Wetland + Riparian Planting Plan

Scarbro Environmental Ltd

Jones Road Managed Fill

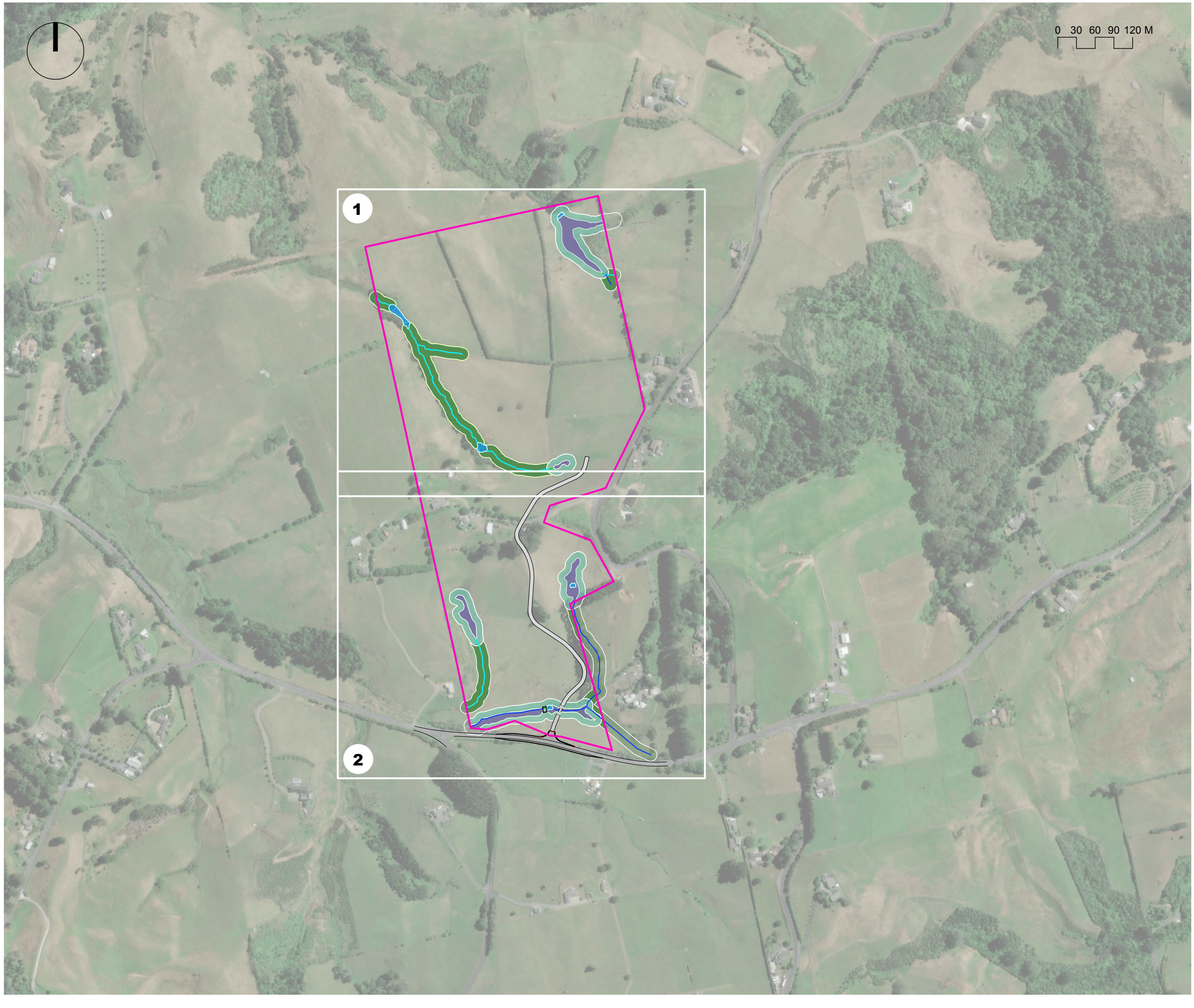
362 Jones Road Hunua Auckland

Prepared by LA4 Landscape Architects

Issued 29.04.2025 **(FOR CONSENT)**

Contents

SITE + KEY PLAN



KEY

- Site Boundary
- Stream Riparian Planting
- Pond
- Wetland Planting
- Wetland Riparian Planting

LA4 LANDSCAPE ARCHITECTS

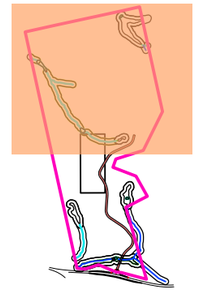
Jones Road Managed Fill
Riparian Planting Plan

362 Jones Rd Hunua
Scarbro Environmental Ltd

REF:	24273
DRW NO:	PP00
DATE:	11.02.2025
SCALE:	1:2000 @ A3
REV:	-
	FOR CONSENT

RIPARIAN PLAN 1

LOCATION



KEY

- Site Boundary
- Stream Riparian Planting
- Pond
- Wetland Planting
- Wetland Riparian Planting

LA4 LANDSCAPE ARCHITECTS

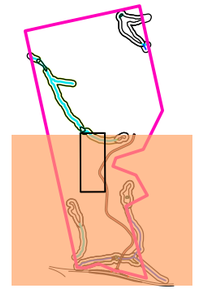
Jones Road Managed Fill
Riparian Planting Plan
362 Jones Rd Hunua
Scarbro Environmental Ltd

REF:	24273
DRW NO:	PP01
DATE:	11.02.2025
SCALE:	1:2000 @ A3

REV: -
FOR CONSENT

RIPARIAN PLAN 2

LOCATION



KEY

- Site Boundary
- Stream Riparian Planting
- Pond
- Wetland Planting
- Wetland Riparian Planting

LA4 LANDSCAPE ARCHITECTS

Jones Road Managed Fill
Riparian Planting Plan
362 Jones Rd Hunua
Scarbro Environmental Ltd

REF:	24273
DRW NO:	PP02
DATE:	11.02.2025
SCALE:	1:2000 @ A3
REV:	-
	FOR CONSENT

PLANTING DETAILS

KEY

- Site Boundary
- Stream Riparian Planting
- Pond
- Wetland Planting
- Wetland Riparian Planting

WETLAND - PLANT SCHEDULE (5931.83m2)

