GREENSCENE

Milldale
Stages 14-17,
Milldale

ARBORICULTURAL ASSESSMENT

Version 1
August 2026

Document Status

Responsibility	Name
Author	Christy Reynolds
Reviewer	Allan Holmes

Client
Fulton Hogan Land Development Limited (FHLD)

Revision Status

Version	Date	Reason for Issue
1.0	17 August 2026	Final issued for Fast-track approval

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Appendices

1 Statement of Qualifications and Expertise

My full name is Christy Leo Reynolds,

I am a planning arborist at Greenscene Limited. I hold the qualifications of Bachelor's degree of Applied Science in Biodiversity Management and have 10 years' professional experience in the field of arboricultural consultation. My experience includes arboricultural assessments, master planning, resource consent applications and reviews (on behalf of Council). I have been involved in large land development projects with both private developers and Government departments.

I have been engaged by Fulton Hogan Land Development Limited (FHLD) (the Applicant) to undertake an assessment of arboricultural effects associated with the Milldale Stages 14-17 project and to prepare this report in support of the substantive application under the Fast-track Approvals Act 2024 (FTAA).

While this is not an Environment Court proceeding, I confirm that I have prepared this assessment in accordance with the applicable professional and ethical obligations of my profession and that the opinions expressed are within my area of expertise.

This report has been reviewed by Allan Holmes, Planning Manager at Greenscene Limited. Allan has a certificate in Arboriculture and over 35 years' experience in the industry.

Introduction

This report has been prepared in support of the substantive application for the Milldale Stages 14-17 (Milldale North) Project under the Fast-track Approvals Act 2024 (FTAA).

The Project relates to approximately 231ha of land centred around Wainui Road in Wainui, Auckland. The proposal provides for a comprehensively planned urban development including residential neighbourhoods, a supporting commercial node, transport and servicing infrastructure, open space, wetland and ecological restoration, and associated enabling works.

The application seeks approvals necessary to facilitate the staged development of the Project, including a suite of resource consents required under the FTAA framework.

The substantive application is supported by a comprehensive set of technical assessments and plans addressing the environmental, servicing and infrastructure matters associated with the proposal. This report should be read alongside the Planning Report and the appended technical reports and drawings lodged in support of the substantive application.

Purpose and Scope of this Report

This report addresses matters relating to arboricultural effects associated with the Project proposal. It seeks to identify trees on site where assessment of effects from proposed land development within AUP(OP) zones and management overlays that require consideration.

This report has been prepared having regard to the relevant statutory and technical framework applicable to the proposal, including AUP(OP) Chapter E39 Subdivision – Rural (for Future

Urban Zones) and E26 Infrastructure (for new road formation and stormwater management). Only trees located within wetlands, waterways and streams have been identified for the purposes of this report as there are no other trees located within private land, or any other trees located in other zones or overlays i.e. Notable trees (D13), Open space (E16) or Roads (E17) that are affected by the Project.

Site Description

The site comprises approximately 231ha of land located to the north of the existing Milldale development. The site comprises two distinct areas:

- Residential subdivision area to the south of the Ōrewa river (shown in red in Figure 1); and
- Te Korowai o Maraeariki to the north of the Ōrewa river (shown in orange in Figure 1)

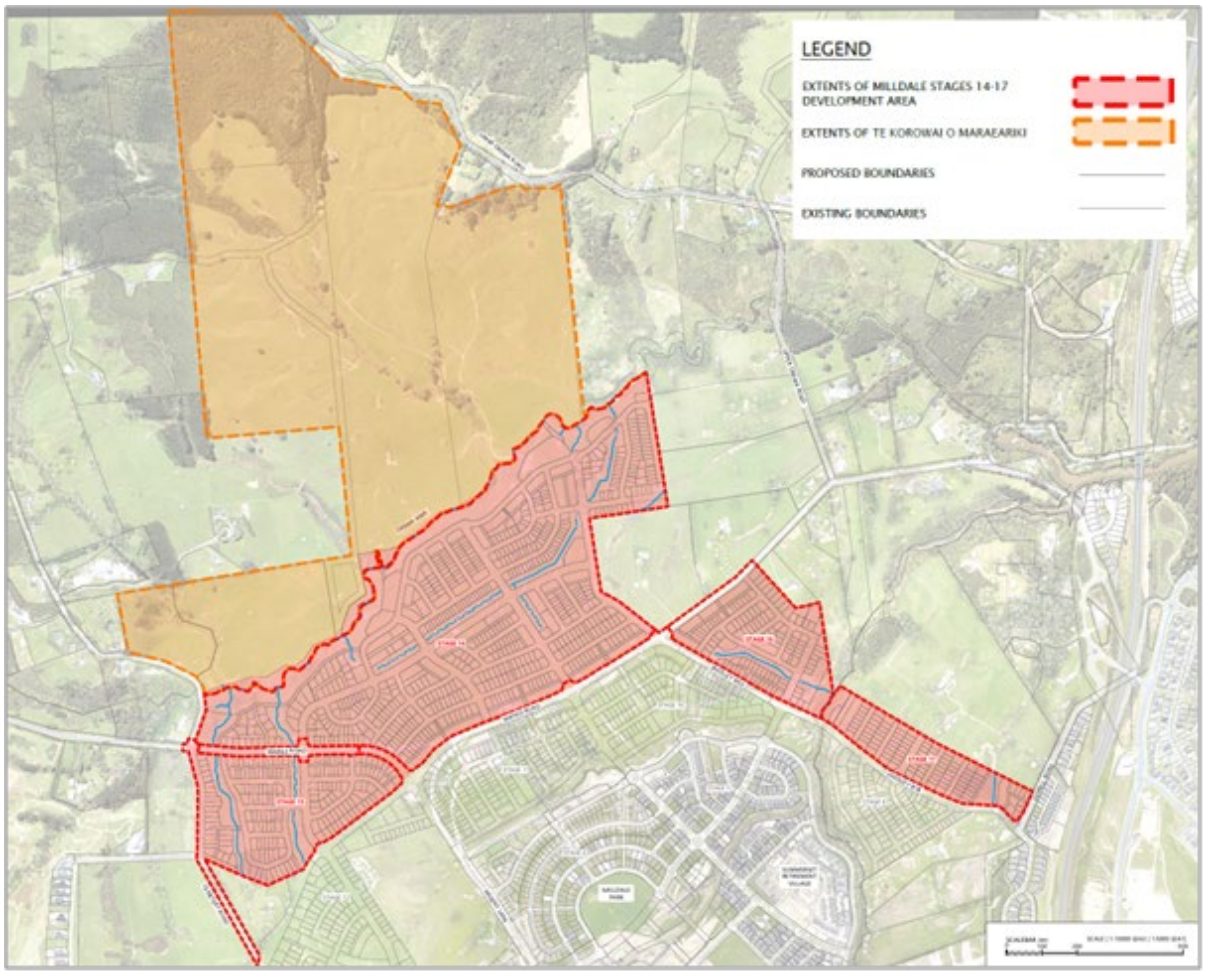


Figure 1: Site location plan.

