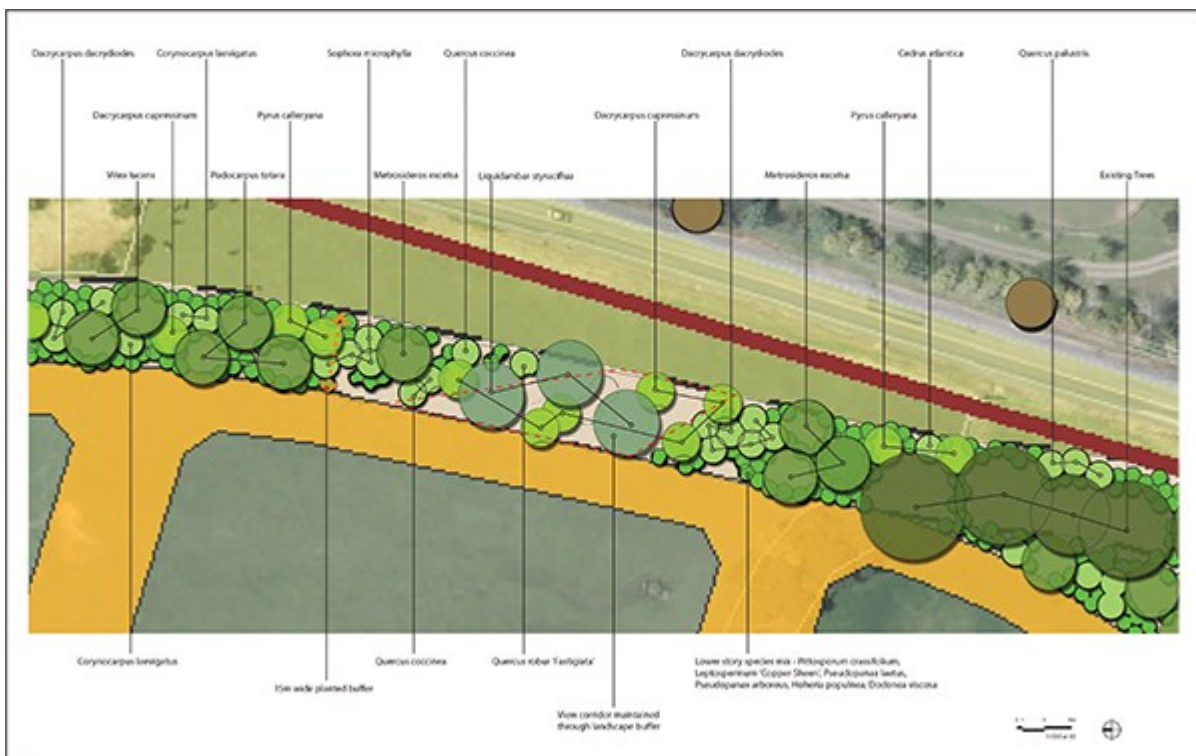
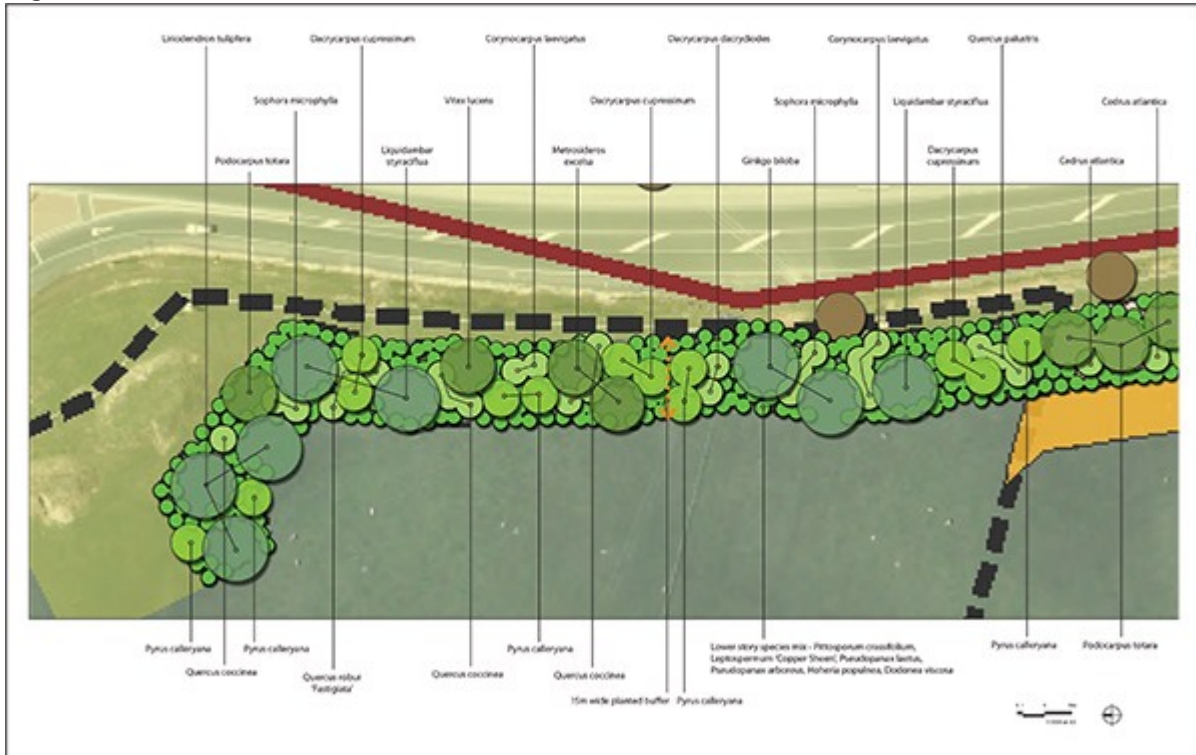


