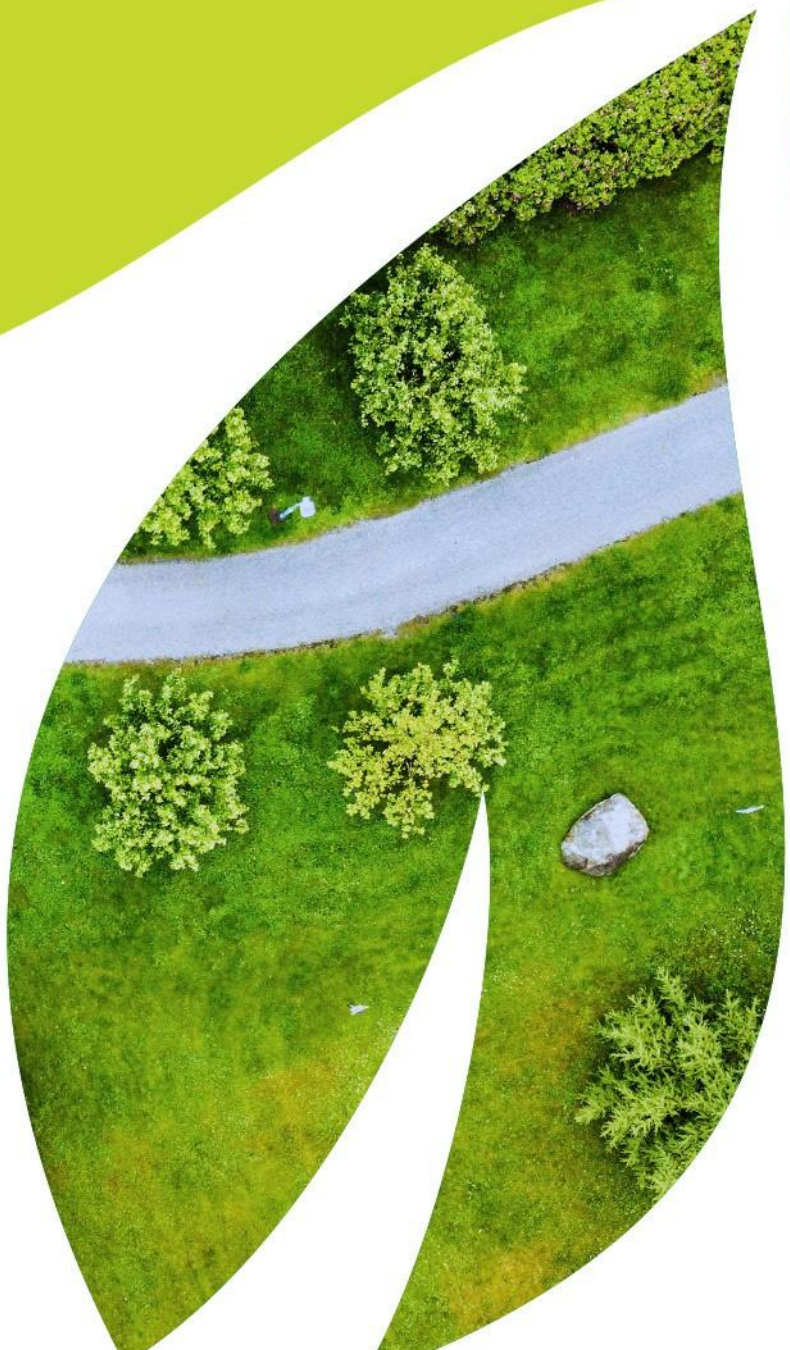
Arborlab

Creating Green Space
Sustainability

Arboricultural Impact Assessment

Milldale Stages 10 – 13



Arboricultural Impact Assessment

Prepared for:	**Fulton Hogan Land Development (FHLD)**
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Date:	**February 2025**

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Statement of Qualifications and Experience

Aaron Norman

I am a consultant arborist at Arborlab Consultancy Services Ltd. Arborlab is a multi-disciplinary consultancy specialising in arboricultural planning. I have been employed at Arborlab since December 2019.

I hold the certificate in arboricultural (Level 4) from Primary ITO, which I completed in 2014.

I have 14 years of professional experience in the arboricultural field. My experience includes contract arboriculture and several Milldale staged projects.

I confirm that, in my capacity as author of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Jon Redfern

I am the principal consultant arborist at Arborlab Consultancy Services Ltd and have been employed at Arborlab since March 2017.

I hold a diploma in horticulture (arboriculture) (Level 6) from Wintec, which I completed in 2004.

I have 10 years of contract arboriculture and 20 years as consultant in the arboricultural field, including roles such as council arborist (seconded). My experience includes tree risk assessments, quality auditing, tree consultancy and management of large residential lots such as other Milldale stages and Tamaki Regeneration projects.

I confirm that, in my capacity as peer report reviewer of this report, I have read and abide by the Environment Court of New Zealand's Code of Conduct for Expert Witnesses Practice Note 2023.

Introduction

1. This report has been prepared in support of the application by Fulton Hogan Land Development (FHLD) for a resource consent to the Environmental Protection Authority (EPA) under the Fast-Track Approvals Act 2024 (FTAA).

2. Resource consent is required for bulk earthworks, subdivision, streamworks, water permits and discharge consents for the development of 623 residential lots, 27 residential super lots, 1 neighbourhood centre lot, jointly owned access lots (JOALS) and roads to vest, reserves to vest, and all associated works, landscaping and infrastructure.

Purpose of the report

3. To identify trees within the project boundary, assess the arboricultural impact of the works, outline regulation triggers and provide recommendations for mitigation.

Summary and Context

4. FHLD have engaged Arborlab Consultancy Limited to provide arboricultural input on proposed vegetation clearance and earthworks to prepare Milldale Stages 10 – 13 for residential development. The works include the removal of various trees which are growing within the survey parameters – within 10m of riparian margins and/or 20m of wetlands (for purposes of this report are collectively called the riparian margins), road reserves and land zoned as open space, which included privately, and Council owned trees. Tree removal is proposed as they are either pest plants and/or are an undesirable species to be growing within a riparian margin and/or are of poor condition, or they are compromised by the works. The proposal also includes works within the Protected Root Zone (PRZ) of trees to be retained within these areas. Trees growing within private property that are outside the above parameters have not been considered in this assessment.

5. The findings and recommendations of this report are based on a visual ground-based assessment undertaken during site inspections from November 2024 to January 2025.

6. The extent of the riparian margin survey has been based on stream and wetland plans provided by Viridis Limited.

7. The survey identified a total of 747 trees growing within the extent of the survey parameters. The details of the trees, including their location and ownership, are outlined within Appendix A of this report and summarised below:

    - 352 trees are growing within land zoned as residential
    - 185 trees are growing within land zoned as open space – Conservation Zone
    - 210 trees are growing within road reserves

8. A total of 697 trees are proposed to be removed, for the following reasons:

    - 524 trees are located within, or will be compromised by, the extent of proposed earthworks; and,
    - 173 trees are undesirable species such as pest plants.

9. In addition to the removals, two trees will require works within their PRZ and will be retained.

10. The remaining 48 trees are clear of the line of works and will be retained. These trees have been included within this report for tree protection and identification purposes.

11. Of the 697 trees proposed to be removed:

    - 485 trees are growing within the riparian margins. These consist of 166 pest plants, 26 native trees and 293 exotic trees. One-hundred and thirty-five of these trees are growing within Open Space zoning and the remaining 350 are growing within residential land – no trees growing within the road reserve are also within the riparian margins.
    - 212 trees are growing outside of the riparian margins. These trees consist of 7 pest plants, 15 native trees and 190 exotic trees. two-hundred and ten of these trees are growing within the road reserve and two trees are growing within residential zones.

12. The two trees being retained with works to their PRZ, and the 48 trees to be retained are located within land zoned as open space and the riparian margins. These consist of 27 native trees and 23 exotic trees.

13. A tree protection methodology has been provided for the works that recommends measures to manage and/or mitigate any effects caused by the works being undertaken within the PRZ of trees being retained. Provided the tree protection methodologies proposed are adhered to, it can be expected that the adverse effects, because of the works, will be negligible.

14. The total number of trees requiring resource consent is 474 as outlined below.

    - 472 require removal
    - two require works within their protected root zones.

15. Replacement planting will be required to mitigate the loss of the vegetation. As part of the development, a landscape treatment plan is proposed, this includes tree planting of road reserves, reserves and riparian margins. Mitigation planting outlined in this report is based on the replacement of trees removed and can be incorporated into the landscape treatment.

Site Details

16. The site subject to this application is located within the Milldale development and referred to as the Milldale Stages 10 – 13 subdivision areas (the Site).

17. The site consists of Land covered by Lot 9006 DP 609046; Lot 9007 DP 602895; Lot 3 DP 151229; Lot 1 DP 147739; Lot 1 DP 488814; Lot 2 DP 488814; Lot 3 DP 488814; Lot 2 DP 147739; Lot 4 DP 353309 and Lot 2 DP 130515. Stages 10 – 13 are located within the northern and western extents of the Milldale development and comprise the remaining undeveloped greenfield stages of Milldale.

18. Overall, the Site covers a total area of approximately 71 ha. The Site is bordered by Wainui Road to the north, incorporates Lysnar Road to the north-east, and undeveloped land to the west. Previously consented Milldale stages are located to the south of the Site including Stages 5 – 8 and the Milldale Town Centre.

19. A full description of the Site and surrounds is provided in the application AEE.

20. An overview of the site is outlined on Figure 1 below. The brown shade represents the earthworks, which are proposed within the following land zonings.

21. Open Space – Conservation Zone (green shade), Residential – Mixed Housing urban zone, suburban zone and single housing zone (orange – pale yellow shade), Road Reserve – White shade, Future Urban Zone – Dark yellow shade.

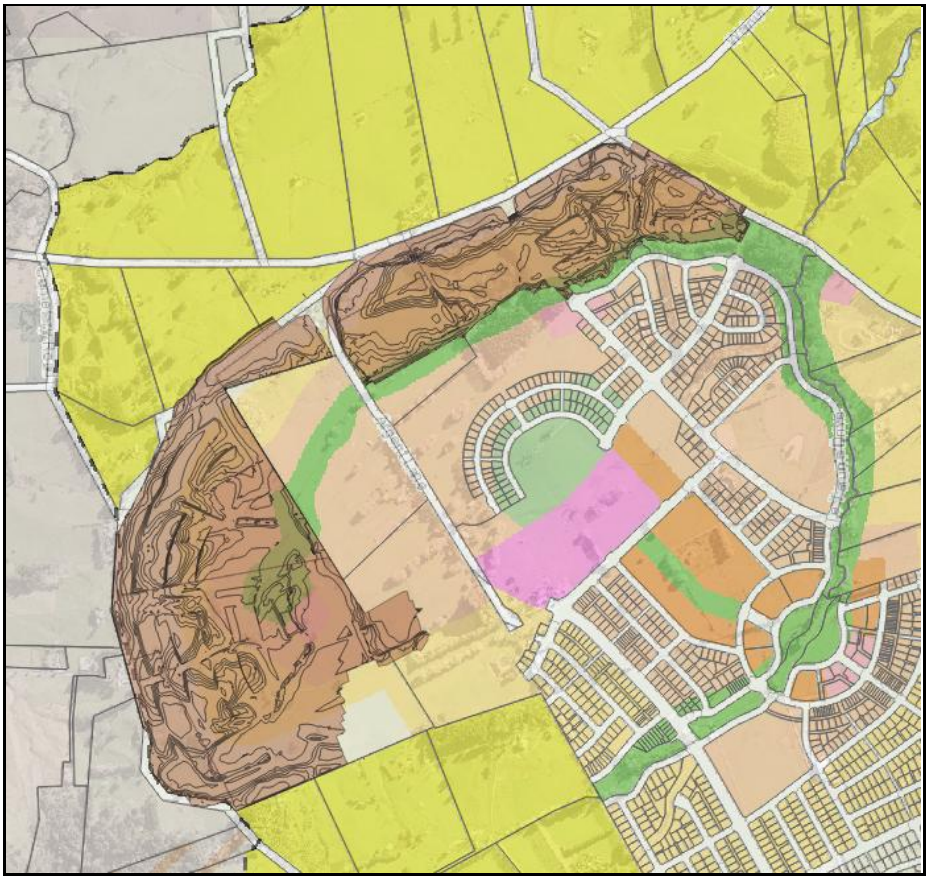


Figure 1: Aerial image of the site and the land zonings

Project Description

22. FHLD are proposing the subdivision and development of the site into a medium density residential development. The proposal will result in the development of the site into 623 residential lots, 27 residential super lots, 1 neighbourhood centre lot, jointly owned access lots (JOALS) and roads to vest, reserves to vest, and all associated works, landscaping and infrastructure.

23. The development will require land modification works to facilitate Stages 10-13 of the Milldale Fast Track application. This includes bulk earthworks across the site to refine the site to the required finished levels.

24. A full description of the project is provided in the application AEE.

Auckland Unitary Plan Regulatory

25. Any work activities being undertaken within the PRZ are subject to rules and standards outlined in the Auckland Unitary Plan (AUP (OP)). The PRZ is defined as the; "*circular area of ground around the trunk of a protected tree, the radius of which is the greatest distance between the trunk and the outer edge of the canopy. For columnar crown species the protected root zone is half the height of the tree*".

For trees growing within Open Space and a riparian margin

26. It is our understanding that the standards outlined in E16.4.1 and E15.4.1 are applicable to trees that are within land zoned as open space and a riparian margin.

Table 1: E16.4.1 Activity Table – Trees in Open Space Zones

Activity		Activity Status
(A8)	Works within the protected root zone that do not comply with Standard E16.6.2	Restricted Discretionary
(A9)	Tree removal of any tree less than 4m in height and less than 400mm in girth	Permitted
(A10)	Tree removal of any tree greater than 4m in height or greater than 400mm in girth	Restricted Discretionary

Table 2: E15.4.1 Activity Table – Vegetation Management and Biodiversity

Activity		Activity Status
(A6)	Pest plant removal	Permitted
(A18	Vegetation alteration or removal within 10m of rural streams in the Rural – Rural Production Zone and Rural – Mixed Rural Zone	Restricted Discretionary
(A19)	Vegetation alteration or removal within 10m of urban streams	Restricted Discretionary

27. We have identified 137 trees growing within land zoned as open space and the riparian margins.

    - A total of 135 trees are proposed to be removed
    - Two of the 137 trees are being retained with works being undertaken within their PRZ.

28. For non-pest plant trees, the applicable standard is within Chapter E.15 (A18 and A19), as any vegetation alteration or removal is considered a restricted discretionary activity, whereas, E.16 (A9) allows for the removal of any tree less than 4m in height and/or 400mm in girth as permitted activity. Therefore, 59 'non-pest' plants are proposed to be removed, in accordance with rule E15 (A18 or A19), a restricted discretionary activity resource consent is required.

29. Seventy-four pest plants that are in excess of 4m in height and/or 400mm in girth are proposed to be removed, in accordance with rule E16 (A10), a restricted discretionary activity resource consent is required.

30. Two dead pest plants identified in the 135 trees to be removed, will be removed as a permitted activity.

31. Excavations are proposed within the PRZ of the two trees that are to be retained, in accordance with rule E16 (A8), a restricted discretionary activity resource consent is required as it is unlikely that the permitted activities will be met, in particular:

    - E16.6.2.2(a)(i) works must not disturb more than 20 per cent of the protected root zone
    - E16.6.2.2(a)(ii) works involving root pruning must not be on roots greater than 80mm in diameter at severance and roots
    - E16.6.2.2(a)(iii) any machine excavator must operate on top of paved surfaces and/or ground protection measures

For trees growing within residential zoned land and a riparian margin

32. It is our understanding that the standards outlined in E15.4.1 are applicable to trees that are growing within residential zoned land and a riparian margin.

