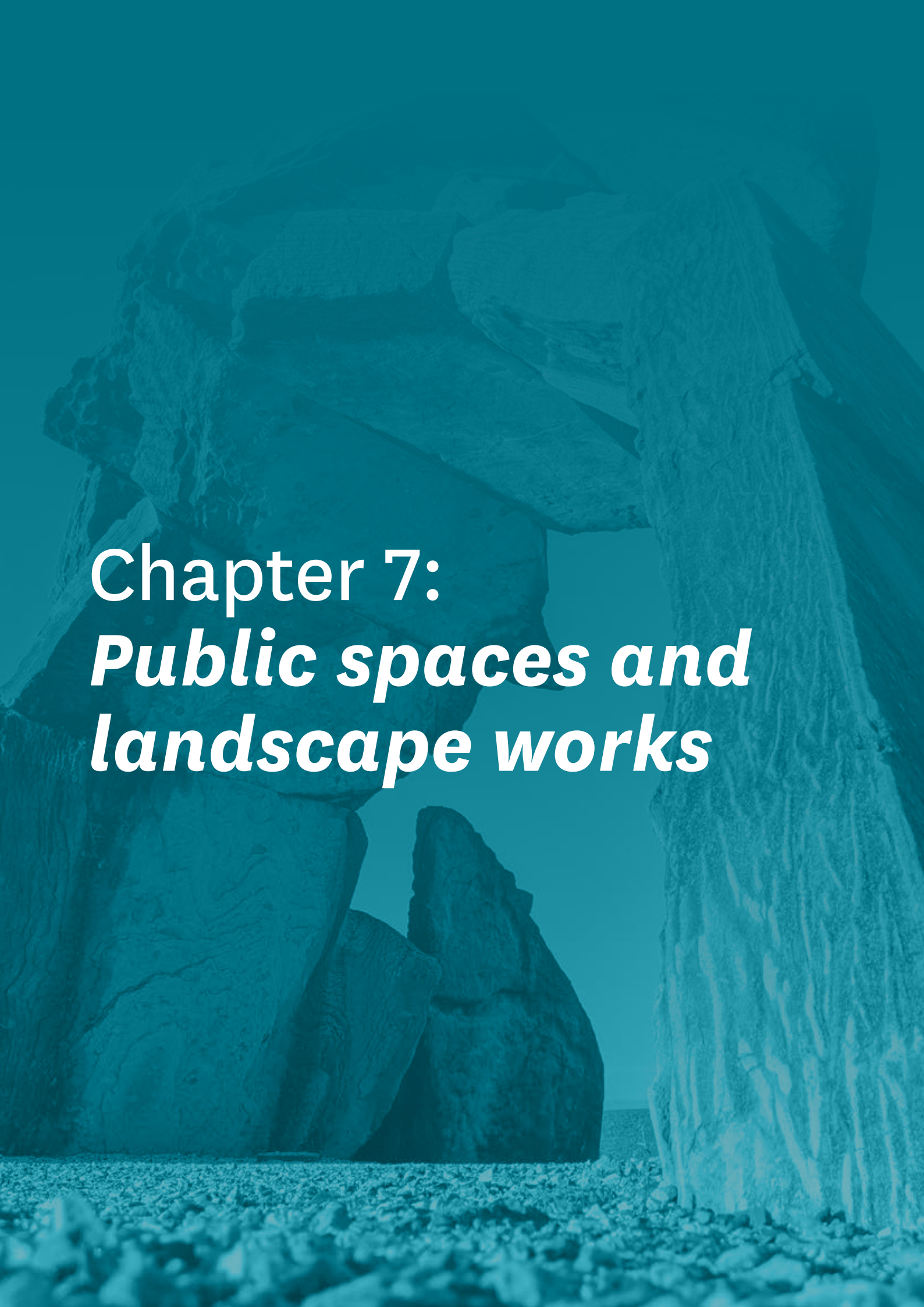

Chapter 7:
Public spaces and landscape works

7.1 Introduction

7.1.1. Scope

This section covers the spatial design of reserves, and the landscape design and construction of public spaces including reserves and streets. The design, layout and landscape enhancement of public spaces shall comply with this Chapter.

7.1.2. Objectives

The creation of areas of public space and landscape development shall:

a. Maximise long term benefits including environmental, community, recreation and systems benefit,

b. Minimise on-going maintenance works and costs,

c. Respond to the surrounding landscape character and context including landform, ecological and geological elements, cultural and heritage importance,

d. Enhance and strengthen existing natural and built character and intended future character,

e. Ensure that any landscape engineering design and works are compatible with these objectives and any consent conditions, and

f. Ensure public safety through consideration to National Guidelines for Crime Prevention through Environmental Design in New Zealand.

Where practicable, the development shall:

g. Protect, maintain and restore existing natural ecosystems, vegetation, and landscape features, and contribute to ecological and habitat biodiversity,

h. Protect and enhance existing vegetation,

i. Provide amenity open space, “buffer areas”, open space connections and access to watercourses, and

j. Provide a coherent and legible design that promotes ease of pedestrian access to and through areas of public space and to other public amenities.

7.1.3. Performance Standards

The design and development of reserves and other public spaces shall achieve the following:

a. Reserves and other public spaces have an appropriate size and shape for expected use.

b. Reserves provide a pedestrian access function and where useful and compatible with other values of the reserve, access linkages to and through the reserve shall support access for ongoing maintenance requirements.

c. Earthworks are planned and executed to achieve appropriate gradients for intended use and optimise drainage for ongoing use and maintenance.

d. Trees and planting are designed for long term retention and easy and cost-effective maintenance.

e. Any structures fulfil a necessary function and are safe and appropriate to the setting.

f. Planting in streets allows for safe transport functions including movement of vehicles and pedestrians.

g. Planting design and layout is compatible with both underground and overhead network utility services and ongoing maintenance requirements.

7.1.4. Reference Documents

The design for all proposed reserves shall (where applicable and where not in conflict with the ES) be consistent with the following documents:

Note it is the responsibility of the Developer to ensure the most up to date referenced document is sourced.

7.1.4.1 Statutory

NRC Regional Plans

Reserves Act 1977

Resource Management Act 1991

Operative District Plan

7.1.4.2 New Zealand Standards

NZS 4404:2010 - Land development and subdivision infrastructure

NZS 5828:2015 – Playground equipment and surfacing

NZS 8409:2021 – Management of agrichemicals

SNZ HB 44:2001 – Subdivision for people and the environment

SNZ HB 8630:2004 - Tracks and Outdoor Visitor Structures

7.1.4.3 WDC Documents

WDC Urban Design Guidelines

7.1.4.4 Other Referenced Documents

Auckland Council GD01 – Stormwater Management Devices in the Auckland Region (2017)

Cancer Society Guidelines for Shade Planning and Design: Under Cover

Growsafe Standard Certificate

Low Impact Urban Design and Development (LIUDD) research programme publications 2003-2009 (Landcare Research: Auckland University)

MfE New Zealand Urban Design Protocol (2005)

Ministry for the Environment's National Guidelines for Crime Prevention Through Environmental Design in New Zealand (2005)

Ministry of Primary Industry's National Pest Plant Accord

Northland Transportation Alliance Design Manual - Street Lighting Version 1 *(To be provided by WDC on request)*

NRC - Clean Streams – A Guide to Riparian Management

NRC Northland Regional Pest and Marine Pathway Management Plan 2017-2027

Waka Kotahi - Pedestrian Planning and Design Guide (2009)

Waka Kotahi - RTS 14 Guidelines for Facilities for Blind and Vision Impaired Pedestrians (2015)

7.1.5. Reserve Provision

Some Developers may voluntarily elect to include public spaces within their developments, recognising the benefits that such spaces will provide to their development. In other circumstances, reserves such as esplanade reserves may be a requirement of the resource consent process.

