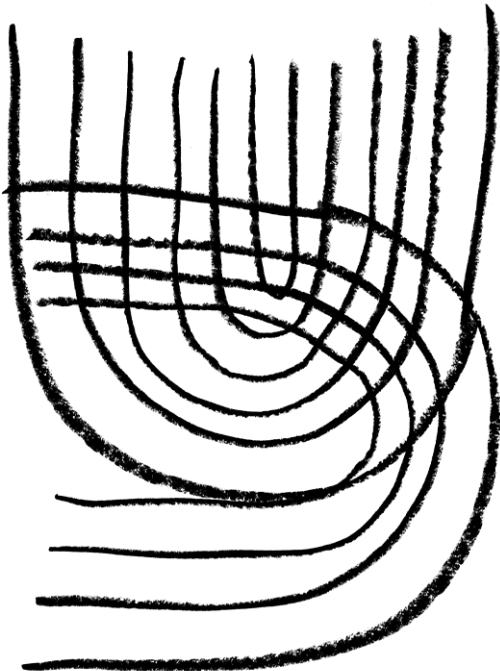


Landscape Management Plan – RC230398

27 September 2024

Design Control Issue



Contents

A	Planting Maintenance Plan	3
1.	Planting Implementation & Establishment	3
2.	Planting Maintenance Schedule	6
3.	Weed Management Strategy	9
4.	Monthly Planting Establishment Report	10

A Landscape Management Plan

This Landscape Management Plan (**LMP**) outlines the applicant's approach to managing the mitigation planting as shown on the subdivision landscape plan. The purpose of the LMP is to ensure the mitigation planting effectively establishes. The LMP covers planting implementation, establishment, and maintenance.

1. Planting Implementation & Establishment

1.1 Cultivation and Final Preparation

Cultivate planting areas to a depth of 250mm to form a firm and friable tilth suitable for pit planting by hand.

During cultivations remove all weed including weed root off site.

Grade to smoothly flowing or even contours to the finished levels by hand or machine as necessary.

1.2 Stone/Debris Picking

After cultivating remove all stones, grass sods and other debris larger than 75mm in any dimension and all roots in excess of 15mm diameter or 200mm length.

1.3 Topsoil

Supply and install topsoil to planting areas to achieve finished surface levels, and to ensure specified topsoil depths are achieved. Remove existing earth where necessary to accommodate topsoil and soil conditioner in planters to achieve finished surface levels.

1.4 Soil Cultivation and Conditioner

Supply and incorporate soil conditioner to all planting areas at the rate of 0.075m³ per m² (75mm depth) worked into the top 150mm of existing soil.

1.5 Plant Materials

Plant materials shall be first class specimens of nursery stock, true to type with well-developed and well-shaped trunk or stem and head. They shall be hardened-off to cope with the climatic conditions of the site.

The roots shall have a high percentage of fibrous roots that have grown to the edge of their containers. Plants with roots that are wound round their containers in circular fashion or otherwise obviously root bound shall be rejected. Plants shall be consistent in quality and size for the same species.

1.6 Planting Season

No planting or transplanting shall take place in exceptionally hot dry weather or in exceptionally wet or frosty soil or weather conditions.

1.7 Plant Material

Containerised plants shall be thoroughly watered the day before they are to be removed from containers. If plants are dry, they are to be submerged in water for five minutes until all air bubbles stop rising. Allow time to drain before planting.

Balled and container plants, shall have cloth cordage or container removed immediately prior to planting. Care shall be taken to ensure that the root ball is not disturbed during container removal or planting. Any wire containment and hessian shall be removed.

Plants shall be set in their final positions with main stem vertical and at such a depth that the soil, when firmed down is at the same height as the nursery earth marks on the stem or the container soil level. Loose roots shall be spread out in a natural fashion; the soil being carefully placed under and amongst them to fill all voids and firmed in. Any major roots which become accidentally broken off or frayed shall be cleanly cut off from the plant.

If plants are slightly pot bound the roots shall be loosened, trimmed and spread out to ensure healthy growth. Roots shall not be exposed to the sun or wind. The planting hole shall be a third larger than the root ball and the soil at the bottom of the hole loosened.

Each plant shall be watered thoroughly after planting, ensuring that the moisture has penetrated to the full depth of the root ball (initial watering is also important to settle the soil around the roots).

1.8 Fertiliser for Planting

Well-balanced six-month slow-release fertiliser including available nitrogen, phosphorus and potassium plus magnesium and trace elements. Fertiliser in granular form to allow distribution through the backfill mix.

All plants shall be planted with controlled, slow release fertiliser such as 'Nutricote' or 'Osmocote Plus' or 'Grotabs' of composition 6:15:3 (N:P:K). Fertiliser shall be applied to the backfill of each tree, shrub, and groundcover in accordance with the following application rates. In all cases, the fertiliser shall be mixed with the soil in the base of the prepared hole prior to placement of the root ball. Care shall be taken to avoid the roots having direct contact with the fertiliser.