Appendix 11.6 South

Appendix 11.6.1 Beachlands 1

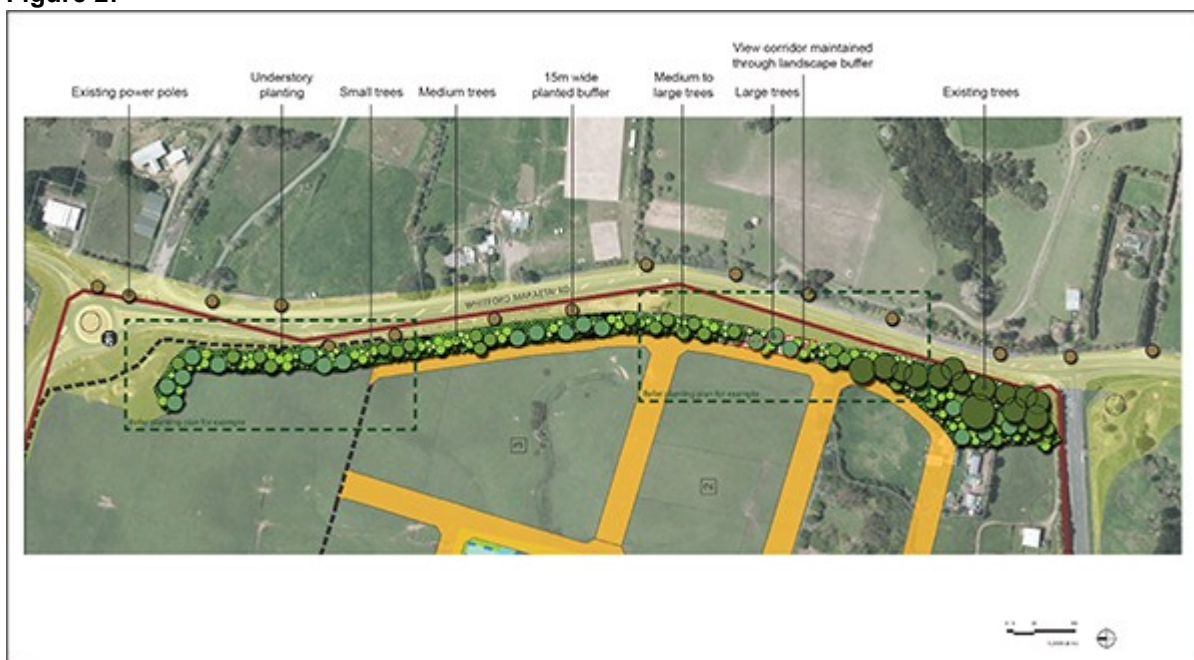
Landscape buffer area planting plan and planting schedule

Figure 1:



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**Figure 2:**



**Table 1:**

Code	Botanic name	Common name	Min PB size	Min height when planted (mm)	Spacing (mm)	Percentage / number
<b>Medium to large trees</b>						<b>100%/130</b>
DAC cup	Dacrycarpus cupressinum	Rimu	PB95	2500	As shown	10%/13
DAC dac	Dacrycarpus dacrydiodes	Kahikatea	PB95	2500	As shown	10%/13
GIN bil	Ginkgo biloba	Ginkgo	PB95	2500	As shown	10%/13
LIR tul	Liriodendron tulipifera	Tulip tree	PB95	2500	As shown	10%/13
LIQ sty	Liquidambar styraciflua	American sweet gum	PB95	2500	As shown	20%/26
MET exc	Metrosideros excelsa	Pohutukawa	PB95	2500	As shown	20%/26
POD tot	Podocarpus totara	Totara	PB95	2500	As shown	10%/13
VIT luc	Vitex lucens	Puriri	PB95	2500	As shown	10%/13
<b>Small to medium trees</b>						<b>100%/220</b>
CED atl	Cedrus atlantica	Atlas cedar	PB50	2000	As shown	10%/22
COR lae	Corynocarpus laevigatus	Karaka	PB50	2000	As shown	20%/44
PYR cal	Pyrus calleryana	Callery pear	PB50	2000	As shown	20%/44

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Code	Botanic name	Common name	Min PB size	Min height when planted (mm)	Spacing (mm)	Percentage / number
SOP mic	Sophora microphylla	Kowhai	PB50	2000	As shown	20%/44
QUE coc	Quercus coccinea	Scarlet oak	PB50	2000	As shown	10%/22
QUE pal	Quercus palustris	Pin oak	PB50	2000	As shown	10%/22
QUE rob	Quercus robur 'Fastigiata'	Fastigate oak	PB50	2000	As shown	10%/22
<b>Understory Planting</b>						<b>100%/500</b>
DOD vis	Dodonea viscosa	Akeake	PB28	1500	As shown	20%/100
HOH pol	Hoheria populnea	Lacebark	PB28	1500	As shown	20%/100
LEP cop	Leptospermum 'Copper Sheen'	Manuka hybrid	PB28	1500	As shown	15%/75
PIT cra	Pittosporum crassifolium	Kara	PB28	1500	As shown	15%/75
PSE arb	Pseudopanax aboreus	Five finger	PB28	1500	As shown	15%/75
PSE lae	Pseudopanax laetus		PB28	1500	As shown	15%/75