The proposed residential subdivision area is located within the Future Urban Zone under the Auckland Unitary Plan (AUP). This part of the site is characterised by gently undulating to rolling pasture, with several streams, natural wetlands, constructed ponds and artificial drains traversing the area.

Te Korowai o Maraeariki is located to the north of the Ōrewa River and is zoned Rural Production under the AUP. This area is characterised by more undulating to steep terrain, with a series of ridgelines separated by incised gullies extending from the Ōrewa River. The land is predominantly managed pasture interspersed with streams and natural wetlands, together with pine plantations, exotic vegetation and gorse scrub. Relatively large areas of indigenous vegetation are also present, including a Significant Ecological Area – Terrestrial Overlay in the north-western portion of the site.

There is existing water, stormwater and wastewater infrastructure surrounding the site as a result of the extensive development within previous Milldale Stages. However, the site itself is not currently serviced in terms of supply and infrastructure. The surrounding roading network has been progressively developed in accordance with the staging of the Milldale development.

The surrounding area is now substantially developed. Milldale Stages 1 to 6 and 9 are complete, while Stage 7 is well advanced, with subdivision completed for Stages 7A–7C and construction of Stage 7D underway and due to be completed by the end of 2026. Stage 8A has been completed and enabling works are underway for Stages 8B and 8C. The Milldale Local Centre has also been constructed, together with associated roads, accessways and drainage reserves. Community infrastructure within the surrounding area includes Ahutoetoe Primary School, two early childhood education centres and the Summerset retirement village. Beyond the urban extent of Milldale, the site adjoins a number of rural residential properties.

Further detail regarding the site, surrounding environment and planning framework is provided within the Planning Report and technical reports appended to the application.

Description of the Proposal

The Milldale Stages 14-17 project seeks approvals for an urban development on the site. The proposal provides for up to 1,425 dwellings across a range of housing typologies and densities. In addition, the proposal includes provision for a small commercial area, transport infrastructure, servicing and stormwater infrastructure, subdivision, earthworks, stream works, and neighbourhood parks.

To the north of the Ōrewa River within Te Korowai o Maraeariki, the project includes private water and wastewater infrastructure if required, ecological restoration, as well as walking and cycling trails to enhance recreation and amenity.

Development of the Project will require a suite of approvals under the FTAA, including resource consents associated with subdivision, land use activities, bulk earthworks, infrastructure works, stream works, water take, diversion and discharge; along with NES for contamination and freshwater.

The aspects of the proposal relevant to this report include arboricultural assessment of vegetation where removal is unavoidable and to provide methodology for tree protection for any trees and vegetation to be retained.

A full description of the proposal is provided in the Planning Report and technical reports and drawings appended to the substantive application, and should be read in conjunction with this report.

AUP(OP) Planning Assessment

This development area is across multiple properties both inside and outside the Rural Urban Boundary, including Future Urban Zone and Rural Production Zones. As mentioned there is a Management Overlay of a Significant Ecological Area (SEA_T_2223) within the north-west corner of the Te Korowai o Maraeariki area. SEA vegetation will be unaffected by the proposed subdivision and infrastructure works.

Identification of vegetation on site has been provided with regards to AUP(OP) Chapter E39 Subdivision – Rural, E39.6.1.6 Existing vegetation on site (1) (a) & (b).

Assessment of the arboricultural impacts have been made with consideration to AUP(OP) Chapters E26 Infrastructure and E15 Vegetation management and biodiversity.

Activities on site will affect trees and vegetation within riparian and wetland areas, namely:

- E26.3.3.1(A78) Vegetation alteration or removal not otherwise provided for, will be a Discretionary activity.
- E15.4.1(A18) Vegetation alteration or removal within 20m of a natural wetland, in the bed of a river or stream (permanent or intermittent), or lake, will be a Restricted Discretionary activity.
- E15.4.1(A19) Vegetation alteration or removal within 10m of urban streams, will be a Restricted Discretionary activity.

2 Arboricultural Impact Assessment

An initial desktop review identified areas of vegetation in proximity to proposed development activities to focus site visit assessments to areas of concern. A site visit was undertaken on 29 May 2026 to confirm and identify trees and vegetation potentially affected by the proposed development activities. Individual trees and groups of trees were identified on site and their locations were uploaded into our tree GIS database. Locations of affected trees and vegetation are shown in Figure 2 below.

Figure 2: Trees (red points) and treed areas (green polygons) identified within stream and wetland buffer zones in the proposed development area (orange dash line) where removal is required

Te Korowai o Maraeariki located north of the Orewa River will require development of water, wastewater infrastructure and creation of an offset wetland (shown in Figure 3). these proposed works will not require any vegetation or tree removals within any AUP(OP) Management Overlays. As such this report only addresses trees and vegetation within the Residential subdivision to the south of the Orewa River.