Where a reserve or future reserve contains or is likely to contain large and/or protected trees, the size and layout of the reserve shall take into account separation distances from existing and future adjacent residential activity and an ETVP shall be submitted, refer to Section 7.2.2.2 Existing Trees and Vegetation Plan.

Each reserve shall be identified and vested in accordance with the most appropriate reserve classification under the Reserves Act 1977.

All land transferred to WDC (whether as road or reserve) shall vest in WDC free from all existing interests. Any such interests shall be removed by the Developer (and all relevant consents obtained), at the Developers cost, and prior to the vesting of the land. Only in special circumstances will WDC accept land to vest subject to existing interests.

Where the function of the reserve will have different ongoing maintenance requirements and levels of service, each part of the reserve shall be identified and vested separately

according to its primary function. Locating reserves with different functions together may be beneficial, for example a drainage reserve adjacent to a recreation reserve.

7.1.5.1 Gifting of Land

WDC may accept the gift of land in certain circumstances and subject to the written agreement of the WDC. The vesting or gifting of land will not result in any financial offset or payment from WDC, unless specific agreement is reached with WDC. The conditions of any application shall confirm the basis of the WDCs acceptance of any vested land.

Where land is proposed to vest as a result of Resource Management Act 1991 requirements, such as esplanade reserves or drainage reserves, there shall be no expectation of any recompense or reduction in development contributions.

7.2. Design

7.2.1. Design Principles and Requirements

It is important that consideration to landscape design occurs throughout the development process through to construction, to ensure that landscaping can be successfully integrated into the reserve or road corridor, with sufficient provision for network utility services and lighting.

Infrastructure services should be planned at the same time as the landscape design so that planting locations do not compromise the integrity and efficient operation of services. If particular landscape conditions or objectives are required for a development, then these shall be considered prior to undertaking detailed engineering design.

The designer and any contractors shall have both experience and qualifications that are relevant to the scope of the development. The landscape designer shall be familiar with the landscape works requirements in this Chapter.

7.2.1.1 Crime Prevention Through Environmental Design

All landscape design will involve the application of National Guidelines for Crime Prevention through Environmental Design in New Zealand principles, regardless of the location.

In some locations, where WDC staff consider greater surveillance is required, the design may need to take into account the location of CCTV cameras.

7.2.2. Content of Design Submission

The application for resource consent shall include drawings locating the following (where applicable):

a. Existing natural features (topographical, geological, hydrological and ecological), including all existing trees and areas of vegetation within the site, and any proposed modifications or changes to these areas,

b. Existing and proposed structures including: paths/paving, fencing, signs, seating, tables, play equipment and lighting, access structures, (such as stiles, gates, boardwalks, platforms), retaining walls, stop banks, scour mats, drainage structures, rock revetment etc.,

c. Proposed planting including plant locations and spacing, plant species and grade, mulch, areas of ecological enhancement, areas of grass to be mown,

d. Services reticulation including water, wastewater, electricity and other utilities to boundary,

e. Landscape features such as mounding,

f. Irrigation or other services, and

g. A design statement accompanying the design drawings detailing how the proposal is consistent with the referenced documents (Section 7.1.4 Reference Documents) and the ES.

Design drawings shall comply with the requirements of Section 1.5.3 Engineering Design Approval and Appendix F Drawing Standards. Sufficient information shall be provided to demonstrate that the proposed work meets WDC requirements.

7.2.2.2 Existing Trees and Vegetation Plan

Where a reserve or road to vest includes existing trees and vegetation, an Existing Tree and Vegetation Plan (ETVP) shall be prepared by a qualified and experienced arborist, or as approved by the WDC, and submitted in the EDA.

The purpose of the ETVP is to:

a. Identify existing trees and vegetation which are proposed to be removed or retained on land to be vested to WDC.

b. Provide ongoing maintenance requirements.

c. Provide whether a methodology is required to protect trees and vegetation from construction activities.

The ETVP shall be submitted to the WDC and shall be approved prior to any removal of trees or vegetation or earthworks commencing.

The ETVP shall include the following:

a. Identification of the size, species and location of all trees, including those trees currently protected by the District Plan and trees that will be afforded protection under the District Plan when the land is vested, due to their scale and situation on public land.

b. Identification of any existing trees that are proposed to be retained and removed.

c. Identification of the tree protection zone around each tree to be retained, which is determined by either the tree dripline, or a 2.0 m radius from the

trunk (whichever is greatest), and / or any other provisions that may apply to trees protected by the District Plan,

d. Construction methodology and protection measures to avoid damage or other adverse effects on the health and value of trees. Construction methodology is to include:

   i. Restrictions on construction activities in the tree protection zone, including the exclusion of machinery and heavy equipment and storage of materials.

   ii. The position and design of any temporary protective fencing or other methods of protection required.

e. Identification of any arboricultural maintenance on trees to be retained, to ensure that the trees are in a healthy and stable state for long-term viability.

7.2.3. Design of Reserve and Reserve Linkages

The Developer is encouraged to discuss reserve design with WDC at an early stage. This process shall begin at a pre-application meeting, prior to applying for resource consent.

Reserves, including neighbourhood recreation reserves, shall:

a. Have a minimum size of 3000 m^2, to provide for expected recreation activities.

b. Have flat or gently sloping contours.

c. Not be dominated by services such as overhead wires that compromise the amenity.

d. Give consideration to how the development will link to the surrounding landscape, including existing areas of open space, and to other public areas, such as schools, town centres, community facilities or public transport routes.

e. Seek to maximise linkages and access opportunities to the surrounding street and reserve network, including esplanade reserves.

   i. In urban areas, esplanade reserves may be provided to facilitate safe pedestrian and cycle movement through neighbourhoods, and to create a more permeable, legible, open space environment.

f. Provide public access points from walkways to roads at 300 m intervals where walkways are located within esplanade and similar reserves to allow access options and ease.

Neighbourhood recreation reserves shall:

a. Be located in prominent locations with sufficient street frontage to provide passive surveillance for safety and greater amenity.

b. Generally, have relatively equal reserve dimensions, to create useable and flexible spaces.

c. Be accessible to all surrounding neighbourhoods and communities.

Reserves that provide for stormwater management purposes shall be created as local purpose (drainage) reserves, with separate titles and shall:

a. Comply with Section 4.3.12.4 Drainage Reserves.

b. Not include ponds or wetlands without prior specific approval from the Parks and Recreation Manager.

Reserves other than local purpose (drainage) reserves used for stormwater treatment or detention ponds for stormwater runoff from the reserve areas, require specific prior approval from the Parks and Recreation Manager, and shall only be allowed where they are designed for >2% AEP flood events. In such circumstances, the design of any drainage structure shall be compatible with the function and amenity of the reserve. The impacts and ongoing maintenance requirements of any stormwater infrastructure in reserves shall be detailed and provided to WDC prior to vesting as per Section 1.7.2 As-Built Plans, Asset Information Schedules, Operation and Maintenance Manuals.