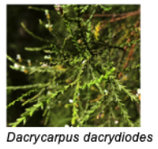
Botanical Name	Common Name	%	Spacing	Size	Quantity
Carex geminata	ratauhi	10	700	1L	1387
Carex secta	purei	20	700	1L	2774
Carex virgata	pukio	20	700	1L	2774
Cordyline australis	cabbage tree	10	1400	1.5lt	347
Dacrycarpus dacrydiodes	kahikatea	10	1400	2.5lt	347
Laurelia novae zelandiae	pukatea	5	1400	2.5lt	173
Carpodetus serratus	putaputaweta	5	1400	2.5lt	173
Phormium tenax	harakeke	20	1400	1.5lt	694

WETLAND- PLANT IMAGES


Carex geminata


Carex secta


Carex virgata


Dacrycarpus dacrydiodes


Cordyline australis


Laurelia novae zelandiae


Carpodetus serratus


Laurelia novae zelandiae

WETLAND RIPARIAN - PLANT SCHEDULE (12629.71m2)

Botanical Name	Common Name	%	Spacing	Size	Quantity
Carex secta	purei	5	700	1L	1477
Carex virgata	pukio	5	700	1L	1477
Cordyline australis	cabbage tree	10	1400	1.5lt	738
Dacrycarpus dacrydiodes	kahikatea	5	5000	1.5lt	29
Coprosma robusta	karamu	5	1400	1.5lt	372
Phormium tenax	harakeke	10	1400	1.5lt	738
Melicytus ramiflorus	mahoe	5	1400	1.5lt	369
Kunzea robusta	kanuka	25	1400	1.5lt	1857
Corynocarpus laevigatus	karaka	5	5000	2.5lt	29
Hedycarya arborea	pigeonwood	5	5000	2.5lt	29

WETLAND RIPARIAN- PLANT IMAGES

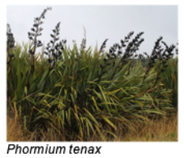

Coprosma robusta


Leptospermum scoparium


Melicytus ramiflorus


Cordyline australis


Hedycarya arborea


Phormium tenax


Dacrycarpus dacrydioides


Corynocarpus laevigatus

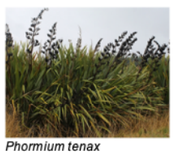

Carex secta


Carex virgata

STREAM PLANTING (1+2) - PLANT SCHEDULE (3773m2)

Botanical Name	Common Name	%	Spacing	Size	Quantity
Carex secta	purei	5	700	1L	441
Carex virgata	pukio	5	700	1L	441
Cordyline australis	cabbage tree	10	1400	1.5lt	221
Dacrycarpus dacrydiodes	kahikatea	5	5000	2.5lt	9
Coprosma robusta	karamu	5	1400	1.5lt	111
Phormium tenax	harakeke	10	1400	1.5lt	221
Melicytus ramiflorus	mahoe	5	1400	1.5lt	9
Kunzea robusta	kanuka	25	1400	1.5lt	555
Corynocarpus laevigatus	karaka	5	5000	2.5lt	9
Hedycarya arborea	pigeonwood	5	5000	2.5lt	9

STREAM PLANTING - PLANT SCHEDULE


Phormium tenax


Leptospermum scoparium


Dacrycarpus dacrydioides


Melicytus ramiflorus


Coprosma robusta


Carex secta


Corynocarpus laevigatus


Cordyline australis


Carex virgata


Hedycarya arborea

LA4 LANDSCAPE ARCHITECTS

Jones Road Managed Fill
Riparian Planting Plan

362 Jones Rd Hunua
Scarbro Environmental Ltd

REF: 24273
DRW NO: PP03
DATE: 29.04.2025
SCALE: 1:2000 @ A3

REV: A
FOR CONSENT

LA4 LANDSCAPE ARCHITECTS LTD
26 KITCHENER STREET, CBD
PO BOX 5669 AUCKLAND 1141
NEW ZEALAND
PH: (09) 353 0643
FAX:09 358 0895
EMAIL: jason@la4.co.nz
WEB: www.la4.co.nz

362 Jones Road | Hunua

PLANTING AND MAINTENANCE SPECIFICATION
April 2025

CONTENTS

1.0 INTRODUCTION

1.1 The Project

The "Specification" is deemed to include all sections of the Specification read as a whole.

This section of the Specification covers the general obligations the Contractor shall meet in executing the Contract Works in this Contract.

1.2 Site of Works

The Contract Works are located at 362 Jones Road, Hunua.

1.3 Scope of Contract

This specification covers the planting works associated with the proposed subdivision. The extent and nature of works is depicted on LA4 Landscape Architects Plans **24-273 PP00 – PP03**. The Contract Works shall be for, but not limited to, the supply of all labour, plant and materials for the completion of the following works in accordance with the Drawings and Specification.

The scope of works shall generally include:

- Control of weed species
- Animal pest control measures to ensure successful establishment of planting
- Planting of defined areas
- Maintenance of the plantings during the five year maintenance period.

1.4 Interpretations and Definitions

Should the Contractor be in doubt as to the interpretation of any aspect of this specification, related documents, or aspects of the implementation of works they shall seek clarification from the Landscape Architect prior to proceeding. Failure to do shall render the Contractor solely responsible for rectifying any errors at no additional cost to the Principal. No additional sums will be allowed for any loss or expense involved through any misunderstandings arising from his failure to comply with this invitation.

The Contractor shall fully familiarise themselves with the site and satisfy themselves as to the nature of site access, the planting conditions and any other conditions required to ensure the successful execution of the works and establishment of plants.

The Contractor is responsible for advising the Landscape Architect, in writing at time of tender, of any conditions which are likely to impair successful execution of works and establishment of plants, in order that they may take steps to rectify such conditions. Should the Contractor fail to do so, no allowances for additional costs as consequence of any misunderstanding, incorrect information or insufficient information shall be allowed.

The Contractor shall provide everything necessary for the proper execution of the works according to the true intent and the meaning of the drawings, specification and schedule, whether the same may or may not be particularly shown on the drawings or described in the specification and the schedules, provided that the same is reasonably to be inferred therefrom.

Any inconsistencies between the drawings and the specification shall be brought to the attention of the Landscape Architect for resolution before proceeding.

1.5 Setting Out

The Contractor shall set out the works from the information shown on the Drawings.

Should any conflict and / or discrepancy exist, the Contractor shall request instruction from the Landscape Architect to proceed.

1.6 Programme

A detailed implementation programme shall be prepared and submitted by the Contractor within 7 Working Days of the Date of Acceptance of Tender. This programme shall be, prepared using critical path techniques and shall be capable of showing actual progress achieved against the original programme. It shall show all activities to be carried out under the Contract Works.

1.7 Meetings

The Contractor shall attend site meetings called for by the Landscape Architect to review progress, and any other matters, which may arise.