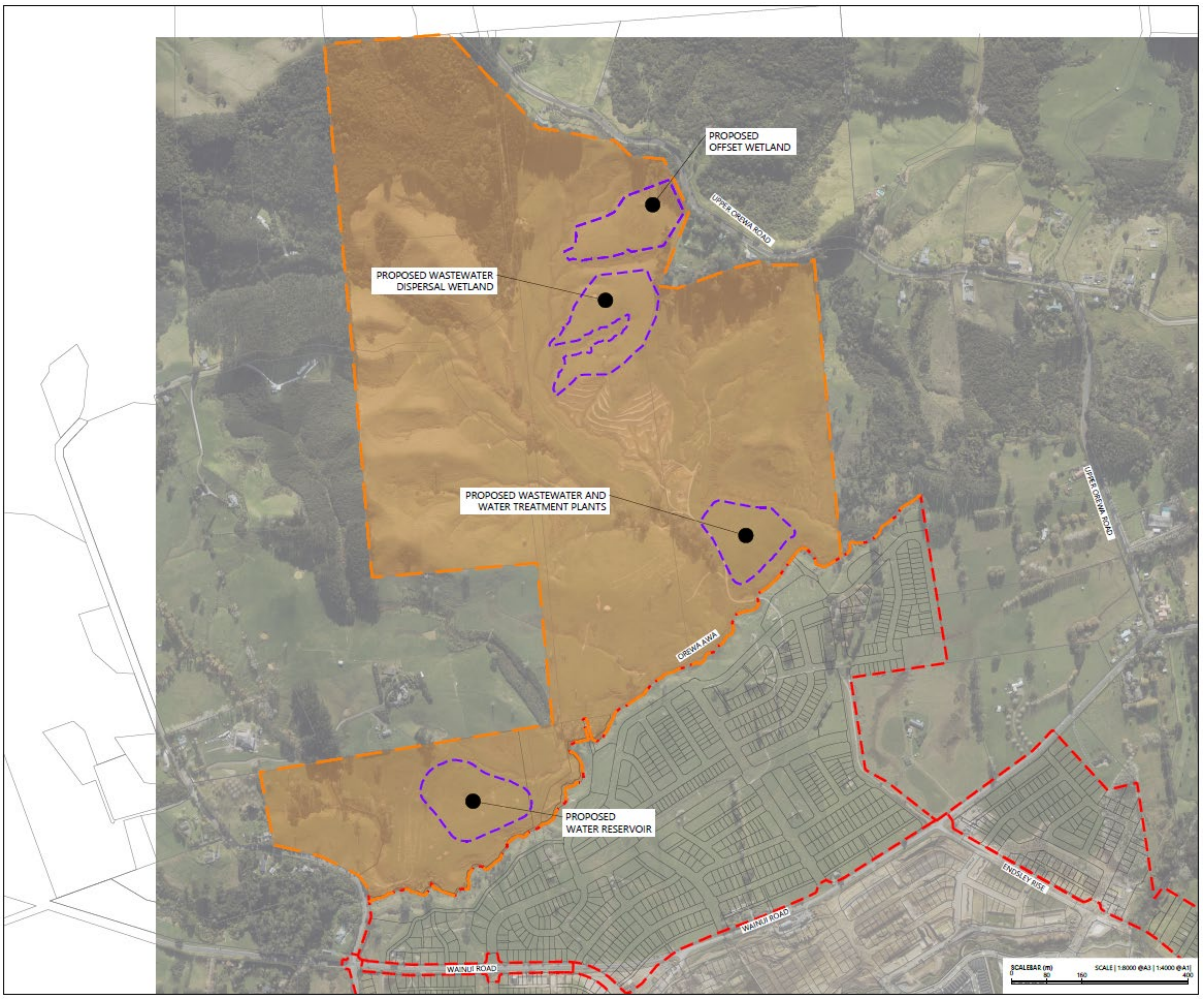


Figure 3: Te Korowai o Maraeariki extent (shown in orange) and proposed water infrastructure locations (shown in purple dash areas)

Trees were identified within 10m of urban streams (20m for rural stream), and 20m from wetlands where proposed development will require removal within these buffer zones for roads and land parcels (Figure 3). Trees identified on site are predominantly large stands of mature trees identified as G1-G3 as well as a few individual trees located within 10m of streams. The areas of trees identified are essentially exotic woodlands with no understory or forest floor vegetation. Based on Auckland Council aerial imagery they were planted sometime during the 1990s. They have been planted out in rows likely as a farm management tool for the wet soils, which is now beyond its design life with the trees starting to fail with age.

Group 1

Group 1, as shown in Figure 4, is a stand of exotic mature pine (*Pinus radiata*), poplar (*Populus* sp.) and blackwood (*Acacia melanoxylon*) trees located near Cemetery Road at the western edge of the development. Trees range from 5m to 34m tall with an average trunk size of 464mm. The mature pines are the dominant trees that have been planted on the slopes around the wetland, the poplar trees are clustered within the wetland itself. This group of mature trees has a canopy cover of approximately 0.5ha and forms a stand of trees with essentially no understory. Approximately 340m^2 of canopy cover requires removal within the adjacent wetland buffer that is within the proposed development area as shown in Figure 5.

Figure 4: Group 1 a stand of exotic mature pine, poplar and blackwood trees

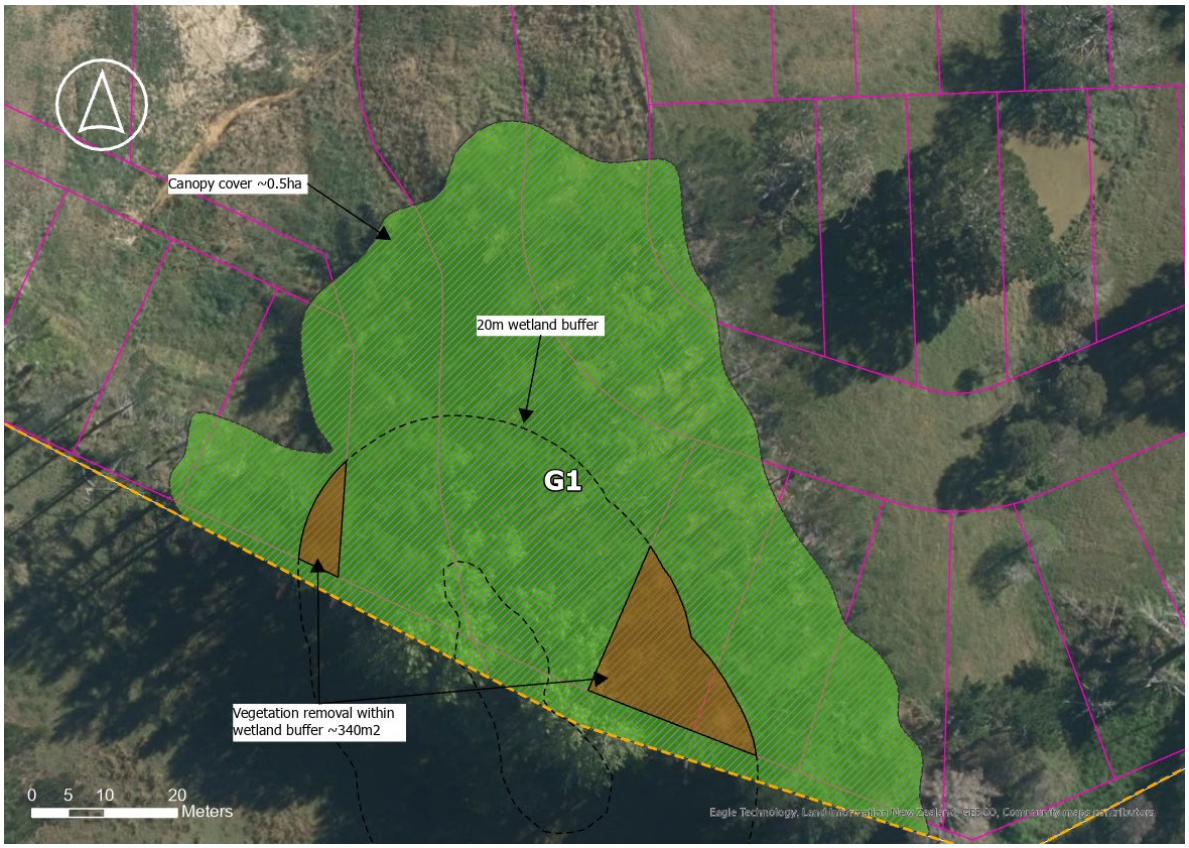


Figure 5: Group 1 vegetation cover (green area) and removals required (red areas)

Group 2

Group 2 is a stand of mature poplar trees adjacent to Lysnar Road at the eastern edge of the development (Figure 6). Group 2 is a treed area with about 270 mature poplar trees with a canopy cover of approximately 1.3ha. These poplar trees have been planted along the stream and wetland in this area. Approximately 0.3ha of canopy cover is within proposed lots and road layout that is either within 20m of wetland or 10 of stream (Figure 7). Within this stand of trees there are a number of fallen trees with uplifted root plates as well as totems and leaning trees (Figure 8).