Multi-use reserves, including recreational or access use of drainage reserves, where consistent with other values, is encouraged.

The alignment of public utility or private services through future reserves shall only be permitted for the benefit of a facility within the reserve.

7.2.3.2 Pedestrian Accessways

Pedestrian linkages in urban areas, and other accessways and leg-ins to reserves including esplanade reserves shall:

a. Have a minimum legal width of 6 m (also to allow for maintenance vehicle access) with a central permanently surfaced pedestrian path 2.20 m in width, or shared path 3 m in width, constructed in accordance with **Sheet 2**.

b. Be aligned in such a way as to provide clear views of entry and exit points. The length of the area of the reserve that functions as a pedestrian accessway shall be no more than five times the narrowest width.

7.2.4. Streetscape Design

The design of streets shall reinforce the legibility of the city by building on the urban context including:

a. Landscape,

b. Built form,

c. Existing use, and

d. Social, economic, cultural, aesthetic and historical associations.

In an urban environment, underground space is limited, and infrastructure placement and provision of space dedicated to planting may be critical for a successful design.

Approval of paving, lighting and other structures that do not align with the ES will require specific approval and shall only be approved where the feature improves the wider urban legibility and character. The WDC will not approve any structures in public land that do not provide public benefit e.g. walls or signs at entrances to subdivisions.

7.2.5. Earthworks Design

Earthworks shall be designed so that maximum finished gradients for mowable areas are 1v: 5h, with profiles that drain sufficiently to allow year-round mowing by tractor-mounted equipment.

Refer to Section 7.3.1 Earthworks when planning earthworks.

7.2.6. Landscaping Structures and Furniture

7.2.6.1 Play Equipment

Approval from WDC is required for all play equipment (including hard courts and skateboarding facilities) in reserves and shall only be approved where WDC considers the equipment and location meets the recreational needs of the local community and complies with current WDC play strategies and policies.

Approved play equipment may be installed by the Developer or by WDC following vesting of the reserve.

Play equipment and surfacing shall comply with NZS 5828:2015, shall meet the conditions of required building or resource consents, and any other engineering or quality control requirements that WDC may require.

7.2.6.2 Landscape Structures

Approval from WDC is required for all landscaping structures in reserves, and in road reserves.

The Developer is responsible for gaining any necessary building or resource consents for proposed structures, including retaining walls.

The following structures shall be provided, prior to the vesting of a reserve:

a. Bollards on the street frontage of reserves, with a removable barrier for maintenance access (refer **Sheet 58**), and

b. Vehicle crossings for maintenance vehicles constructed in accordance with Section 3.2.26 Vehicle Entrances and Section 3.3.7 Footpaths, Cycleways and Vehicle Crossings,

The following structures shall be provided, prior to the vesting of a walkway:

a. Bollards on the street frontage of reserves, with a removable barrier for maintenance access (refer **Sheet 58**),

b. Fencing to a maximum height of 1.2 m on side boundaries constructed in accordance with **Sheet 54**, and

c. Pedestrian path 2.20 m in width, or shared path 3 m in width, constructed in accordance with Section 7.2.3.2 Pedestrian Accessways.

Durability and maintenance requirements shall be considered in the design of all landscape structures.

Structures shall be located so that they do not obstruct the sight lines for intersections, pedestrian crossings and signs. The location shall take into account any separation required from trees and other landscaping features.

Entranceway wall structures shall be located fully on private land. Any other immovable landscape structure (e.g. boulders) shall not be located where they prevent access to underground services.

Structures shall be designed to safely withstand appropriate loadings and shall not be a hazard to traffic, pedestrians, people with disabilities and cyclists.

Landscape track structures shall comply with the requirements of SNZ HB 8630:2004.

All retaining walls shall be constructed to resist lateral earth pressures and those from any surcharge loading that may be present.

If paths are provided, the maximum gradient of paving and ramps shall be no greater than 1 in 8. Paths shall be no closer than 2 m to residential boundaries.

Where vehicle barriers are required by WDC to control unauthorised vehicles, these shall be constructed as detailed in **Sheet 58** or otherwise as agreed with WDC.

Note: The WDC may not approve jetties, landings, fishing pontoons and similar structures that will be located on public land.

7.2.6.3 Fencing styles

Refer to the WDC Urban Design Guidelines for further guidance on boundary treatments.

Fencing within reserves or on walkways shall be consistent with the fence types outlined in **Sheet 54** unless otherwise agreed by the WDC.

The standard fences in Table 7-1 shall be used.

Refer to the WDC Urban Design Guidelines for further guidance on boundary treatments.

Table 7-1: Standard Fence Uses

Fence Type	Use
Type 1 (post and mesh)	Urban walkways and reserves

Fence Type	Use
Type 2 (tube and mesh)	Urban walkways and reserves
Type 3 (stock proof)	Where stock proofing is required

Note: A building consent shall be obtained for fencing over 2.5 m in height, and District Plan requirements and consent notices shall be checked.

7.2.6.4 Fencing Covenant on Reserve Boundaries

All fencing within and on the boundaries of reserves shall be subject to a fencing covenant. The covenant shall exempt WDC from liabilities relating to fences and shall require fencing to be agreed by WDC in line with the fencing guidelines.

7.2.7. Planting Design General Requirements

7.2.7.1 Grassing, Sowing and Turfing

Requirements for establishing lawn are covered in Section 7.3.8 Establishment of Sown Areas.

7.2.7.2 Planting and Garden Areas

Planting, including native revegetation and garden areas, will only be approved by WDC where the planting adds to visual amenity, urban legibility, improved ecological outcomes and/or reduce maintenance requirements. Refer to the WDC Urban Design Guidelines for further guidance.

Trees, and reserve plantings shall be located so as not to compromise the integrity and efficient operation of network utility services. As such, if particular landscape conditions or objectives are required for a development then these shall be taken into account prior to undertaking detailed engineering design.

Designs shall consider the effect of tree roots on the operation and maintenance of piped services and vice versa. Trees shall not be planted where piped services will be within the tree dripline, unless specific consideration by an arborist confirms that the root system is unlikely to affect the services, and that excavation to maintain the service will not affect the tree. Areas free of services shall be designed so that trees can be successfully incorporated into the street environment. To achieve this, the design shall demonstrate how sufficient room is provided for the proposed planting, with reference to likely root growth of a particular species.

7.2.7.3 Species Selection

The species choice shall ensure a unified result to complement street planting, environment, and scale of surroundings. The following shall be considered for appropriate species selection:

a. Overall composition, low maintenance and longevity,

b. Suitability to environmental conditions such as modified groundwater table, exposure to wind and frost, vehicular and cycle traffic, and

c. Suitability to locality e.g. scale in relationship to the surrounding environment, shading consistent with location: impact on neighbouring properties, structures and infrastructures, fruiting,

d. Minimum maintenance requirements including longevity, non-suckering habitat, pest and disease resistance,

e. Safety such as toxicity of leaves, flowers, seeds, and bark in areas likely to be used by young children, along with impairments to pedestrians,

f. Avoidance of Invasive or pest species recognized by the NRC and the National Pest Plant Accord,and

g. Native species are preferred.

All plants shall be high quality specimens for their grade and species, and be well rooted relative to container size. Stock shall be a minimum RT or PB 3 grade for groundcover, and PB 5 grade for shrubs.

