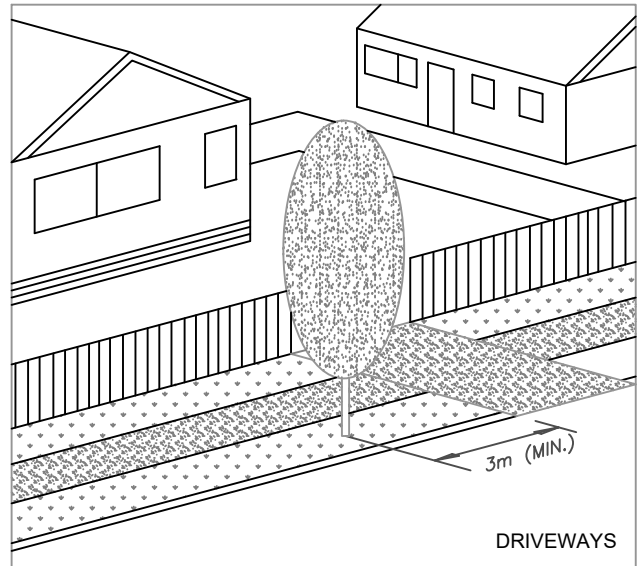
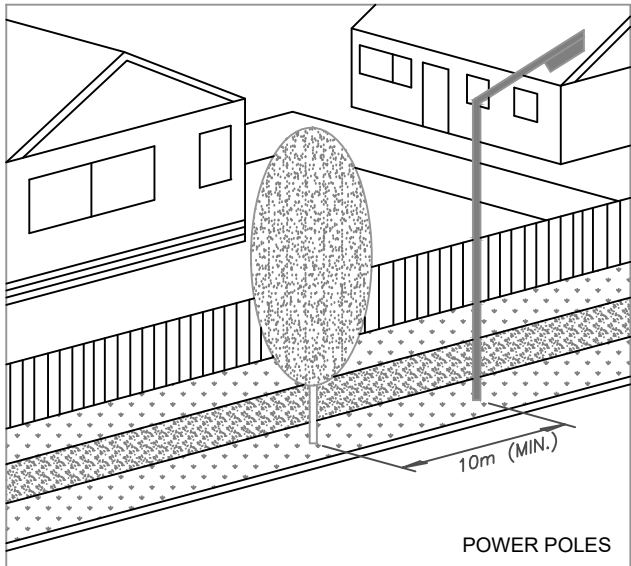


- Trees with a small maximum mature height, typically less than 6m height.
 - Trees with compact form and structure suitable for restricted urban streetscapes.
 - Trees which are proven to adapt and perform well in streetscape environments.
 - Trees with documented characteristics of low or no levels of invasive lateral surface root activity.
 - Trees that do not produce profuse levels of leaf litter or problematic fruit or flower drop.
 - Trees which require low levels of maintenance.
 - Trees that have specific amenity characteristics, such as seasonal colours and or flowers.
 - Trees that are ecologically beneficial and appropriate for the local environment.
19. During selection processes for urban streetscapes, it is rarely possible to source a tree which does not require some form of associated maintenance during its lifecycle and there is always a compromise where the tangible and intangible benefits of trees will outweigh the burden of maintenance. Nonetheless our selection recommendation is framed in the above criteria and the principal of planting the right tree in the right place.
20. We concur with Ms Madara Vilde, Principal Ecologist at Wild Ecology that the Brentwood Avenue streetscape is of low ecological quality and agree that the street tree plantings are valued primarily for their amenity values.
21. On the basis of the criteria provided our recommended selection of street trees from the Palette of Replacement Trees are either;
- i) Japanese maple (*Acer palmatum* 'Shindishojo')
 - ii) Crepe myrtle (*Lagerstroemia indica* 'Bergerac')
 - iii) Magnolia aurora
22. For consistency, amenity and the creation of a tree lined avenue we recommend the selection of one species only for the Brentwood Avenue replacement streetscape.
23. We note that the selected trees are of exotic provenance. Although an indigenous selection would prove more ecologically and culturally appropriate, we had concerns that the Palette of Replacement Trees options of Titoki (*Alectryon excelsus*) and the variety of Pohutukawa 'Māori Princess' are both medium sized trees in maturity and have been evidenced to cause uplift of footpaths when growing in restricted street environs.
24. The variety of Pohutukawa 'Māori Princess' is a selected cultivar with Taranaki provenance and therefore would not be considered as an eco-sourced species within the Whangārei region.
25. We concur with Council's in-house arborist that the selection of Upright Ginkgo (*Ginkgo biloba* 'Fastigiata') is appropriate for Brentwood Avenue reserve as this species is a larger tree in maturity and suitable for a park setting. We also suggest that a species for consideration within the reserve from the Palette of Replacement Trees with a larger potential canopy is the Turkey oak (*Quercus cerris*).
26. Although not included within the Palette of Replacement Trees we note that native Totara (*Podocarpus totara*), a tree with a larger potential canopy, are growing along the eastern boundary of the Brentwood Avenue reserve. These trees appear to be performing very well and if indigenous tree selection is a priority, we suggest consideration be given to planting 10 Totara trees within the reserve.