Removal of trees within this stand may open up trees to be retained to additional wind loading, especially where edge trees are removed, resulting in greater environmental exposure to internal trees making them susceptible to failure during extreme storm/wind events. Long term care and successional planting will likely be required to manage trees that are retained along riparian areas.

Figure 6: Group 2, stand of mature poplar trees along stream and wetland beside Lysnar Road

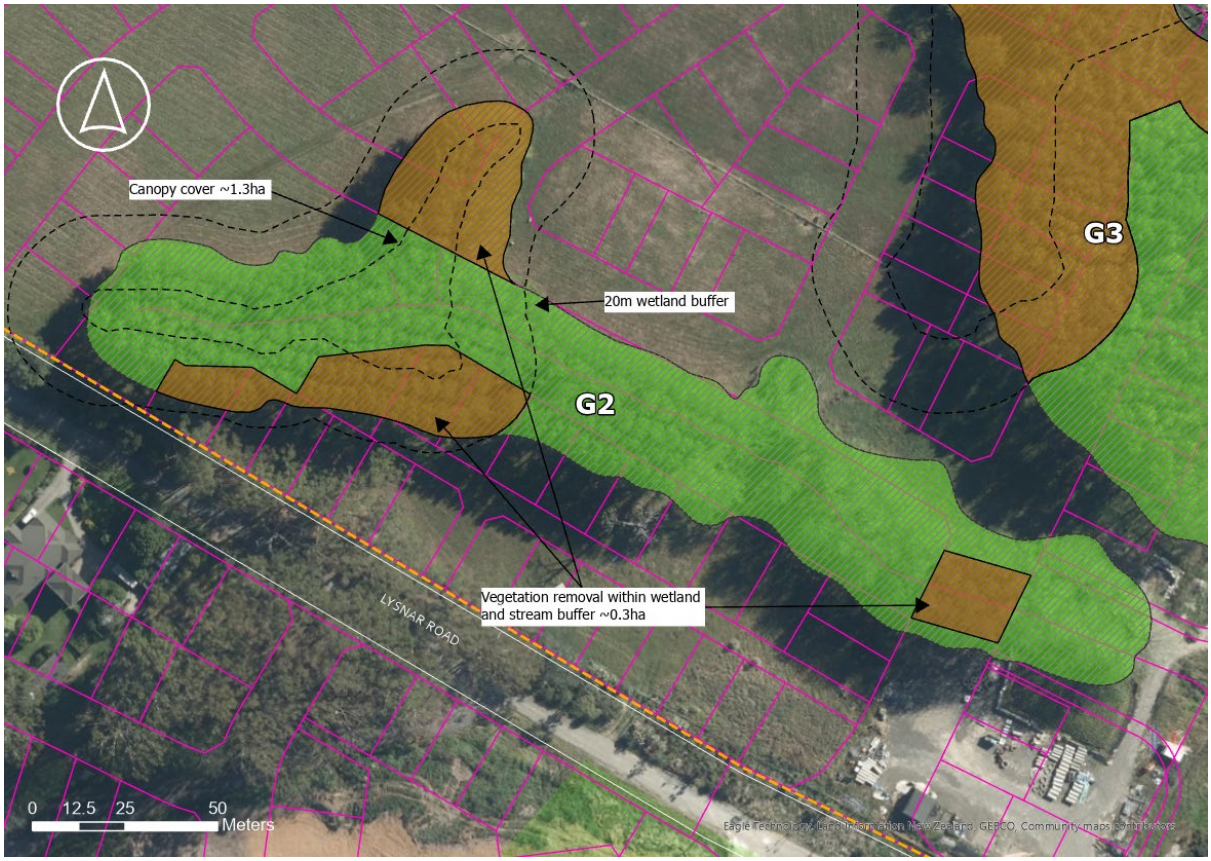


Figure 7: Group 2 vegetation cover (green area) and removals required (red areas)

Figure 8: Fallen and leaning trees within Group 2

Group 3

Group 3 is another stand of mature poplar trees, in proximity to Group 2. This is a separate stand of trees around another natural wetland area. This is a stand of over 400 trees around 28m tall, with an average trunk diameter of around 465mm (Figure 9). Canopy cover within the development area is approximately 1.44ha with about 0.6ha proposed for removal that is located within proposed lots and roads within the wetland 20m buffer zone (Figure 10).

Similar to Group 2 there are a number of fallen, leaning and totem trees amongst Group 3 (Figure 11). Similar management to Group 2 will be required to any trees to be retained in this area to address increased exposure or where additional earthworks are required.