The minimum planting size of a specimen tree is 1.5 m tall with a minimum caliper of 30mm at the time of planting, unless the local conditions of a site require consideration of alternatives, e.g. an exposed site may require small, well-hardened trees.

No substitution of species or grade shall be made without the written approval from WDC. If species or grades specified are unobtainable, WDC may approve alternatives. Smaller grades of plants may require an increased planting density and numbers.

7.2.7.4 Location of Trees to be Planted in Reserves

The following offsets from boundaries shall apply for tree planting:

Table 7-2: Tree Planting Offsets from Boundaries

Mature tree height	Minimum boundary offset from north of adjoining property (m)	Minimum boundary offset from other boundaries adjoining property (m)
Small (up to 6m)	5	3
Medium (6-12 m)	12	8
Large (12+ m)	17	11

Any variations from these offsets shall be approved by the WDC.

Consideration shall be given to placement of trees to avoid conflict with future views, for example placing trees in line with boundaries between residential lots.

Trees shall be located a minimum of 3 m from paths.

7.2.7.5 Irrigation Provision

The WDC may require provision for permanent irrigation of street and reserve gardens or turf. Provision for irrigation during the establishment of plants may be acceptable for gardens that are not otherwise irrigated.

All irrigation connections shall be provided with a water meter. The Developer shall apply for, and pay all costs associated with the water connection, including development contributions.

7.2.8. Street Tree Planting Design Considerations

Street trees shall be planned to ensure they don't compromise sight lines, underground services, or the safety of road users, cyclists and pedestrians, and shall meet the following requirements:

a. Be located to meet recommended clearances shown in **Sheet 55** and **Sheet 56** unless otherwise approved by the WDC. See the Northland Transportation Alliance Design Manual - Street Lighting Version 1 for lighting columns clearance requirements.

b. Tree species within the road reserve shall be selected for appropriate root structure and growth patterns for urban areas.

c. Street trees shall have access to a root area of at least 10 m^2 clear of paving and utilities. Tree root barriers may be required where trees will be located near paving or other infrastructure.

d. All street trees, unless specified otherwise, shall be first grade nursery specimens of a minimum grade of pb95, with a minimum height of 2.0 m, have a 30 mm trunk calliper and have appropriate formative pruning ensure optimal visibility from when they are first planted through to maturity.

e. Tree species in the road corridor shall be selected to provide minimal leaf fall.

f. The WDC will require a street tree maintenance period to ensure trees are well-established. This will vary depending on the tree type and location.

g. Trees located in the sight triangle of intersections, or other traffic or vehicle/pedestrian conflict areas should not exceed 400 mm in height when mature, unless the trees are grown to create clear trunks and a high canopy that does not interfere with sight lines.

The WDC may refuse the planting of street trees where space does not allow for a tree to mature.

No substitution of species or grade shall be made without the written approval of the WDC.

Drawings of proposed street trees provided for in the EDA shall show all WDC services, overhead power lines and other relevant services, and visibility splays at road intersections and corners.

7.3. Landscape Works

7.3.1. Earthworks

Approval from WDC is required before any earthworks can take place in areas that are or will be vested as reserves. All earthworks shall comply with the District Plan, and Environmental Standards for Land Disturbance Activities contained within the NRC Regional Plans or have appropriate resource consent approval.

Unless otherwise agreed, earthworks shall remove all tree stumps, buildings and foundations, and redundant tracks and other features. All topsoil removed to permit earthworks to be carried out shall be stockpiled for reuse within the area of the reserve.

Refer to Section 7.2.5 Earthworks Design for finished gradients and profiles to be achieved by earthworks.

7.3.2. Existing Vegetation and Trees

Land development can damage or threaten the long-term viability of existing trees and vegetation, and works shall be planned to minimise risk of this. All existing vegetation and trees to be retained during works shall be protected before construction starts, and remain protected until completion of construction as outlined in the ETVP (See Section 7.2.2.2 Existing Trees and Vegetation Plan) for each site.

Existing trees within road reserves and WDC reserves, and other listed trees in the District Plan may have additional planning requirements. New construction and planted areas shall also be protected from any practicable damage from site works (refer Section 7.3.18 Protecting Newly Planted Areas in Work Sites and Section 7.3.6 Landscaping Structures and Furniture).

7.3.2.1 Construction Activities Near Trees

Site works including earthworks shall not take place within 10 m of the tree dripline of existing trees, unless allowed for in a site-specific ETVP approved by WDC.

Any exceptions to the requirements for trees outlined in this section shall be identified and require specific approval from WDC.

The Tree Protection Zone identified in the approved ETVP shall be fenced or otherwise restricted to the satisfaction of WDC to avoid activities in this area that may adversely affect the health and value of the tree. Machinery and equipment shall be kept outside the Tree Protection Zone, and nothing shall be deposited within the Tree Protection Zones at any time.

Pruning or removal of branches or roots 50 mm in diameter or more may only be carried out by an Arborist or other expert as approved by the WDC and shall be in accordance with approved ETVP. All tree roots severed that are between 10 mm and 50 mm shall be neatly cut with a saw or other suitable pruning equipment. Roots larger than 25 mm in diameter shall be retained in an undamaged state and protected. Any exposed roots and cut roots shall be protected from drying winds and frost with damp sacking or similar material if not backfilled immediately. When there is a need for an open cut trench near

trees, works will be done under the supervision of an arborist, and hand excavation shall be used. Under no circumstances may a digger be used to sever tree roots within the Tree Protection Zone.

Services shall be routed around the outside of the tree dripline. If installation of services is required under existing trees and vegetation then trenchless technology shall be used, and the depth of thrusting approved by the WDC. If this is not practicable, an assessment of the effects on the tree(s) from a qualified arborist shall be provided to the WDC.

Note: Works within the tree dripline of trees protected by the District Plan may require resource consent. The WDC may require that a suitably qualified WDC staff member monitor all works in or around these trees.

7.3.2.2 Existing Trees to Remain on Land to be Vested

Prior to vesting, any arboriculture maintenance on trees that will be retained as identified in the ETVP shall be undertaken by an arborist approved by the WDC.

7.3.3. Natural Areas

Natural areas, including native forest and wetlands contained within reserves to be vested shall be free of rubbish and debris, and weed free (for list of weeds refer to Northland Regional Pest and Marine Pathway Management Plan 2017-2027) when vested. All persistent perennial weeds including gorse, wild ginger, pampas and tobacco weed shall have been killed by spraying and, where practicable, removed from site.

7.3.4. Soil and Fertility

Imported topsoil shall be a good quality loam soil that is free draining, free of perennial weeds and debris and capable of sustaining the required plant growth. All topsoil shall be inspected at its source and shall not be placed without the prior consent of the WDC.

Stockpiles of imported or site topsoil to be used in planting areas shall be left to grow vegetation and sprayed to eliminate perennial weeds prior to their seeding and prior to the soil's use, (refer to Section 7.3.14 Weed Control). Topsoil stockpiles shall be a maximum of 2 m in height and stored for the minimum practicable period and less than 12 months. The WDC may require that topsoil is supplemented with compost when soil is deficient in organic matter or stored for a longer time.