Plant size:Application rate per plant:(gms or tab)

1.5L 12g or 1x tab

3L 12g or 1x tab

5L 20g or 2x tab

Fertiliser shall be applied prior to mulching.

1.9 Mulching of Plants – Wool Mulch Matting

Biomac-Wool Mulch R500 (Ex Geofabrics NZ Ltd) or an approved equivalent shall be installed underneath all mitigation planting areas.

The existing grass cover (including weeds) shall be sprayed with a suitable herbicide and allowed to completely die off prior to installation of the wool mulch.

The wool mulch shall be rolled down the slope rather than across the slope. The top of the wool mulch matting shall be trenched in 200mm, except on the existing trees side. The top of the wool mulch on this side shall be pegged to the ground within the dripline of the trees.

The joins between the rolled wool mulch shall have a minimum overlap of 200mm. Secure all joins at the overlap (through both layers of wool mulch) with 230mm long U staples. The staples shall be placed every 0.5m to 1.0m. Any minor depressions should also be pinned to ensure soil contact is achieved for 90% of the matting area.

The completion of the wool mulch matting shall be inspected by the Contract Administrator prior to planting. This is a hold point.

Following inspection, the Contractor shall plant into the wool mulch by cutting a slit and planting into a planting hole as per the relevant planting specification.

After planting, the Contractor shall close the wool mulch around the base of the plant and pin down to fix the wool mulch in place.

1.10 Rabbit Proof Guards

Install rabbit proof guards as per the 'Fiber Guard Assembly and Installation Guide' provided by Advanced Landscape System Ltd.

Ensure all punched inlets are removed to maximise light and airflow through installed guard.

For sloping sites make use of the guards angled top, which allows the guard to be installed upright on sloping ground.

Water Generally

A suitable water supply shall be installed for watering plants (or water carts if necessary). Water carts, hoses and sprinklers sufficient to provide an adequate water supply to the plant material shall be brought to the site.

Prior to Planting:

All plants shall be thoroughly watered a few hours prior to planting to ensure successful establishment, preferably by standing the plants in their pots in a trough of water and soaking until saturated prior to planting. All shrubs are to be copiously watered in such a way that the entire shrub station is moistened to field capacity to encourage settlement.

After Planting:

All plants shall be watered as required to ensure their survival. In the interests of good horticultural practice watering shall be sufficient to give 300mm minimum depth penetration and not just surface dampening. Attention must be paid to watering during and after planting to ensure successful establishment. Notwithstanding any prevailing restrictions by the local authority on the use of water for watering any plants, it is expected special arrangements may be necessary to ensure regular and adequate watering of trees and shrubs to ensure successful establishment.

Drought Conditions:

If during a drought some planting has not been carried out, planting may be delayed by agreement. If water supply is likely to be restricted, water from other approved sources will need to be used.

2. Planting Maintenance Schedule

Ref	Item	Minimum Frequency	Action
2.2	Watering	To maintain moisture content as specified. (Refer 3.3) Minimum recommendation once per month. Once per week over the first summer growing season. As required thereafter to maintain growth.	Water all plants
2.3	Pests and diseases	Check at 1-month intervals first 12 months, 3-month interval for the following two years.	Check for pests and diseases and apply appropriate treatment to ensure plants are pest and disease free.
2.4	Rabbit Proof Guards	As per above.	Ensure that rabbit proof guards are well maintained and remain in place.
2.5	Pruning	As per above.	All dead and weak branches to be removed.
2.6	Plant maintenance, vandalism, losses, and replacement	As per above.	Replace any plant losses as per approved landscape plans. Refer to specification 2.6 and follow.
1.8	Fertilisation	Implement at 6-month intervals or at the recommended rate depending on type and period of slow release. A schedule of fertilisation must be supplied at quotation as variation to this specification.	Fertilise each plant (not wetland areas, if applicable) to the recommended slow release period of manufacturers specification.
3.0	Weed Control	Check at 1-month intervals first 12 months, then check at 3-month intervals through growing seasons and less over winter for the following two years.	Refer Section 3.0 for specific species treatments.

2.1 Scope

Maintenance shall include watering, weed removal, plant trimming, cultivation, insect, and disease control, checking stakes and ties, pruning and other accepted horticultural operations to ensure normal and healthy plant establishment and growth.

Ensure that the plants installed will survive and grow. Water the plants installed as frequently as necessary, taking into consideration Cromwell's low annual precipitation and hot dry summers. Inspect the landscaping works as necessary to confirm the health of the plants, existence of pests, diseases, or vandalism. At the end of the maintenance period, re-position mulch where required and replacement of plant losses will be required.

Maintenance **shall not include** replacement of plants stolen, and/or those damaged by vandalism, spillage of fuels and chemicals, extreme / unforeseen weather events or by vehicle damage.

2.2 Watering

The Contractor shall provide sufficient water to all lawn areas, trees and planting to maintain plants in a healthy condition. For trees, soil moisture shall contain an average volumetric water content of between 20 and 30%. This value shall be determined through taking four readings corresponding approximately to

the four points of the compass. The readings shall be at 500mm below the topsoil surface and 300mm from the trunk for trees up to PB95 grade and 500mm from the trunk for PB150 grade and above trees.