Figure 9: Group of mature poplar trees growing within and around wetland

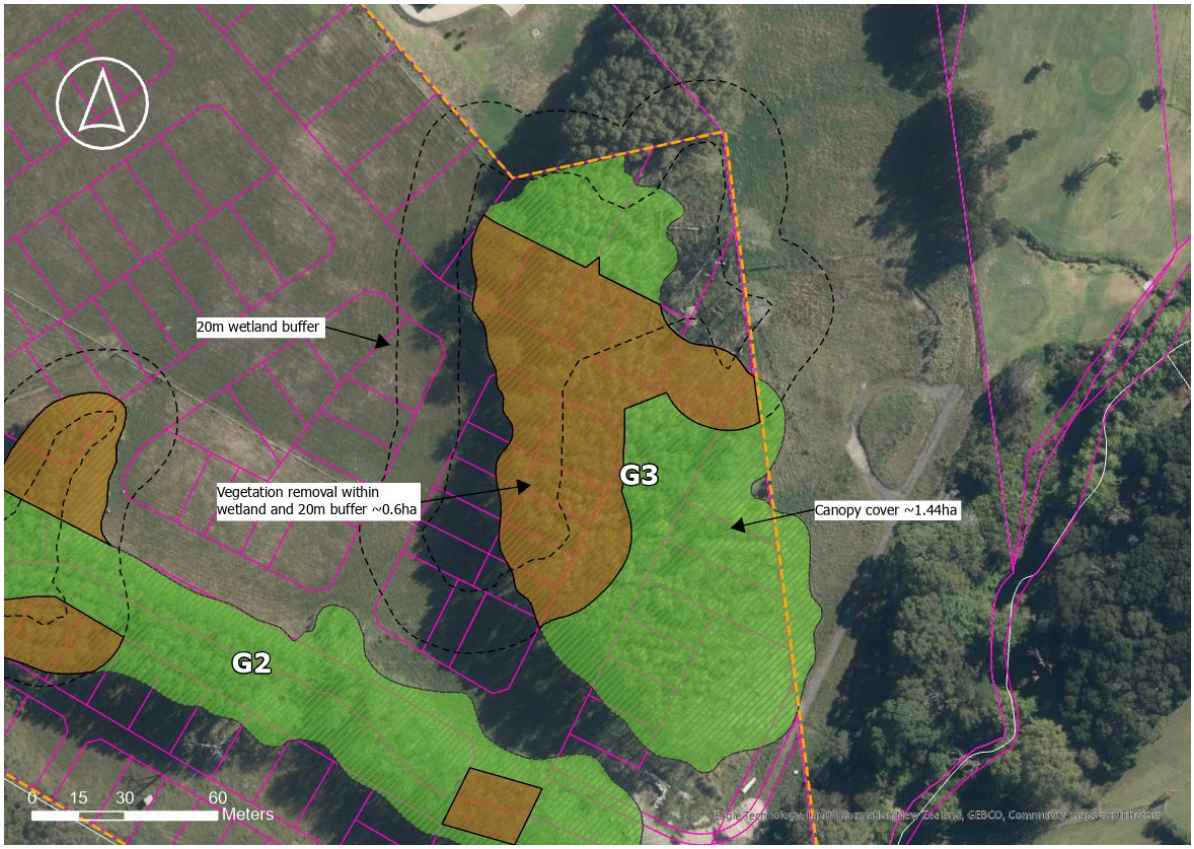


Figure 10: Group 3 canopy cover (green) and removals required within wetland buffer (red area)

Figure 11: Fallen, leaning and totem trees amongst Group 3

Individual Trees

Trees that were not planted as large groups are fairly typical of rural/farm trees and include large specimens such as poplar, pine, macrocarpa and Japanese cedar. Most of the pines on site are large mature specimens that are exhibiting signs of decline (Figure 12). Outside of removals identified for development of roads and lots with regards to activities in E26 and E15, no other tree removals are proposed.

Figure 12: Large declining pine (Tree 1) located 10m from stream

A small group of exotic trees were identified within 10m of an existing stream where removal is required for proposed site development for new road layouts, stream realignments and culverts (Figure 13). As in other areas some of these trees in the area are declining (Figure 14).

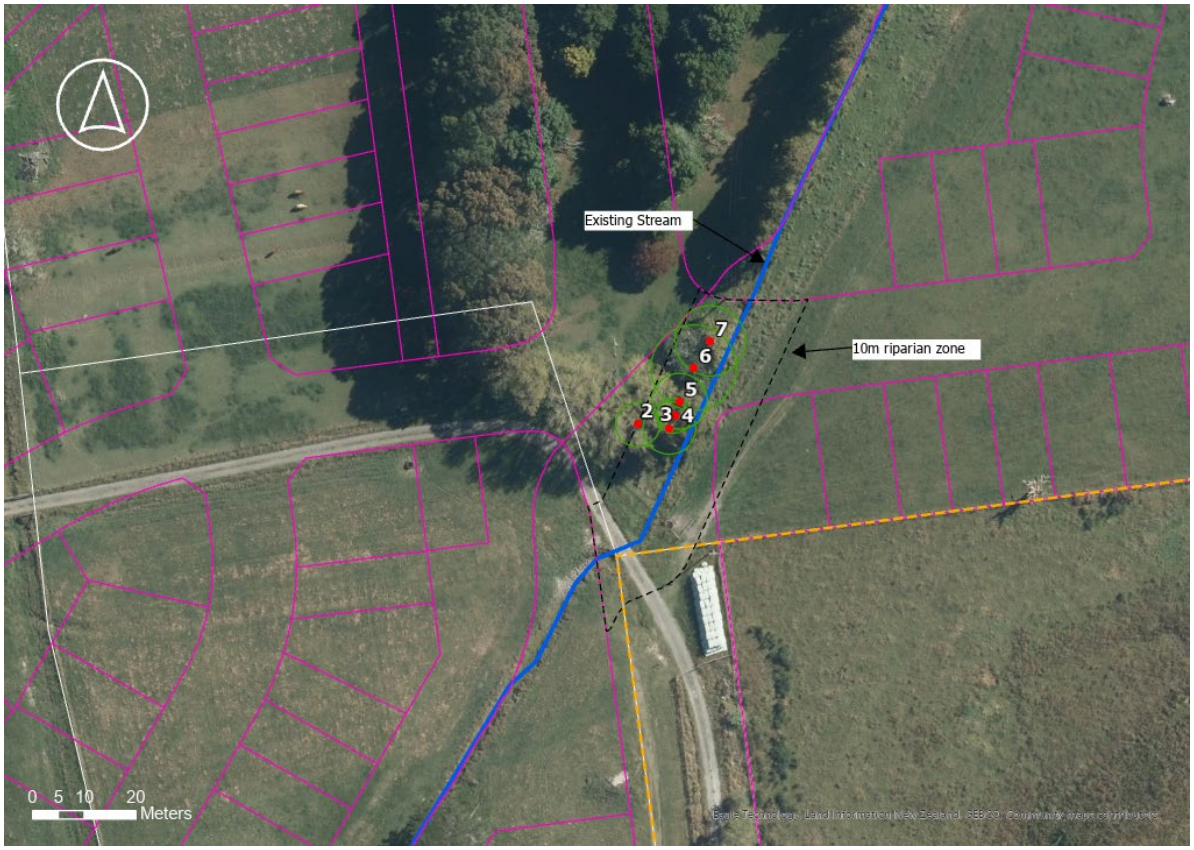


Figure 13: Individual trees to be removed in riparian margin

Figure 14: Poplar trees (including Tree 2) that are declining or have failed

Recommendations

Based on the assessment undertaken in this report, the following recommendations are made to avoid, remedy or mitigate potential adverse effects associated with the proposal and to support the appropriate implementation of the development.

Tree removals are required where proposed development layout (new roads and lots) conflict with existing trees. Management of aging and declining tree stock should be part of long-term development plans. Revegetation of existing steams and wetlands to be retained will improve the amenity and biodiversity on site and provide for successional growth for aging/declining tree stock.

The extent of proposed vegetation removals identified in this report will be approximately 0.9 ha. Therefore, a minimum 0.9 ha should be provided for mitigation planting, additional benefits such as the creation and/or restoration of ecologically important areas (stream and wetlands) with native species and pest control activities will ensure a net benefit to any mitigation planting proposed for the loss of the exotic trees identified. Proposed mitigation planting could occur within the development areas where streams and wetlands are being retained or part of the proposed large-scale ecological restoration to the north of the Ōrewa Awa.

Restoration planting activities should provide for the establishment of primary coloniser planting to open grass areas. Any offset mitigation planting for the identified tree removals should be consistent with any ecological restoration management plan that compliments the ecosystems and biodiversity of the area.