1.8 Supervision

The Contractor's Representative shall adequately supervise the works to ensure the works are constructed in accordance with the requirements of the Contract to the approved programme. Where the quality of the works are to less than the required standard, or the works are delayed without extensions of time issued, the Contractor shall increase the level of supervision and resources to ensure compliance. The Contractor's Representative shall be contactable on mobile phones and shall return phone messages from the Landscape Architect Representative, within 3 hours of the message, or as soon as reasonably practical.

1.9 Health & Safety

As a minimum, the Contractor shall comply with the Health and Safety in Employment Act 1992 and amendments and Construction Regulations 1995, and relevant Codes of Practice. The Contractor shall meet its obligations to its employees, other Contractors and sub-Contractors under the Health and Safety in Employment Act 1992 and amendments. The Contractor must exercise a high standard of safety management and supervision.

1.9.1 Health & Safety Plan

The Contractor must have an approved Health and Safety Plan (HSP) in place prior to work commencing on this Contract.

The Contractor shall prepare a HSP for the Contract Works. The HSP shall address how the Contractor will comply with legal and health and safety obligations under this Contract, in particular the assessment of hazards likely to be encountered in the Contract Works. The Contractor shall maintain the plan and ensure that it is comprehensive and takes into account any changes to the HSE Act 1992 and amendments and any regulations issued under the HSE Act 1992.

The Contractor shall submit the HSP to the Landscape Architect within 7 days of the date of Acceptance of the tender. The Landscape Architect will approve the HSP (or request amendments to it) within two working days of receiving the plan. Approval of the plan does not reduce or amend the Contractor’s responsibilities under the Contract or under any legislation governing their activities.

A controlled, ‘original’ copy of the HSP is to be provided to the Landscape Architect when it is approved. The Contractor shall keep the Landscape Architect copy of the HSP up to date, adding amendments within ten days of making the changes.

The Contractor's HSP shall detail procedures for:

(a) Co-ordination and communication with people working on or adjacent to the site

(b) Ensuring worker safety on and adjacent to the work sites

(c) Ensuring public safety adjacent to and through the work sites

(d) Safety training and induction of persons coming onto the sites. A high level of training and supervision of the Contractor's and Sub-Contractor's employees engaged in carrying out the Contract Works is expected by the Principal

(e) Ensuring sub-Contractors have safety policies and site safety plans approved by the Contractor, that the activities are in compliance with the requirements of the HSE Act 1992 and amendments, and to ensure activities are co-ordinated with other Contractors and persons on the sites

(f) Providing a first aid person (suitably qualified by St John or equivalent) on each work site (where this is practical in terms of the work carried out)

(g) The audit and inspection of the Contractor's health and safety procedures, health and safety plans, the Contract Works and the site to ensure compliance with the safety requirements of the HSE Act 1992 and amendments, and this Contract.

The Contractor has the primary responsibility for the identification of hazards relating to the Contract Works. The Contractor shall provide a comprehensive hazard analysis to employees, sub-Contractors and other persons who are carrying out any work on the site. This may require up-to-date hazard notification boards at each approach to a work site.

The Contractor shall implement and carry out an audit and inspection regime to ensure compliance with the HSP.

The Contractor's responsibilities shall include reporting in writing to the Landscape Architect (within 24 hours) all accidents causing harm to employees or public at the workplace during the execution of the Contract Works. Furthermore, where death, serious harm or serious damage is caused, the accident shall be reported immediately (by telephone or messenger) to the Landscape Architect and the Department of Labour.

Should the Contractor fail to comply with the Health and Safety Plan, the Landscape Architect may suspend the works until deficiencies are attended to. Such suspension shall not be grounds for an extension of time for the Contract.

1.9.2 Site Personnel

The Contractor ensures that:

- Site personnel hold SiteSafe Civil Passport or approved alternative equivalent.
- That site supervisors hold a SiteSafe Gold Card or approved alternative equivalent.

2.0 PRE-PLANTING PREPARATION

2.1 Fencing

Fencing of planting areas will be undertaken by others.

2.2 Vegetation Control/Removal (Generally)

2.2.1 Weed Control

Vegetation removal includes control of weed species within the proposed planting areas. This shall include:

- Existing kikuyu in newly planted areas

- Woody environmental weeds species
- All species declared as plant pests in the Auckland region by Auckland Council (including Total Control/Containment Pests/Surveillance Pests & Research Organisms)

Specific weeds shall be controlled in accordance with the Auckland Council Plant Pest Management Strategy using accepted techniques as detailed in Plant Pest Fact Sheets.

Only Glyphosate (e.g. *Roundup G2*) shall be sprayed within 5m of waterways.

No herbicides shall be mixed or diluted within 20m of a waterway.

Spraying shall be carried out on suitably fine, calm days (wind velocities must be under 8 knots/10kph) by experienced, certified applicators in strict accordance to recommendations and precautions of the manufacturers and in accordance with the New Zealand Agrichemical Manual.

Great care shall be taken to avoid spraying existing indigenous vegetation including sedges and rushes in grassland areas.

2.2.2 Kikuyu
Control Kikuyu and other grasses with a *Glyphosate* herbicide (e.g. Round-Up G2 or similar) with compatible penetrant (e.g. *Pulse*) at manufacturers recommended rates no less than 21 days before planting. For successful control, rank growth should be hard grazed before spraying regrowth.

2.2.3 Woody Weeds
All woody environmental weeds in planting areas shall be **stump** treated where necessary by cutting stems horizontally within 150mm of the ground and applying suitable herbicides at recommended rates immediately as the sap ceases to flow or within 5 minutes of making the cut. Treatment must be carried out within this timeframe. All part of plants shall be removed from site and disposed of in an appropriate manner

2.3 Vegetation Retention

Excluding weed species, all other existing indigenous vegetation on the site shall be retained.

2.4 Animal Pest Control

2.4.1 General
Newly planted areas are susceptible to damage from pest animals such as rabbits, hares and possums. Small numbers of pests can cause severe damage to young plantings in a very short time. Pest control is therefore essential for successful plant establishment. It will be the Contractors responsibility to ensure effective pest control measures are established. Any plant losses resulting from insufficient pest control shall be replaced by the Contractor at no additional cost to the Principal.

Pest control measures shall be undertaken as required.