Mitigation

27. The consent seeks to mitigate the loss of the 34 trees with replacement planting within the Brentwood Avenue streetscape with 34 trees and 10 trees within the Brentwood Avenue reserve.
28. Mitigation measures for tree loss are often subjective but given the equal substitution within the streetscape and planting of an additional 10 large canopy trees within the reserve, over time, the loss of the Bull Bay Magnolia and Rewarewa trees will be adequately compensated from an amenity and urban forest perspective.



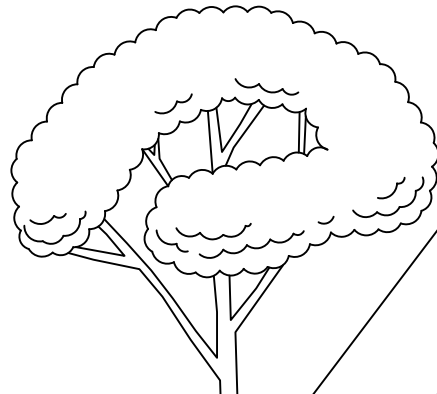
NOTES:

1. Clearances for lighting columns shall comply with the NTA Design Manual - Street Lighting.

STREET TREE PLANTING CLEARANCES
(LIVING 1 AND 2, AND ALL BUSINESS ENVIRONMENTS)

Date:	FEB 2022
Revision:	R1
Scale:	AS SHOWN
SHEET No.	56

Tree planted at same depth in soil that it was grown. In heavy clay or wet soils height at centre of planting hole raised 100mm above surrounding ground level. Soil level falls smoothly from root ball to edge of bark. In other soil types the top surface may be level.



Reinforced hessian ties at a height of no more than 1/3 tree height, firmly secured to post.

3 x Hardwood stakes forming an equal angled triangle. Stakes are rough sawn 40 x 40mm with tapered end and long enough to provide firm support to tree

Aged mulch (3 months) to 100mm depth evenly spread to 1m radius around tree. Mulch placed clear of tree trunk

Where required by Council a 1900mm long section of 65mm perforated drainage coil installed under the root ball and level with the mulched or ground surface

Planting hole depth is height of the root ball plus 30cm. The sides of the planting hole will be broken up as required to avoid a compacted edge

The lower 30cm of planting hole will be reworked basal material that has been compacted softly by foot. The top of the planting hole will be backfilled with good topsoil

Drainage coil installed above planting hole base with crimped or covered end. Drainage coil connected to drainage system at levels that ensure drainage from planting hole

TREE PLANTING DETAIL

Date:	DEC 2021
Revision:	R1
Scale:	AS SHOWN
SHEET No.	57