Table 3: Activity Table – Vegetation Management and Biodiversity

Activity		Activity Status
(A6)	Pest plant removal	Permitted
(A19)	Vegetation alteration or removal within 10m of urban streams	Restricted Discretionary
(A18)	Vegetation alteration or removal within 20m of a natural wetland, in the bed of a river or stream (permanent or intermittent), or lake	Restricted Discretionary
(A22A)	Vegetation alteration or removal	Permitted

33. There are 352 trees are growing within private property that will require removal, 350 are within the riparian margins.

34. Ninety have been identified as pest plants and can be removed as a permitted activity in accordance with rule E15 (A6)

35. Two-hundred and sixty non-pest plant trees growing within 20m of a wetland or 10m from an urban stream are proposed to be removed, in accordance with rule E15 (A16) and E15 (A18), a restricted discretionary activity resource consent is required.

36. in accordance with a restricted discretionary activity resource consent is required.

37. Trees not within a riparian margin and/or wetland can be removed as a permitted activity in accordance with rule (A22A).

For trees growing within the road reserve

38. The works within the road reserve relate to the construction of new roading infrastructure and will be subject to the stands outlined in Chapter E.26 – Infrastructure.

Table 4: E26.4.3.1 Activity table – Infrastructure

Activity		**Auckland wide-rules Trees**
		Trees in roads [dp]
Operation, maintenance, renewal, repair, construction and removal of network utilities and electricity generation facilities and, minor infrastructure upgrading		
(A82)	Pest Plant Removal	Permitted
(A90)	Tree trimming, alteration or removal on roads adjoining rural zones and on roads adjoining the Future Urban Zone	Permitted
(A92)	Tree alteration or removal of any tree greater than 4m in height and/or greater than 400mm in girth	Restricted Discretionary

39. There are 210 trees growing within existing road reserves that are proposed to be removed.

40. Seven trees have been identified as pest plants and can be removed as a permitted activity in accordance with rule E26 (82).

41. One-hundred and twenty-four trees are growing adjacent rural or future urban zoned land and can be removed as a permitted activity in accordance with rule E26 (A90).

42. Seventy-nine trees are in excess of 4m in height and/or 400mm in girth, in accordance with rule E26 (A92), a restricted discretionary activity resource consent is required for their removal.

Summary

43. In summary there are 697 trees proposed to be removed, of which, restricted discretionary resource consent is required for the removal of 472 trees and works within the PRZ of two trees. Overall, 474 trees will require resource consent.

44. Tree Owner Approval (TOA) from Council's Parks and Community Facilities Urban Forest Specialist is required for the removal of 347 trees and works within the root zone of two trees growing within the road reserve and/or land zoned as open space. In accordance with the TOA Guidance Document, this report references the Structural Root Zone (SRZ) and the Tree Protection Zone (TPZ).

45. The SRZ and TPZ are expressed as a radius measurement from the trunk centre. They are calculated from trunk/stem diameter and shown on Arborlab plans as a circular area around the trunk. However, best practice requires the consideration and assessment of impediments and likelihood of root growth within a tree's TPZ and SRZ. A number of factors can influence root growth in a modified growing environment, which most road reserve trees experience. Therefore, the TPZ and SRZ measurements can only be considered nominal and the arborist needs to consider all limitations and mitigating factors to assess the adverse effects and to apply any mitigation requirements.

Findings

46. It is proposed to undertake site clearance and earthworks in preparation for the residential development of the Site. We have identified 747 trees growing within the Site extent; consisting of 506 exotic trees, 68 native trees and 173 pest plants.

47. The native trees are listed within Table 5, exotic trees within Table 6 and pest plants are listed within Table 7 below. The trees proposed to be removed are listed within Table 8 and the trees proposed to be retained are within Table 9 below.

Table 5: Native trees identified within the project boundary

Botanical Name	Quantity
Cordyline australis	16
Dacrycarpus dacrydioides	2
Kunzea ericoides	30
Leptospermum scoparium	3
Metrosideros excelsa	1
Pittosporum crassifolium	1
Pittosporum eugenioides	4
Pittosporum tenuifolium	9
Podocarpus totara	2
Grand Total	**68**

Table 6: Exotic trees identified within the project boundary

Botanical Name	Quantity
Abies sp.	1
Acacia dealbata	12
Acacia melanoxylon	13
Acer palmatum	1
Acer platanoides	2
Alder sp.	37
Alnus cordata	6
Camellia japonica	5
Casuarina cunninghamiana	32
Cinnamomum camphora	1
Citrus x limon	1
Cryptomeria japonica	100

Botanical Name	Quantity
Cupressus macrocarpa	3
Erythrina x sykesii	2
Eucalyptus sp.	24
Fagus sylvatica	2
Fagus sylvatica var. purpurea	1
Feijoa sellowiana	2
Ficus carica	3
Ginkgo biloba	1
Grevillea robusta	8
Liquidambar styraciflua	7
Magnolia grandiflora	3
Metasequoia glyptostroboides	5
Nyssa sylvatica	1
Olea europaea	2
Pinus pinaster	27
Pinus radiata	21
Populus nigra	51
Populus yunnanensis	85
Prunus sp.	1
Pyrus communis	1
Quercus palustris	2
Quercus robur	19
Sequoia sempervirens	3
Syagrus romanzoffiana	4
Syzygium australe	4
Taxodium distichum	5
Tristaniopsis laurina	1
Washingtonia robusta	7
Grand Total	**506**

Table 7: Pest plants identified within the project boundary

Botanical Name	Quantity
Acacia longifolia	2
Bambusodae sp.	1
Banksia integrifolia	1
Crataegus monogyna	1
Ligustrum lucidum	2
Salix babylonica	2
Salix fragilis	164
Grand Total	**173**

Table 8: Trees identified within the project boundary that are proposed to be removed

Botanical Name	Quantity
Acacia dealbata	12
Acacia longifolia	2
Acacia melanoxylon	13
Alder sp.	37
Alnus cordata	6
Bambusodae sp.	1
Banksia integrifolia	1
Camellia japonica	1
Casuarina cunninghamiana	30
Cinnamomum camphora	1
Citrus x limon	1
Cordyline australis	8
Crataegus monogyna	1
Cryptomeria japonica	100
Cupressus macrocarpa	3
Erythrina x sykesii	2
Eucalyptus sp.	24
Fagus sylvatica	2
Fagus sylvatica var. purpurea	1
Feijoa sellowiana	2
Ficus carica	3
Ginkgo biloba	1
Grevillea robusta	8
Kunzea ericoides	18
Leptospermum scoparium	3
Ligustrum lucidum	2
Liquidambar styraciflua	2
Magnolia grandiflora	3
Metasequoia glyptostroboides	5

Botanical Name	Quantity
Metrosideros excelsa	1
Nyssa sylvatica	1
Olea europaea	2
Pinus pinaster	27
Pinus radiata	21
Pittosporum crassifolium	1
Pittosporum eugenioides	2
Pittosporum tenuifolium	7
Podocarpus totara	1
Populus nigra	51
Populus yunnanensis	85
Prunus sp.	1
Quercus palustris	2
Quercus robur	17
Salix babylonica	2
Salix fragilis	164
Syagrus romanzoffiana	4
Syzygium australe	4
Remove	4
Taxodium distichum	3
Tristaniopsis laurina	1
Washingtonia robusta	7
Grand Total	**697**

Table 9: Trees identified within the project boundary that are proposed to be retained

Botanical Name	Quantity
Abies sp.	1
Acer palmatum	1
Acer platanoides	2
Camellia japonica	4
Casuarina cunninghamiana	2
Cordyline australis	8
Dacrycarpus dacrydioides	2
Kunzea ericoides	12
Liquidambar styraciflua	5
Pittosporum eugenioides	2
Pittosporum tenuifolium	2
Podocarpus totara	1
Pyrus communis	1
Quercus robur	2
Sequoia sempervirens	3
Taxodium distichum	2
Grand Total	**50**

Advice and Analysis

48. The development proposes to remove approximately 697 trees. The trees are proposed to be removed for one or more of the following reasons: they are compromised by the works, are a pest plant, an undesirable species to be growing within a riparian margin and/or are of poor condition.

49. Undesirable species within the riparian margin primarily consists of pest plants, such as willows are undesirable species such as poplar, acacia, syzygium and/or are poorly conditioned. The proposal is aiming to minimise vegetation removal by retaining as much the native canopy within the riparian margins as possible, which is desirable as it provides shelter for the establishment of new native species. There are also some exotic species such as taxodium, oak and liquidambar growing within the open space zoned land that would be suitable retention as they are viable for long-term growth within an urban environment, and will enable more mature trees to be retained within an area that is undergoing intensive urban development.

50. The trees proposed to be retained are all located within the open space zoned land and riparian

margins. It is expected that this land will be protected throughout the development by isolating the riparian margin from the work activities and there will be enough of a buffer between the trees and the earthworks to ensure that changes to their growing environment are kept to a minimum. This is a crucial factor when ensuring that trees remain viable, as significant changes to a tree's growing environment can often lead to adverse effects. The riparian margins that these trees are located along are proposed to be enhanced with infill planting and vested in Council as drainage reserves.

51. Of the 697 trees proposed to be removed, 173 have been identified as pest plants within the Regional Pest Management Plan (RPMP), 506 are exotic trees and 68 are native trees. Resource consent will be required for the removal of 476 trees.

52. The trees being removed are predominantly farm / paddock trees that provide different ecosystem benefits and values than an urban tree, therefore, when assessing numbers for replacement planting different considerations would typically apply. However, the land use is shifting to an urban setting and a landscape treatment plan has been provided by Beca. It is therefore recommended that mitigation is incorporated into this plan, which proposes to replant road reserves, riparian margins and open space reserves. Each tree will need to be selected for that purpose. For this reason, plant dimensions specifications (planter bag size requirements) or replacement numbers have not been recommended. The treatment plan proposes to plant no fewer than 22,492 trees within embankments alone and further trees within road reserves. This equates to approximately 32 trees per tree being removed that are outlined in this report. The trees include totara, tarairi, kahikatea, rimu, pūriri, etc. The amount of replacement planting will suitably mitigate, and in the long-term provide more benefits the trees being removed.

Recommendations

53. Removal of any vegetation should be undertaken by qualified arborists implementing modern arboricultural techniques, taking care to avoid damage to any retained vegetation.

54. Auditing reports should be compiled by an Appointed Arborist and made available to Auckland Council upon request.

Authored by
Aaron Norman

Reviewed by
Jon Redfern

Appendix A: Vegetation Inventory

Summary data for the trees is outlined below and are ordered with trees requiring resource consent first, because of this the numbers are not sequential.

- Table 10 contains the details of trees growing within open spaces and road reserves that require resource consent
- Table 11 contains the details of trees growing within residential land that require resource consent
- Table 12 contains the details of trees growing within open spaces and road reserves that do not require resource consent
- Table 13 contains the details of trees growing within residential land that do not require resource consent

Table 10: Trees growing within open space and road reserves that require resource consent