2.4.3 Rabbits
- Distribute *Pindone* rabbit pellets during periods of dry weather, following the manufacturers recommendations for usage and safety. Stock should be removed and kept off baited areas for 1 month following last application.
- Prior to applying *Pindone*, pre-feed with a non-toxic pollard.
- Apply bait in area areas of noticeable rabbit activity (look for droppings and signs of burrowing).
- Overturn a 'sod' of earth and place a small handful of pellets on the overturned earth.
- A poisoning pulse should occur 1 month prior to planting and then as required through till the end of spring (i.e. the active breeding time for rabbits).
- Bait should be applied at least twice at 3-4 day intervals in areas where rabbits graze. Enough bait should be laid to feed the local rabbit population for 2 days at recommended application rates of 2-3 kg/ha. Rates may need to be increased where rabbit numbers are high.
- Remove residual pellets (untaken) and dispose of appropriately post baiting.

2.4.4 Hares

Hares do not usually take bait, so if shooting is not an option, either of the following should be considered:

Repellents

- Plant repellents are applied as foliar sprays to a browsing height of up to 0.5m to manufacturers specifications. Commonly available commercial products include: *Thiroprotect, Treepel* and *Plantskydd*.

2.5.5 Possums

Possums can be controlled either with Timms traps (as an alternative for using toxins) or by bait stations.

Traps

- Place traps either within planting area or near suitable nesting sites (farm buildings, hedges, large trees)
- Secure traps with wire pegs. Set traps using apple or kiwi fruit sprinkled with cinnamon to make more attractive to possums and less for other animals. Bait size should be approximately 25mm long by 12mm thick, placed 12mm in front of the trigger. Replace the bait every 2 days.

Poison

- Use Brodifucoum (e.g. *Pestoff*) or equivalent pellets. No poison license is required for this product.
- Use proprietary bait stations which are weather resistant (sealed at the top /open at the base for feeding) be installed as per the manufacturers/ distributors instructions, including ensuring stock and/or pets are unable to access or reach the stations. (30cm off ground on fence post or similar).
- Set up bait stations along the fencelines of adjacent stands of vegetation. Fix bait stations to fence posts at intervals of approximately 100- 150m.
- Pulse feed with 1kg of bait per station, followed by 500grms the following month. A third month maybe required to control possums.
- Poisoning should occur 2 months prior to planting and then every 4-6months during planting establishment stages.
- Ensure baited areas are free from domestic stock.
- Dispose of carcasses in an appropriate manner to avoid secondary poisoning.
- Use vitamin K as an antidote for domestic animals which may be poisoned accidently.

2.5.6 Pukeko

Pukeko are a significant potential threat to newly planted wetland species. If required the contractor shall provide suitable control.

3.0 PLANT SUPPLY

3.1 Plants

3.1.1 Generally

All plants:

- shall be eco-sourced from the Hunua Ecological District
- shall conform with the species lists provided
- be of best stock, being healthy and vigorous and free from pests and disease
- root systems shall be well developed and in balance with the amount of foliage growth of the plant
- be well hardened in preparation of planting into open exposed sites
- plants shall be well branched and symmetrically shaped of a normal habit for the species involved
- the roots shall have a high percentage of fibrous roots that are just touching the edge of their containers. Plants with roots that are wound round their containers in circular fashion shall be rejected.

3.1.2 Plant Sizes

Plants shall conform to the following bag size, minimum calliper/height:

PB of bag)	*Calliper (dbh)*	*Height (minimum from top*
1L		200mm
1.5L	-	250mm
2.5		300mm

3.1.3 Inspections

The Contractor shall notify the Landscape Architect for inspection of the works following:

- Prior to transport of plant materials
- Upon delivery of plant materials

The Landscape Architect may at their discretion; inspect the plants during any phase of, propagation or on growing. The Contractor shall make staff and facilities available during normal office hours for the Landscape Architect to undertake these inspections.

3.1.4 Plant Inventory

All plants leaving the nursery shall be thoroughly documented to ensure accurate tracking of plant numbers and varieties. The Contractor shall provide the Landscape Architect with all nursery dispatch and delivery forms associated with each planting area. No payment will be made if the supporting documentation is not submitted as required.

3.2 Deliver/Storage

All plant material shall be adequately protected from damage during transit. Pots and other protective material shall not be removed prior to delivery. Roots shall not be left uncovered at any time. All plants shall be adequately watered prior to transporting and shall be protected from potential wind damage and sun scorch during transit.

In so far as is practicable, plant material shall be planted within two days of delivery. In the event this is not possible, a suitable holding area shall be established to with adequate facilities to protect the plants from drying out.

All plants stored on site shall be watered on a daily basis.

4.0 PLANTING

4.1 Planting Period

Planting shall be timed to occur between April - September to optimise plant establishment. Actual dates for planting shall be determined by the Contractor in agreement with the Principal.

4.2 Site Preparation

Planting areas shall include one blanket spray to removal all grass and weeds prior to planting.

4.3 Planting Layout

Plants are to be laid out and planted as detailed on the planting plans and schedule.

4.3.1 Native Restoration Planting
The various shrub species shall be distributed within the mix at specified centres. Generally no more than five shrub specimens of the same species shall be located together in a single cluster. The exception to this is where conditions of a particular site are suited to only one or a few individual species within the mix, e.g. a wet low lying area, where only species tolerant of such conditions shall be planted. Unless shown otherwise, trees within these mixes shall be distributed randomly and in small clusters, as they would occur naturally, in accordance with the average spacing specified.

Stream Margins
Sedges along stream margins which shall be planted in same species drifts varying up to 25 plants and blended into adjacent species. Toetoe shall be planted in large drifts on the landward side of the streamside sedge planting

4.4 Planting

4.4.1 Planting Holes
The planting holes for individual plants shall be well cultivated and large enough to contain the plants roots without distortion. Cultivated planting holes shall be at least twice the diameter of the plant rootball and one and one half times the depth of the rootball. In such instances single species may be planted in large drifts as they occur naturally.

All holes for shrubs shall be hand dug with the sides and the bottom of the hole well loosened to remove glazing and to allow root penetration.

4.4.2 Planting
Prior to planting all plant rootballs shall be thoroughly soaked.

Backfill material shall consist of the material from the planting hole well cultivated prior to backfilling.

If roots are formed in a tight mass they shall be gently freed prior to planting. All care shall be taken to keep the rootball of the plant intact during placement.

When planting manuka and kanuka **ensure minimal** disturbance to root systems.

Root bound plants shall be discarded and replaced with suitable replacements.

The base of the planting hole is to be filled and firmed with backfilling material to a level where the top of the plant rootball is level with surrounding ground. On sloping sites this level shall relate to the bottom edge of the hole.

Backfill in a maximum of 150mm layers firming material evenly without compaction. When the backfilling is complete the plant shall be gently firmed in.

At time of planting apply fertiliser at recommended application rates into planting hole approximately half way up the backfill material. Ensure placement on the upper slope side of plants.