7.3.4.1 Soil Laboratory Testing

At the WDC's discretion, topsoil on site or topsoil to be brought onto site shall require nutrient or chemical laboratory testing (e.g. contamination testing). If WDC requires soil testing, planting shall not proceed without WDC approval of the soil test and agreement on any necessary improvements.

The WDC may:

a. View the topsoil at its source: and/or

b. Request further topsoil sample testing: and/or

c. Undertake further topsoil sample testing.

The laboratory results and a plan indicating sample site location shall be provided to WDC prior to planting. Where sample results are beyond acceptable parameters for intended use, the topsoil shall be modified to ensure that it aligns within these parameters or another conforming topsoil source shall be identified to be used for planting.

7.3.5. Preparation of Planting Areas

Excavation and soil placement shall be carried out where necessary to achieve the soil depths in Table 7-3:

Table 7-3: Excavation and Soil Placement Depths

Situation	Topsoil depth (minimum) (mm)	Mulch depth (minimum) (mm)	Depth below adjacent paving or kerbs (mm)
Street gardens including traffic islands	400	100	50
Planting areas - mulched	400	100	50
Annual bedding areas	400	-	70

All levels shall be after cultivation and reasonable consolidation. In areas of very good soil conditions and where approved by the WDC, topsoil from site may be used to achieve depths listed above.

In locations such as street gardens and roundabouts where the topsoil is not in contact with underlying soil strata, a detail of ground preparation including drainage shall be approved by the WDC. Concrete haunching of edges shall not extend into planting areas more than the minimum required to hold. Haunching of edges shall not surpass a maximum of 100 mm into gardens.

Prior to planting, all planting areas shall be cleaned of rubbish, stones, unwanted vegetation and other debris.

7.3.6. Landscaping Structures and Furniture

No structures other than those on the approved plans shall be constructed without approval from the WDC. Any structures that form part of the landscape works requirements shall be protected from other landscape activities by fencing or other means.

7.3.6.1 Play Equipment

All play space construction works shall be approved by WDC prior to installation.

7.3.6.2 Vehicle Access Barriers

Bollards shall be constructed in timber to the detail in **Sheet 58** or as otherwise approved by the WDC.

7.3.6.3 Fencing

All fencing shall be constructed to the detail drawings in **Sheet 54** unless otherwise approved by the WDC**.**

Livestock fencing shall be provided where required. At road frontages, no hot wires shall be used unless they are attached at 300 mm inside the fence. In poor soil conditions or variable topography, longer posts, longer strainers and more substantial footings and stays shall be used where necessary to achieve a stable fence.

7.3.7. Grassing, Sowing and Turfing

This section covers the preparation and sowing of any new grassed areas or those requiring reinstatement or turfing of such areas. It includes berms, lawns and embankments.

7.3.7.1 Preparation for Sowing or Turfing

Grass seeding and fertilising shall be carried out over all existing grassed areas disturbed by machinery and other areas which may require reinstatement. In existing grassed areas, excessive compaction of the subsoil shall be relieved by a method approved by WDC such as verti-draining, vibra-moling, coring or ripping to achieve satisfactory long-term growing conditions.

All new grass areas shall be built on subgrades prepared to a CBR of not less than five and no greater than seven throughout the area. A minimum 100 mm layer of clean, friable loam topsoil, free of all perennial weeds, stones and rubbish shall be placed on the subgrade. If the subgrade has been backfilled with sand or if the existing subgrade material is of a sandy nature, then the 100 mm topsoil shall be of a heavier silt loam.

The topsoil shall be lightly compacted or consolidated, and may be laid proud of adjoining features (such as kerb and channel, path, crossings etc.) by not more than 25 mm to allow for settlement, provided that it does not cause water to pond on any footpath or vehicle crossing area. All finish levels shall be those specified on the plans or to a 2-2.5% cross slope. New areas shall be neatly contoured into adjoining grassed areas. The top 25 mm of topsoil shall have a loose tilth. No soil shall be cultivated or handled when the moisture content is at a level where soil structure damage will result.

For weed removal, a suitable broad spectrum weed control chemical spray shall be used. Any other spraying shall be approved prior to application by the WDC, and used according to manufacturer's instructions, (refer Section 7.3.14 Weed Control).

7.3.7.2 Grass Sowing

All seed shall be certified and less than 12 months old at the time of sowing. The WDC may prohibit the use of seed which has deteriorated because of wetting, fertiliser-burning, and other reasons at their discretion. The seed mixture shall be a high endophyte amenity turf rye certified as having greater than 89% live endophyte content and used at a rate of 200 kg per hectare.

For lawn areas greater than 100 m^2, the seed shall be broadcast sown in at least two directions or planted with a mechanical seeder to ensure an even spread. The seed shall

then be incorporated into the soil by use of a drag mat, harrow, or brush harrow, then rolled with a suitable light turf roller.

For areas 100 m^2 or less, grass seed shall be evenly applied to the prepared surface by hand and raked thoroughly into the soil so that little seed remains exposed, then rolled with a light turf roller.

7.3.8. Establishment of Sown Areas

Newly established grass shall be protected from damage by pedestrian and vehicular traffic until the grass growth has reached a self-sustaining state.

The grassed areas shall be watered as required, to achieve an efficient germination of the seed and maintain satisfactory growth throughout the maintenance period.

During the establishment, the newly grassed areas shall be maintained as follows:

a. Upon the grass reaching 100 mm in height, it shall be cut to 50 mm high,

b. For subsequent mowing, the mowing frequency shall be governed by growth rate. Minimum grass height to be 40 mm - maximum grass height to be 70 mm,

c. The turf shall be maintained free of all broadleaf weeds,

d. Areas where there has been a poor strike of grass shall be either re-cultivated and re-sown or under sown, and

e. Upon completion of mowing, either all grass clippings shall be collected and removed from all sown grass areas except non kerb and channelled berms, or grass shall be mowed in dry conditions that ensure efficient mulching of clippings. All clippings shall be removed from adjacent hard surfaces.

Lawn fertiliser with an NPK ratio of approximately 6:1:5 shall be applied at a minimum rate of 200 kg/ha or according to manufacturer's instructions followed by watering in Spring, or at least 6 weeks after sowing.

7.3.8.2 Turf

The turf shall be of good quality, free of weeds and pests and with an even thickness of approximately 20 mm depth, 450 mm wide and of a consistent length. The constituent grasses of the turf shall be suitable for the area where they will be grown. The turf shall be sufficiently fibrous to hold together when handled, but excess fibre or thatch is undesirable.

Turf shall be packed to avoid drying out in transit and sprayed with water and covered with hessian in hot weather. Turf shall be delivered to the site within 24 hours of lifting and shall be off-loaded by hand unless arranged on pallets for mechanical handling. Any turf permitted to dry out shall be rejected when, in the opinion of the WDC, its survival after placement is doubtful. All turf shall be laid immediately after delivery to site. Where this is not practicable, the turves shall be unloaded and stacked on clear ground to a maximum height of one metre and suitably protected.

No turf shall be laid in exceptionally hot dry weather, or in exceptionally wet or frosty soil or weather conditions. Turf shall not be laid until the soil works have been satisfactorily completed by being brought to an even tilth and firmness.

Turf shall be handled carefully to ensure minimum breakage and prevent soil dropping from the roots. The turf shall be laid from planks working over turves previously laid.