Where trees and vegetation are to be retained the recommended consent conditions relating to the Tree Protection Methodology in Appendix 1 outlines arboricultural recommendations required to ensure tree health and longevity are not compromised by site development.

Conclusion

The trees identified within the 10 m stream buffers and 20 m wetland buffers are predominantly mature exotic plantings established during the 1990s. These stands are largely composed of poplar, with some pine and blackwood trees, with limited ecological value due to the absence of a native understory, forest floor vegetation, and natural regeneration processes. Several areas, particularly within Groups 2 and 3, contain aging trees exhibiting structural defects including leaning stems, fallen trees, uplifted root plates, and declining health, indicating that these stands are entering a stage where ongoing management and succession planning will be required.

The proposed removals are associated with the construction of roads, residential lots, stream realignments, and associated infrastructure, and are limited to those areas where development cannot reasonably avoid existing tree cover. While removal of portions of Groups 1–3 will result in some loss of canopy cover within riparian and wetland margins, the total area of tree removal within these protected zones will be less than 1 ha. Retained trees may experience increased exposure to wind loading following edge tree removal and will require ongoing monitoring and management to maintain safety and tree health.

The adverse effects associated with the proposed tree removals are considered to be low to moderate and can be appropriately managed through the implementation of the

recommended arboricultural protection measures, long-term management of retained trees, and extensive revegetation works. The proposed restoration planting programme, including proposed revegetation and large-scale ecological restoration north of the Ōrewa Awa, will result in a substantial net increase in indigenous vegetation cover, biodiversity values, habitat provision, and landscape amenity across the wider site.

Overall, the proposed tree removals are considered necessary to facilitate the planned development and, when assessed in conjunction with the extensive mitigation and ecological enhancement measures proposed, are unlikely to result in significant long-term adverse arboricultural, ecological, or amenity effects. The development provides an opportunity to replace aging exotic tree stock with more sustainable indigenous vegetation communities while enhancing public access, recreation opportunities, and environmental outcomes for the future community.

If you have any queries regarding the content of this report, please contact *Greenscene Limited* on (09) 623 3514.

Kind regards,

Christy Reynolds

Greenscene Limited

Appendix 1. Recommended Consent Conditions - Tree Protection Methodology

Pre-Work Requirements

1. A Works Arborist must be engaged by the applicant for the duration of the project to monitor all works within the root zone of trees in proximity to the works, and to implement the conditions of any relevant approvals granted for the proposed works or to undertake a duty of care where approvals are not required i.e. private trees.

2. Prior to any site works commencing, the applicant must organise an on-site meeting with the Works Arborist so that the tree protection measures can be explained to all relevant contractors and sub-contractors associated with these works.

3. In conjunction with the Works Arborist, the project manager/foreman must ensure that all contractors, sub-contractors and work site staff are advised of these tree protection measures and all relevant approval conditions, and that they must comply with these methods for the duration of the works.

Protective Barriers

4. The primary purpose of protective barriers is to establish a defined zone that safeguards important root environments and above-ground parts of the tree during construction. Barriers are not mandatory, but may be required depending on the contractor's compliance with tree protection requirements. Where compliance is poor, stronger control measures will be implemented to ensure protection (e.g., more robust barriers or expanded exclusion zones).

5. The type and construction of barriers will depend on the scale and proximity of works to retained trees. The location and nature of any barrier, whether protective fencing, trunk protection, or ground protection, will be confirmed by the Works Arborist, taking into account the type of work scheduled. Examples of tree protection fencing and ground protection measures have been provided in Appendix 4.

Site Access and Storage

6. No machinery, materials, spoil, fill, soil or equipment must be stored or temporarily placed within the root zone of any tree unless it can be kept wholly within the bounds of an existing load-bearing surface or temporary load-bearing surface installed to the satisfaction of the Works Arborist.

7. No washing of equipment or machinery must be undertaken within the root zone or seepage range of any street tree and no product injurious to trees such as petrol/diesel, herbicides, solvents etc. shall be stored or discharged within the root zone or seepage range of any tree.

Excavations and Tree Roots

8. The Works Arborist must be notified prior to any excavation in areas affecting trees, and as confirmed at the pre-start meeting. Where practicable, excavation is to be undertaken using hand tools or other root-sensitive methods to avoid damaging or debarking root wood.

9. Where hand excavation is impractical, small machinery or other approved methods may be used only with prior approval from the Works Arborist and under the supervision of a designated spotter. The spotter must monitor for root exposure and machinery movement around trees at all times.

10. Where possible, any tree root encountered measuring over 35mm in diameter is to be retained and carefully worked around. Any tree roots below 35mm in diameter that are necessary to be cut must be cleanly cut back to the face of the excavation.

11. The removal of tree roots measuring greater than 35mm in diameter must be at the discretion of the Works Arborist. The Works Arborist may carry out the removal of such roots only when they are satisfied that the health and safety of the tree will not be compromised. No roots measuring greater than 80mm in diameter at point of severance must be removed.

12. Any exposed root ends/retained roots that have been cut must be protected from drying out. This must be done by covering them immediately with hessian (or similar material) and ensuring that the material is kept damp until backfilling occurs.

13. Where deemed necessary by the Works Arborist to accommodate the presence of roots that required retention, the location and/or depth of excavations must be adjusted as required.

Tree Removal

14. All tree removals and tree pruning must be completed by the Works Arborist in accordance with the requirements detailed in this report and any consent conditions and must be undertaken in accordance with current, industry-accepted best practice methodologies.

15. All tree removals must ensure that adjacent vegetation, including root zones, are not damaged or subject to mechanical compaction, including restricting vehicle access and use of track mats or similar ground protection.

Supervision

16. Specialist arboricultural input is important to ensure that tree protection measures are correctly implemented and understood. The Works Arborist provides the necessary guidance during the works to resolve tree-related conflicts. The success of supervision

depends heavily on effective communication from contractors and adherence to the agreed tree protection measures.

17. Once works commence, the Works Arborist will visit the site at the intervals confirmed during the pre-start meeting. The supervision arrangement must remain flexible to allow for attendance at sensitive works, with the Works Arborist given suitable notice before such works are carried out.

18. A copy of the specific tree protection details must be kept on-site at all times. The Site Manager must brief any staff member whose work may affect protected trees, ensuring they understand the requirements. These details must be incorporated into the site induction process so that all personnel, including new contractors, are aware of and understand their obligations.