4.4.3 Bamboo Canes

At time of planting, all plants excluding specimen trees shall be planted with a 0.9m bamboo cane (300mm in-ground) which will be retained with the plant during the maintenance period. The stake will assist in locating individual specimens during releasing operations).

4.4.4 Plant Staples
On instruction of the Landscape Architect the Contractor shall secure plants into the ground with 300mm long steel staple/pins. This method may be adopted in the flood zone along the stream or other areas where determined necessary (e.g. Pukeko threat or fast moving water)

4.5 Fertilisers

All plants shall be planted with a controlled slow release fertiliser such as 'Grow tabs'/Agriform incorporated into the backfill.

Fertiliser shall be applied in accordance with the following application rates.

PB Size	*Fertiliser Tab*
1L / 1.5L	1 (10g)
2.5L	2 (10g)

4.6 Watering

4.6.1 Prior to Planting
All plants shall be thoroughly watered in a few hours prior to planting.

5.0 MAINTENANCE

5.1 Scope

Vegetation management and maintenance activities shall be undertaken for a period of 3 years following planting and include all operations necessary to achieve the performance standards detailed in this specification and to ensure the ongoing health and viability of all areas planted. The maintenance period may be reduced to one year at the discretion of the Principal.

The main scope of maintenance activities will include, but not be limited to:

- Weed control
- Replacement planting
- Watering if required
- Monitoring
- Fence maintenance
- Pest control

5.2 Frequency

The frequency of maintenance shall be determined by the Contractor in order to achieve the performance standards set out in this specification.

5.3 Maintenance Plan

Within 21 days of practical completion the Contractor shall submit and maintenance plan/programme to detail the frequency and activities to be undertaken that year to achieve the maintenance requirements outlined in this specification. This will be updated and reviewed and submitted to the Landscape Architect for approval on an annual basis until the end of the maintenance and defects liability period. This will provide details on, but not limited to:

- Timing/frequency and details of maintenance operations including animal pest control, proposed for the current year
- Highlight any issues which require the Landscape Architect input or intervention
- Review of previous years maintenance
- Animal pest issues
- Plant failures (and reason for failures) /replacement planting required.

5.4 Monitoring

5.4.1 Generally
Regular monitoring of maintenance shall be undertaken to:

- determine the necessity for maintenance intervention
- gauge the effectiveness of weed control. Such monitoring shall occur at least every 2 months
- determine the success establishment rate of planting to determine the extent replacement planting and reasons for plant failure (disease, stock, drought etc)
- ensure compliance with maintenance standards.
- determine effectiveness of pest control being undertaken.

5.5 Weed Control

5.5.1 Scope
Weed control measure are applicable to all new planting areas.

5.5.2.Objectives
The key objectives of weed control in the establishment stage are to:

- control the competition of weeds on establishing native species
- control and contain outbreaks of infestations of invasive environmental weed species
- ensure minimal damage to native plants during weed control operations.

5.5.3.Environmental Weed Species
Environmental weeds shall be controlled in accordance with the Auckland Council Plant Pest Management Strategy using accepted techniques as detailed in the *Pest Fact Sheets*.

All application of herbicides shall be carried out in strict in accordance with manufacturers specifications.

5.5.4 Releasing
Rather than blanket grass and weed control in planting areas, a predominantly grass sward between plants can be maintained. However releasing shall ensure that individual specimens are not being suppressed by any grass and herbaceous weed regrowth. Releasing of individual plants shall be undertaken by a combination of chemical and hand releasing, with a preference of physical clearing rather than use of chemicals.

Releasing of native grasses (e.g. Carex species) shall be by hand release only (no herbicides due to sensitivity).

5.5.5 Herbicides
Where release spraying is required *Glyphosate* (e.g. Roundup G2) shall be used. This should be mixed with compatible penetrant (e.g. *Pulse*) and marker dye to indicate sprayed areas.

When herbicides are used:

- All spray equipment shall be fitted with effective guards to prevent drift onto desirable vegetation.
- All equipment shall be free of leaks and thoroughly cleaned out before and after use.
- When releasing plants within areas of grass sward it may be necessary to trim back or trample weeds around the planted shrub or tree to avoid contact with the sprayed vegetation.
- Generally release spraying shall be carried out using a knap sack and carefully calibrated spray equipment in the manner depicted in Figure 2.
- All spraying shall be carried out on suitably fine, calm days (wind velocities must be under 8 knots/10kph). Great care shall be taken to prevent spray contact with foliage of any desirable plants (those planted).

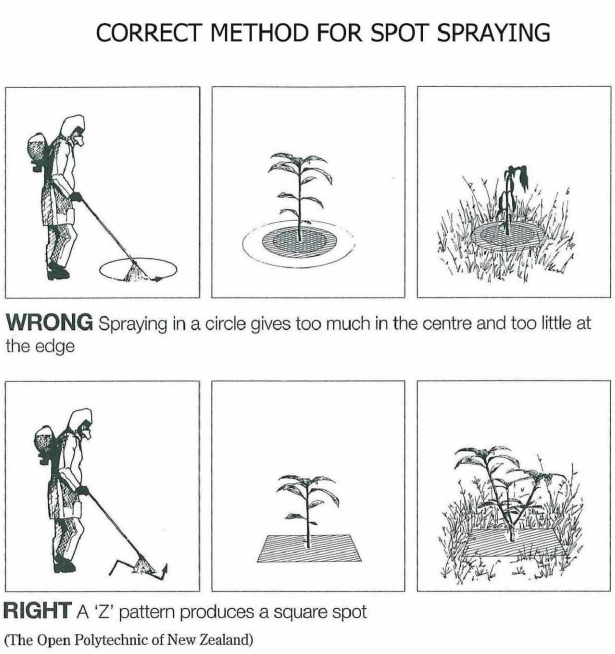


Figure 1

5.6 Pest Control

Pest control of rabbits, hares, possums and pukeko shall be ongoing throughout the maintenance period to ensure successful establishment. For details refer to 2.5.

The Contractor shall undertake regular site inspections to determine evidence of pest activity, damage to plants etc, with modification of frequency of poisoning, and frequency and location of traps as required.

A pest control methodology and programme shall be reviewed 6 monthly.

5.7 Replacement Planting

Replacement planting shall be undertaken at the beginning of each subsequent planting the season (April / May) for 2 seasons following planting, to replace any plants that may have died.

Where necessary the Contractor shall undertake replacement planting at no additional cost to the Principal to ensure that at 1 year and 2 years following practical completion plant numbers are at least 90% of that initially planted.

Replacement planting shall be timed so that it follows release operations in each area.

Replacement planting shall use the species and specified proportions as detailed in the planting schedule accompanying the planting plans.