The turves shall be thoroughly watered until the turf mat and top 50mm of soil is wet. After allowing a ‘soaking in’ period the turves shall be lightly and evenly firmed with a wooden tamper to ensure the underside of the turf mat and the wet soil surface are thoroughly bonded.

The finished level of the turf shall conform to the levels indicated. Where the turf meets paths the finished mowing strip level shall be 12 mm above the path. Any inequalities in finished levels owing to variation in turf thickness or uneven consolidation of soil shall be adjusted by raking and/or packing fine soil under the turf, not by topdressing the lawn surface.

During establishment, the turf shall be maintained as follows:

a. Prevent any pedestrian traffic until grass is well established,

b. Remove weeds and replace soil if necessary,

c. Water regularly: The turf shall not be allowed to dry out for at least three weeks after laying, then it shall be watered normally. In Summer this will require watering at least daily. Watering shall normally be carried out prior to 7am and shall not be done in hot sunny conditions,

d. Initial mowing shall be carried out when first growth is apparent, with blades set no lower than two-thirds of the height of the grass. Use roll-type mower for first cuts. Grass shall be in a reasonably dry condition. All clippings shall be collected and removed from site. All clippings shall also be removed from adjacent hard surfaces,

e. Edges of all turf areas adjoining cultivated gardens, borders, hand paving, sealed surfaces or landscape structures shall be trimmed to the edge or controlled by herbicide to within 25 mm of flat surfaces or 50 mm of vertical structures. Grass shall not be allowed to encroach over flat paved or sealed surfaces by more than 25 mm,

f. Lawn fertiliser with a NPK ratio of approximately 6:1:5 shall be applied at the minimum rate of 200 kg/ha or according to the manufacturer’s instructions, in Spring or at least one month after turf is installed, and

g. Areas of turf where there has been a poor establishment shall be re-laid.

7.3.9. Landscape Planting

7.3.9.1 Staging and Notice of Planting Works

Consideration shall be given to staging of landscape works. All irrigation and drainage work, utilities installation, signs or landscape structures shall be completely installed prior to planting.

All specimen tree planting shall be undertaken between June and August. Evergreen stock may be planted outside this period at the WDC's discretion but will be subject to additional maintenance requirements.

The WDC shall be provided with not less than five days' notice of dates upon which planting will commence. All plantings on existing or proposed reserves shall be marked out on site prior to planting works commencing. All trees shall be planted on the day of delivery to the site.

7.3.10. Plant Stock

7.3.10.1 Eco-Sourced Plants

Conditions of resource consent may require that plants be eco-sourced, and in some locations WDC may, at its discretion, require that any species of plants to be planted on reserves or street trees be eco-sourced. Where this is the case, nursery documentation shall be provided to WDC to certify where propagation material was sourced from.

7.3.10.2 General Plant Species and Quality

a. Plants shall be well branched, symmetrical and of typical habit for the species. All plants shall be nursery stock of good form, healthy and vigorous with strong fibrous root systems and free of all pests and diseases.

b. All trees shall be supplied with the central leader intact - no pruning of the central leader shall have taken place. All torn or damaged roots shall be pruned before dispatch. All stock shall be well rooted but not root bound. Open ground stock shall have dense root formation.

c. All root balls and containers shall be free of all weeds. Plants shall be well 'hardened -off' prior to supply.

d. All plants and their roots shall be maintained in a moist environment, protected from adverse conditions such as drying winds, frost or water logging. All roots shall be covered during transit and storage and other planting operations to prevent desiccation or damage.

e. All plants shall be sound, healthy, vigorous and free of any defects which may be detrimental to plant growth and development. Defects may include but are not limited to the following:

    i. Pests,

    ii. Diseases,

iii. Sun scalds,

iv. Abrasions,

v. Cankers,

vi. Cracks,

vii. Denuded bark,

viii. Multi leaders,

ix. Dead wood,

x. Girdling roots,

xi. Breakages,

xii. Spent flowerheads,

xiii. Weed and parasites,

xiv. Excess dead leaf material,

xv. Frost damage,

xvi. Form not consistent with species, or

xvii. Tree proportion (i.e. trunk caliper/tree size)

7.3.10.3 Transit of Plants from Nursery

Street trees shall be well 'hardened–off' prior to supply.

All trees and plants shall be thoroughly watered prior to dispatch from the nursery and shall be thoroughly watered-in after planting.

All trees are shall be transported in covered trailers or vehicles from the nursery to the planting site.

All roots shall be covered during transit and adequately stored to prevent desiccation or damage.

7.3.11. Tree Planting Works in Reserves

Trees shall be planted and staked to the detail shown on **Sheet 56**. In areas of volcanic and other suitable soils, WDC may approve reduced excavation areas. WDC may, at its discretion, require that drainage and / or a drainage pipe for watering be installed from the planting pit where a suitable outlet is available.

Where WDC determines that soil is unsuitable for backfilling, imported or modified topsoil for backfilling shall be used. The imported topsoil shall be a free draining loam of a quality and subject to inspection by WDC prior to placement. Additions to modify soil for back filling shall be as directed by WDC.

7.3.12. Street Tree Planting

7.3.12.1 Layout

Confirmation shall be obtained that the planting has been approved by WDC prior to planting. The WDC services including powerlines shall be shown on planting plan. Service plans shall be obtained from 'beforeudig' before planting so that all other services are located to avoid damage.

Plants shall be planted in the locations shown on the approved planting drawings.

7.3.12.2 Installation

Planting holes will be dug to excavate an area 1 metre square and 1 metre deep.

Planting shall not be undertaken in waterlogged soil or holes that are full or part full of water. If the water table is high and water cannot be dispersed from the hole, WDC shall be consulted to determine if works can continue.

Roots of all plants shall be pre-watered if required so that they are moist. All plant containers or wrapping and if necessary, any root bound roots shall be removed prior to planting.

The hole shall first be backfilled with consolidated soil or soil mix, mounding the soil in the centre to aid even spread of the roots in 150 mm layers.

The plants shall be placed in the hole ensuring that the final soil level is equal to or not exceeding 10mm above the nursery soil level and at an appropriate depth to ensure sustained growth.

The street tree shall have tree root barriers installed where required, irrigated (when applicable), fertilised, mulched and staked as specified in this Section.

All specimen tree plantings shall have two-year slow release fertiliser tablets installed at the time of planting. This shall be implemented using eight minimum 10g tablets inserted in the base of the planting pit, prior to planting, 100 mm below the root ball to stimulate root growth. All fertiliser tablets shall have a balanced NPK.

7.3.12.3 Passive Street Tree Irrigation

When surrounded by hard surfaces or as required by the WDC, a street tree shall have a 1900 mm long section of 65 mm perforated drainage pipe inserted into the tree pit. The drainage pipe is to run down one side of the tree pit, under the intended root ball and up the opposite side of the tree pit to be level with the mulched or ground surface. The other end is to extend above the intended mulch layer by 20 mm. Underground irrigation systems can be installed instead of manually watering.

7.3.12.4 Tree Root Barriers

At the WDC's discretion, root barriers may be required to be installed prior to tree planting. This will be assessed on a case by case basis.

Each fabric/HDPE-based root barrier shall be a minimum 2000 m length and be impermeable to penetration by roots according to the following minimum specifications:

Table 7-4: Tree Root Barriers

Weight	Thickness	Tensile Strength	Puncture Resistance	Width (Depth)
750g/m2	1.0 mm	15 kN/m	300N	300 mm

7.3.13. Irrigation and Fertilising

7.3.13.1 Irrigation

During planting and establishment, the soil moisture in all planting areas including tree pits shall be retained to ensure active plant growth throughout the growing season (September – May). To achieve a high level of site presentation or in areas of annual bedding display planting, irrigation systems may be required to achieve this.