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
21	1	Crataegus monogyna	6	1250	2.5	2.8	3.5	Fair	Open Space	Yes	Yes	Remove	Pest Plant
26	1	Salix fragilis	8	2130	3	4.8	6	Fair	Open Space	Yes	Yes	Remove	Pest Plant
27	1	Salix fragilis	8	3250	3	7.3	6	Fair	Open Space	Yes	Yes	Remove	Pest Plant
28	1	Populus nigra	22	2990	3.4	11.4	8	Good	Open Space	Yes	Yes	Remove	Exotic
29	1	Salix fragilis	4.5	690	1.8	2	4	Fair	Open Space	Yes	Yes	Remove	Pest Plant
30	1	Kunzea ericoides	6	780	2.1	3	4	Fair	Open Space	Yes	Yes	Remove	Native
31	1	Salix fragilis	8	4250	2.8	6.8	6	Poor	Open Space	Yes	Yes	Remove	Pest Plant
32	3	Kunzea ericoides	5	350	1.5	2	2.5	Fair	Open Space	Yes	Yes	Remove	Native
33	1	Salix fragilis	9	7100	3.2	8.5	6	Poor	Open Space	Yes	Yes	Remove	Pest Plant
34	1	Salix fragilis	8	3500	3	7.1	6	Fair	Open Space	Yes	Yes	Remove	Pest Plant
35	2	Salix fragilis	8	1870	2.6	5.1	7	Fair	Open Space	Yes	Yes	Remove	Pest Plant
38	1	Salix fragilis	6	700	2	2.7	3	Poor	Open Space	Yes	Yes	Remove	Pest Plant
39	1	Salix fragilis	7.5	550	1.7	2.1	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
40	2	Cordyline australis	5	300	1.5	2	2.5	Fair	Open Space	Yes	Yes	Remove	Native
46	1	Quercus robur	11	1290	2.4	4.9	5.5	Fair	Open Space	Yes	Yes	WWRZ	Exotic
47	1	Populus nigra	15	1200	2.3	4.6	6	Good	Open Space	Yes	Yes	Remove	Exotic
48	1	Populus nigra	18	1520	2.5	5.8	6	Good	Open Space	Yes	Yes	Remove	Exotic
54	1	Populus nigra	26	3520	3.7	13.5	13	Good	Open Space	Yes	Yes	Remove	Exotic
55	1	Populus nigra	27	3150	3.5	12	13	Good	Open Space	Yes	Yes	Remove	Exotic
60	23	Salix fragilis	20	2100	3	8	10	Good	Open Space	Yes	Yes	Remove	Pest Plant
61	1	Cinnamomum camphora	14	2800	3.4	10.7	6	Poor	Open Space	Yes	Yes	Remove	Exotic
62	1	Populus nigra	20	1930	2.7	7.4	6	Good	Open Space	Yes	Yes	Remove	Exotic
120	1	Ficus carica	4.5	450	1.7	2	4	Fair	Open Space	Yes	Yes	Remove	Exotic
122	1	Ficus carica	4.5	350	1.5	2	3	Fair	Open Space	Yes	Yes	Remove	Exotic
123	1	Grevillea robusta	18	1550	2.6	5.9	8	Fair	Open Space	Yes	Yes	Remove	Exotic
124	1	Grevillea robusta	18	2350	2.9	6.4	8	Fair	Open Space	Yes	Yes	Remove	Exotic
125	1	Pittosporum tenuifolium	6	300	1.5	2	2	Fair	Open Space	Yes	Yes	Nil	Native
126	1	Olea europaea	5	450	1.7	2	3.5	Fair	Open Space	Yes	Yes	Remove	Exotic
129	1	Acer palmatum	10	900	2.2	3.4	5	Fair	Open Space	Yes	Yes	WWRZ	Exotic
130	1	Olea europaea	8	500	1.8	2	4.5	Fair	Open Space	Yes	Yes	Remove	Exotic
131	1	Cordyline australis	8	650	1.9	2.5	2.5	Fair	Open Space	Yes	Yes	Nil	Native
132	1	Feijoa sellowiana	3	200	1.5	2	2.5	Fair	Open Space	Yes	Yes	Remove	Exotic
133	1	Feijoa sellowiana	5	500	1.8	2	3	Fair	Open Space	Yes	Yes	Remove	Exotic
143	1	Camellia japonica	5	350	1.5	2	3	Fair	Open Space	Yes	Yes	Remove	Exotic
148	1	Populus nigra	7	600	1.8	2.3	3.5	Fair	Open Space	Yes	Yes	Remove	Exotic
150	1	Populus nigra	12	900	2.1	3.4	4	Fair	Open Space	Yes	Yes	Remove	Exotic
151	1	Populus nigra	18	1450	2.5	5.5	6	Fair	Open Space	Yes	Yes	Remove	Exotic
152	1	Acacia dealbata	12	1100	2.3	4.2	6	Poor	Open Space	Yes	Yes	Remove	Exotic
153	1	Populus nigra	18	1500	2.6	5.7	7	Fair	Open Space	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
154	1	Populus nigra	18	1200	2.4	4.6	5	Fair	Open Space	Yes	Yes	Remove	Exotic
155	1	Populus nigra	18	1800	2.8	6.9	11	Fair	Open Space	Yes	Yes	Remove	Exotic
156	1	Acacia dealbata	15	1650	2.7	6.3	10	Poor	Open Space	Yes	Yes	Remove	Exotic
157	1	Acacia dealbata	9	450	1.7	2	4	Fair	Open Space	Yes	Yes	Remove	Exotic
158	7	Acacia dealbata	6	300	1.5	2	2	Fair	Open Space	Yes	Yes	Remove	Exotic
159	1	Acacia dealbata	18	1650	2.7	6.3	10	Fair	Open Space	Yes	Yes	Remove	Exotic
160	1	Acacia dealbata	15	1500	2.5	5.7	6	Fair	Open Space	Yes	Yes	Remove	Exotic
177	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
179	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
182	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
184	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
186	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
187	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
188	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
189	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
221	1	Populus nigra	15	3100	3.4	11.8	12	Fair	Open Space	Yes	Yes	Remove	Exotic
222	1	Cryptomeria japonica	5	500	1.6	2	2.5	Poor	Open Space	Yes	Yes	Remove	Exotic
223	1	Populus nigra	15	2400	3	9.2	8	Poor	Open Space	Yes	Yes	Remove	Exotic
225	1	Grevillea robusta	9	600	2	2.3	3	Poor	Open Space	Yes	Yes	Remove	Exotic
235	1	Banksia integrifolia	8	700	2.1	2	4	Fair	Open Space	Yes	Yes	Remove	Pest Plant
236	1	Syzygium australe	7	600	2.5	2.3	3	Poor	Open Space	Yes	Yes	Remove	Exotic
237	1	Syzygium australe	7	600	2.5	2.3	3	Poor	Open Space	Yes	Yes	Remove	Exotic
238	1	Syzygium australe	7	600	2.5	2.3	3	Poor	Open Space	Yes	Yes	Remove	Exotic
239	1	Syzygium australe	7	600	2.5	2.3	3	Poor	Open Space	Yes	Yes	Remove	Exotic
240	1	Salix fragilis	7	1300	2.5	5	3	Poor	Open Space	Yes	Yes	Remove	Pest Plant
241	1	Ginkgo biloba	4	350	1.5	2	3	Poor	Open Space	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
243	1	Grevillea robusta	7	550	1.7	2.1	3	Poor	Open Space	Yes	Yes	Remove	Exotic
245	1	Salix fragilis	8	1600	2.5	6.1	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
246	1	Salix fragilis	8	2000	2.7	7.6	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
248	1	Salix fragilis	8	1700	2.6	6.5	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
249	1	Salix fragilis	5	1700	2.6	6.5	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
250	1	Salix fragilis	5	1700	2.6	6.5	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
251	1	Salix fragilis	8	1700	2.6	6.5	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
257	1	Populus nigra	15	2220	3	8.5	12	Fair	Open Space	Yes	Yes	Remove	Exotic
259	1	Grevillea robusta	10	1300	2.4	5	5	Poor	Open Space	Yes	Yes	Remove	Exotic
261	1	Citrus x limon	4.5	350	1.5	2	2	Fair	Open Space	Yes	Yes	Remove	Exotic
275	1	Pittosporum crassifolium	3	150	1.5	2	2	Fair	Open Space	Yes	Yes	Remove	Native
282	23	Salix fragilis	20	2100	3	8	10	Good	Open Space	Yes	Yes	Remove	Pest Plant
283	1	Salix fragilis	8	1600	2.5	6.1	5	Poor	Open Space	Yes	Yes	Remove	Pest Plant
349	5	Alnus cordata	4	200	1.5	2	3	Fair	Open Space	Yes	Yes	Remove	Exotic
63	14	Kunzea ericoides	4	300	1.5	2	1.5	Good	Road Reserve	No	Yes	Remove	Native
64	1	Podocarpus totara	4.5	320	1.5	2	2	Good	Road Reserve	No	Yes	Remove	Native
65	1	Pinus radiata	4.5	450	1.7	2	2.25	Good	Road Reserve	No	Yes	Remove	Exotic
66	1	Populus nigra	6	1600	2	2.8	2	Good	Road Reserve	No	Yes	Remove	Exotic
71	1	Syagrus romanzoffiana	8	1200	2.3	4.6	2	Good	Road Reserve	No	Yes	Remove	Exotic
72	1	Washingtonia robusta	12	1500	2.5	5.7	2	Good	Road Reserve	No	Yes	Remove	Exotic
73	1	Syagrus romanzoffiana	7	830	1.9	3.2	2	Good	Road Reserve	No	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
74	1	Washingtonia robusta	8	1300	2.4	5	2	Good	Road Reserve	No	Yes	Remove	Exotic
76	1	Washingtonia robusta	10	1500	2.5	5.7	2	Good	Road Reserve	No	Yes	Remove	Exotic
77	1	Washingtonia robusta	9	1400	2.5	5.4	2	Good	Road Reserve	No	Yes	Remove	Exotic
78	1	Erythrina x sykesii	9	3660	2.9	7.3	7	Good	Road Reserve	No	Yes	Remove	Exotic
79	1	Syagrus romanzoffiana	7	980	2.2	3.7	2	Good	Road Reserve	No	Yes	Remove	Exotic
80	1	Syagrus romanzoffiana	7	780	2.1	3	2	Good	Road Reserve	No	Yes	Remove	Exotic
81	1	Washingtonia robusta	10	1600	2.6	6.1	2	Good	Road Reserve	No	Yes	Remove	Exotic
82	1	Erythrina x sykesii	5	350	1.5	2	3	Good	Road Reserve	No	Yes	Remove	Exotic
83	1	Grevillea robusta	10	1130	2.3	4.3	3	Good	Road Reserve	No	Yes	Remove	Exotic
85	27	Pinus pinaster	27	2500	3.2	9.6	13.5	Good	Road Reserve	No	Yes	Remove	Exotic
86	1	Pinus radiata	27	3200	3.5	12.2	14	Poor	Road Reserve	No	Yes	Remove	Exotic
87	1	Pinus radiata	16	2890	3.3	11	12	Fair	Road Reserve	No	Yes	Remove	Exotic
92	1	Pinus radiata	28	3600	3.6	13.8	14	Poor	Road Reserve	No	Yes	Remove	Exotic
93	1	Cryptomeria japonica	4.5	250	1.5	2	2	Poor	Road Reserve	No	Yes	Remove	Exotic
94	1	Cryptomeria japonica	4	250	1.5	2	2	Poor	Road Reserve	No	Yes	Remove	Exotic
95	1	Pinus radiata	28	3300	3.5	12.6	14	Poor	Road Reserve	No	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
96	1	Eucalyptus sp.	8	750	2	2.9	3	Fair	Road Reserve	No	Yes	Remove	Exotic
97	1	Cryptomeria japonica	4	250	1.5	2	1.4	Poor	Road Reserve	No	Yes	Remove	Exotic
99	1	Pinus radiata	28	3200	3.4	12.2	12	Poor	Road Reserve	No	Yes	Remove	Exotic
101	1	Pinus radiata	28	3600	3.6	13.8	14	Poor	Road Reserve	No	Yes	Remove	Exotic
105	7	Populus nigra	12	1000	2.2	3.8	7	Good	Road Reserve	No	Yes	Remove	Exotic
107	1	Eucalyptus sp.	13	1950	2.8	7.5	14	Fair	Road Reserve	No	Yes	Remove	Exotic
108	2	Eucalyptus sp.	13	1390	2.5	5.3	14	Fair	Road Reserve	No	Yes	Remove	Exotic
109	1	Eucalyptus sp.	15	1810	2.7	6.9	10	Fair	Road Reserve	No	Yes	Remove	Exotic
116	2	Populus nigra	8	1000	2.2	3.8	5	Fair	Road Reserve	No	Yes	Remove	Exotic

Table 11: Trees growing within residential land requiring resource consent

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
42	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic
44	1	Cordyline australis	7	450	1.6	2	3.5	Fair	Residential	Yes	Yes	Remove	Native
49	3	Pinus radiata	17	1730	2.7	6.6	8.5	Good	Residential	Yes	Yes	Remove	Exotic
50	5	Cryptomeria japonica	15	1350	2.5	5.2	7.5	Poor	Residential	Yes	Yes	Remove	Exotic
117	1	Eucalyptus sp.	24	1500	2.6	5.7	8	Fair	Residential	Yes	Yes	Remove	Exotic
118	1	Eucalyptus sp.	24	1500	2.6	5.7	8	Fair	Residential	Yes	Yes	Remove	Exotic
163	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
164	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic
165	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic
166	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic
167	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic
168	1	Quercus robur	12	900	2.2	3.4	6	Fair	Residential	Yes	Yes	Remove	Exotic
284	1	Populus yunnanensis	15	1500	2.4	5.7	6	Good	Residential	Yes	Yes	Remove	Exotic
285	1	Populus yunnanensis	15	1500	2.4	5.7	6	Good	Residential	Yes	Yes	Remove	Exotic
286	1	Populus yunnanensis	15	2100	2.8	8	6	Good	Residential	Yes	Yes	Remove	Exotic
287	1	Populus yunnanensis	15	600	1.8	2.3	6	Good	Residential	Yes	Yes	Remove	Exotic
288	1	Populus yunnanensis	15	1700	2.6	6.5	6	Good	Residential	Yes	Yes	Remove	Exotic
289	1	Populus yunnanensis	15	900	2	3.4	6	Good	Residential	Yes	Yes	Remove	Exotic
290	1	Populus yunnanensis	15	1500	2.4	5.7	6	Good	Residential	Yes	Yes	Remove	Exotic
291	1	Populus yunnanensis	15	900	2	3.4	6	Good	Residential	Yes	Yes	Remove	Exotic
295	1	Pinus radiata	12	3200	3.4	12.2	12	Poor	Residential	Yes	Yes	Remove	Exotic
296	1	Pinus radiata	12	5200	3.7	14.1	12	Poor	Residential	Yes	Yes	Remove	Exotic
297	1	Pinus radiata	12	3100	3.4	11.8	12	Poor	Residential	Yes	Yes	Remove	Exotic
298	1	Pinus radiata	12	3100	3.4	11.8	12	Poor	Residential	Yes	Yes	Remove	Exotic
299	1	Pinus radiata	12	3100	3.4	11.8	12	Poor	Residential	Yes	Yes	Remove	Exotic
300	1	Pinus radiata	12	3100	3.4	11.8	12	Poor	Residential	Yes	Yes	Remove	Exotic
301	3	Cryptomeria japonica	8	1000	2	3.8	6	Good	Residential	Yes	Yes	Remove	Exotic
303	1	Cryptomeria japonica	8	450	1.5	2	6	Good	Residential	Yes	Yes	Remove	Exotic
304	32	Populus yunnanensis	12	2000	2.7	7.6	6	Good	Residential	Yes	Yes	Remove	Exotic
312	1	Populus nigra	9	500	1.5	2	4	Fair	Residential	Yes	Yes	Remove	Exotic
313	1	Populus nigra	9	500	1.5	2	4	Fair	Residential	Yes	Yes	Remove	Exotic
318	1	Pinus radiata	15	2400	3.1	9.2	15	Dead	Residential	Yes	Yes	Remove	Exotic
319	3	Cryptomeria japonica	10	1600	2.5	6.1	5	Dead	Residential	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
324	1	Cryptomeria japonica	10	1600	2.5	6.1	5	Dead	Residential	Yes	Yes	Remove	Exotic
326	45	Populus yunnanensis	18	2400	3	9.2	12	Poor	Residential	Yes	Yes	Remove	Exotic
327	1	Quercus robur	8	2000	2.7	7.6	8	Fair	Residential	Yes	Yes	Remove	Exotic
328	1	Eucalyptus sp.	12	2000	2.7	7.6	6	Fair	Residential	Yes	Yes	Remove	Exotic
329	1	Eucalyptus sp.	12	2000	2.7	7.6	6	Fair	Residential	Yes	Yes	Remove	Exotic
330	1	Eucalyptus sp.	12	2000	2.7	7.6	6	Fair	Residential	Yes	Yes	Remove	Exotic
331	1	Eucalyptus sp.	12	2000	2.7	7.6	6	Fair	Residential	Yes	Yes	Remove	Exotic
332	1	Eucalyptus sp.	8	1220	2.2	4.7	6	Fair	Residential	Yes	Yes	Remove	Exotic
333	1	Eucalyptus sp.	8	1220	2.2	4.7	6	Fair	Residential	Yes	Yes	Remove	Exotic
334	1	Quercus palustris	15	2200	2.9	8.4	8	Fair	Residential	Yes	Yes	Remove	Exotic
335	1	Quercus palustris	15	2200	2.9	8.4	8	Fair	Residential	Yes	Yes	Remove	Exotic
336	1	Taxodium distichum	12	2200	2.9	8.4	8	Fair	Residential	Yes	Yes	Remove	Exotic
337	1	Taxodium distichum	12	2200	2.9	8.4	8	Fair	Residential	Yes	Yes	Remove	Exotic
338	1	Taxodium distichum	12	2200	2.9	8.4	8	Fair	Residential	Yes	Yes	Remove	Exotic
339	1	Pinus radiata	12	2200	2.9	8.4	8	Dead	Residential	Yes	Yes	Remove	Exotic
340	1	Pinus radiata	12	3800	3.7	14.5	8	Poor	Residential	Yes	Yes	Remove	Exotic
341	1	Populus nigra	18	2600	3.1	9.9	8	Fair	Residential	Yes	Yes	Remove	Exotic
344	1	Populus nigra	18	2600	3.2	9.9	12	Fair	Residential	Yes	Yes	Remove	Exotic
356	1	Cordyline australis	5.5	300	2	2	1.2	Fair	Residential	Yes	Yes	Remove	Native
357	1	Cordyline australis	5.5	400	2.4	2	1.2	Fair	Residential	Yes	Yes	Remove	Native
358	1	Cordyline australis	5.5	200	2	2	0.5	Fair	Residential	Yes	Yes	Remove	Native
359	1	Cordyline australis	4.5	100	1.7	2	0.5	Fair	Residential	Yes	Yes	Remove	Native
360	1	Cordyline australis	4.5	300	2.4	2	1	Good	Residential	Yes	Yes	Remove	Native
361	1	Casuarina cunninghamiana	14	700	2.1	2.7	3.5	Good	Residential	Yes	Yes	Remove	Exotic
362	1	Pinus radiata	18	2600	3.2	9.9	10	Good	Residential	Yes	Yes	Remove	Exotic
365	1	Alnus cordata	4	150	2	2	1.5	Good	Residential	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
366	3	Populus nigra	22	1000	2.2	3.8	5.5	Good	Residential	Yes	Yes	Remove	Exotic
367	1	Populus nigra	22	1000	2.2	3.8	3.5	Good	Residential	Yes	Yes	Remove	Exotic
368	1	Populus nigra	22	1200	2.3	4.6	3.5	Good	Residential	Yes	Yes	Remove	Exotic
369	1	Populus nigra	22	1200	2.3	4.6	3.5	Good	Residential	Yes	Yes	Remove	Exotic
370	1	Populus nigra	9	700	2	2.7	2	Good	Residential	Yes	Yes	Remove	Exotic
371	6	Populus nigra	7	1200	2.4	4.6	2	Good	Residential	Yes	Yes	Remove	Exotic
372	1	Populus nigra	8	400	1.5	2	1	Good	Residential	Yes	Yes	Remove	Exotic
373	1	Acacia melanoxylon	12	1600	3	6.1	6.5	Good	Residential	Yes	Yes	Remove	Exotic
374	1	Acacia melanoxylon	14	1200	2.4	4.6	4	Good	Residential	Yes	Yes	Remove	Exotic
375	1	Acacia melanoxylon	14	1200	2.4	4.6	4	Good	Residential	Yes	Yes	Remove	Exotic
376	1	Acacia melanoxylon	14	1800	2.7	6.9	5.5	Good	Residential	Yes	Yes	Remove	Exotic
377	1	Acacia melanoxylon	16	1800	3	6.9	8	Good	Residential	Yes	Yes	Remove	Exotic
378	1	Acacia melanoxylon	16	1400	2.6	5.4	4.5	Good	Residential	Yes	Yes	Remove	Exotic
379	1	Acacia melanoxylon	16	1600	2.9	6.1	6.5	Good	Residential	Yes	Yes	Remove	Exotic
380	1	Acacia melanoxylon	16	1200	2.4	4.6	4	Good	Residential	Yes	Yes	Remove	Exotic
381	1	Acacia melanoxylon	12	800	2	3.1	2	Good	Residential	Yes	Yes	Remove	Exotic
382	1	Acacia melanoxylon	14	1000	2.5	3.8	6	Good	Residential	Yes	Yes	Remove	Exotic
383	1	Acacia melanoxylon	14	1000	2.1	3.8	2	Poor	Residential	Yes	Yes	Remove	Exotic
384	1	Acacia melanoxylon	14	1000	2.1	3.8	2	Fair	Residential	Yes	Yes	Remove	Exotic
385	1	Acacia melanoxylon	14	1400	2.5	5.4	7	Good	Residential	Yes	Yes	Remove	Exotic
386	1	Casuarina cunninghamiana	18	650	2	2.5	9	Fair	Residential	Yes	Yes	Remove	Exotic
387	1	Casuarina cunninghamiana	18	740	2	2.8	9	Fair	Residential	Yes	Yes	Remove	Exotic
388	1	Casuarina cunninghamiana	18	900	2.2	3.4	9	Fair	Residential	Yes	Yes	Remove	Exotic
389	1	Casuarina cunninghamiana	18	750	2	2.9	9	Fair	Residential	Yes	Yes	Remove	Exotic
390	1	Casuarina cunninghamiana	18	800	2	3.1	9	Fair	Residential	Yes	Yes	Remove	Exotic
391	1	Casuarina cunninghamiana	18	850	2.1	3.2	9	Fair	Residential	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
392	1	Casuarina cunninghamiana	18	300	1.5	2	9	Fair	Residential	Yes	Yes	Remove	Exotic
395	1	Quercus robur	16	1200	2.4	4.6	6	Fair	Residential	Yes	Yes	Remove	Exotic
400	1	Quercus robur	18	2200	3	8.4	8	Fair	Residential	Yes	Yes	Remove	Exotic
401	1	Quercus robur	16	1100	2.4	4.2	8	Fair	Residential	Yes	Yes	Remove	Exotic
402	1	Quercus robur	7	600	1.8	2.3	3	Fair	Residential	Yes	Yes	Remove	Exotic
407	4	Quercus robur	5	300	1.5	2	5	Poor	Residential	Yes	Yes	Remove	Exotic
409	1	Alder sp.	7	500	1.7	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
410	1	Alder sp.	6	450	1.7	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
411	2	Alder sp.	4.5	300	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
412	5	Alder sp.	3	350	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
414	4	Alder sp.	7	400	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
417	1	Alder sp.	9	450	1.7	2	2.5	Fair	Residential	Yes	Yes	Remove	Exotic
418	1	Alder sp.	9	450	1.7	2	2.5	Fair	Residential	Yes	Yes	Remove	Exotic
419	1	Alder sp.	9	400	1.6	2	2.5	Fair	Residential	Yes	Yes	Remove	Exotic
420	1	Alder sp.	6	350	1.5	2	2.5	Fair	Residential	Yes	Yes	Remove	Exotic
421	1	Alder sp.	9	1000	2.2	3.8	3	Fair	Residential	Yes	Yes	Remove	Exotic
422	1	Alder sp.	6.5	850	2	3.2	3	Fair	Residential	Yes	Yes	Remove	Exotic
423	1	Alder sp.	6.5	350	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
424	1	Alder sp.	6.5	350	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
425	1	Alder sp.	6.5	350	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
426	1	Alder sp.	6.5	350	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
427	1	Alder sp.	6.5	400	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
428	2	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
429	1	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
430	1	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
431	3	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
432	1	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
433	1	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
434	1	Alder sp.	6	280	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
435	1	Alder sp.	6.5	350	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
436	1	Magnolia grandiflora	8.5	1250	2.5	4.8	4.3	Fair	Residential	Yes	Yes	Remove	Exotic
437	1	Alder sp.	11	750	2	2.9	2	Fair	Residential	Yes	Yes	Remove	Exotic
438	1	Metasequoia glyptostroboides	11	1350	2.5	5.2	5.5	Fair	Residential	Yes	Yes	Remove	Exotic
439	1	Metasequoia glyptostroboides	10	1100	2.4	4.2	5	Fair	Residential	Yes	Yes	Remove	Exotic
440	1	Metasequoia glyptostroboides	12	1650	2.6	6.3	6	Fair	Residential	Yes	Yes	Remove	Exotic
441	1	Metasequoia glyptostroboides	12	1800	2.8	6.9	6	Fair	Residential	Yes	Yes	Remove	Exotic
442	1	Metasequoia glyptostroboides	12	1750	2.7	6.7	6	Fair	Residential	Yes	Yes	Remove	Exotic
443	1	Alder sp.	4	300	1.5	2	2	Fair	Residential	Yes	Yes	Remove	Exotic
444	1	Magnolia grandiflora	7	600	1.8	2.3	2	Fair	Residential	Yes	Yes	Remove	Exotic
445	1	Quercus robur	10	1350	2.4	5.2	5.5	Fair	Residential	Yes	Yes	Remove	Exotic
446	1	Tristaniopsis laurina	9	1200	2.6	4.6	6	Fair	Residential	Yes	Yes	Remove	Exotic
447	1	Fagus sylvatica	7	700	1.9	2.7	3.5	Poor	Residential	Yes	Yes	Remove	Exotic
448	1	Fagus sylvatica	6	700	1.9	2.7	3.5	Poor	Residential	Yes	Yes	Remove	Exotic
449	1	Ficus carica	4.5	450	1.5	2	3.5	Poor	Residential	Yes	Yes	Remove	Exotic
451	1	Liquidambar styraciflua	18	2100	3	8	7	Fair	Residential	Yes	Yes	Remove	Exotic
453	1	Fagus sylvatica var. purpurea	11	950	2.2	3.6	5	Fair	Residential	Yes	Yes	Remove	Exotic
454	1	Liquidambar styraciflua	16	1850	2.8	7.1	6	Fair	Residential	Yes	Yes	Remove	Exotic
459	1	Populus nigra	10	1800	2.8	6.9	5	Dead	Residential	Yes	Yes	Remove	Exotic
461	1	Grevillea robusta	14	650	1.9	2.5	4.5	Fair	Residential	Yes	Yes	Remove	Exotic
462	4	Populus nigra	12	900	2.1	3.4	7	Fair	Residential	Yes	Yes	Remove	Exotic
463	1	Populus nigra	20	2400	3.2	9.2	8	Fair	Residential	Yes	Yes	Remove	Exotic
464	1	Populus nigra	20	2400	3.2	9.2	8	Poor	Residential	Yes	Yes	Remove	Exotic