If there has been a high level of mortality of a particular species, it shall be replaced with another suitable species.

5.8 Fence Maintenance

Fences and gates shall be regularly checked by the Contractor to ensure no stock is gaining entry. Where repairs are necessary the Contractor shall inform so that repairs can be organised.

5.9 Watering

Provision shall be made for watering during very dry conditions if necessary to ensure plant survival.

5.10 Quality Control

General
It is the responsibility of the Contractor to ensure that all of their personnel are fully familiarized with the requirements set out in this specification and that work is carried out in a manner that fulfils the overall intent of the specification, objectives for landscape maintenance and the relevant performance standards described.

The Landscape Architect will regularly undertake quality control assessments/maintenance audits throughout the maintenance/defects periods. Following consultation with the stakeholder these will be used as the basis to approve/withhold payments or instruct remedial work to be undertaken.

All remedial work shall be carried out within the time specified from notification unless this cannot be accomplished for legitimate reasons e.g. unfavourable weather conditions etc. Failure to undertake remedial works within designated periods will result in payment penalties or withholding of payments as described in 5.12.

Quality control assessments may be undertaken in the presence of the Contractor at the discretion of the Landscape Architect. If requested, the Contractor shall be obliged to present during an inspection.

5.11 Maintenance Payment

Maintenance payments will be made based on an annual amount as determined by the contract agreement. Tall or portions of the payment may be held until all defects and replacement planting are undertaken in accordance with this document to the satisfaction of the Landscape Architect.

5.12 Inspections

The Contractor shall notify the Landscape Architect for inspection of the works following:

- Completion of each maintenance visit
- Completion of the maintenance period prior to issue of Defects Liability Certificate.

5.13 Completion

On completion of the Maintenance Defects Liability Period and prior to issue to the Defects Liability Certificate, the Contractor shall undertake/supply the following;

Undertake all necessary maintenance, repair all defects and undertake replacement planting in accordance to this specification, and to the satisfaction of the Landscape Architect.

Appendix 1: Recommended Weed Control Methods

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Agapanthus (*Agapanthus praecox*)	Dig out and dispose off-site	-	-	Year round	Only if this can be done without posing a weed hygiene risk
	Knapsack – foliar spray	Grazon	100ml per 10 litres water plus 20ml pulse	October-March	Not when flowering or seeding
	Knapsack – foliar spray	Escort[1]	5g per 10 litres water plus 20ml pulse	October-March	Not when flowering or seeding
Alligator weed (*Alternathera philoxeroides*)	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	Year round	Requires follow up control
Aristea (*Aristea ecklonii*)	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	October-March	
Arum lily Flag Iris	Hand pull seedlings/small plants	-	-	Year round	
	Dig out and dispose off-site	-	-	Year round	Only if this can be done without posing a weed hygiene risk
	Cut and spray stems of large plants	Escort[1]	5g per 10 litres water	October-March	Monitor for re-growth. Spray immediately following cutting.
Artillery plant (*Galeobdolon luteum*)	Foliar spray	Glyphosate	100ml per 10 litres water	October-March	
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	October-March	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Asparagus fern (*Asparagus densiflorus*)	Knapsack/hand sprayer	Escort[1]	5g Escort plus per 10 litres water plus 20ml pulse	October-March	
Bamboo	Foliar spray re-growth	Glyphosate	200ml per 10 litres water plus 20ml pulse	October-March	Monitor for re-growth Will need several treatments
	Foliar spray re-growth Cut tops and treat as per Giant reed grass.	Gallant	150ml per 10 litres water	October-March	Monitor for re-growth Will need several treatments
Banana passionfruit	Hand pull seedlings/small plants	-	-	Year round	
	Cut and treat stump	Grazon	1 part Grazon to 20 parts water	October-March	Leave foliage in host to die off
	Cut and treat stump	Escort[1]	5g per 10 litres water	October-March	Leave foliage in host to die off
	Cut and treat stump	Picloram (Vigilant gel)	Apply gel to cut stem	October-March	
Barberry (Berberis glaucocarpa)	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	October-March	Apply to freshly cut surface and stems to ground level
Bartlettina (Bartlettina sordida)	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	October-March	
Bear's breeches (*Acanthus mollis*)	Dig out and dispose off-site	-	-	Year round	
	Cut and treat stump	Grazon	1 part Grazon to 20 parts water	October-March	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Bindweed (*Calystegia sylvatica, C. septum*)	Knapsack – foliar spray	Banvine	Follow label recommendations		
Blackberry (*Rubus fruticosus* agg.)	Knapsack – foliar spray	Escort1	5g per 10 litres water	December-April	
	Knapsack – foliar spray	Grazon	60ml per 10 litres water	December-April	
Black passionfruit (*Passiflora edulis*)	Handpull seedlings/small plants	-	-	Year round	
	Cut and vines and spray re-growth	Glyphosate	20ml per litre water	Cut vines in winter and spray re-growth in spring	Leave foliage in host to die off
Black wattle Australian Black wood	Hand pull seedlings/small plants	-	-	Year round	
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	October-April	Ensure of felling that damage to surrounding native vegetation is limited.
	Drill and inject	Grazon	1 part Grazon to 20 parts water	October-April	
	Drill and inject	Escort[1]	20g Escort per litre water, plus 2 ml pulse	October – April	
Blue morning glory	Knapsack – foliar spray	Grazon	60ml per 10 litres water	November-March	
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	November-March	Leave foliage in host to die off
Boneseed	Handpull seedlings/small plants	-	-	Year round	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	November-February	
Bottlebrush (*Callistemon* spp.)	Handpull seedlings/small plants	-	-	Year round	
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	Year round	
	Drill and inject	Escort1	20g Escort per litre water, plus 2 ml pulse	Year round	
Broom	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	November-February	Do not spray if seed pods have turned brown
Brush wattle	Handpull seedlings/small plants	-	-	Year round	
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	October-April	
	Drill and inject	Escort[1]	20g Escort per litre water, plus 2 ml pulse	October – April	
Buddleia (*Buddleja davidii*)	Handpull seedlings/small plants	-	-	Year round	
	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	Year round	
Buffalo grass (*Stenotaphrum secundatum*)	Knapsack – foliar spray	Gallant	60ml per 10 litres water	October-January	
Canna lily Calla lily	Dig out and dispose off-site	-	-	Year round	Monitor for re-growth