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## Appendix 11.6.2 Kingseat

### Appendix 11.6.2.1 Typical road cross sections

Figure 1

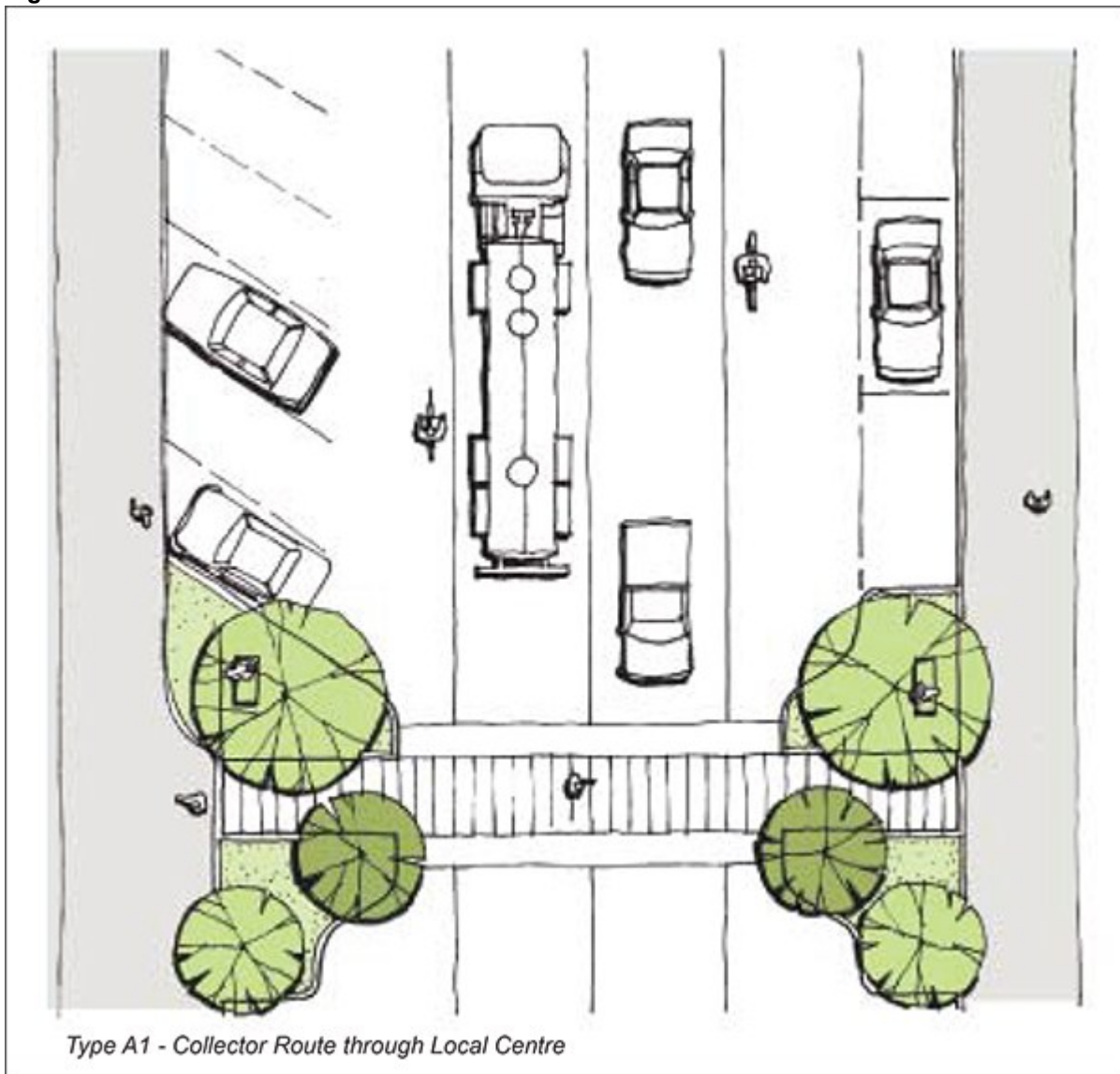


Figure 2

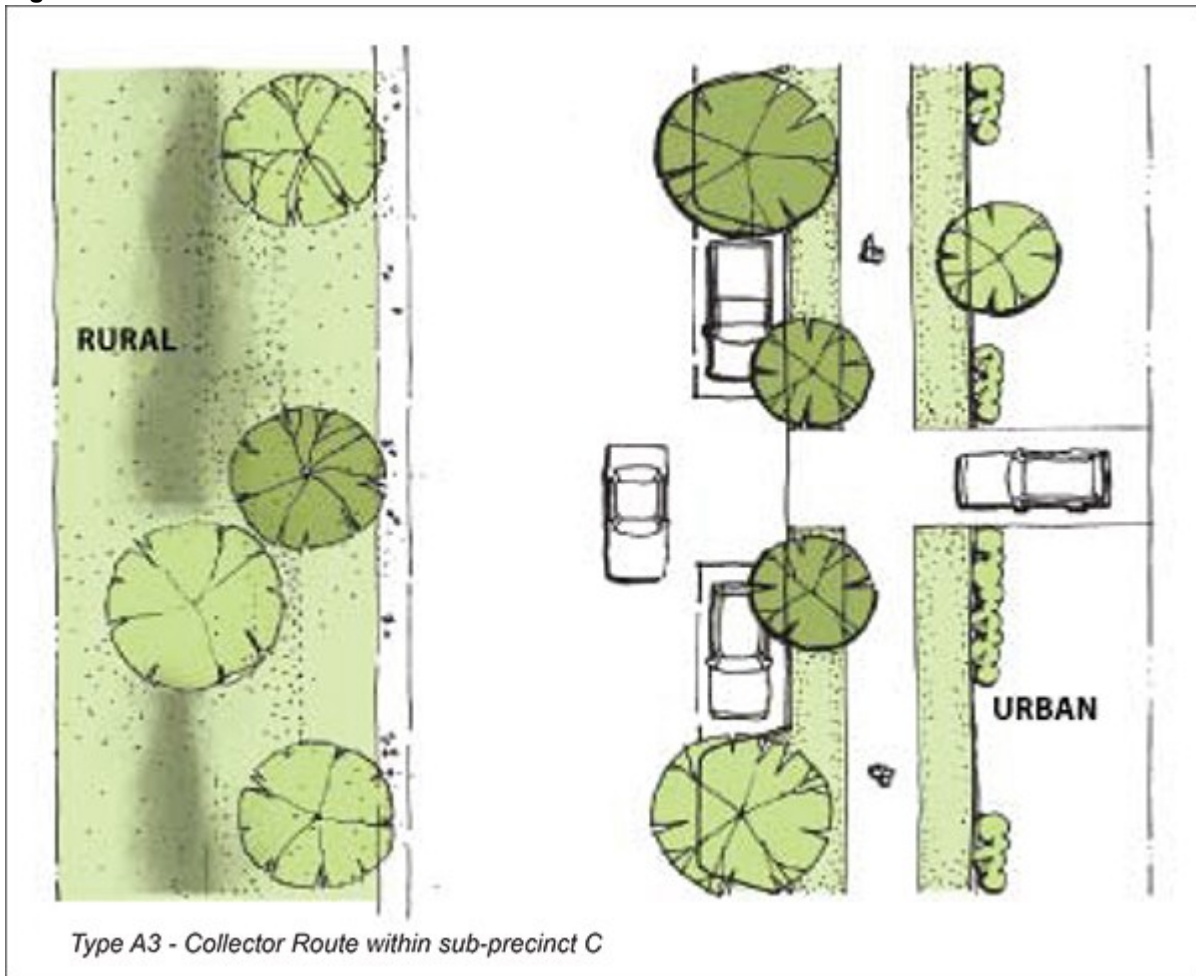