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
465	1	Magnolia grandiflora	2.5	150	1.5	2	1.5	Poor	Residential	Yes	Yes	Remove	Exotic
473	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
474	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
475	1	Leptospermum scoparium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
476	1	Pittosporum eugenioides	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
477	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
478	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
479	1	Leptospermum scoparium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
480	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
481	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
482	1	Leptospermum scoparium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
483	1	Pittosporum tenuifolium	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
484	1	Pittosporum eugenioides	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native
485	1	Metrosideros excelsa	2	150	1.5	2	1.5	Fair	Residential	Yes	Yes	Remove	Native

Table 12: Trees growing within open space and road reserves that do not require resource consent

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
1	1	Quercus robur	7	1160	2.2	4.4	4.5	Good	Open Space	Yes	No	Nil	Exotic
12	1	Taxodium distichum	15	2140	3	8.2	7.5	Good	Open Space	Yes	No	Nil	Exotic
15	1	Taxodium distichum	13	1870	3	7.1	6.5	Good	Open Space	Yes	No	Nil	Exotic
18	2	Dacrycarpus dacrydioides	5	280	1.5	2	1	Fair	Open Space	Yes	No	Nil	Native
20	1	Kunzea ericoides	8.5	1150	2.4	4.4	3.5	Fair	Open Space	Yes	No	Nil	Native
22	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
23	1	Kunzea ericoides	10	880	2.1	3.4	3.5	Fair	Open Space	Yes	No	Nil	Native

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
24	1	Kunzea ericoides	10	1230	2.5	4.7	5	Fair	Open Space	Yes	No	Nil	Native
25	1	Kunzea ericoides	6	3000	3	8.1	8	Fair	Open Space	Yes	No	Nil	Native
119	2	Salix fragilis	8	1870	2.6	5.1	7	Dead	Open Space	Yes	No	Remove	Pest Plant
121	1	Pittosporum tenuifolium	5	250	1.5	2	1.5	Fair	Open Space	Yes	No	Nil	Native
127	1	Acer platanoides	15	900	2.1	3.4	6	Fair	Open Space	Yes	No	Nil	Exotic
128	1	Acer platanoides	15	750	2	2.9	6	Fair	Open Space	Yes	No	Nil	Exotic
134	1	Cordyline australis	9	450	2	2	2	Fair	Open Space	Yes	No	Nil	Native
135	1	Cordyline australis	6	400	2	2	2	Fair	Open Space	Yes	No	Nil	Native
136	1	Pyrus communis	6	700	1.9	2.7	3	Fair	Open Space	Yes	No	Nil	Exotic
149	5	Cordyline australis	6	350	1.5	2	1.5	Fair	Open Space	Yes	No	Nil	Native
193	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
194	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
195	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
196	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
197	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
198	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
199	1	Kunzea ericoides	9	750	2	2.9	3.5	Fair	Open Space	Yes	No	Nil	Native
220	2	Casuarina cunninghamiana	4	300	1.5	2	2	Fair	Open Space	Yes	No	Nil	Exotic
224	1	Sequoia sempervirens	10	2400	3	9.2	5	Poor	Open Space	Yes	No	Nil	Exotic
226	1	Sequoia sempervirens	8	1700	2.6	6.5	7	Fair	Open Space	Yes	No	Nil	Exotic
227	1	Liquidambar styraciflua	8	600	2	2.3	3	Poor	Open Space	Yes	No	Nil	Exotic
228	1	Liquidambar styraciflua	14	1300	2.4	5	6	Fair	Open Space	Yes	No	Nil	Exotic
229	1	Liquidambar styraciflua	13	800	1.9	3.1	3	Fair	Open Space	Yes	No	Nil	Exotic
230	1	Liquidambar styraciflua	14	1100	2.2	4.2	4	Fair	Open Space	Yes	No	Nil	Exotic
231	1	Liquidambar styraciflua	8	300	1.5	2	2	Fair	Open Space	Yes	No	Nil	Exotic
232	1	Pittosporum eugenioides	6	700	1.8	2.7	2	Fair	Open Space	Yes	No	Nil	Native

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
233	1	Sequoia sempervirens	20	2300	3	8.8	7	Fair	Open Space	Yes	No	Nil	Exotic
234	1	Abies sp.	10	1000	2.1	3.8	4	Fair	Open Space	Yes	No	Nil	Exotic
242	1	Podocarpus totara	4	300	1.5	2	2	Good	Open Space	Yes	No	Nil	Native
244	1	Pittosporum eugenioides	3	300	1.5	2	2	Poor	Open Space	Yes	No	Nil	Native
258	4	Camellia japonica	5	650	2.4	2.1	5	Fair	Open Space	Yes	No	Nil	Exotic
67	2	Salix fragilis	6	1150	1.8	2.6	2	Good	Road Reserve	No	No	Remove	Pest Plant
68	1	Salix fragilis	5	400	1.7	2	2	Good	Road Reserve	No	No	Remove	Pest Plant
69	1	Salix fragilis	5	250	1.5	2	2	Good	Road Reserve	No	No	Remove	Pest Plant
70	1	Salix fragilis	5	200	1.5	2	2	Good	Road Reserve	No	No	Remove	Pest Plant
75	1	Grevillea robusta	6	330	1.5	2	3	Poor	Road Reserve	No	No	Remove	Exotic
88	3	Cupressus macrocarpa	20	1690	2.8	6.5	6	Fair	Road Reserve	No	No	Remove	Exotic
89	2	Acacia longifolia	15	840	2.1	3.2	4	Fair	Road Reserve	No	No	Remove	Pest Plant
90	1	Eucalyptus sp.	5.5	600	1.8	2.3	3.5	Fair	Road Reserve	No	No	Remove	Exotic
91	1	Eucalyptus sp.	9	650	1.9	2.5	3.5	Fair	Road Reserve	No	No	Remove	Exotic
98	8	Eucalyptus sp.	10	900	2.1	3.4	4	Fair	Road Reserve	No	No	Remove	Exotic
100	1	Eucalyptus sp.	9	750	2	2.9	3	Fair	Road Reserve	No	No	Remove	Exotic
102	8	Cryptomeria japonica	12	1200	2.3	4.6	6	Fair	Road Reserve	No	No	Remove	Exotic
103	12	Cryptomeria japonica	12	900	2.1	3.4	6	Fair	Road Reserve	No	No	Remove	Exotic
104	55	Cryptomeria japonica	12	900	2.1	3.4	6	Poor	Road Reserve	No	No	Remove	Exotic
106	3	Cryptomeria japonica	12	900	2	3.4	6	Fair	Road Reserve	No	No	Remove	Exotic
110	2	Washingtonia robusta	6	1000	2.2	3.8	2	Fair	Road Reserve	No	No	Remove	Exotic
111	1	Prunus sp.	3	550	1.5	2.1	3	Fair	Road Reserve	No	No	Remove	Exotic
112	1	Nyssa sylvatica	6.5	750	1.9	2.9	4.5	Fair	Road Reserve	No	No	Remove	Exotic
113	1	Casuarina cunninghamiana	7	600	1.8	2.3	2.5	Fair	Road Reserve	No	No	Remove	Exotic
114	1	Casuarina cunninghamiana	22	750	2	2.9	5	Fair	Road Reserve	No	No	Remove	Exotic
115	5	Cryptomeria japonica	9	900	2.1	3.4	3	Fair	Road Reserve	No	No	Remove	Exotic

Table 13: Trees growing within residential land that do not require resource consent

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
36	1	Pinus radiata	25	3720	3.4	14.2	12.5	Poor	Residential	No	No	Remove	Exotic
41	2	Salix fragilis	9	900	2.2	3.4	4.5	Fair	Residential	Yes	No	Remove	Pest Plant
43	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
45	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
51	1	Salix fragilis	4	1380	2.5	5.3	6	Poor	Residential	Yes	No	Remove	Pest Plant
52	1	Salix fragilis	15	2140	3	8.2	8	Fair	Residential	Yes	No	Remove	Pest Plant
53	1	Salix fragilis	9	1100	2.8	2.5	6	Fair	Residential	Yes	No	Remove	Pest Plant
84	1	Populus nigra	27	2880	3.3	11	12	Good	Residential	No	No	Remove	Exotic
169	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
170	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
171	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
172	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
173	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
174	1	Salix fragilis	9	600	1.8	2.3	4.5	Poor	Residential	Yes	No	Remove	Pest Plant
175	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
176	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
178	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
180	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
181	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
183	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
185	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
190	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
191	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant

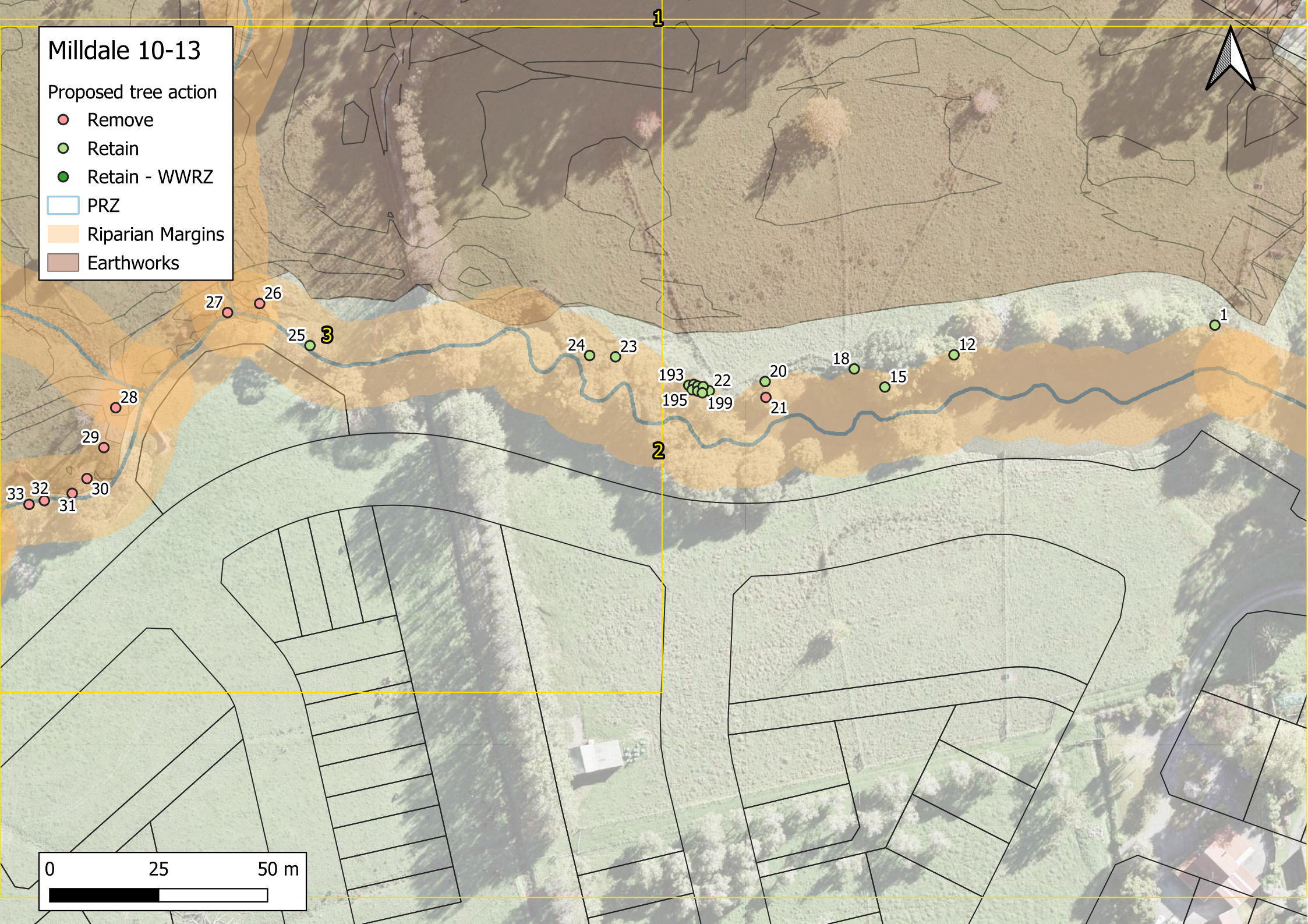
Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
192	1	Salix fragilis	7	500	1.7	2	3.5	Poor	Residential	Yes	No	Remove	Pest Plant
247	1	Salix fragilis	8	1600	2.5	6.1	5	Poor	Residential	Yes	No	Remove	Pest Plant
281	2	Salix fragilis	9	900	2.2	3.4	7	Fair	Residential	Yes	No	Remove	Pest Plant
302	1	Salix fragilis	8	1000	2	3.8	6	Good	Residential	Yes	No	Remove	Pest Plant
306	1	Ligustrum lucidum	4	2000	2.7	7.6	6	Good	Residential	Yes	No	Remove	Pest Plant
307	1	Salix fragilis	4	2000	2.7	7.6	6	Good	Residential	Yes	No	Remove	Pest Plant
308	1	Salix fragilis	8	2000	2.7	7.6	15	Fair	Residential	Yes	No	Remove	Pest Plant
309	1	Salix fragilis	15	2000	2.7	7.6	15	Fair	Residential	Yes	No	Remove	Pest Plant
311	1	Salix fragilis	4	500	1.5	2	4	Fair	Residential	Yes	No	Remove	Pest Plant
314	1	Salix fragilis	9	2500	3	9.6	10	Poor	Residential	Yes	No	Remove	Pest Plant
315	1	Ligustrum lucidum	4	1200	2.2	4.6	10	Poor	Residential	Yes	No	Remove	Pest Plant
316	1	Salix fragilis	15	2400	3.1	9.2	15	Poor	Residential	Yes	No	Remove	Pest Plant
317	1	Salix fragilis	15	2400	3.1	9.2	15	Poor	Residential	Yes	No	Remove	Pest Plant
320	1	Salix fragilis	10	1600	2.5	6.1	5	Dead	Residential	Yes	No	Remove	Pest Plant
325	31	Salix fragilis	10	1600	2.5	6.1	5	Poor	Residential	Yes	No	Remove	Pest Plant
342	3	Salix fragilis	12	1880	2.7	7.2	8	Fair	Residential	Yes	No	Remove	Pest Plant
347	1	Salix fragilis	8	1800	2.2	6.9	7	Fair	Residential	Yes	No	Remove	Pest Plant
348	1	Salix fragilis	8	1200	2	4.6	5	Fair	Residential	Yes	No	Remove	Pest Plant
350	1	Salix fragilis	8	900	2.2	3.4	5	Fair	Residential	Yes	No	Remove	Pest Plant
351	1	Salix fragilis	8	1800	2	6.9	7	Fair	Residential	Yes	No	Remove	Pest Plant
394	1	Salix fragilis	9	900	2.2	3.4	7	Fair	Residential	Yes	No	Remove	Pest Plant
399	1	Salix fragilis	9	650	2	2.5	7	Poor	Residential	Yes	No	Remove	Pest Plant
408	6	Salix fragilis	7	650	1.8	2.5	5	Dead	Residential	Yes	No	Remove	Pest Plant
413	1	Salix fragilis	7	750	2	2.9	5	Poor	Residential	Yes	No	Remove	Pest Plant
415	1	Salix fragilis	7	600	1.8	2.3	5	Poor	Residential	Yes	No	Remove	Pest Plant
416	1	Salix fragilis	7	700	1.9	2.7	5	Poor	Residential	Yes	No	Remove	Pest Plant

Tree No.	Quant.	Botanical Name	Height (m)	AUP Girth (mm)	SRZ (m)	TPZ (m)	PRZ (m)	Health	Land Zoning	Within Riparian	RC Required	Action	Status
450	1	Salix babylonica	7.5	1300	2.4	5	6	Fair	Residential	Yes	No	Remove	Pest Plant
452	1	Bambusodae sp.	6	100	1.5	2	1	Fair	Residential	Yes	No	Remove	Pest Plant
455	1	Salix babylonica	6	850	2	3.2	4.5	Fair	Residential	Yes	No	Remove	Pest Plant
460	1	Salix fragilis	16	2100	3	8	9	Fair	Residential	Yes	No	Remove	Pest Plant

Appendix B: Tree Maps


Overview
Proposed tree actions
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
0
150
300 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
63
64
291
290
288
289
285
286
284
295
296
297
1
2
3
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
1
2
3
1
12
15
18
20
21
22
23
24
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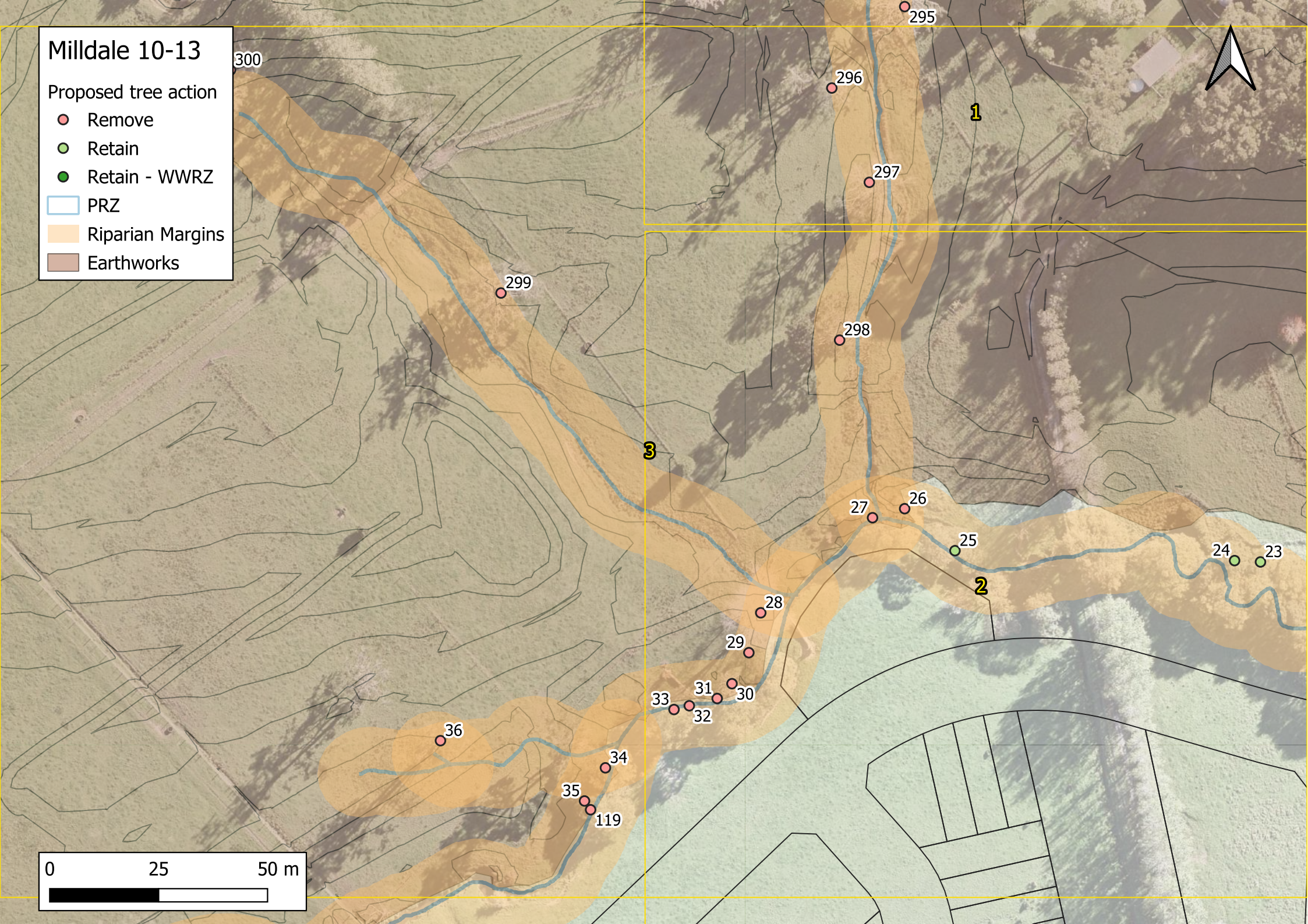
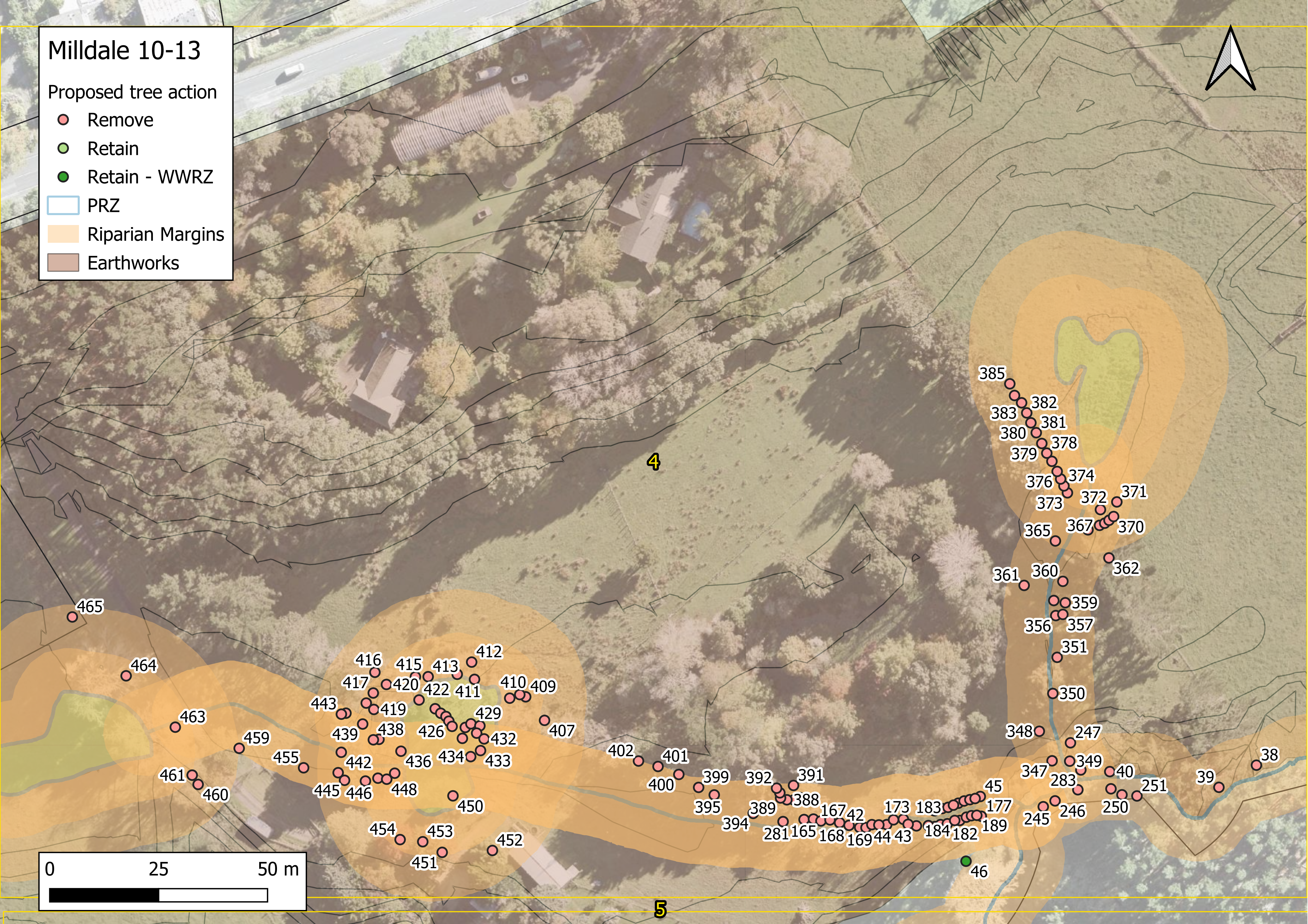
26
27
28
29
30
31
32
33
193
195
199
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
300
295
296
297
299
298
1
2
3
27
26
25
24
23
28
29
31
30
33
32
36
34
35
119
0
25
50 m



Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
4
5
0
25
50 m
385
382
383
381
380
378
379
376
374
373
372
371
367
370
365
362
361
360
359
356
357
351
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251
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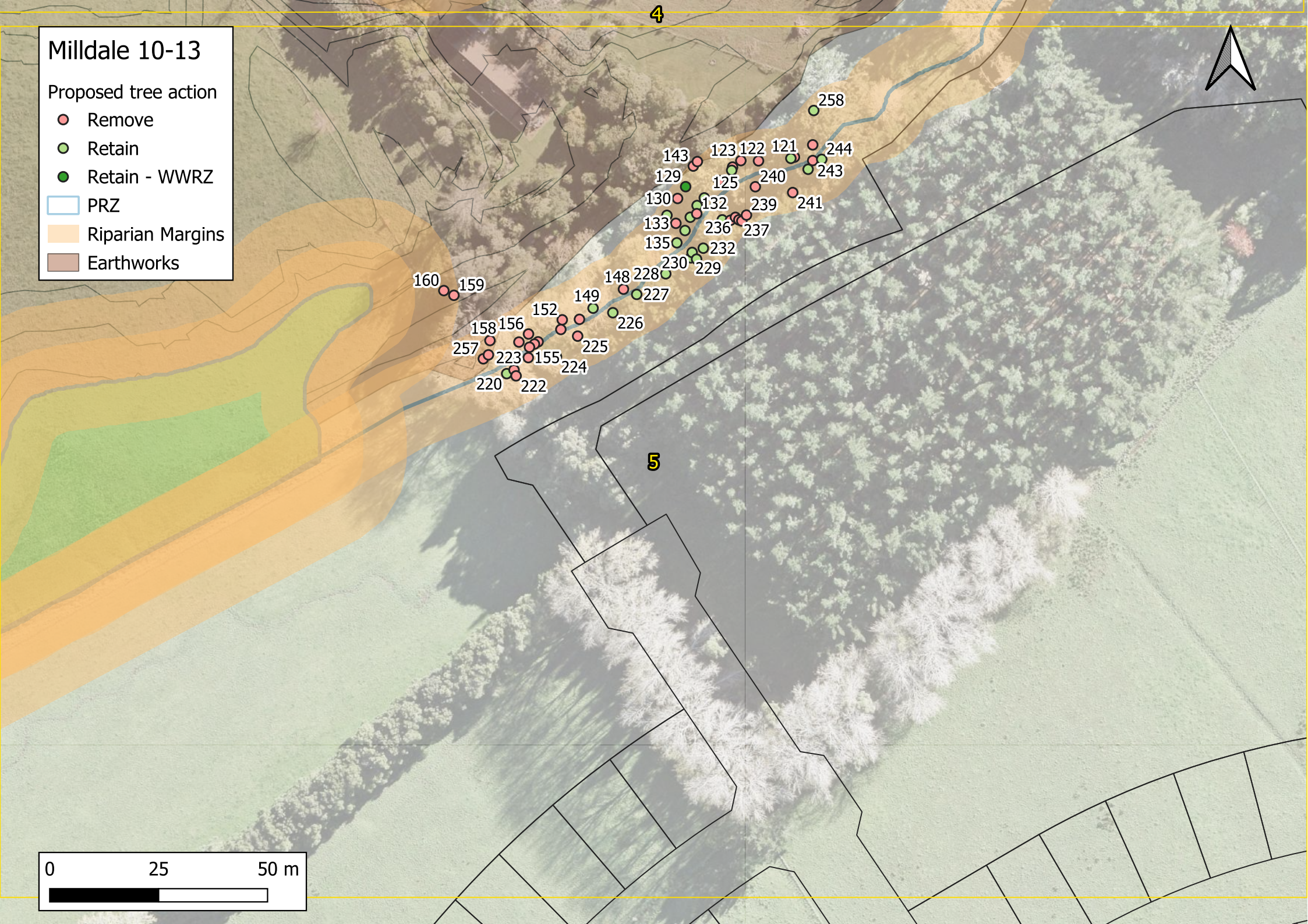
Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
4
5
258
143
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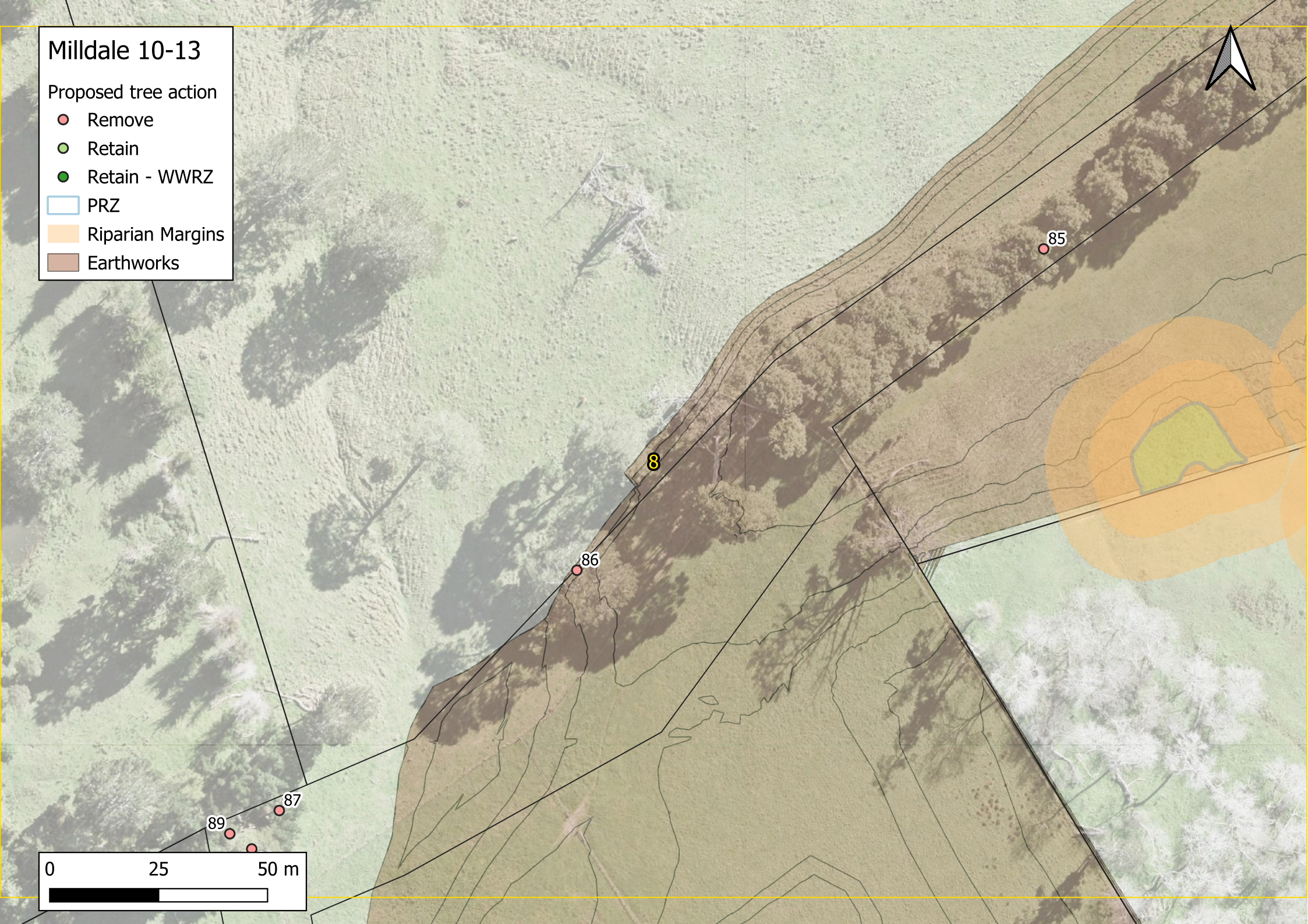
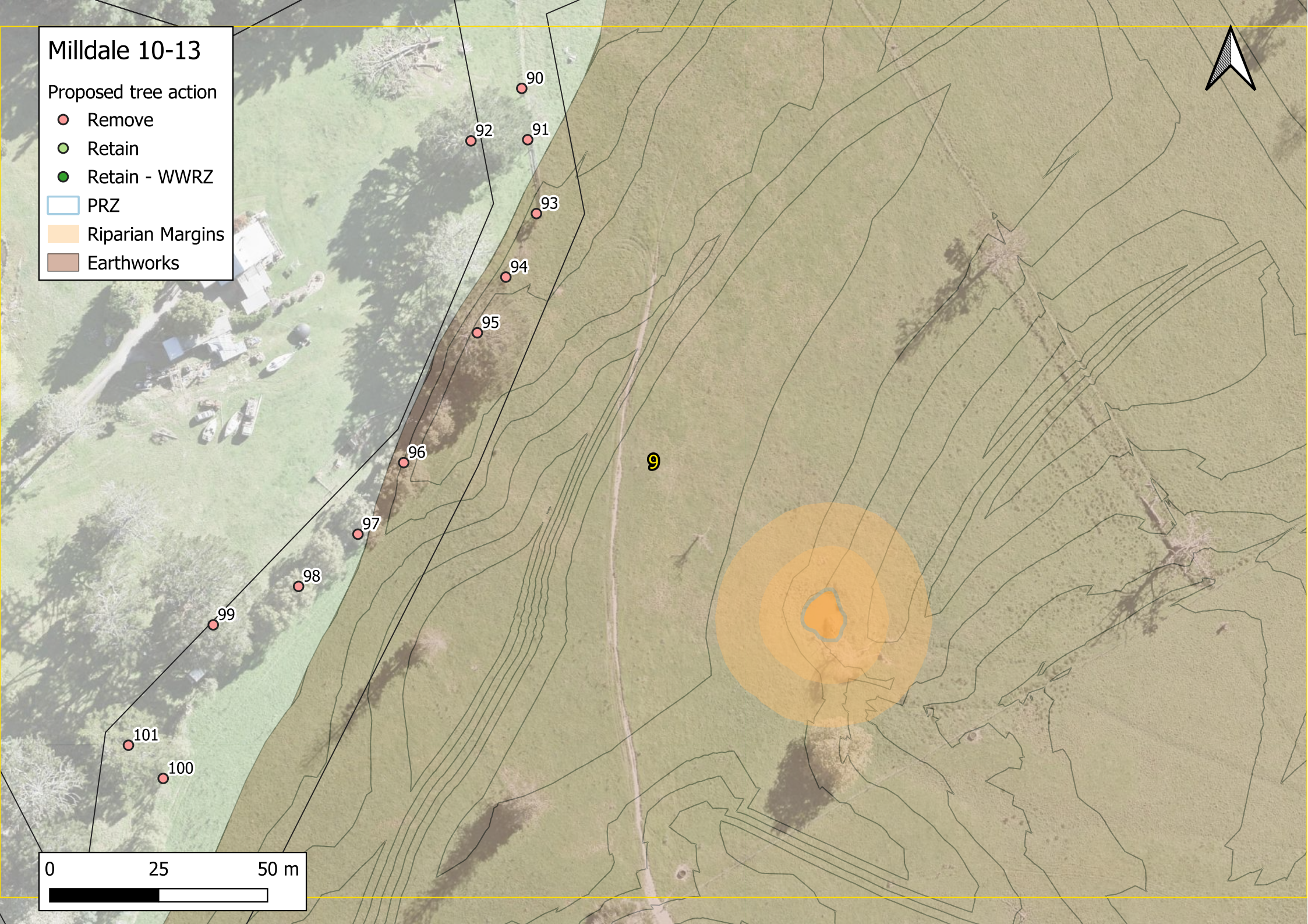
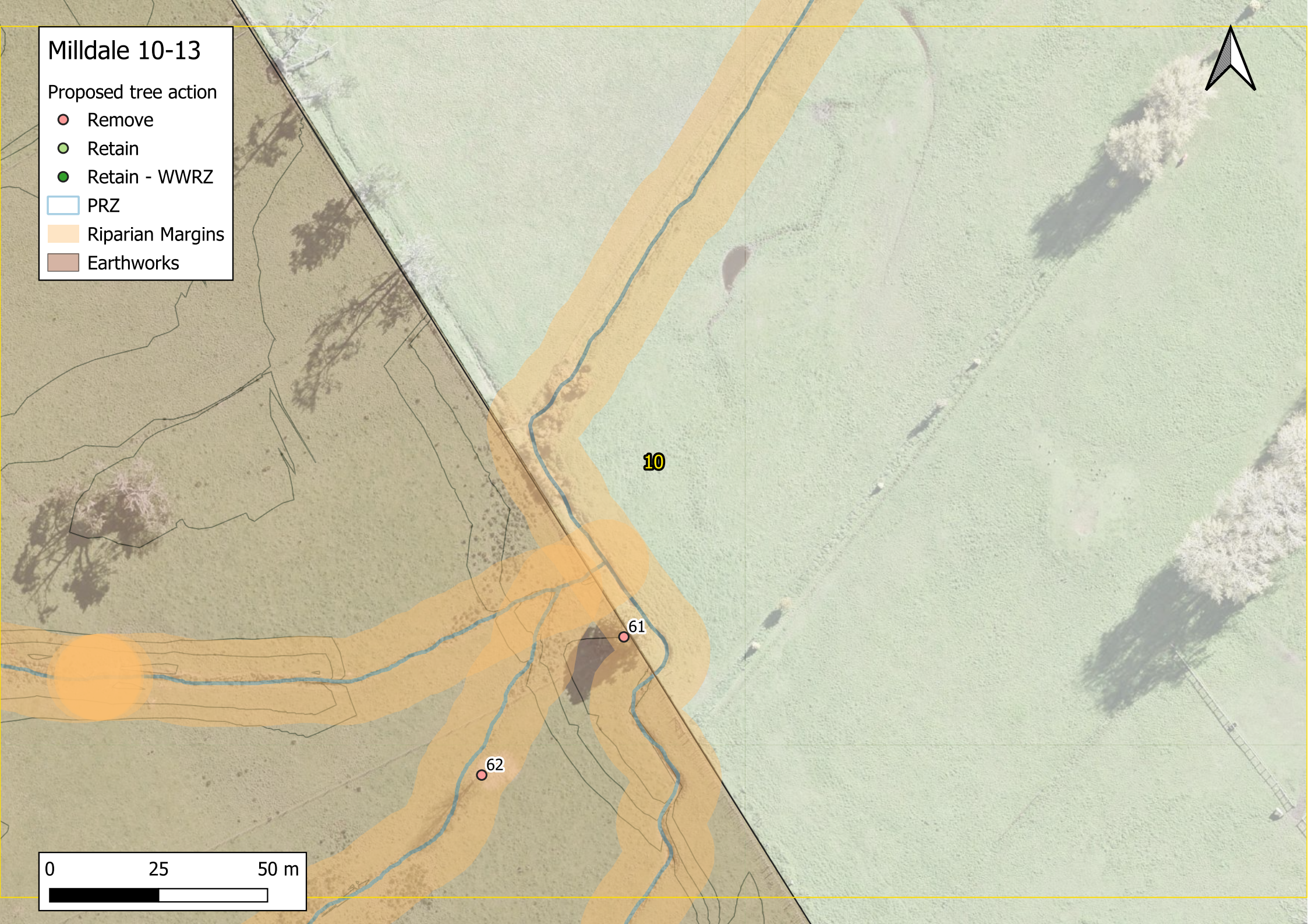
122
121
244
243
129
125
240
130
132
239
241
133
236
237
135
232
230
229
148
228
227
160
159
149
152
226
158
156
225
257
223
155
224
220
222
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
75
74
76
73
77
72
79
78
71
80
81
82
83
84
70
69
68
67
65
6
7
473
474
476
475
480
478
483
482
485
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
6
7
47
48
66
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
85
8
86
87
89
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
90
92
91
93
94
95
96
97
98
99
101
100