Appendix 2. Tree Details

Groups

Group No.	Species	Approximate Number of trees	Height (m)	Average DSH (mm)	Age Class	Comments	Planning
1	Pine (*Pinus radiata*), poplar (*Populus* sp.), blackwood (*Acacia melanoxylon*)	110 pine 36 poplar 16 wattle	5m-34m	570	Mature	Removal of approximately 0.03ha required for development activities	E15.4.1(A18) Restricted Discretionary
2	Poplar (*Populus* sp.)	270 poplar	25m	464	Mature	Removal of approximately 0.3ha required for development activities	E26.3.3.1(A78) Discretionary & E15.4.1(A19) Restricted Discretionary
3	Poplar (*Populus* sp.)	400 poplar	28m	350	Mature	Removal of approximately 0.6ha required for development activities	E26.3.3.1(A78) Discretionary & E15.4.1(A18) Restricted Discretionary

Individual Trees

Tree No.	Species	Height (m)	DSH (mm)	PRZ (m)	NRZ (m)	Age Class	Comments	Planning
1	Monterey pine (*Pinus radiata*)	22	1255	12	15	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary

Tree No.	Species	Height (m)	DSH (mm)	PRZ (m)	NRZ (m)	Age Class	Comments	Planning
2	Poplar (*Populus* sp.)	12	259	4.3	3.108	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary
3	Japanese cedar (*Cryptomeria japonica*)	12.5	421	5.1	5.052	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary
4	Japanese cedar (*Cryptomeria japonica*)	10.6	293	3.4	3.516	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary
5	Japanese cedar (*Cryptomeria japonica*)	12	715	5.4	8.58	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary
6	Macrocarpa (*Hesperocyparis macrocarpa*)	6.4	589	8.3	7.068	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary
7	Japanese cedar (*Cryptomeria japonica*)	10	375	6.8	4.5	Mature	Removal required for development activities	E26.3.3.1(A78) Discretionary

Appendix 3. Tree Protection Zones

Protected Root Zone – PRZ

The PRZ radius is determined by calculating the widest lateral crown projection, or half the height for columnar species in accordance with the AUP-OP, see Figure 3.

The PRZ is the legislated (AUP-OP) protected root zone of scheduled notable trees and any protected tree within designated open space and road reserve zones, it is the environment required for sustained absorption, conduction and growth-regulating processes. The extent of permitted PRZ activities for trees in open spaces or the road reserves are:

- Any minor incursion of less than 10% into the PRZ where roots no larger than 60 mm diameter are pruned, is a Permitted activity.
- Any moderate incursion of greater than 10% into the PRZ but no more than 20%, where roots no larger than 80 mm diameter are pruned is also a Permitted activity, but only with arborist supervision.

The extent of permitted PRZ activities for scheduled notable trees is:

- Any incursion excavation less than 1m^2 and which disturb no more than 10% of the PRZ is Permitted, for trenchless activities only.

All other activities are Discretionary or Restricted Discretionary and should be assessed to best arboricultural practice, different rules apply for proposed infrastructure works under AUP-OP Chapter E26.

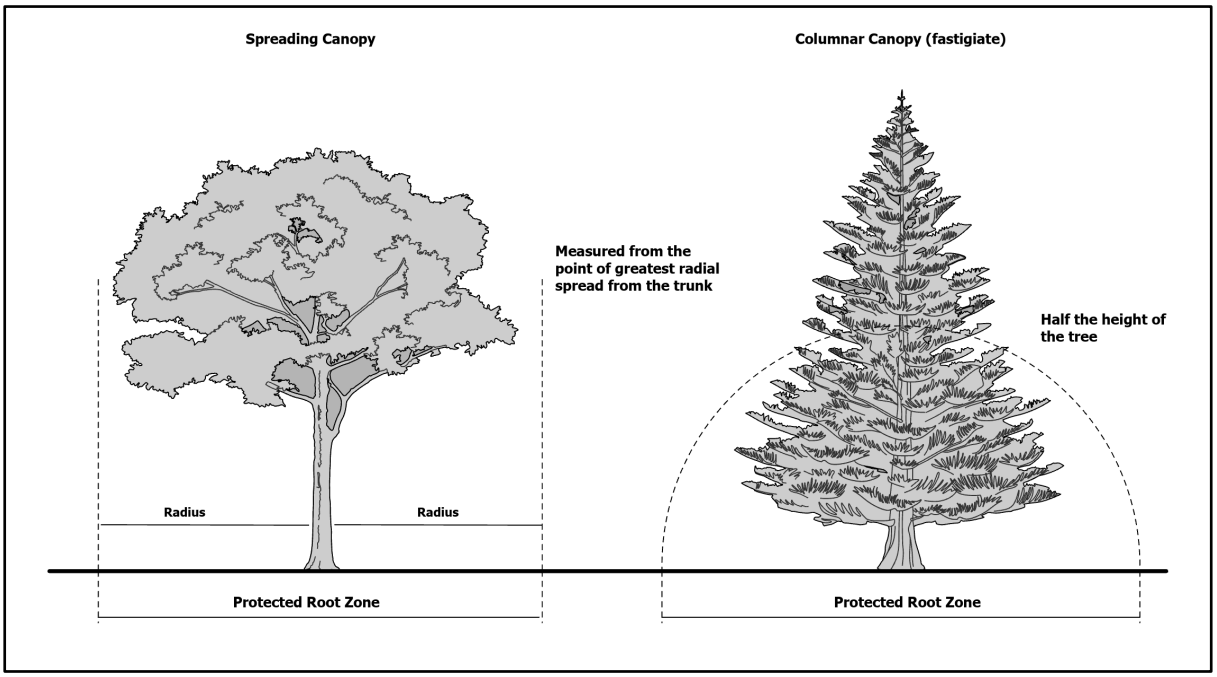


Figure 1: Protected root zone for spreading and columnar tree canopies

Notional Root Zone/Tree Protection Zone – NRZ/TPZ

The TPZ is the area determined by the Works Arborist where tree protection must take place. The Notional Root Zone (NRZ) is the starting point for identifying the TPZ. The radius of the NRZ is calculated by multiplying the diameter at standard height (DSH) by a factor of 12 in accordance with Australian Standards AS4970:2025. The NRZ for palms, cycads, tree ferns and similar is not calculated but shall not be less than 2m.

The NRZs for all trees are to be used to assess all construction activities around trees to be retained. An NRZ incursion less than 10% is considered as minor, between 11% to 20% as moderate and any greater than 20% (or within the SRZ) as major, all incursions can be minimised with arborist supervision. In line with arboricultural best practice wherever an NRZ is greater than minor then arboricultural methods should always be utilised to minimise the impacts to the root zone.

Structural Root Zone - SRZ

The SRZ radius is determined by multiplication of the stem diameter above the basal stem flare by a factor of $50^{0.42}$ x 0.64 in accordance with the *Australian Standard AS4970-2025 Protection of trees on development sites.* The SRZ is only required to be for consideration where there is likely to be an encroachment of more than 10% of the PRZ or TPZ or where activities are to occur directly within the structural root zone. Identification of the SRZ provides an indicative area within which most structural roots responsible for anchorage and stability are likely to be encountered.