Figure 3

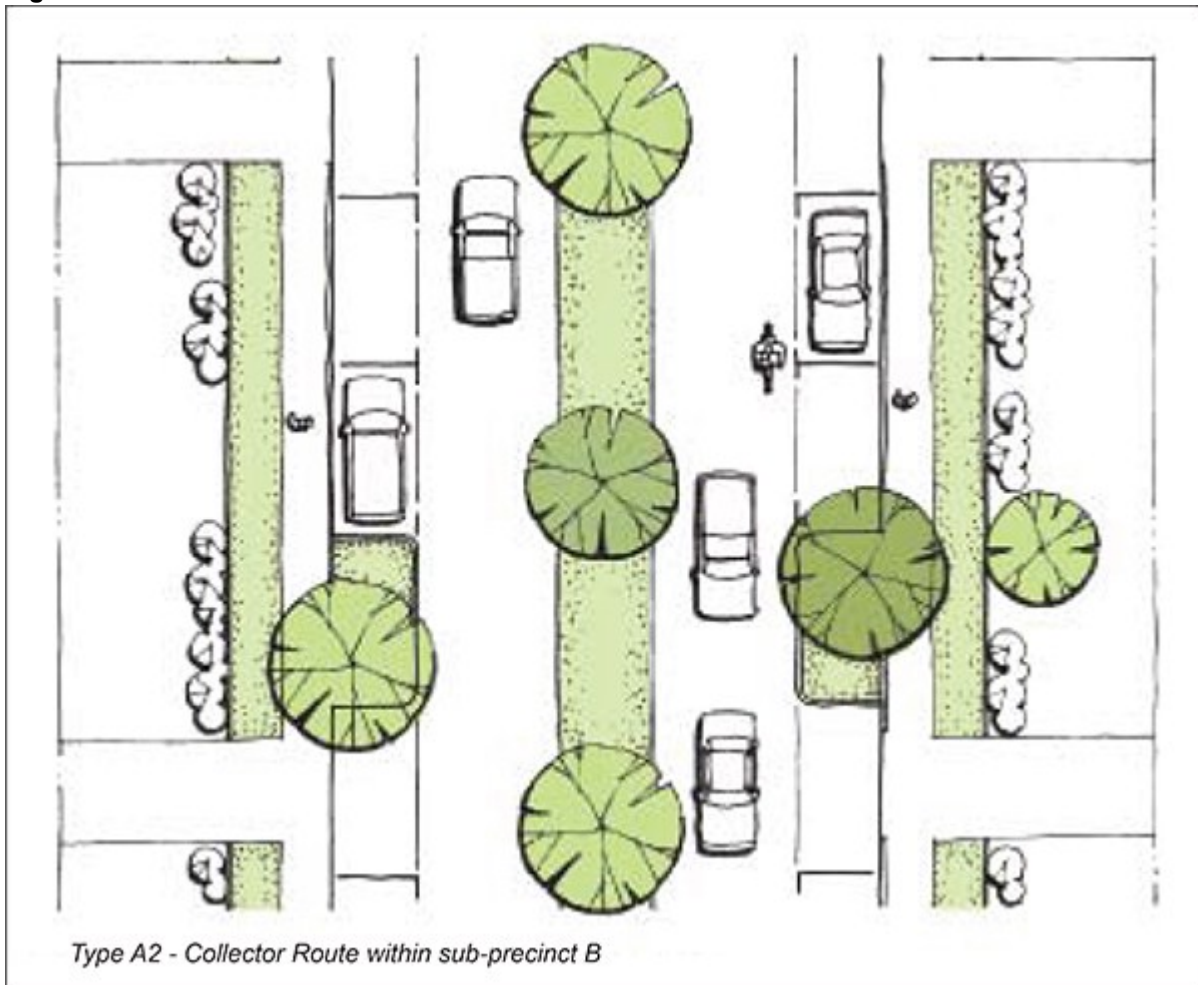
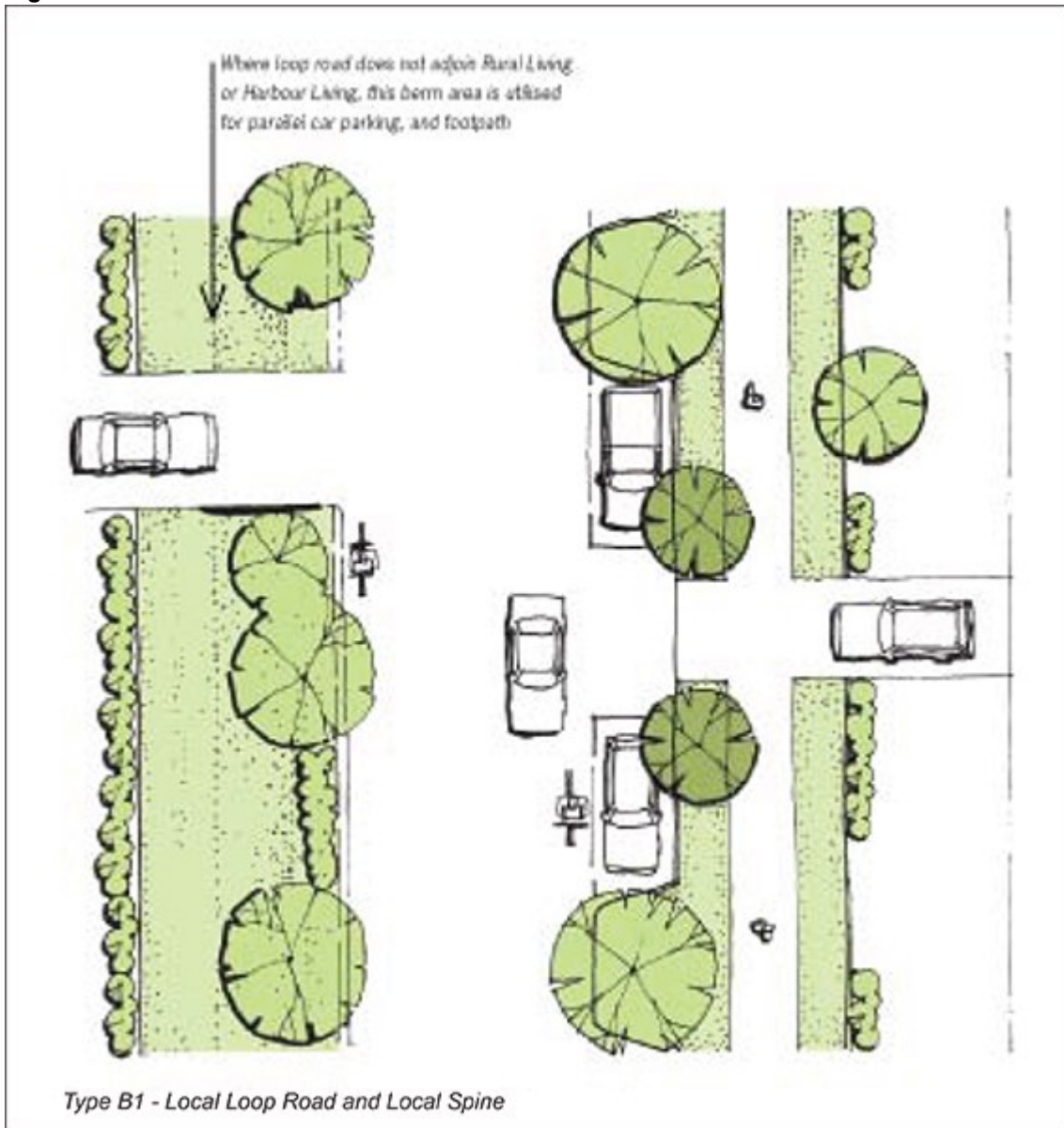