9
0
25
50 m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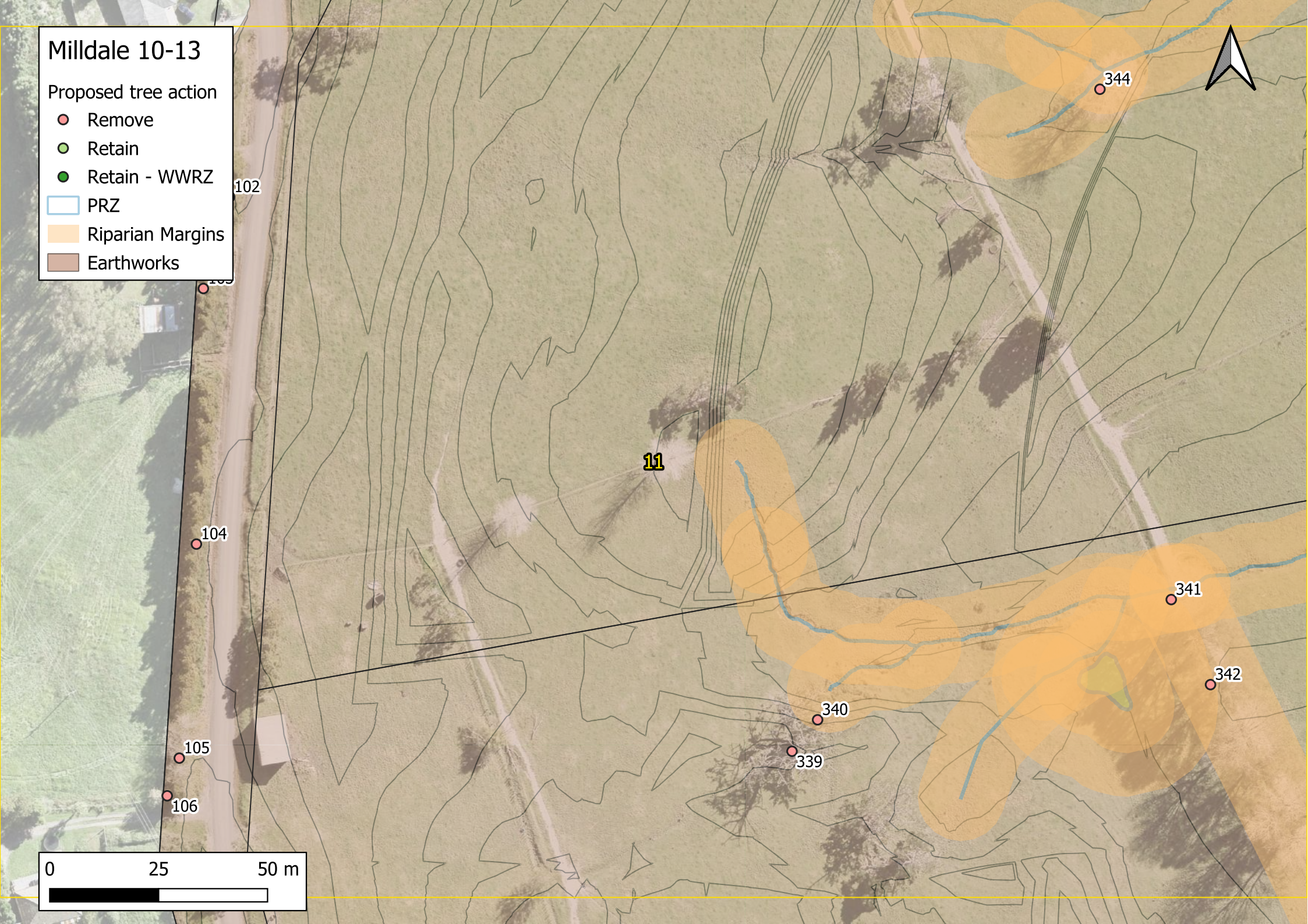
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
10
61
62
0
25
50 m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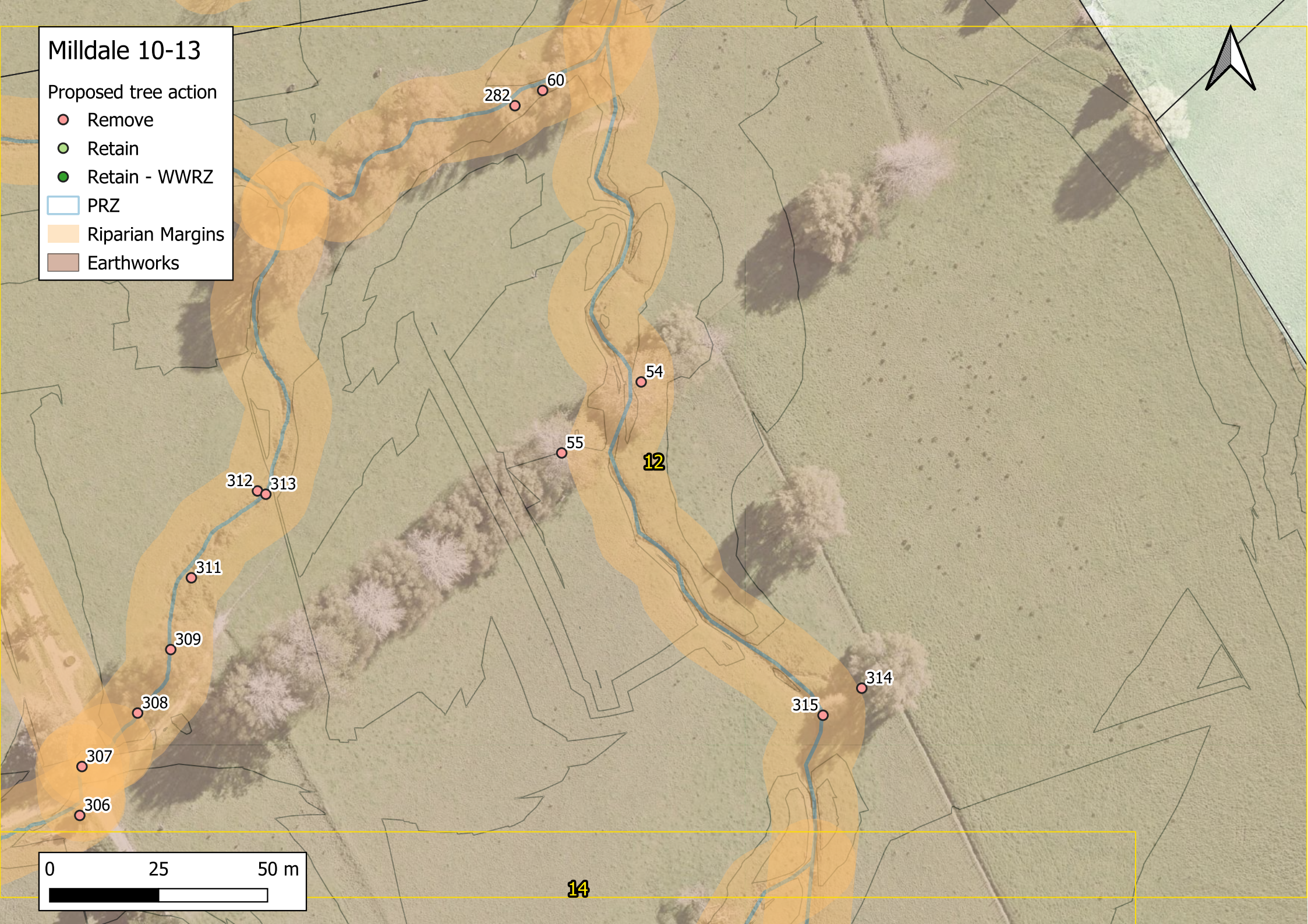
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
102
104
105
106
11
340
339
341
342
344
0
25
50 m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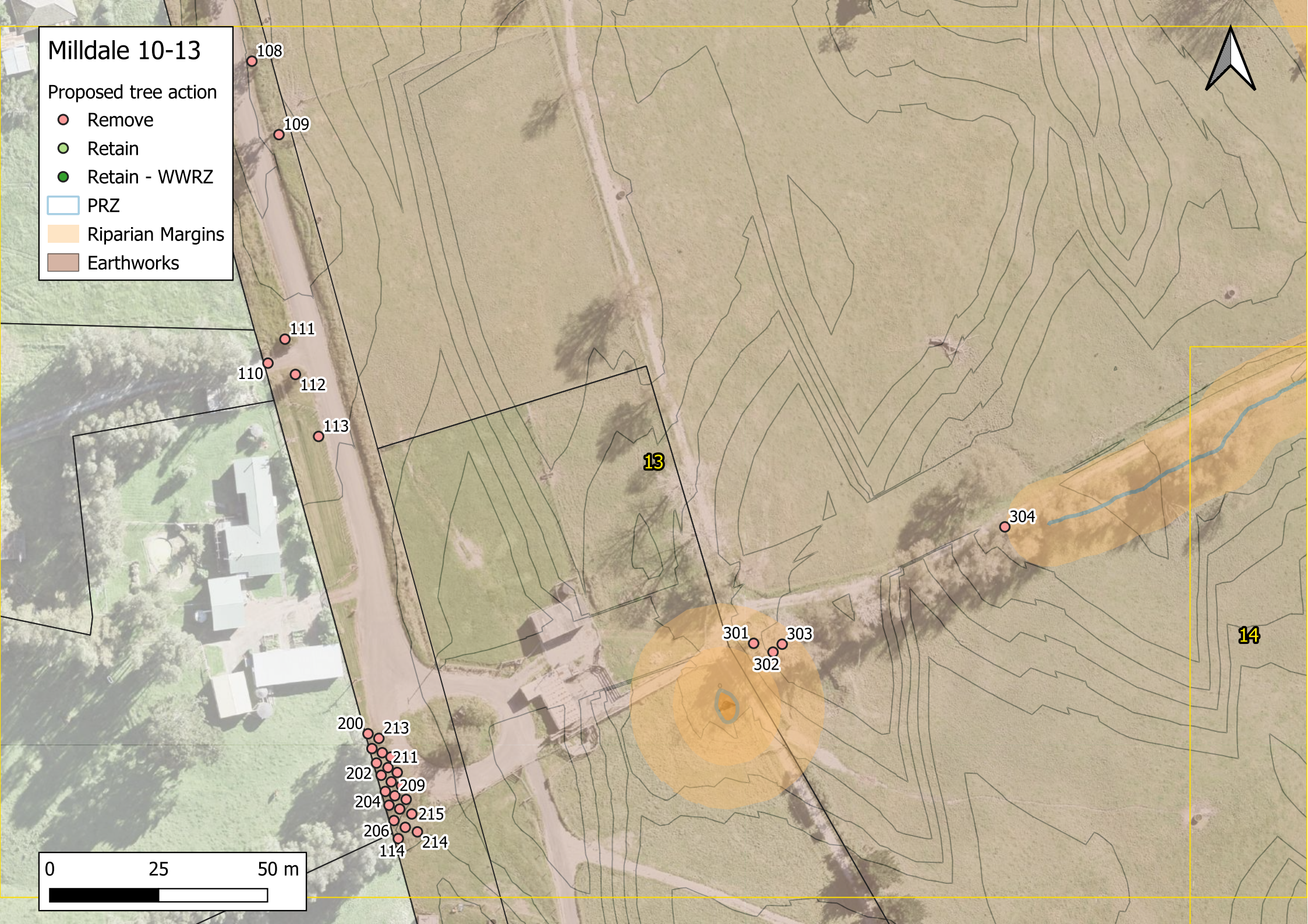
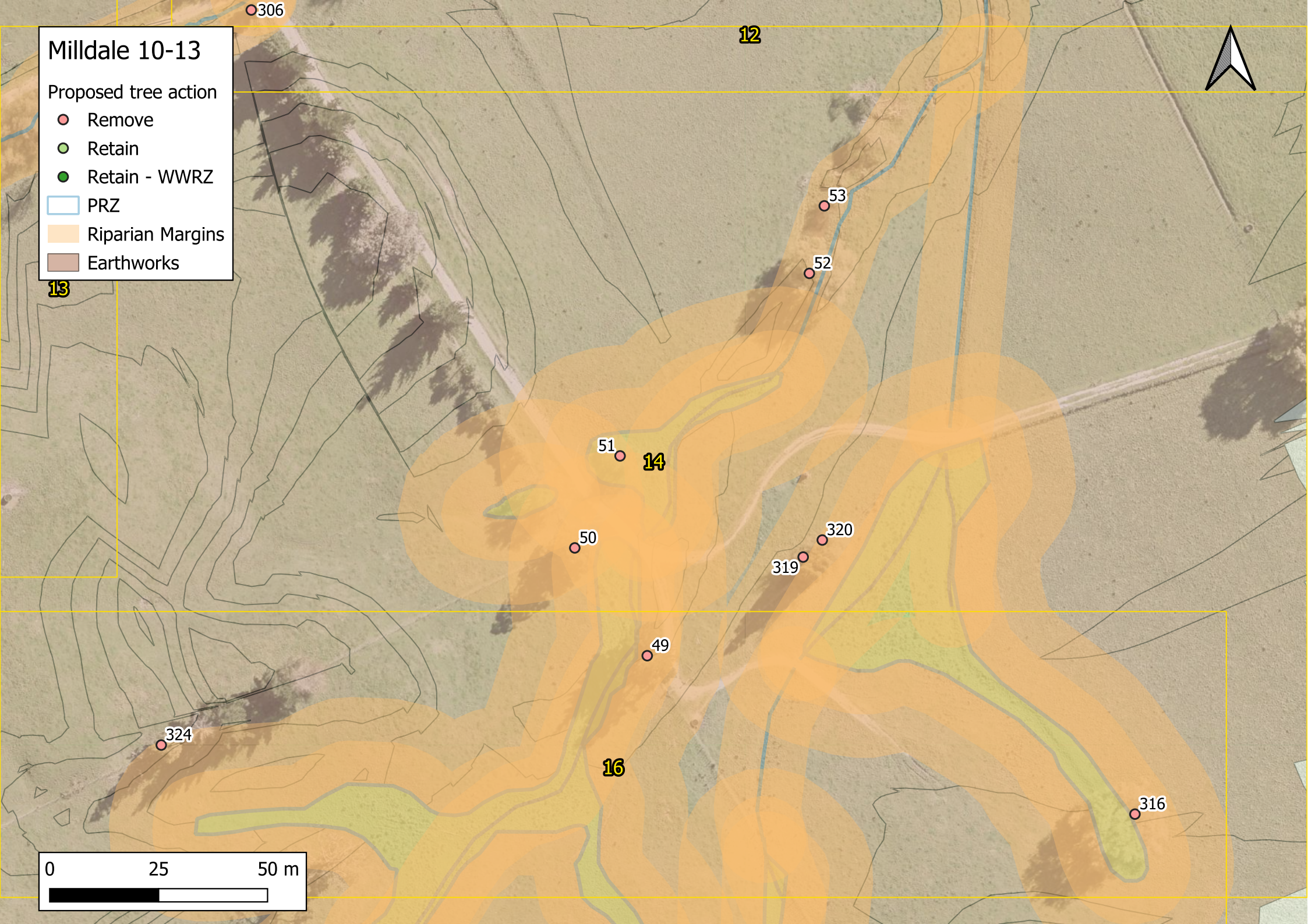
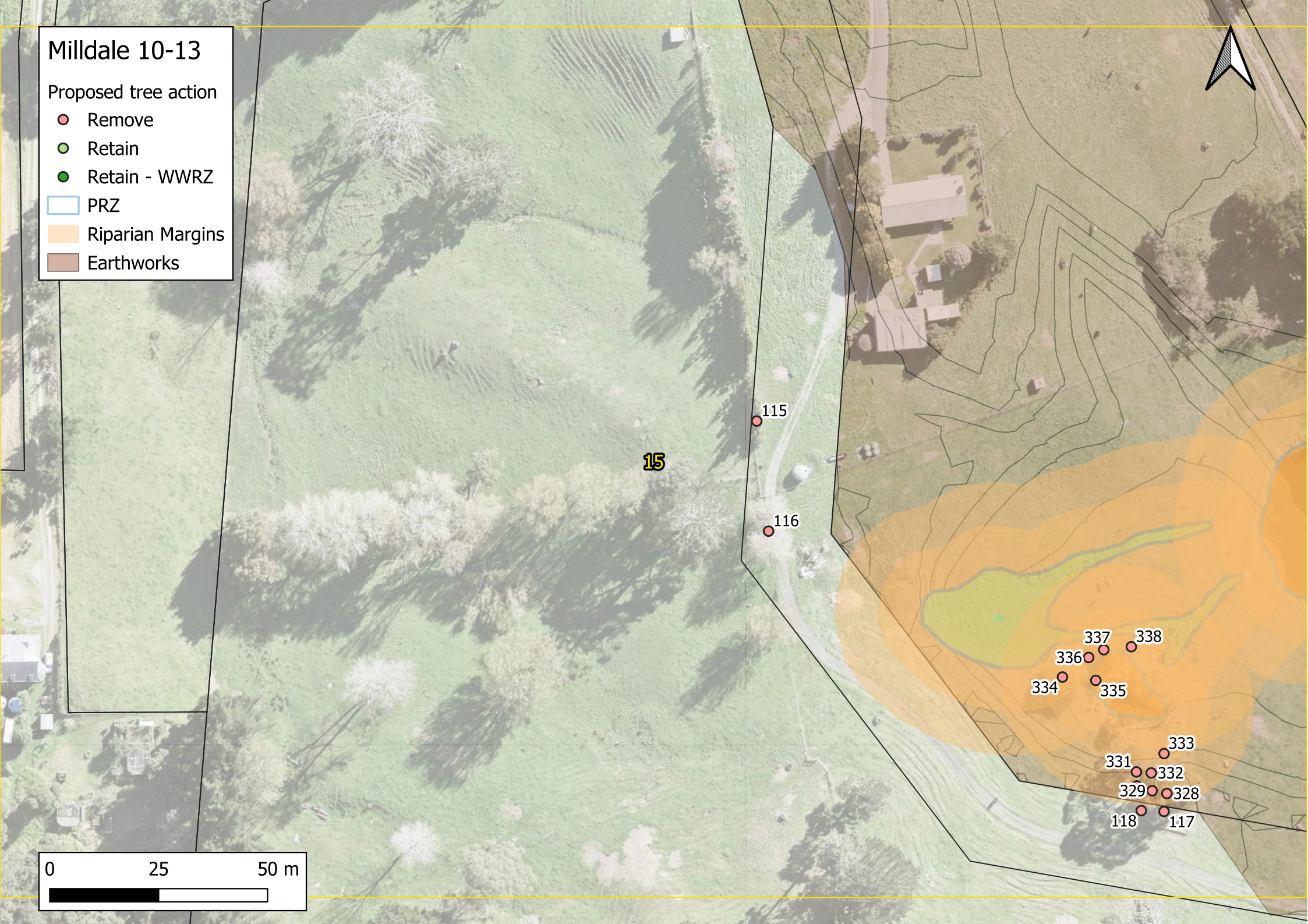
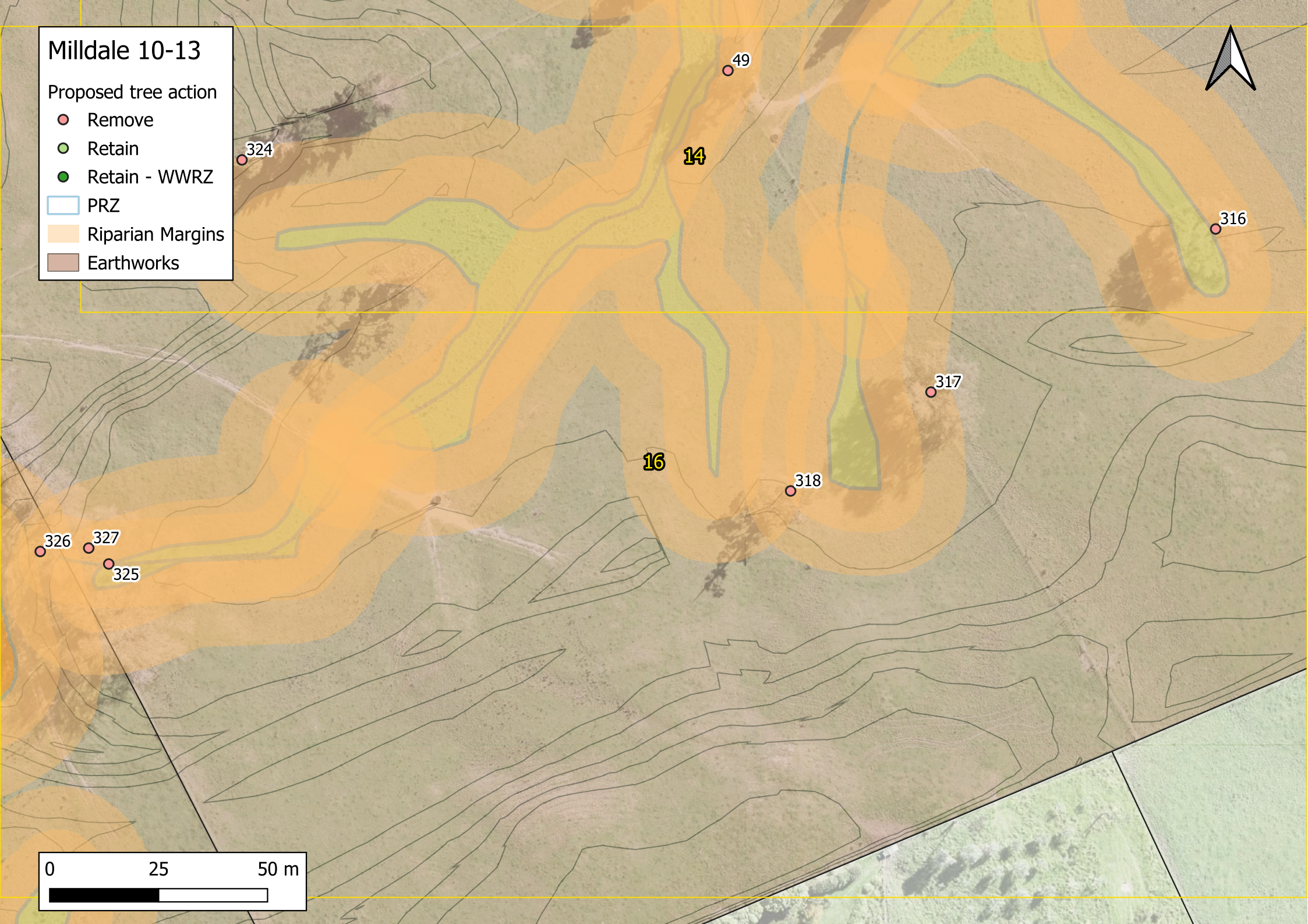
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
282
60
54
55
312
313
311
309
308
307
306
314
315
12
14
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
108
109
111
110
112
113
13
304
301
303
302
14
200
213
211
202
209
204
215
206
214
114
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
306
12
53
52
13
51
14
50
320
319
49
324
16
316
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
115
15
116
337
338
336
334
335
333
331
332
329
328
118
117
0
25
50 m