For trees, this moisture content relates approximately to 40 litres of water per application in order to saturate the root ball. For trees larger than PB150 grade, each application should be approximately 80 litres of water. As a guide, shrubs and groundcover should receive 5 litres of water each per application in order to saturate the root ball. Applications should occur at least once a week during Summer (October – March), fortnightly during Spring/ Autumn (April - May and September - October) and monthly during Winter (June to August).

Water shall be applied evenly and radially around the root ball to a distance of 600mm from the base of the trunk or to the extremity of the tree's drip line, whichever is the greater. Water shall be applied at low pressure from a height of less than 500mm. Care shall be taken to avoid the displacement of soil or mulch whilst undertaking watering.

Installation of a portable irrigation system (i.e. K-line sprinklers and drippers) is acceptable. Additional to irrigation systems, carry out watering by handheld hoses at regular intervals as necessary during dry conditions to ensure successful plant establishment and growth. Water shall be applied until the top 200mm of topsoil around each plant is saturated. Do not water during the hot part of the day. Watering nozzles shall be fine rose or sprinkler heads to prevent damage to growth areas of the plants.

2.3 Noxious Pests and Diseases

Monitor the works for insect and plant disease problems. If present, identify the problem and apply appropriate remedy by accepted horticultural practices including chemical or biological methods.

Take all suitable precautions for the safe handling and application of herbicides, fungicides and insecticides and use these strictly in accordance with the manufacturer's specifications. In all cases, apply sprays on windless days. If the site is in a public area, the public shall be advised by signage that spraying is occurring and shall be directed away from the spray area.

Avoid damage to neighbouring properties caused by spraying.

2.4 Rabbit Proof Guards

Make good any rabbit proof guards that have been disturbed by rabbits or strong winds. Ensure bamboo stakes securing guards are firmly in the ground and guards are upright.

Remove rabbit proof guard when plants become too big for the guard and before the guard damages the plant.

2.5 Pruning

The Contractor shall remove all weak, dead, diseased or damaged growth, including spent flower heads. Sight lines at intersections and driveways shall be maintained and signs shall not be obscured. Pruning shall not be carried out during leaf burst or leaf fall.

Pruning shall be carried out on shrubs and groundcover by an appropriately qualified horticulturalist to maintain a high standard of presentation, display and plant vigour and to maintain the desired shape and size. An arborist qualified to international arboriculture standards shall undertake all tree pruning.

The following pruning techniques shall be employed where appropriate:

- Tips shall be pinched or purged, as appropriate for species, to give desired shape and size.
- Form pruning of young plants to ensure compact form and shape.
- Undercutting of groundcovers at border edges.
- Plants shall be pruned so that they do not smother neighbouring plants.

2.6 Plant vandalism, loss, and replacement

All losses of plants during the 12 month establishment period must be replaced in the first available planting season (between May and October). Replacements shall be the same as those specified, unless otherwise agreed. Any defective stakes, ties, etc. shall be replaced as soon as possible.

3. Weed Management Strategy

3.1 Scope

Weed control is required to maximize the survivability of plants in their first 12 months of growth. Weeds and pasture grasses are key competitors for new plantings. The weed management program should be undertaken in a proactive as opposed to a reactive manner. It will ensure that weeds do not compete with the new plantings. To this end weeds and grasses shall always be controlled before they flower, set seed or get to half the height of the new plantings.

3.2 Weed Control Method

Weeds and grasses will not be allowed to grow over the top of new plantings. If this does occur, weeds must be pulled back from each plant prior to any spraying being undertaken. In some cases, this may require hand pulling of weeds as opposed to spraying. Note that all weed removal shall be undertaken by hand-pulling in the first instance, with spraying to be used if this is not applicable/suitable. (refer section 3.4). Regular maintenance visits shall be undertaken. They are required to:

- a) Review work done in the month(s) prior to that visit.
- b) Assess the condition of plantings and identify any issues.
- c) Undertake weed control work to be done.
- d) Identify and confirm work for upcoming months.
- e) Review weed control species lists and identify any new threats.

3.3 Release Spraying

Release spraying shall be undertaken, only if explicitly required. It is anticipated that not less than two release sprays will be undertaken over the period of 12 months. If it determined that more sprays are necessary to control weeds and/or disease/infection, then these will be performed with confirmation from the Applicant.

Those undertaking spraying shall adhere to the spraying specifications as set out under the Growsafe manual. All chemicals used shall be approved. Detailed spray diaries shall be kept and progressively forwarded to CODC as work is done. Marker dye is to be used every time spraying is undertaken.

3.4 Manual Weed Control

Releasing of plants shall not be solely limited to the use of herbicides. It is preferred that plants are to be hand pulled or dug out wherever practical. Care needs to be taken to ensure the whole plant is removed and that it is disposed of in such a manner that it does not regrow. Crews will be experienced in weed identification and knowledge of which weeds can be hand pulled as opposed to those that cannot.