Figure 4



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Figure 5



## Appendix 11.6.2.2 Schedule of protected heritage places

Item. Reference (Diagram Plan 3)	Name	Verified Location	Verified Legal Description	Category	Known Heritage Values	Extent of Place	Exclusions	Additional Controls for Archaeology	Place of Significance to Maori
A.54	Kingseat Hospital Administration Building	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.57	Kingseat Hospital Villa 11	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			



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A.58	Kingseat Hospital Villa 12	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.59	Kingseat Hospital Villa 13	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.61	Former Nurses Home	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.62	Kingseat Hospital Ancillary Building 1	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.63	Kingseat Hospital Ancillary Building 2	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.64	Kingseat Hospital Ancillary Building 3	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.65	Kingseat Hospital Ancillary Building 4	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.66	Kingseat Hospital Ancillary Building 5	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
A.67	Kingseat Hospital Ancillary Building 6	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
B.21	Main access road from Kingseat Road	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
B.22	Main entrance gates, piers and wing walls	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			
D.20	Archaeological Terraces	112B McRobbie Road (E 1758965 N 5890134)	(Lot 2 DP112871)	B		Refer to planning maps		Yes	

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D.21	Archaeological Terraces	125 McRobbie Road	(Lot 4 DP 173114)	B		Refer to planning maps		Yes	
D.22	Amenity Space	Former Kingseat Hospital site	(Lot 1 DP 137234)	B	F,G,H	Refer to planning maps			

### Appendix 11.6.2.3 Schedule of protected trees

Former Kingseat Hospital site

Map 3 Reference	Common Name	Botanical Name	Number of Trees	Location and address	Legal description
C.75	Tulip Tree	Liriodendron tulipifera	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.77	Norfolk Pine Bermudan Juniper	Auracaria heterophylla Juniperis bermudiana	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.78	Phoenix Palms	Phoenix canariensis	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.81	Rimu	dacrydium cupressinum	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.82	Kauri	agathis australis	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.83	Kauri	agathis australis	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.84	Kahikatea	dacrycarpus dacrydioides	150	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.85	Copper Beech English Oak	fagus sylvatica var purpurea quercus robur	1 1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.86	English Oak Turkey Oak	quercus robur quercus cerris	1 1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.88	Liquidambar	Liquidambar styraciflua	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234

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C.89	London Plan Tree	platanus x acerifolia)	2	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.90	Oak tree London Plan Tree	quercus robur platanus xacerifolia	1 1 1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.92	Chinese Fir Turkey Oak	cunninghamia lanceolata quercus cerris	1 1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.96	Oak Tree #1	quercus spp		Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.97	Oak tree # 1	quercus spp	2	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.100	Oak tree	quercus spp	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.102	Oak trees	quercus spp	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.103	Wellingtonia English Oak	sequoiadendron giganteum quercus robur	1 1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.104	Totara	Podocarpus totara	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.108	Norfolk Pine	auracaria heterophylla	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.109	Norfolk Pine	auracaria heterophylla	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.111	Red Flowering Gum	corymbia ficifolia	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234

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C.112	Red Flowering Gum	corymbia ficifolia	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.116	Marri, Flowering Gum	Ficifolia	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.117	Chestnut	aesculus hippocastanum	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.121	Magnolia Himalayan cedar	magnolia grandiflora cedrus deodara	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.127	Tulip tree	liriodendron tulipifera	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.130	Photinia	photinia x fraseri "Red Robin"	1	Former Kingseat Hospital site (Lot 1 DP 137234)	Lot 1 DP 137234
C.131	Maidenhair tree	ginkgo biloba	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.134	Maidenhair	ginkgo biloba	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.135	Norfolk Pine	auracaria heterophylla	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.141	Magnolia	Magnolia grandiflora	2	Former Kingseat Hospital site	Lot 1 DP 137234
C.142	Tulip Tree	liriodendron tulipifera	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.143	Tulip Tree	liriodendron tulipifera	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.145	London Planes	platanus x acerifolia	7	Former Kingseat Hospital site	Lot 1 DP 137234
	Tulip Tree	liriodendron	1		
	Camphor laural tree	tulipifera cinnamomum camphora	1		
C.146	English Oak tree	quercus robur	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.147	Oak	quercus spp	2	Former Kingseat Hospital site	Lot 1 DP 137234

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C.148	London Plane Tulip Tree Camphor Laurel Bull Bay	platanus x acerifolia iriodendron tulipifera cinnamomum camphora magnolia grandiflora	4 1 1 1	Former Kingseat Hospital site	Lot 1 DP 137234
C.149	Phoenix Palms	phoenix canariensis	18	Former Kingseat Hospital site	Lot 1 DP 137234
C.150	Moreton Bay Fig	ficus macrophylla	2	Former Kingseat Hospital site	Lot 1 DP 137234
C.151	London Plane	platanus x acerifolia	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.152	Pohutukawa	vitex lucens	6	Former Kingseat Hospital site	Lot 1 DP 137234
C.153	London Plane	platanus x acerifolia	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.154	Norfolk Pine	auracaria heterophylla	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.156	Holm Oak	quercus ilex	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.157	Oak tree	quercus spp	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.158	Turkey Oak tree	quercus cerris	1	Former Kingseat Hospital site	Lot 1 DP 137234
C.161	Hungarian Oak tree	quercus frainetto	1	Lot 1 DP 137234	
C.168	London Plane	platinus x acerifolia	5	1016 Linwood Road	Lot 1 DP400117
C.169	Gum Tree	eucalyptus spp	1	1016 Linwood Road	Lot 1 DP400117
C.170	Black Poplar	populus nigra	1	1016 Linwood Road	Lot 1 DP400117
C.175	Sessile Oak tree	quercus petraea		112B McRobbie Road	Lot 2 DP112871