Milldale 10-13
Proposed tree action
Remove
Retain
Retain - WWRZ
PRZ
Riparian Margins
Earthworks
49
324
14
316
317
16
318
326
327
325
0
25
50 m

Appendix C: Tree Assessment Methodology and Limitations

Assessments are undertaken through a Visual Tree Assessment (VTA) consistent with modern arboricultural practices (Mattheck and Breloer, 1994).

Unless stated all assessments are undertaken from ground level.

Unless specified GPS plotting and measurements will be indicative only and subject to the resilience and accuracy of GPS data on the day of data collection. All attempts are made to ensure that GPS plotting and subsequent desk top analysis will be as accurate as possible.

Tree health assessments are generally based upon industry best practice, the assessor's experience and in accordance with (but not limited too):

i) MIS306 Tree Inspection for Access and Work

ii) MIS501 Tree Risk Assessment

iii) BS 5837 2012 Trees in Relation to Design, Demolition and Construction to Construction

iv) AS 4970-2009 Protection of Trees on Development Sites

Unless detailed in the report no tissue sampling was carried out and all data was collected without the use of any invasive and/or diagnostic tools. The tools used onsite to gather the necessary tree data will generally be a measuring tape and hand-held devices.

The tree girth and canopy width will be measured using a standard nylon tape measure. Unless specified the tree height will be estimated.

Given the dynamic nature of trees, arboricultural assessments are generally valid for up to 12-months from the date of inspection and ongoing frequency-based inspections are recommended.

Tree locations are generally plotted using a combination of GPS and overhead mapping (GPS survey) through online software. GPS surveys can be variable, for example, discrepancies with aerial angles, GPS coordination variances. To assist with GPS surveys, the plot locations are manually adjusted on site using overhead photographs (LINZ imagery). This method, although generally accurate and suitable for tree assessments, is not as accurate as a topographical survey or 'ground truthing'.

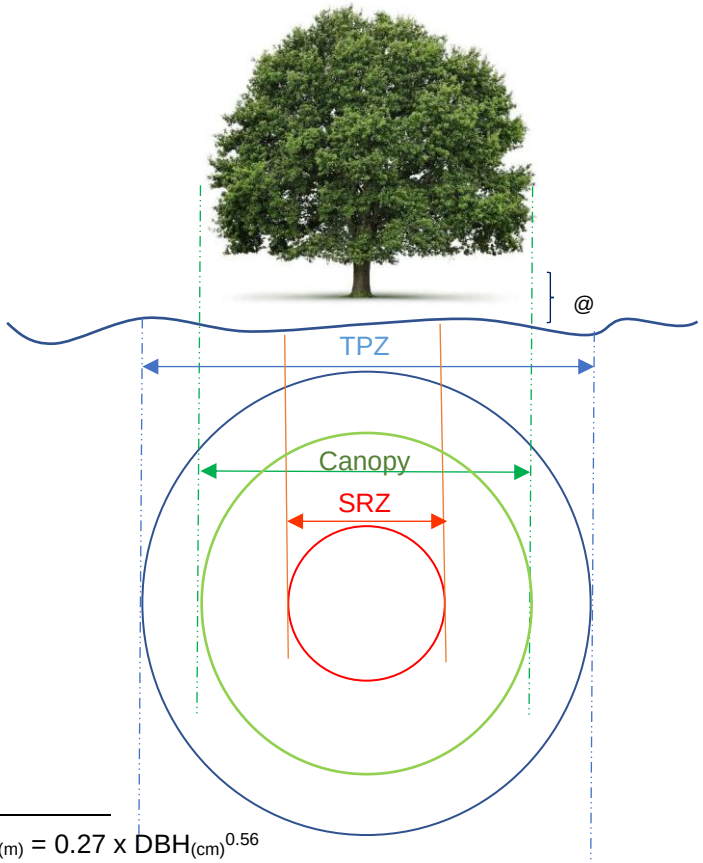
AS 4970-2009 Protection of Trees on Development Sites provide a tree protection zone (TPZ) and structural root zone (SRZ), expressed as a radius measurement from the trunk centre. The TPZ incorporates the SRZ. These measurements are calculated from trunk/stem size. When determining potential encroachment impacts, the following factors are considered;

- Potential loss of root mass
- Species and tolerance of root disturbance
- Tree size and age, vigour

- Stability
- Soil characteristics and volume, topography and drainage
- The presence of existing or past structures or obstacles affecting root growth, and
- Design.

The Standards describe the TPZ as the optimal combination of crown and root area that requires protection during the construction process so that the tree can remain viable. The TPZ is an area that is isolated to ensure that tree sensitive construction measures are implemented so that any disturbance or encroachment is mitigated. The Standards describes the SRZ as the area of the root system used for stability, mechanical support and anchorage of the tree. Construction and work activities in this area are avoided or heavily limited. The Standards specify the TPZ at a maximum of 15m.

Structural Root Zone (SRZ)[1] and Tree Protection Zone (TPZ)[2] measurements have been recorded in accordance with Auckland Council's Tree Owner Approval Guide and are considered to be from the trunk centre. This method provides a TPZ that addresses both tree stability and growth requirements. TPZ distances are measured as a radius from the centre of the trunk at ground level.



[1] SRZ calculation: $SRZ_{(m)} = 0.27 \times DBH_{(cm)}^{0.56}$
[2] TPZ calculation: $TPZ_{(m)} = DBH_{(m)} \times 12$

AS4970-2009, s3: The radius of the TPZ is calculated for each tree by multiplying its Diameter @ Breast Height measured @ 1.4m from ground level (DBH × 12 = TPZ). (DBH = Trunk Girth @ 1.4m ÷ π).
To calculate the SRZ: Radius SRZ = **D**iameter **A**bove **R**oot **C**rown (**DRC** x 50) ^ 0.42 x 0.64. If the DRC is less than 0.15m the SRZ will be 1.5m.

Appendix D: Tree Protection Methodology for Milldale Stages 10 – 13

Pre-works

1. An arborist (appointed arborist) experienced in tree protection systems, protocols and construction methodologies around trees, is to be engaged for the project.

2. Prior to works commencing, the consent holder is to arrange a pre-start meeting with the works principal, contractor, representatives of Council and the appointed arborist. The pre-start meeting is to identify:

    - Areas where the appointed arborist will need to be on site monitoring works. The expected work timings near the tree.
    - Work methodologies required.
    - Access to the site for vehicles and equipment and potential for storage of the equipment in relation to the tree.
    - Onsite audit recording method and final report requirements.

3. The construction area and areas where excavations will be required are to be identified prior to construction.

During works

4. All works within a tree's root zone (Protected Root Zone (PRZ)), as defined by Auckland Council's definition, will be managed by the appointed arborist.

5. The appointed arborist will audit all works and potential effects on the tree.

6. Tree protection methodology amendments shall require approval from the appointed arborist.

7. The poplar trees will be isolated from the work site by a temporary fence that will be emplaced at the edge of the excavation footprint.

8. No chemicals or harmful fluids are to be emptied or disposed of within the PRZ.

9. Damage and/compaction to existing soil structure is to be avoided by the exclusion of machinery, structures and vehicles from the PRZ, unless protected with appropriate, fit for purpose, temporary load bearing surfaces.

10. The removal of trees will be undertaken by a reputable, approved arboricultural contractor.

11. To ensure damage to the retained trees and underlying vegetation is minimised, modern tree removal techniques will be employed, such as the use of a pulling rope attached within the tree's structure when directional felling, and lowering of branches through manual rigging where dismantling is required.

Post works

12. Auditing reports are to be compiled by the appointed arborist and made available to Council if requested.

APPENDIX E: Auckland Unitary Plan Operative in part, J1 Definitions

Protected root zone: "*The circular area of ground around the trunk of a protected tree, the radius of which is the greatest distance between the trunk and the outer edge of the canopy. For columnar crown species the protected root zone is half the height of the tree".*

Figure J1.4.5 Protected root zone A

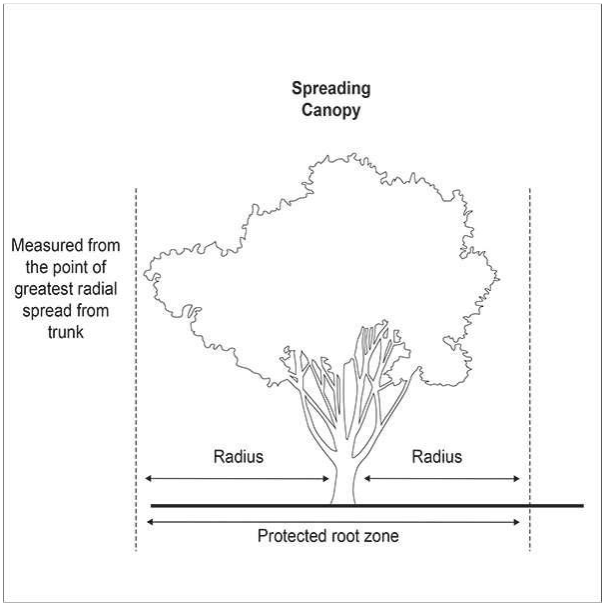


Figure J1.4.6 Protected root zone B