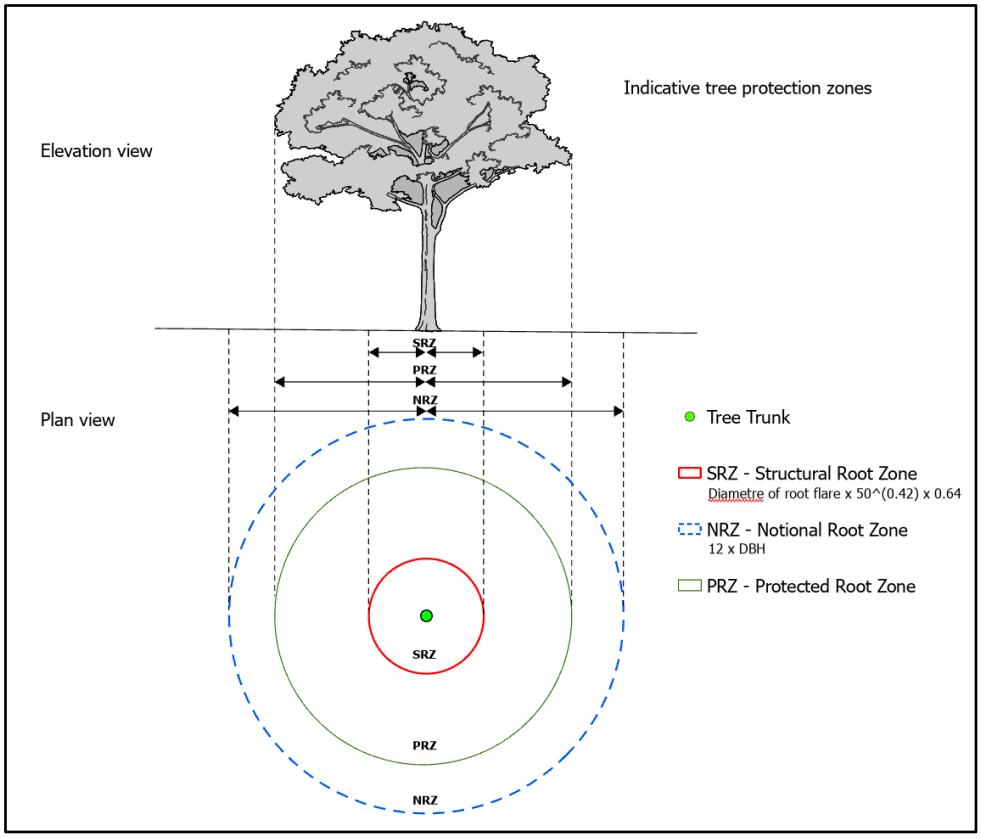
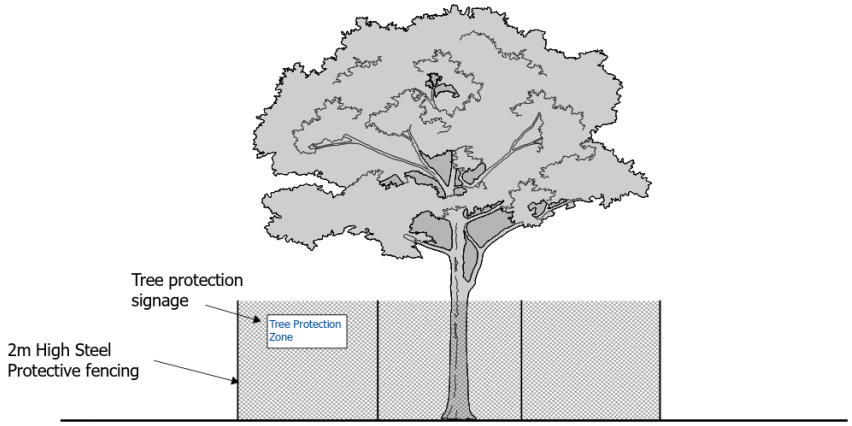
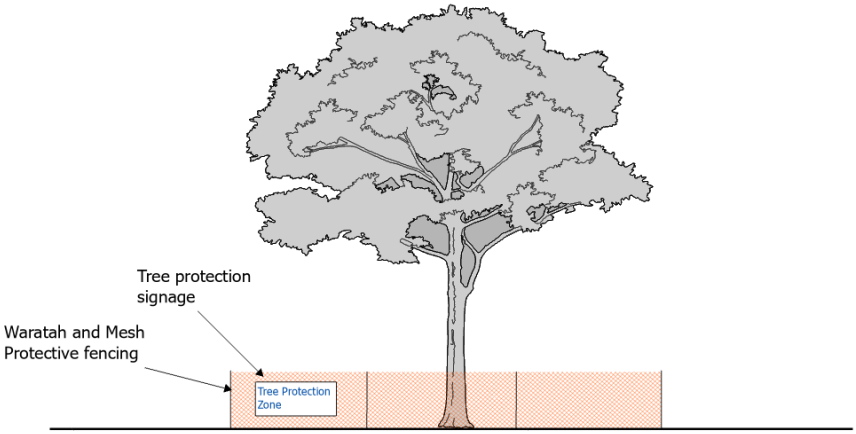


Figure 2: Tree root zones

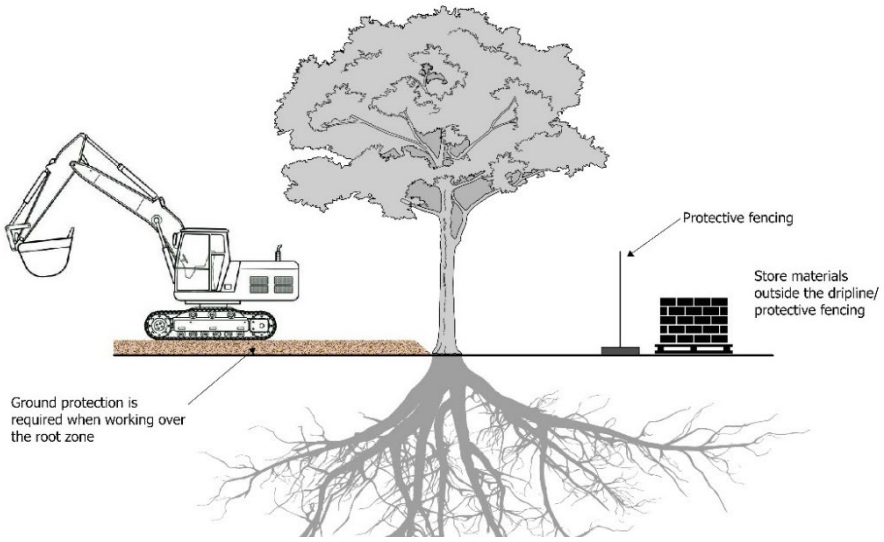
Appendix 4. Tree Protection Fencing



Detail A: Tree Protection Fencing



Detail B: Tree Protection Fencing



Detail C: Ground Protection