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## Appendix 11.6.3 Pararekau and Kopuahingahinga Islands

### Pararekau Island Planting Guidelines

#### Purpose

These planting guidelines relate to the Pararekau and Kopuahingahinga Islands precinct, which applies to Pararekau Island and an access roading area within Kopuahingahinga Island, and two causeways that link both Islands to the mainland, as shown on the planning maps. The precinct provisions set out in this Unitary Plan rely strongly on achieving the vision in the Pararekau Island Landscape Concept Plan (refer to appendices 11.3.1.1 and 11.3.1.2) to achieve the environmental outcomes which seek to protect the natural character of the coastal environment from inappropriate subdivision and development, and avoid adverse effects on the landscape character and rural amenity values of this rural zone.

The rules and assessment criteria for subdivision and development require consistency with the landscape concept plan and the following planting guidelines:

- the subdivision standards require landscaping to be provided for each management area identified within the concept plan to be consistent with that plan and this planting guideline
- the subdivision standards also require any application for subdivision within the precinct to provide a landscape plan which must include a plant species schedule detailing species and mix grades at the time of planting, with comment on the degree of consistency with the planting guideline and explanation for any variance with this guideline
- the assessment criteria for applications for controlled resource consent for subdivision within the precinct will be assessed in terms of matters including the extent to which the proposed landscape plan will assist in ensuring a cohesive landscaping theme consistent with the concept plan and planting guidelines. This theme is of a parkland with larger free species and the integrated management of open space, whether within countryside living sites that will be privately and individually owned or areas intended for common ownership.

#### Creating habitats for native lizards

Native lizards are known to be present on the islands and planting should seek to provide them with suitable habitats. Information provided by the Department of Conservation's Gardening for Ornate Skinks includes:

- ornate skinks inhabit forest or open areas with deep leaf litter, or stable cover such as deep rock piles or thick vegetation
- they prefer damp, humid conditions
- the species is very secretive.

Plant species and size guidelines for the management areas shown on the concept plan include:

- esplanade strip
- recreation and arainage areas
- access area
- countryside living sites
- revegetation implementation technique
- monitoring and maintenance.

Protection from predators, including pet cats can be partly achieved by creating a thick and diverse garden with

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plenty of cover. Treed areas or tall scrublands should have a layer of shade tolerant ground vegetation. Ferns, swamp musk, renga renga or creeping fuchsia are good options because they will also help maintain a high humidity. This information should be taken into account when providing planting.

### Plant species recommendations

Explanade reserve

The explanade area revegetation will consist of a mix of hardy native species suited to a coastal environment. Reference has been made, for plant species selection, to the Hingaia Ecology Report – Concepts and Guidelines, Dr Andrea Julian, August 2002 (unpublished).

Table 1:

Botanical name	Common name	Size at planting
<i>Coprosma repens</i>	taupata	
<i>Coprosma robusta</i>	karamu	PB ¾ - 3
<i>Cordyline Australis</i>	cabbage tree	PB ¾ - 3
<i>Cortaderia flavicans</i>	toetoe	PB ¾ - 3
<i>Corynocarpus laevigatus</i>	karaka	PB ¾ - 3
<i>Cyathpoides junipera</i>	mingimingi	PB ¾ - 3
<i>Geniostoma rupestre</i>	hangehnage	PB ¾ - 3
<i>Hebe strica</i>	koromiko	PB ¾ - 3
<i>Leptospermum scoparium</i>	manuka	PB ¾ - 3
<i>Metrosideros excelsa</i>	pohutukawa	PB ¾ - 3
<i>Myrsine australis</i>	mapou	PB ¾ - 3
<i>Olearia furfuracea</i>	akepiro	PB ¾ - 3
<i>Phormium tenax</i>	harakeke	PB ¾ - 3
<i>Pseudopanax lessonii</i>	houpara	PB ¾ - 3
<i>Sophora microphylla</i>	kowhai	PB ¾ - 3

Table 2: Salt marsh

Botanical name	Common name	Size at planting
<i>Apodasmia simiilis</i>	oioi/jointed wire rush	PB ¾ - 3
<i>Baumea juncea</i>		PB ¾ - 3
<i>Juncus maritimus var australiensis</i>	Sea rush	PB ¾
<i>Plagianthusdivaricatus</i>	Maakaka/salt marsh ribbonwood Ribbonwood	PB ¾

### Recreation and drainage areas

Table 3: Riparian

Botanical name	Common name	Size at planting
<i>Coprosma robusta</i>	karamu	PB ¾ - 2
<i>Cordyline australis</i>	cabbage tree	PB ¾ - 3