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Cape gooseberry	Hand pull Knapsack – foliar spray	- Glyphosate	- 100ml per 10 litres water	Year round	Monitor for re-growth For large infestations
Cape honey flower	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	November-February	
Cape ivy	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	November-February	Leave foliage in host to die off
Castor oil plant (*Ricinus communis*)	Cut and treat stumps Knapsack – foliar spray	Grazon Glyphosate	1 part Grazon to 20 parts water 100ml per 10 litres water	October-March October-March	
Cestrum (*Cestrum* spp.)	Handpull seedlings/small plants Cut and treat stumps	- Grazon	- 1 part Grazon to 20 parts water	Year round October-March	
Chinese privet	Seedlings – hand pull Trees – drill and inject Saplings - cut and stump treat	- Escort[1] Grazon	- 20g Escort per litre water, plus 2ml pulse 1 part Grazon to 20 parts water	November-April November-April November-April	
Climbing asparagus	Knapsack/hand sprayer	Escort[1]	5g Escort plus per 10 litres water plus 20ml pulse	October-March	Foliar spray both climbing stems up to 1m high and scrambling plants in situ. Brittleness of stems means they cannot effectively be pulled off plants. Ensure no tree fern or kowhai trunks are sprayed.
Climbing dock	Knapsack	Escort[1]	5g per 10 litres water	November-February	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Cotoneaster (*Cotoneaster glaucophyllus*)	Handpull seedlings/small plants Cut and treat stumps	- Grazon	- 1 part Grazon to 20 parts water	Year round October-March	
Crack willow/grey willow	Drill and inject/frill and spray	Escort[1]	20g Escort per litre water, plus 2ml pulse	November-February	Do not cut as every twig becomes another willow.
Creeping club moss	Knapsack/hand sprayer Knapsack – foliar spray	Mostox Renovate/Organic Interceptor	1% solution Label rate	Year round.	Ensure no tree fern or kowhai trunks sprayed
Elaeagnus	Cut and treat stumps Cut and treat stumps	Picloram (Vigilant gel) Grazon	Apply gel to freshly cut stump 1 part Grazon to 20 parts water	October-March October-March	Must be applied liberally within 5 mins of cutting
Elephants ear	Dig out and dispose off-site Cut and spray stems	- Escort[1]	- 5g per 10 litres water	- October-March	Monitor for re-growth Spray immediately following cutting
Fatsia (*Fatsia japonica*)	Dig out	-	-	Year round	
Flame tree (*Brachychiton acerifolium*)	Drill and inject	Escort[1]	20g per litre water, plus 2ml pulse	Year round	
Fruit salad plant	Handpull seedlings/small plants	-	-	Year round	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
(*Monstera deliciosa*)	Cut and treat stump	Grazon	1 part Grazon to 20 parts water	October-March	
Garden nasturtium	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	November-March	
German ivy	Cut stems and treat stumps Knapsack – foliar spray	Grazon Escort[1]	1 part Grazon to 20 parts water 5g per 10 litres water	November-March November-March	Leave foliage in host to die off
Giant reed	Cut and spray stumps Cut and spray re-growth Cut and spray re-growth	Glyphosate Glyphosate Gallant	1 part Glyphosate to 10 parts water 200ml per 10 litres water 150ml per 10 litres water	November-February November-February November-February	Do not break up canes. These should be removed off site and burned or taken to an approved disposal site.
Gorse, and other compostitae weeds, and legumes found in pasture such as lotus major.	Knapsack foliar spray For targeted gorse control with minimal loss of existing bush emerging	Versatill	500ml/100litres of water with wetting agent Knapsack 125ml/10 litres With wetting agent	October - March	Will target legumes and compositae species so care needed around Kowhai, Hebe and Olearia species
Hawthorn	Handpull seedlings/small plants Cut and treat stumps	- Grazon	- 1 part Grazon to 20 parts water	Year round November-March	
Hydrangea (*Hydrangea* sp.)	Dig out and remove	-	-	Year round	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Himalayan honeysuckle	Hand pull seedlings/ small plants.			October to February	Ensure no tuber left behind.
	Knapsack – foliar spray	Escort	5g/10 litres water + 10ml Pulse	Spring to late autumn	Not for use around native vegetation or waterways.
	Knapsack – foliar spray	Glyphosate	100ml/10 litres water + 10ml Pulse	Spring to late autumn	
	Cut and treat stems/	Escort[1]	20g/10 litres water	Spring to late autumn	For application near waterways and native vegetation.
	Cut and treat stems/	Glyphosate	50:50 mix with water	Spring to late autumn	For application near waterways and native vegetation.
Italian arum (*Arum italicum*)	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	October-March	Monitor for re-growth. Spray immediately following cutting.
Ivy (*Hedera helix*)	Cut and treat stems/tubers	Grazon	1 part Grazon to 20 parts water	November-March	Leave foliage in host to die off
	Cut and treat stems/tubers	Escort[1]	5g per 10 litres water	November-March	
Japanese honeysuckle	Knapsack – foliar spray	Versatill	40-50mls Versatill to 10 litres water	October-March	Pull away from non-target species before spraying. Spray to run off. Ensure no epiphytic attachment.
	Cut and treat stems	Grazon	1 part Grazon to 20 parts water	October-March	Do not pull cut vegetation from host plant
Japanese spindle tree	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	November-March	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Jasmine	Cut and treat stems	Grazon	1 part Grazon to 20 parts water	October-March	Do not pull cut vegetation from host plant
	Where practical foliar spray	Glyphosate	20ml per litre water and 20ml Pulse with clean water	October-March	Pull away from non-target species before spraying
	Where practical foliar spray	Escort[1]	5g per 10 litres water	October-March	
Kikuyu grass and pasture grasses in the early stages of revegetation	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	Year round	
	Knapsack – foliar spray	Gallant	150ml per 10 litres water	Year round	
Mexican daisy (*Erigeron karvinskianus*)	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	October-March	Requires regular follow up
Mexican devil (*Ageratina adenophora*)	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	October-March	
Mignonette vine	Cut and treat stump	Grazon	1 part Grazon to 20 parts water	October-March	Follow up control required to treat propagules
	Cut and treat stump	Picloram (Vigilant gel)	Apply gel to cut stem	October-March	Follow up control required to treat propagules
Mistflower (*Ageratina riparia*)	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	October-March	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Monkey apple (*Acmena smithii*)	Seedlings/small plants – hand pull	-	-	Year round	
	Tree – drill and inject	Escort[1]	20g per litre water, plus 2ml pulse	October-March	
	Sapling – Cut and stump treat	Grazon	1 part Grazon to 20 parts water	October-March	
Montbretia	Knapsack – foliar spray	Grazon	60mls per 10 litres water, 10ml Pulse per 10 litres water	October-February	
Moth plant	Cut and treat stump	Escort[1]	1 part Grazon to 20 parts water	October-March	Leave cut vegetation in host to die off. Remove seed pods if possible.
	Cut and treat stump	Picloram (Vigilant gel)	Apply gel to cut stem	October-March	Leave cut vegetation in host to die off. Remove seed pods if possible.
Palm grass (*Setaria palmifolia*)	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	October-January	
Pampas	Knapsack – foliar spray	Glyphosate	10ml per litre water	October-March best results	Use clean water and thoroughly soak centre of large plants.
	Knapsack – foliar spray	Gallant	150ml per 10 litres water plus crop oil	October-March	Best on smaller plants.
Periwinkle	Knapsack – foliar spray	Glyphosate	200ml per 10 litres water	November-March	Follow up spray as soon as re-growth big enough to treat. 4-5 treatments required 2-3 months apart.