Where a permanent irrigation system is required to be installed, the brand shall be approved by the WDC. The system shall provide a minimum soil moisture level of 50% to 200 mm depth, throughout the planted areas or within the dripline of trees specified. It shall be capable of fully re-wetting the root zone to 200 mm depth when the irrigation is applied: and shall be able to be fully automated to operate between 1:00am and 6:00am when moisture levels drop below 50%.

7.3.13.2 Fertilising

Fertiliser shall be applied to planting. For shrubs and trees, all fertiliser shall be well mixed with the backfilled soil. For bedding or groundcover all fertiliser shall be well mixed with the site topsoil prior to planting. Fertilisers shall be either an approved pelletised natural or organic fertiliser or an approved synthetic fertiliser.

An exception to these approved pelletised natural and organic fertilisers or approved synthetic fertilisers is for the Proteaceous species and ferns which shall on no account be fertilised with Phosphate (P) containing fertilisers.

7.3.14. Weed Control

7.3.14.1 Chemical Applications for Weed and Pest Control

All chemical application on planted areas shall be carried out by qualified, trained personnel and according to the Growsafe Standard Certificate, NZS 8409:2021, and any manufacturers' directions. Glyphosate spray shall be used as the first option. Use of any other herbicides shall be first approved by the WDC.

All spraying operations shall be carried out in up to 10 km/hr winds, dry conditions, when rain is not imminent for at least 12 hours and at times which minimise practicable hazards or disruption to the public, animals or other beneficial fauna. Care shall be taken to prevent spray drifting onto non-target areas or plants and comply with notification requirements as required by the NRC Regional Plans.

Herbicides may be used to control weeds or excess grass growth over structures, surfaces or into planting areas.

All trees in grassed areas shall have a weed release spot spray applied between four and six months after planting. General weed control shall be carried out whenever necessary to maintain the planting weed-free (for list of weeds refer to Northland Regional Pest and Marine Pathway Management Plan 2017-2027).

Chemical weed control in planting areas shall be kept within the edge of the planting beds, within a maximum of 500 mm of tree trunks, within 50 mm of the edge of any undefined mulch surface, and within 50 mm of any posts or the base of any landscape structures.

7.3.15. Pruning

Pruning shall be carried out in accordance with acceptable modern aboricultural and horticultural practices.

On-going pruning during the defects and liability period shall concentrate on producing good plant form, ground coverage, removal of spent flowers, healthy growth, preventing plants smothering other planting, keeping accessways clear of growth and maintaining visibility.

Trees shall be pruned up to provide good visibility for vehicles and pedestrians throughout all growth stages. In the long term, trees shall comply with District Plan sightline requirements.

Where shrubs are located within the intersection or other road visibility splays, they shall be pruned down to 400 mm height maximum for good visibility.

Pruning of shrubs and groundcovers shall be consistent with landscape plans and use techniques which maintain the natural form and habit of the plants. Pruning shall avoid ‘hedging’ techniques which create strong visual lines and detract from the natural texture and form of the plants. Groundcover plants shall be pruned by undercutting at the edges.

Planting designed as hedges shall be clipped only after Spring or Autumn growth flushes. Hedges grown for flowers shall be clipped only after completion of flowering. Hedge trimming shall be carried out in a way that will promote even growth to the specified height and width.

All material pruned from plants shall be removed from the planted areas and the site so that the site is left in a clean and tidy condition.

7.3.16. Mulching

Unless otherwise approved by the WDC, all new planting areas shall be mulched. All care shall be taken in placing the mulch to protect the plants and any irrigation system, ensuring that no plant canopy is covered by mulch post-installation. Any damage to the plants or irrigation system shall be rectified.

7.3.16.1 Site Specific Mulch Applications

7.3.16.1.1. Flat Site Mulch

On sites flatter than a 1:3 grade (1.0 m high by 2.0 m long), bark mulch shall be spread evenly to a depth of 100 mm over the planted area, creating an inverted cone hollow around each plant stem with a maximum 25 mm depth around plant stems. The mulch shall be supplied as scheduled, clean and free of soil, sawdust and wood preservatives, and a sample shall be provided to WDC for approval prior to spread.

a. Coarse untreated shredded pine bark shall have an average diameter of 50 mm and with no pieces longer than 100 mm. Coarse bark is appropriate to most locations.

b. Fine untreated shredded pine bark shall have no pieces longer than 40 mm and be evenly graded. Fine bark may be specified by WDC in commercial areas, or for other specified locations.

c. Aged woodchip or arbour mulch may be used at the WDC's discretion.

7.3.16.1.2. Steep Site Mulch

On slopes steeper than 1:3, mulching for weed control shall consist of a WDC approved matting. The matting shall be a single layer of biodegradable mulching fabric or material without synthetic geonet or synthetic geotextile content with at least 1000 gsm density. The mulching fabric shall have a minimum 24-month life expectancy and be fully biodegraded into soil within six years. It should be walkable on by maintenance crew, without damage to the fabric, within the first 6-12 months of installation.

It shall be installed according to manufacturer's instructions prior to planting, ensuring that the mulch will not uplift due to inundation or wildlife exposure from animals such as Pukeko.

Note: A simple test to ascertain whether the mulching fabric is viable, is to hold a sample to the sky. It shall be mostly opaque. This density inhibits weed seeds trapped under the mulching fabric from sprouting, provides good moisture retention and assists with batter erosion control.

At the WDC’s discretion, mat rounds may be used instead of matting. These shall be a minimum 500 mm diameter and have the same characteristics as the mulch fabric. Each round shall have 8 pins: 4 pins equidistant near the outer edge and 4 pins around the plant stem.

On steep slopes with erosion issues that are receiving planting, biodegradable netting with no geotextile or geonet content shall be used at the WDC’s discretion. The netting will have an expected lifespan of at least 36 months. This shall be placed on top of the mulch matting and shall be installed according to manufacturer’s instructions. The netting is not intended to suppress weeds and shall be used in conjunction with mulch matting or rounds.

7.3.17. Staking, Fencing and Protection of Trees

7.3.17.1 Staking of Specimen and Street Trees

Newly planted specimen trees shall be staked with three 40 x 40 x 1.8 m hardwood stakes with at least one third of their length (600 mm) in the ground and at least 1.0 m exposed minimum, or as specified on the approved plan. One synthetic tie per stake shall be attached. Ties shall be tensioned to avoid chafing of the tree against the stakes but with enough play for the tree to move in the wind. All ties shall be fixed to the stakes. Any other stakes including those against the main stem shall be removed.

Ties shall be of a type approved by WDC prior to tying. Ties shall be fixed to the outer stake face with a minimum of four staples in a square pattern.

All stakes shall be inserted to avoid hitting the root ball. Stakes shall be at least 400 mm away from the tree trunk and no more than 500 mm away.

Street trees shall have two hardwood stakes located outside of the root ball to firmly anchor the tree. Stakes shall be rough sawn 40 x 40 mm with tapered end and long enough to firmly support the tree. Reinforced hessian ties at a height of no more than 1/3 tree height shall be fixed to the stakes to provide stable support, and any stakes including those against the main stem shall be removed.

Refer to **Sheet 57**.

7.3.17.2 Staking of Mass-Planted Trees

Unless otherwise approved by the WDC, all mass-planted trees including revegetation plantings shall be staked with a single 1.2 m minimum long 22-25 mm diameter dead bamboo stake, positioned outside the root ball, driven into the ground to at least a 400 mm depth. Where nursery-supplied plants are provided with a stake attached, usually directly against the main stem, this stake shall be removed and replaced according to this specification.

The stake shall be fastened 2/3rd up the plant stem/trunk with a tree tie as approved by WDC.

If the tree tie is not biodegradable:

a. The tie shall be adjusted periodically so that the stem/trunk does not become damaged or the stem/trunk grow over the tie.

b. The tie shall be removed at a time designated during the design phase of the landscape planting.

7.3.18. Protecting Newly Planted Areas in Work Sites

Newly planted areas shall be protected from any practicable damage from site works and onsite storage of plant and material, and any other damage.

If necessary, to ensure protection for the duration of the site works, 1 m (minimum) high fences are to be erected around new, single or grouped, trees and shrubs.

During planting, existing structures, turf, other planting, or irrigation system shall be protected by appropriate means from practicable damage. All damage to existing utilities, structures, planting and irrigation systems shall be repaired.

7.4. Completion of Works

It is the Developer's responsibility to ensure that the landscaping meets these required standards at the termination of the maintenance period. The Developer is responsible (and may be bonded) for the routine maintenance and replacement of the planting including dead wooding, weed control, mulching, replacing dead trees, shrubs, and plants, and watering for a defined period from the time of acceptance of as-built landscape plans by WDC or issue of a section 224 completion certificate under the Resource Management Act 1991.

7.4.1. As-Built Drawings and Schedule of Asset Information

A set of as-built drawings and a schedule of asset information shall be submitted as per Section 1.7.2 As-Built Plans, Asset Information Schedules, Operation and Maintenance Manuals to the WDC. These shall clearly and accurately show the as-built locations and details of all reserves infrastructure provided as part of the work, including details of planting and any modifications made to existing systems. A copy of the as-built plan recording any variation from the approved landscape planting plans shall be provided to the WDC.

As-built information for specimen trees shall include the following:

a. Species and Common names,

b. Planting date,

c. Height,

d. Address / Location description, and

e. GPS X/Y co-ordinates.

As-built information for planting areas shall include the shape and dimensions of the planting, and either the GPS location of the centre of the planting for circular shapes e.g. roundabouts, or two or more other points sufficient to locate the shape of the planting.

As-built drawings may be checked by WDC on site for accuracy on completion of the development.

An EDA Certificate of Completion for the works will not be issued until acceptable as-built drawings have been provided.

The drawings shall identify assets that have been removed or decommissioned.

7.4.2. Operation and Maintenance Manuals

Full details of any equipment shall be submitted to WDC along with the Operations and Maintenance Manual as per Section 1.7.2 As-Built Plans, Asset Information Schedules, Operation and Maintenance Manuals.

The Operation and Maintenance Manuals shall include:

a. Equipment List, with make, model and serial numbers,

b. Equipment supplier details,

c. Maintenance schedules,

d. Warranty information, and

e. Conservation plans.

7.4.3. Defects liability

The Planting Defects Liability Period shall be until 24 months from works clearance and acceptance of the landscape planting works by the WDC, or otherwise upon release of any implementation bond held for uncompleted landscaping.

Works to be carried out under the defects and liability period include routine maintenance of the landscape planting works i.e. weeding, mulching, watering and replacement of plants.

The WDC may periodically check the site to ensure that maintenance requirements are being met. Should any defects be identified, the defects shall be remedied or mitigated by the Developer within one month.

If planting is completed outside the stated planting timeframes additional watering will be required at the WDC's discretion.

7.4.3.1 Works Clearance Inspection

After completing all proposed works, WDC shall be provided notice at least seven working days prior to the proposed commencement of the Defects Liability Period and shall be available for a joint pre-Defects Liability Period inspection.

7.4.3.2 Defects Liability Period Final Inspection

At the end of the Defects Liability Period, WDC shall be provided notice at least seven working days prior to the proposed commencement of WDC acceptance of the asset and its on-going maintenance.

7.4.3.3 General Planting Defects Liability Period

During and at the end of the Defects Liability Period, the following minimum standards are required.

a. All planted areas shall be free of weeds and litter,

b. All planted areas including street trees shall be mulched with fibre or 100 mm loose fill mulch,

c. All trees and other planting shall be vigorous and healthy, free of disease and free of dead growth or dead flowers,

d. Planting is becoming well established. Any plants failing during this period shall be replaced to the specification, to ensure adequate establishment of the planting,

e. Plant growth shall be trimmed to the extent and height required for any visibility splays or National Guidelines for Crime Prevention through Environmental Design in New Zealandrequirements,

f. All tree stakes and ties shall be intact and correctly installed, or should the stakes no longer be providing adequate support for a plant, on approval from WDC, the stakes shall be removed and disposed without damaging the plant, and

g. Fertiliser shall have been applied at start of second growing season.

7.4.3.4 Replacement Planting

All replacement plants that have been installed due to plant failure shall have successfully established for at least three months prior to the final defects check otherwise the defects period will be extend by at least three months. The WDC may request replacement records that include dated digital photographic evidence to verify installation dates.

Should more than 25% of the originally installed planting fail during the defects period, the plants shall be replaced and the defects period for the whole planting area shall extend by a minimum six months.

7.4.3.5 Fencing and Landscape Structure Defects Liability Maintenance

During and at the end of the Defects Liability Period the following minimum standards shall be maintained:

a. All permanent or temporary landscape structures shall be structurally sound, safe, functional or operational and in a presentable finished form

b. Paint work and other finishes shall be maintained in a clean and presentable finished form. Bolts and other fixtures shall be maintained sound and without loose parts or rough edges

c. All structures shall be free of litter, graffiti, grime, weeds and plant growth or any other foreign matter

d. Borders, footing edges or paving shall be maintained so that no more than 25 mm of grass or other vegetation is allowed to encroach. Vertical elements without mowing edges shall have vegetation maintained clear of the structure by no less than 25 mm and no more than 75 mm.

7.4.3.6 Grassing and Turf Defects Liability Period

After initial establishment, during and at the end of the Defects Liability Period, the following minimum standards shall be maintained:

a. All kerb and channelled berms shall have grass growth no more than 50 mm high. Non-kerb-and-channelled berms shall have grass growth no more than 200 mm high and banks shall have grass growth not more than 250 mm high.

b. The sward shall be maintained in a healthy, weed-and-disease free state without bare patches

c. Trees and other plantings shall be protected from damage by maintenance or mowing operations and if damaged shall be reinstated within one week of the damage occurring

d. Maintenance and mowing operations shall be carried out at times which minimise disruption to the public

e. Maintenance and mowing operations shall be carried out only in conditions and with equipment that ensures maintenance of good soil structure, minimum deformation of ground surfaces and on-going establishment of the grass sward

f. Litter shall be removed prior to commencing maintenance or mowing operations. Highly visible shredded litter shall be removed following maintenance and mowing

g. Grass clippings, when not required to be collected during mowing, shall be spread evenly over the sward.

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