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<i>Entelia arborescens</i>	whau	PB ¾ - 2
<i>Hebe strica</i>	koromiko	PB ¾ - 3
<i>Leptospermum scoparium</i>	manuka	PB ¾ - 2
<i>Myrsine australis</i>	mapou	PB ¾ - 2
<i>Phormium tenax</i>	harakeke	PB ¾ - 3
<i>Sophora microphylla</i>	kowhai	PB ¾ - 2

Table 4: Wetland

Botanical name	Common name	Size at planting
<i>Carex secta</i>	pukio	PB ¾ - 2
<i>Carex virgata</i>		PB ¾ - 2
<i>Cordyline australis</i>	cabbage tree	PB ¾ - 2
<i>Cyperus ustulatus</i>	giant umbrella sedge	PB ¾ - 2
<i>Leptospermum scoparium</i>	manuka	PB ¾ - 2
<i>Phormium tenax</i>	harakeke	PB ¾ - 2
<i>Schoenoplectus validus</i>	kuta	PB ¾ - 2
<i>Typha orientalis</i>	raupo	PB ¾ - 2

### Access area

Table 5: Amenity

Botanical name	Common name	Size at planting
<i>Chionochloa flavicans</i>		PB 3
<i>Fagus sylvatica</i> var. <i>purpurea</i>	Copper beech	PB 40 – 150
<i>Phormium cookianum</i>	Mountain flax	PB 3 – 5
<i>Quercus palustris</i>	Pin oak	PB 40 – 150

### Countryside living sites

#### Design concept

As part of the overall concept for Pararekau Island, it is important that structural landscaping is provided for each countryside living site at the time of subdivision and at the same time as the balance of the planting within the access area, recreation and drainage area, and esplanade strip. This will ensure planting achieves a consistent landscape character of a parkland with large areas of open space.

Planting for countryside living sites must be:

- consistent with the concept plan in 11.3.1.2
- include native and exotic trees at least 1.8m tall at the time of planting, that will grow to a height providing a relatively open framework for each lot, and contribute to the intended parkland character of the island
- provide a native understorey to create habitats for birds and lizards and provide ecological corridors between the ecological restoration areas, including the recreation and drainage areas



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- integrate with the planting schedules in this guideline for each lot in the access area, recreation and drainage area, and esplanade strip
- avoid lineal planted edges along lot boundaries to deliver privacy for each lot identified on the structure plan in 11.3.1.1
- contribute to mitigating potential adverse effects of household units and accessory buildings on the natural character of the coastal environment and the landscape character and amenity values of the island.

The subdivision rules require that at the time of subdivision, countryside living sites, excluding the access area, esplanade strip, and recreation and drainage areas, will be planted and maintained in native and exotic trees and shrubs and underplanting consistent with the landscape concept plan, access area plans and planting guidelines.

### **Revegetation implementation technique**

#### **Sourcing**

All plant material must be eco-sourced.

Once the contract and planting programme is confirmed, the landscape contractor must source all plant material to ensure the best hardy nursery stock available is secured. All plants must be healthy and vigorous, with well-developed root systems, free of disease, pests and physical damage. They must be well branched, symmetrically shaped and matched to the site.

#### **Planting methodology**

Layout and plant densities must be at 1.4m spacing i.e. 5000 stems/ha. This is a general guide only and is dependent on species combinations and growth form.

All planting must be done based on established revegetation techniques in relation to matching species with site conditions, soil type, soil/moisture conditions, aspect, exposure and recognition of individual species relationships and growth habit.

Cell and tube grades and open ground material must be planted with a double spade cut to shatter soil structure to allow rapid root formation and nutrient uptake.

Larger grade plants and plastic bag (PB) sizes must be planted in hand dug holes. The base of the planting hole is to be broken up to shatter soil structure to allow rapid root formation and nutrient uptake.

All plant species must be planted with a twice-yearly controlled release general fertiliser, such as Nutricote or Osmocote Plus and rain crystals, applied to the manufacturer's recommendations. The rain crystals must be distributed through the base of the hole. If the plant is on a slope then the fertiliser must be placed dominantly on the upper hillside.

All plants must have an identification stake close by. This will allow rapid identification of plants at the maintenance stage and assist the monitoring process for the detection and control of plant mortality and success rates.

#### **Monitoring/maintenance**

Regular monitoring must be done at monthly intervals, dependent on prevailing weather conditions, for the first three years of each planting stage, then half-yearly.

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Hand removal and/or herbicide spray, such as Roundup or Fusilade W6 must be done in spring and autumn as necessary.

### **Maintenance period**

- Initial three years - rigorous regime, including replacement of losses over 10 per cent in the winter season following maintenance visits
- Ongoing thereafter.

No watering is required as plant material is chosen for specific aspect/slope/soil/type/moisture regime. Crystal rain and fertiliser must be used at time of planting.

### **Pest control**

Rabbit and possum eradication/control area generally the landowners' responsibility. Control must be done prior to planting to decrease pest numbers. Ongoing control must be by way of poisoning as outlined below:

- rabbits: Pindone cereal pellets should be hidden in short lengths of terracotta or plastic pipe during dry weather
- possums: Pindone could be used as could bait stations using brodifacoum or cholecalciferol pellet baits.

Monitoring of planting for damage must be done post-planting in spring/autumn and control methods executed as necessary

### **Watering**

No watering will be necessary, as the plant species have been selected to tolerate on-site conditions.

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