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Pine (*Pinus radiata*, *P.Pinnaster*)	Large evergreen tree to 30m.	Forms dense stands displacing native forest through light suppression and by altering the chemical balance of the soil via needle drop.	Ringbarking: Requires the use of a chainsaw, axe or machete to remove the outer bark layer around the entire trunk circumference. The cut should be a minimum of 5cm wide/high. Felling in sections: Only to be undertaken by experienced & qualified arboricultural contractors under the guidance of an experienced & qualified arboricultural consultant. Felling and removal via winch: Only to be undertaken by experienced & qualified arboricultural / forestry contractors under the guidance of an experienced & qualified arboricultural consultant.	Poison standing: Drill 10-12mm diameter holes at 100-150mm spacing (75mm for smaller trunks), around the base of the trunk. Holes should be drilled approximately 75mm deep and encircle the entire trunk at the specified spacing. Apply via spray bottle 10grms Metsulfuron (i.e. Escort®/ Meturon® etc) & 20 mls penetrant/ surfactant per 1L of water, or Undiluted Glyphosate with no penetrant.	Felling in sections: All vegetation is to remain onsite and be stacked, where this is not possible felled in a manner that minimises impacts on the surrounding native vegetation. Poison standing: Where the trees are in large stands and likely to cause damage to native regeneration this is a preferred method in conjunction with ring barking Felling and removal via winch: Where possible all vegetation is to be removed from bounds of forest area and disposed of/ burnt as appropriate. This is appropriate for mature specimens

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Poplar At year 5 Within the plant zone **Prune annually for the first 4 years** Eucalypt species Australian blackwood	Drill and inject/frill and spray	Escort[1]	20g per litre water + 10ml pulse	November-February	
Prickly hakea (*Hakea sericea*)	Handpull seedlings/small plants Cut and stump treat	- Grazon	- 1 part Grazon to 20 parts water	Year round Year round	
Willow leaved hakea (*Hakea salicifolia*)	Drill and inject	Escort[1]	20g Escort per litre water, plus 2ml pulse	Year round	
Reed sweetgrass (*Glyceria maxima*)	Knapsack – foliar spray	Glyphosate	100ml per 10 litres water	October-March	
Shrub balsam	Cut and treat stumps	Escort[1]	5g per 10 litres water	October-March	
Smilax	Knapsack – foliar spray	Escort[1]/Glyphosate	20ml Glyphosate, 5g Escort plus 20ml pulse per 10 litres water.	November-March	Foliar spray both climbing stems up to 1m high and scrambling plants in situ. Brittleness of stems means they cannot effectively be pulled off plants. Ensure no tree fern or kowhai trunks are sprayed.
Spanish heath	Cut and treat stumps	Grazon	1 part Grazon to 20 parts water	October-March	

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
Sweet pea shrub (*Polygala myrtifolia*)	Handpull small plants Cut and treat stumps	- Grazon	- 1 part Grazon to 20 parts water	Year round October-March	
Three cornered garlic	Knapsack – foliar spray	Grazon	15ml per 10 litres water	September-December	
Tradescantia	Knapsack – foliar spray	Grazon	10ml per litre water + 2ml Pulse per litre water	November-March	Pull away from non-target species before spraying.
Tree lupin (*Lupinus arboreus*)	Cut and hand fell	-	-	Year round	
Tree privet	Cut and treat stumps Drill and inject	Grazon Escort[1]	1 part Grazon to 20 parts water 20g Escort per litre water, plus 2ml pulse	November-March November-March	
Tuber ladder fern	Knapsack – foliar spray	Escort[1]	5g per 10 litres water	March to May	
Tutsan (*Hypericum androsaemum*)	Handpull small plants Cut and treat stumps	- Grazon	- 1 part Grazon to 20 parts water	Year round November-March	
Velvet groundsel (*Senecio petasitis*)	Handpull small plants Knapsack – foliar spray	- Escort[1]	- 5g per 10 litres water	Year round October-March	
Wild ginger	Hand pull seedlings/small plants. Knapsack – foliar spray	- Escort[1]	- 5g/10 litres water + 10ml Pulse	October to February Spring to late autumn	Ensure no tuber left behind. Not for use around native vegetation or waterways.

Weed	Control Method(s)	Chemical(s)	Application Rate	Timing	Remarks
	Knapsack – foliar spray	Glyphosate	100ml/10 litres water + 10ml Pulse	Spring to late autumn	
	Cut and treat stems/tubers	Escort[1]	20g/10 litres water	Spring to late autumn	For application near waterways and native vegetation.
	Cut and treat stems/tubers	Glyphosate	50:50 mix with water	Spring to late autumn	For application near waterways and native vegetation.
Woolly nightshade	Seedlings/small plants – hand pull	-	-	Year round	
	Trees – drill and inject	Escort[1]	20g Escort per litre water, plus 2ml pulse	Year round	
	Saplings - cut and treat stump	Picloram (Vigilant gel)	Apply gel to cut stems	Year round	
	Saplings - cut and treat stump	Grazon	1 part Grazon to 20 parts water	Year round	
Wild cherry	Tree – drill and inject	Escort[1]	20g Escort per litre water, plus 2ml pulse	October-March	
	Saplings – cut and treat stump	Grazon	1 part Grazon to 20 parts water	October-March	

Appendix 2: Information Template for Weed Management Plan

Location/site:	
Species:	
Level of infestation:	
Location of infestation:	
Control method (manual/poison):	
Poisons to be used:	
Timing of operation:	
Native species present:	
Replanting to be undertaken:	
Site management:	
Monitoring method to be used:	
Timing of monitoring:	
Consent/approvals required:	
Contractor:	

Appendix 3: Maintenance Record Sheet

362 Jones Road | Hunua
Landscape Maintenance Record Sheet

Date	
Contractor	
Personnel	

Operations Undertaken:

Comments:

Further Action Required: