



PLANTING STRATEGY

Reserves Planting Design

NCC APPENDIX 14 - RELEVANT CLAUSES

AP14.2 information requirements

AP14.2.2 Design Description: Subdivision and Development Plan streetscape and open space design - AP14.2.2.iv - e.

Legend

- Grassed areas
- Amenity planting.
- Street planting.
- Upper dry riparian planting.
- Temporary inundation/ littoral edge riparian planting.
- Shallow and deep-water marsh.
- Flow control weirs.
- Outflow structure.
- Rock-lined open channel.

Planting Type	Area (Approx)
Upper Dry Riparian edge mix	12,1087 sq m 12.1087 ha
Riparian edge mix - Temporary inundation/ Littoral Edge	22,008 sq m 2.2008 ha
Shallow and Deep Marsh	14,281 sq m 1.4281 ha



Slope Revegetation Palette

The plant species have been selected to withstand the varied conditions of hillsides. A mix of underplanting, large shrubs and trees will create a lush and biodiverse plant ecosystem as the planting establishes.

TREES



Aristotelia serrata
makomako



Plagianthus regius
ribbonwood



Hoheria angustifolia
narrow-leaved lacebark



Carpodetus serratus prostratus
prostrate putaputaweta



Alectryon excelsus
titoki



Beilschmiedia tawa
tawa



Prumnopitys ferruginea
miro



Prumnopitys taxifolia
matai



Dacrydium cupressinum
rimu



Cordyline australis
ti kouka / cabbage tree



Fuscospora solandri
black beech



Fuschia excordata
kōtukutuku



Dacrycarpus dacrydioides
kāhikatea



Pittosporum eugenioides
tarata



Pittosporum tenuifolium
kōhūhū



Fuscospora truncate
hard beech



Griselinia lucida
pukatea



Melyticus ramiflorus
māhoe



Myoporum laetum
ngaio



Myrsine australis
māpou

Slope Revegetation Palette - Continued

TREES



Pennantia corymbosa
kaikomako



Weinmannia racemosa
kāmahi



Sophora microphylla
kōwhai



Pseudopanax crassifolius
lancewood

SHRUBS,
GROUNDCOVERS,
GRASSES AND SEDGES



Coprosma propinqua
mingimingi



Coprosma rigida
streamside coprosma



Brachyglottis repanda
rangiora



Coprosma robusta
karamū



Astelia fragrans
kahakaha



Melicytus crassifolius
coastal porcupine shrub



Macropiper excelsum
kawakawa



Muehlenbeckia axillaris
creeping wire vine



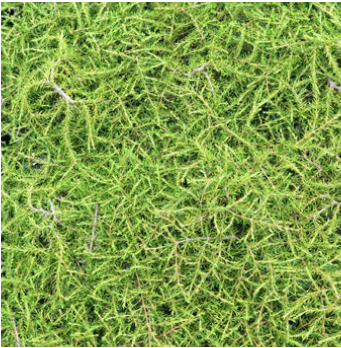
Veronica stricta
koromiko



Coprosma repens
taupata



Coprosma acerosa 'Red Rocks'
groundcover coprosma



Coprosma acerosa 'Hawera'
groundcover coprosma



Ozothamnus leptophyllus
tauhinu



Phormium cookianum
wharariki



Carpodetus serratus prostrata
prostrate putaputaweta

Reserve Links

GREEN CONNECTIONS

Green connections throughout the development provide access to the Linear Park. These areas offer additional space for ecological plantings by creating corridors and connections to the larger ecological patch of the linear park. Food crop trees can also be integrated into these plantings.



Pittosporum tenuifolium
kōhūhū



Pseudowintera colorata
horopito



Myrsine divaricata
weeping mapou



Coprosma rigida
stiff karamu



Phormium cookianum
wharariki / mountain flax



Weinmannia racemosa
kāmahī



Pittosporum eugenioides
tarata



Carex flagellifera
sedge



Astelia fragrans
bush lily



Carpodetus serratus prostrata
prostrate putaputaweta



Plagianthus regius
lowland ribbonwood



Cordyline australis
ti kouka / cabbage tree



Pseudopanax crassifolius
lancewood



Anemanthele lessoniana
hunangāmoho

Linear Parkland Plant Palette

The parkland features a mix of wetland areas with boardwalks, and open spaces in the drier elevated areas. Plants are chosen to tolerate both wet and dry conditions of this flood plain environment. Using predominantly native plantings in the wetland areas and incorporating a selection of non-native plants to provide seasonal interest and varied amenity for both active and passive recreation opportunities - including walking and biking, picnicking, bird watching etc

AMENITY PLANTING



Alnus glutinosa
'imperialis'



Aristotelia serrata
makomako



Carpodetus serratus
putaputaweta



Cordyline australis
ti kouka / cabbage tree



Dacrydium cupressinum
rimu



Dodonaea viscosa
akeake



Hoheria angustifolia
narrow-leaved lacebark



Podocarpus totara
tōtara



Prumnopitys ferruginea
miro



Prumnopitys taxifloia
matai



Taxodium distitchum
bald cyprus



Plagianthus regius
ribbonwood



Nyssa sylvatica
black tupelo



Anemanthele lessoniana
wind grass



Astelia fragrans
bush lily



Carex secta
makura sedge



Austroderia richardii
South Island toe toe



Coprosma robusta
karamu



Chionochloa conspicua
hunangamoho snow grass



Phormium 'Emerald Green'
dwarf flax

Linear Parkland Plant Palette - Continued

PLAY PLANTING



Austroderia richardii
South Island toe toe



Anemanthele lessoniana
wind grass



Phormium cookianum
wharariki



Dodonaea viscosa
akeake

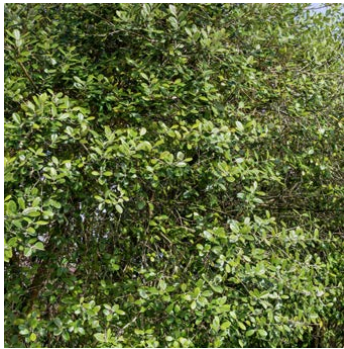


Chionochloa conspicua
hunangamoho snow grass

INFORMAL ORCHARD



Prune Plum 'Italian'
prune plum



Acacia sellowiana
feijoa



Juglans regia 'Rex'
grafted walnut



Ribes spp.
currant



Hazelnut 'Merville de Bollwiller'
fruiting hazelnut



Hazelnut 'Whitehart'
fruiting hazelnut

Kākā Stream Plant Palette

RIPARIAN EDGE MIX - TEMPORARY
INUNDATION/ LITTORAL EDGE

The riparian edge plant species have been selected for their suitability to grow in revegetating stream margins where they will be temporarily inundated during flooding events.

The species selected for planting within the water edge mix and water shallows are native species, which all grow within the local region at water’s edge and in shallow water, providing ecosystem services including water filtration and ecological habitat.

The dry riparian edge mix species have been selected for their suitability to grow in revegetating forest stream margins.

All named species are native, with eco-sourced seeds and will be grown locally. The species selected will provide shading to the stream and food sources for birds and insects.



Carex germinata
wetland cutty grass



Aposadmia sismilis
oioi



Astelia fragrans
bush lily



Austroderia richardii
South Island toetoe



Carex secta
pukio



Juncus australis
rush



Juncus pallidus
giant rush



Carex lessoniana
rautahi



Cyperus ustulatus
giant umbrella-sedge



Phormium tenax
harakeke

SHALLOW MARSH



Machaerina articulata
jointed twig rush



Isolepsis prolifera
club rush



Eleocharis acuta
sharp spike sedge



Carex secta
pukio

DEEP MARSH


























Machaerina articulata
jointed twig rush



Schoenoplectus tabernaemontani
softstem bullrush

Kākā Stream Plant Palette - Continued

DRY RIPARIAN EDGE MIX – SHRUBS/ RIPARIAN TERRESTRIAL					
					
Myrsine divaricata weeping māpou	Carpodetus serratus putaputaweta	Cordyline australis cabbage tree	Dacrydium dacrydioides kahikatea	Aristotelia serrata makomako	
					
Coprosma robusta karamū	Syzygium maire swamp maire	Laurelia novae zealandiae pukatea	Fuchsia excorticata kōtukutuku	Dacrydium cupressinum rimu	Lophomyrtus obcordata rōhutu
					
Coprosma rigida streamside coprosma	Austroderia richardii South Island toe toe	Carex flagellifera sedge	Blechnum minus swamp kiokio	Pennantia corymbosa kaikomako	Sophora microphylla kōwhai
					
Coprosma propinqua mingimingi	Phormium tenax harakeke	Gahnia xanthocarpa māpere	Carex germinata sedge	Carex dissita pūrei	Astelia frangrans kahakaha



STREET DESIGN

Streetscape Plans

The street typologies have been treated as three different street types. Although the profile of the community street and interim collector street is the same, the planting palette and arrangement will differ, giving the two street types a unique feel and character.

Carefully selected native species, including Titoki, have been matched with a palette of low native plants to be used in key intersections and areas of interest to add vibrancy to key points of interaction. The height of the plants will be limited to 700mm to ensure clear sightlines for drivers. The planting and streets trees have been arranged to give an illusion of driving under a lush canopy that frames views and creates a positive relationship with the adjoining open space.

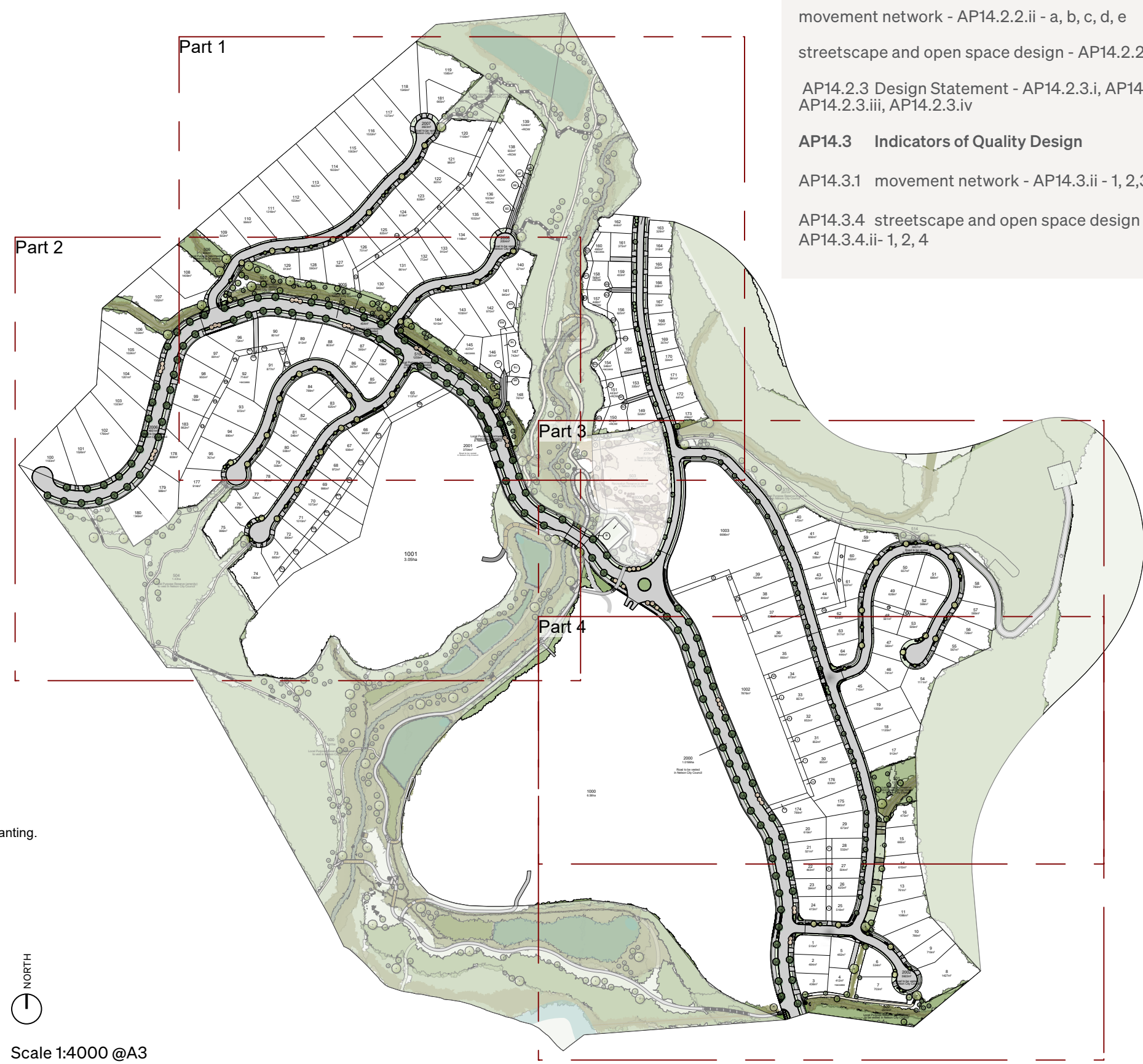
The street intersections will include paving elements that will provide a change in colour and texture for both the drivers and the pedestrians, providing interest and a visual threshold. Special intersection treatments will be located at the entry to the development, at the main roundabout and between the neighbourhood reserve and the location of Koata House.

A 2.5m shared path will follow the main street from the entrance to the development and all the way up to its western extent. A 1.5m footpath will be located across the other side of the main street. On smaller community and interim collector streets, where only one side of the street has a footpath, these will be located on the downhill side of the street, providing the pedestrians with better views, sightlines, and passive surveillance of their surroundings.

Legend

- Balustrade.
- Boulders.
- Stage boundary.
- Lot boundary.
- Asphalt shared path.
- Concrete path junctions.
- Self-binding gravel path.
- Timber decking.
- Cultural sculptural marker.
- Timber bench.
- Stone gabion retaining wall.
- Sculptural timber fence.

- Grassed areas
- Amenity planting.
- Street planting.
- Upper dry riparian planting.
- Temporary inundation/ littoral edge riparian planting.
- Shallow and deep-water marsh.
- Flow control weirs.
- Outflow structure.
- Rock-lined open channel.



NCC APPENDIX 14 - RELEVANT CLAUSES

AP14.2 information requirements

AP14.2.i b) design description:

AP14.2.2 Design Description: Subdivision and Development Plan

movement network - AP14.2.2.ii - a, b, c, d, e

streetscape and open space design - AP14.2.2.iv - a

AP14.2.3 Design Statement - AP14.2.3.i, AP14.2.3.ii, AP14.2.3.iii, AP14.2.3.iv

AP14.3 Indicators of Quality Design


AP14.3.1 movement network - AP14.3.ii - 1, 2,3,4


AP14.3.4 streetscape and open space design - AP14.3.4.ii- 1, 2, 4


Streetscape Part 1


- ① Intersection low street planting.
- ② Reserve entrance.
- ③ Arvida village access.
- ④ Shared path street crossing.
- ⑤ Roadside overland flow path.


Legend


 Balustrade.


 Boulders.


 Stage boundary.


 Lot boundary.


 Asphalt shared path.


 Concrete path junctions.


 Self-binding gravel path.


 Timber decking.


 Cultural sculptural marker.


 Timber bench.


 Stone gabion retaining wall.


 Sculptural timber fence.


 Grassed areas


 Amenity planting.


 Street planting.


 Upper dry riparian planting.


 Temporary inundation/ littoral edge riparian planting.

 Shallow and deep-water marsh.

 Flow control weirs.

 Outflow structure.

 Rock-lined open channel.

 NORTH

Scale 1:1500 @A3



Streetscape Part 2

- ① Intersection low street planting.
- ② Reserve entrance.
- ③ Arvida village access.
- ④ Shared path street crossing.
- ⑤ Roadside overland flow path.

- Legend
- Balustrade.
 - Boulders.
 - Stage boundary.
 - Lot boundary.
 - Asphalt shared path.
 - Concrete path junctions.
 - Self-binding gravel path.
 - Timber decking.
 - Cultural sculptural marker.
 - Timber bench.
 - Stone gabion retaining wall.
 - Sculptural timber fence.
 - Grassed areas
 - Amenity planting.
 - Street planting.
 - Upper dry riparian planting.
 - Temporary inundation/ littoral edge riparian planting.
 - Shallow and deep-water marsh.
 - Flow control weirs.
 - Outflow structure.
 - Rock-lined open channel.




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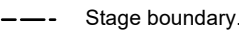
Streetscape Part 3

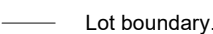
- ① Intersection low street planting.
- ② Reserve entrance.
- ③ Raised planted roundabout.
- ④ Shared path street crossing.
- ⑤ Development water tank access.
- ⑥ Arvida village access.

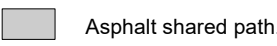
Legend


 Balustrade.


 Boulders.


 Stage boundary.


 Lot boundary.


 Asphalt shared path.


 Concrete path junctions.


 Self-binding gravel path.


 Timber decking.


 Cultural sculptural marker.


 Timber bench.


 Stone gabion retaining wall.


 Sculptural timber fence.


 Grassed areas


 Amenity planting.


 Street planting.


 Upper dry riparian planting.

 Temporary inundation/ littoral edge riparian planting.

 Shallow and deep-water marsh.

 Flow control weirs.

 Outflow structure.

 Rock-lined open channel.
























Scale 1:1500 @A3



Streetscape Part 4

- ① Intersection low street planting.
- ② Reserve entrance.
- ③ Arvida Village exit only.
- ④ Shared path street crossing.
- ⑤ Roadside overland flow path.
- ⑥ Development entrance.

Legend

- | | |
|---|--|
|  | Balustrade. |
|  | Boulders. |
|  | Stage boundary. |
|  | Lot boundary. |
|  | Asphalt shared path. |
|  | Concrete path junctions. |
|  | Self-binding gravel path. |
|  | Timber decking. |
|  | Cultural sculptural marker. |
|  | Timber bench. |
|  | Stone gabion retaining wall. |
|  | Sculptural timber fence. |
|  | Grassed areas |
|  | Amenity planting. |
|  | Street planting. |
|  | Upper dry riparian planting. |
|  | Temporary inundation/ littoral edge riparian planting. |
|  | Shallow and deep-water marsh. |
|  | Flow control weirs. |
|  | Outflow structure. |
|  | Rock-lined open channel. |

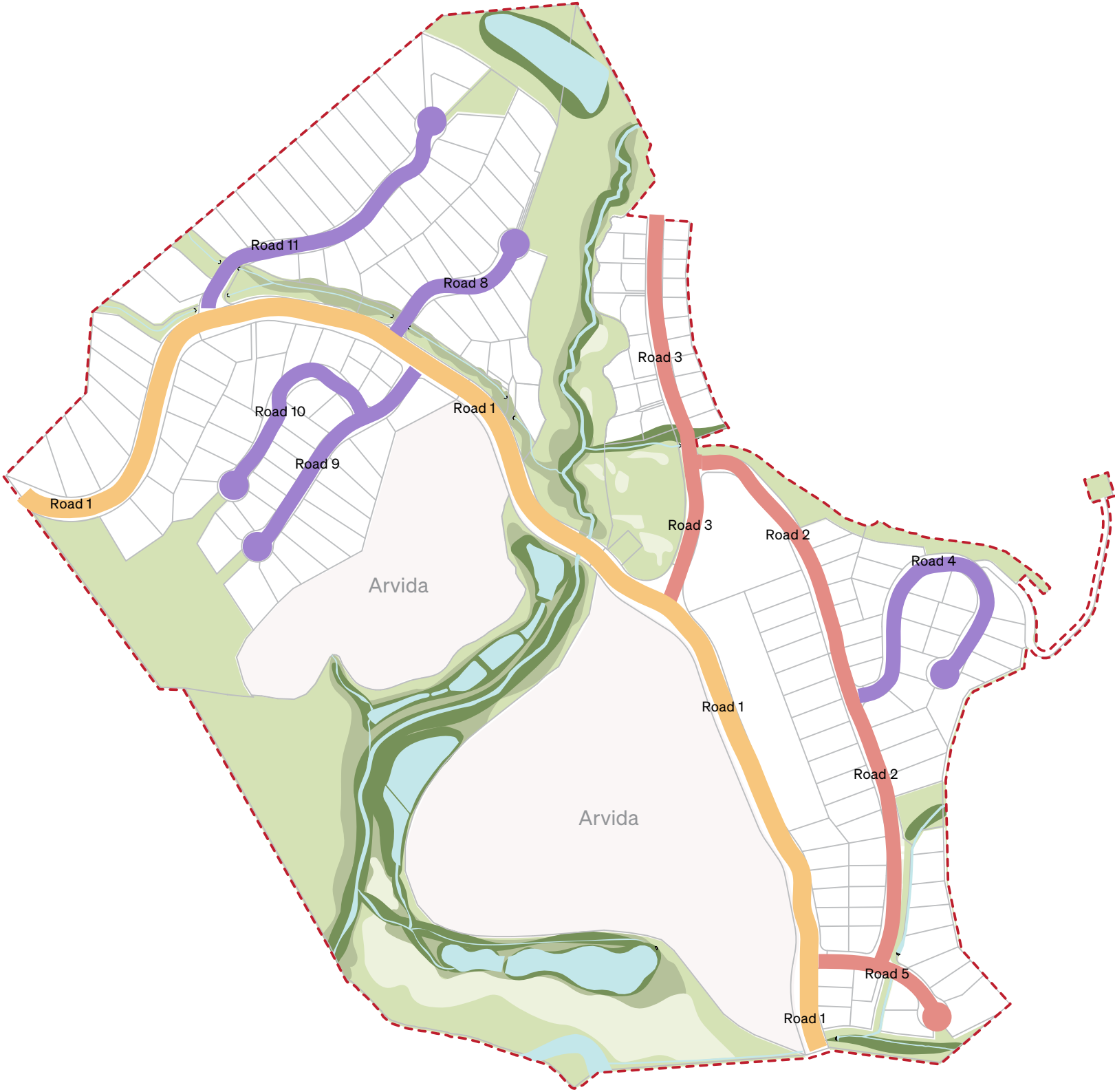


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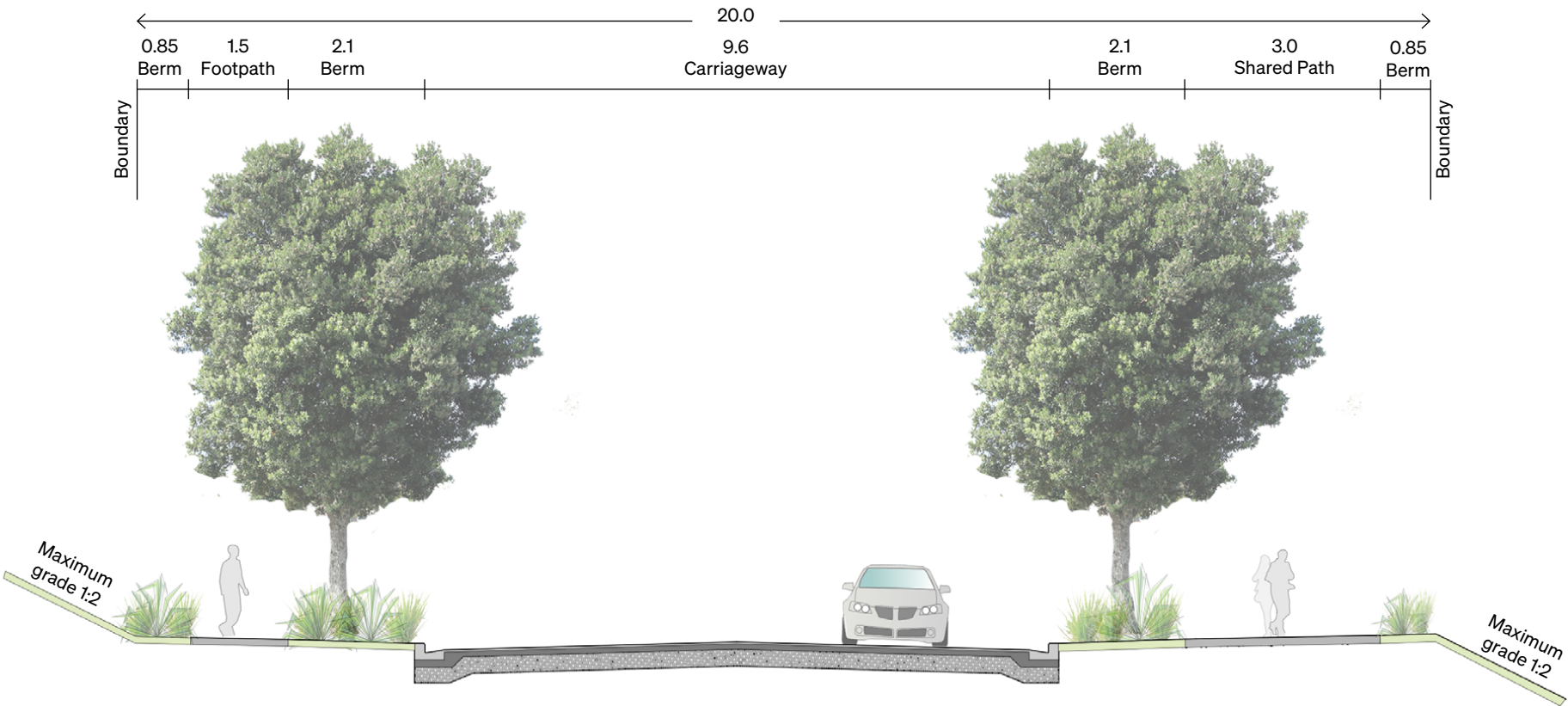
Street Tree Strategy

Legend			
<div></div>	20M WIDE COLLECTOR ROAD	Alectryon excelsus - Titoki (8×5m @10 Yrs)	Primary Street tree
	Road 1	Metrosideros 'Maungapiko' - Southern Rata Hybrid (5×3m @10 Yrs)	Secondary Street tree planted in clusters of three
<div></div>	14M/13M INTERIM COLLECTOR ROAD	Beilschmiedia tawa (6×4m @10 Yrs)	Primary Street tree
	Roads 2, 3,5	Plagianthus regius - Lowland Ribbonwood (5×3m @10 Yrs)	Secondary Street tree planted in clusters of three
<div></div>	13M COMMUNITY ROAD	Sophora microphylla - Kowhai (6×5m @10 Yrs)	Street tree clusters including all species tree planted in clusters of three
	Roads 4, 8-11	Pseudopanax crassifolius- Lancewood (4×2m @10 Yrs)	
		Hoheria angustifolia (6×3m @10 Yrs)	

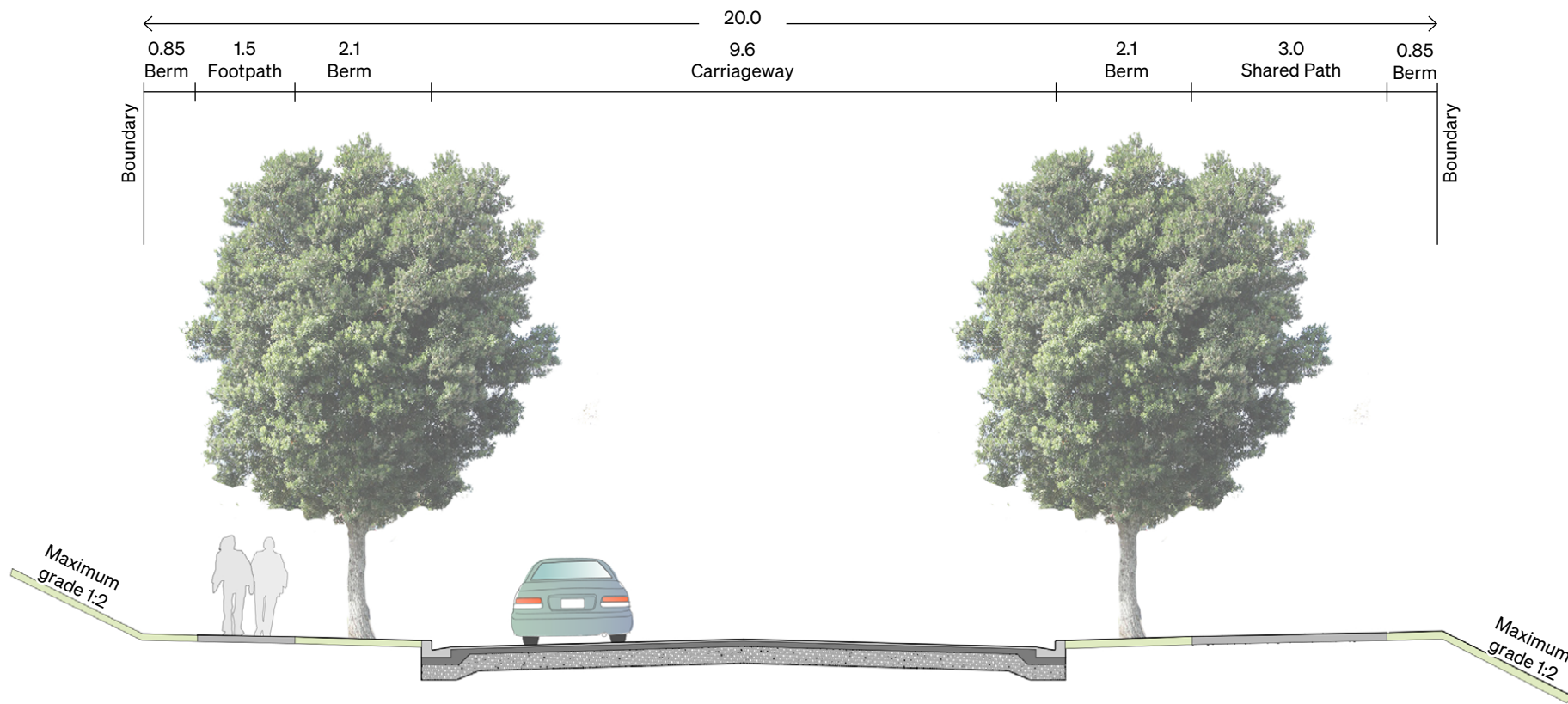


Street Typologies

* Tree locations will be impacted by lighting design and will be finalised at detailed design stage.



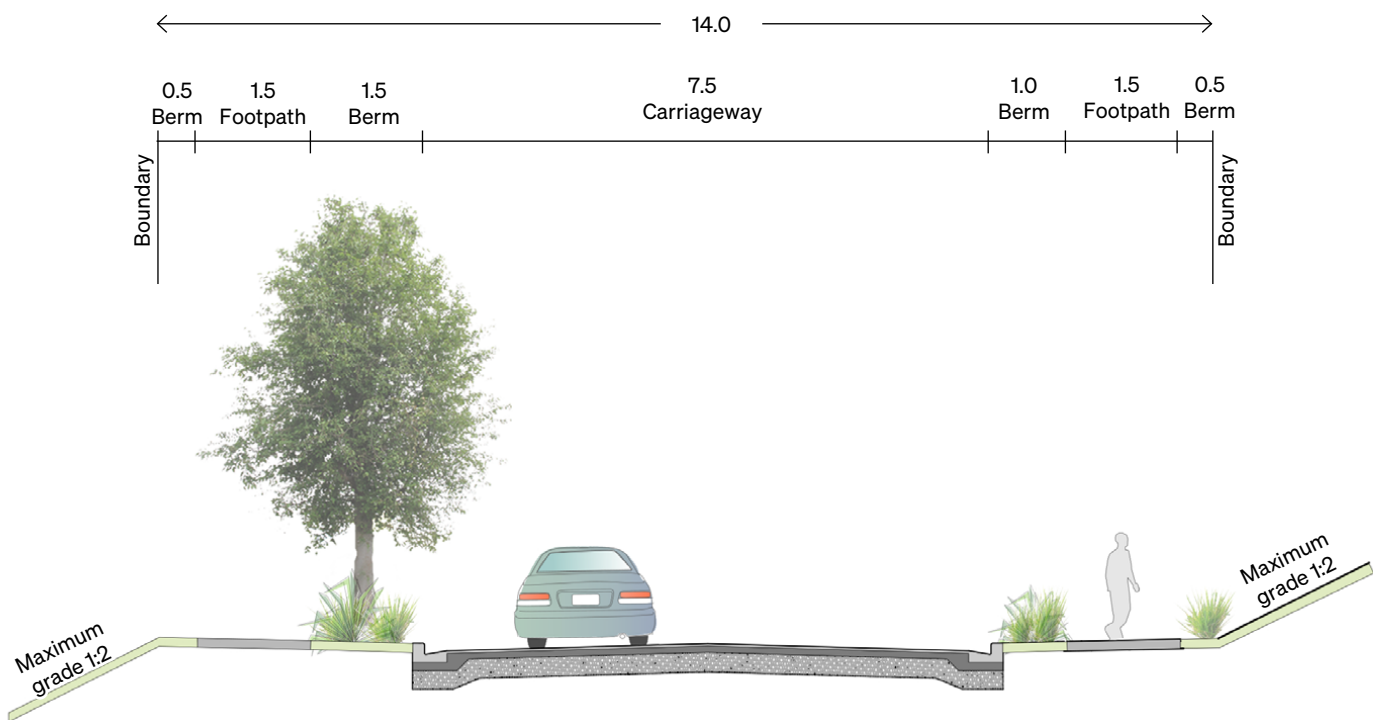
20m Wide Collector Road Planted Intersection Typical Cross Section - Road 1
Scale 1:100 @ A3



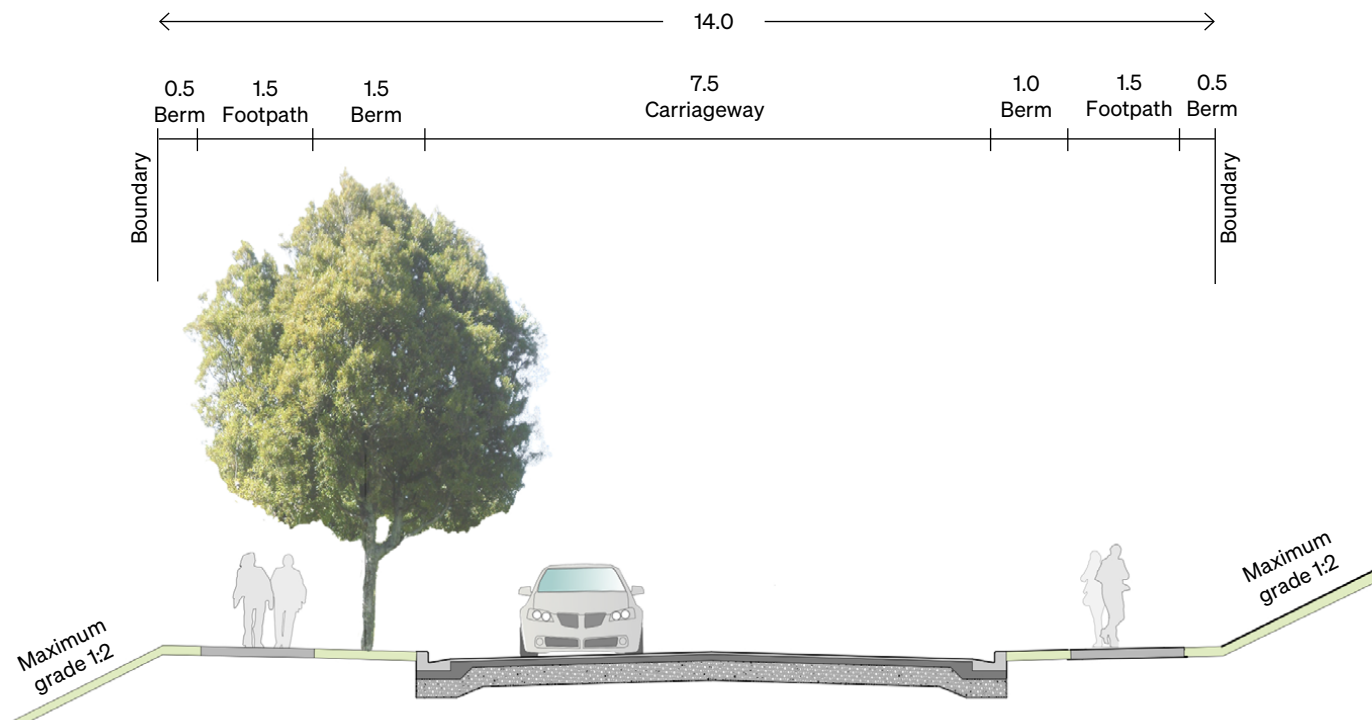
20m Wide Collector Road Typical Cross Section - Road 1
Scale 1:100 @ A3

Street Typologies - Continued

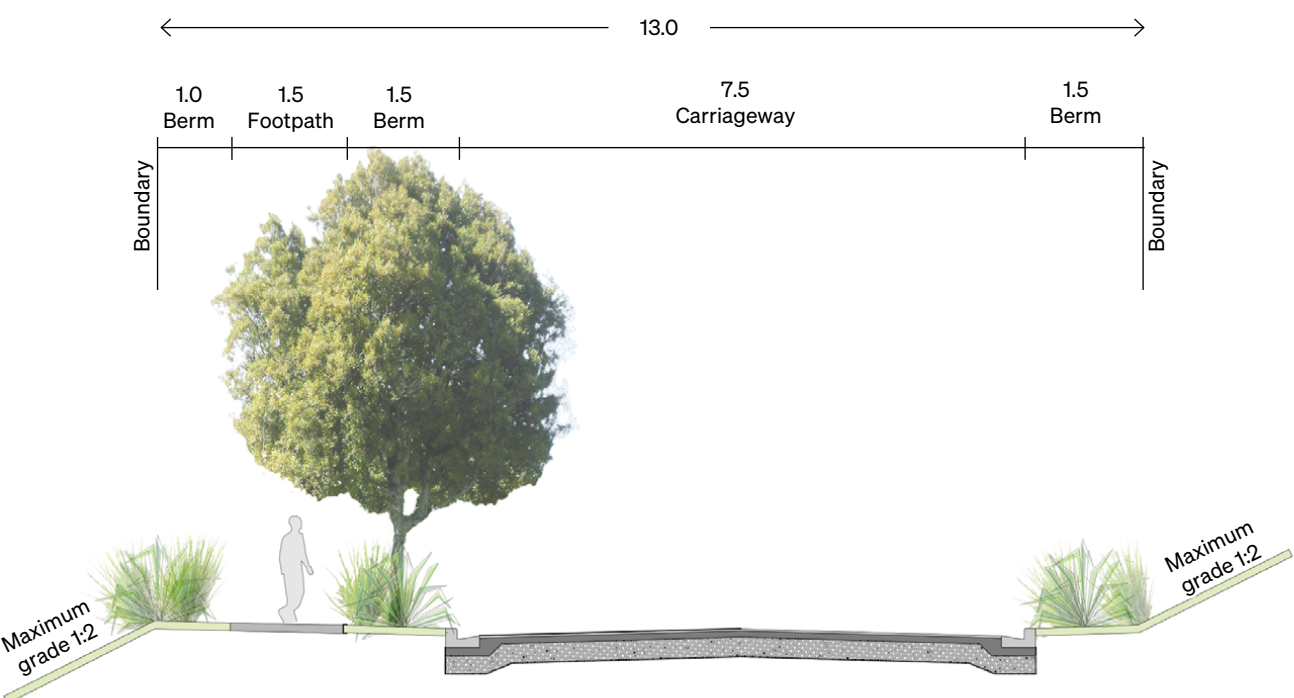
* Tree locations will be impacted by lighting design and will be finalised at detailed design stage.



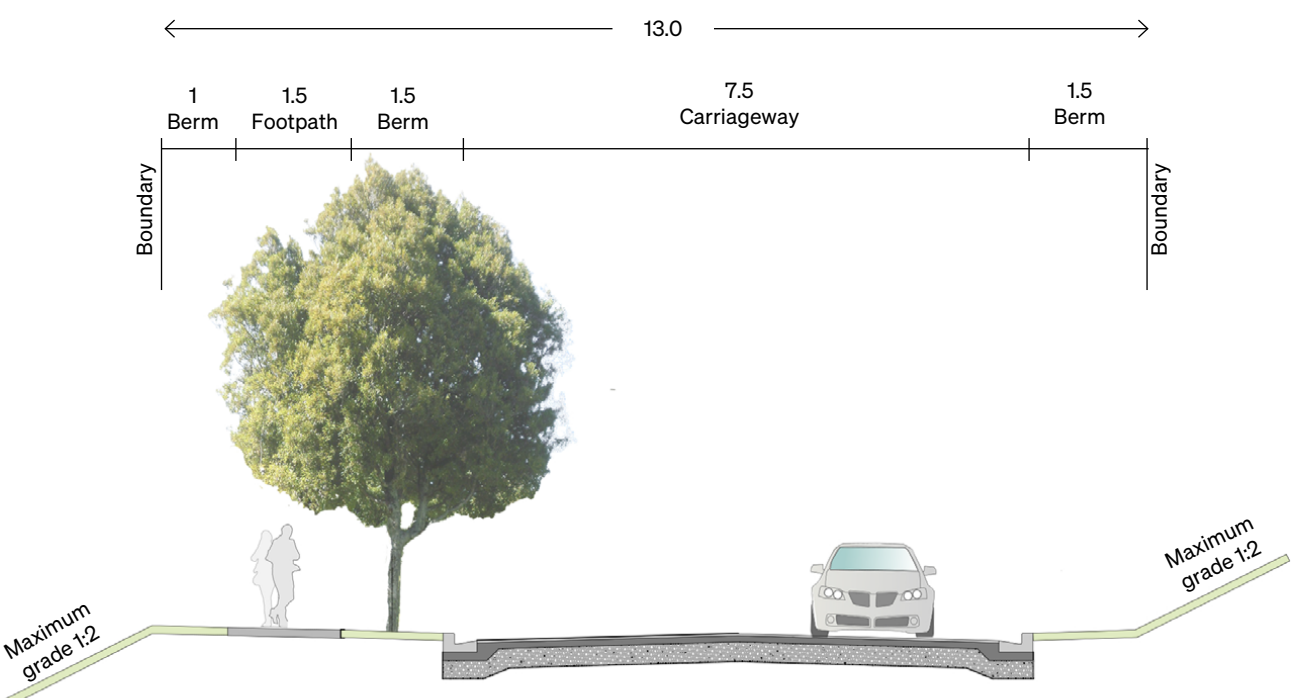
14m Interim Collector Road Planted Intersection Typical Cross Section - Road 3
Scale 1:100 @ A3



14m Interim Collector Road Typical Cross Section - Road 3.
Scale 1:100 @ A3



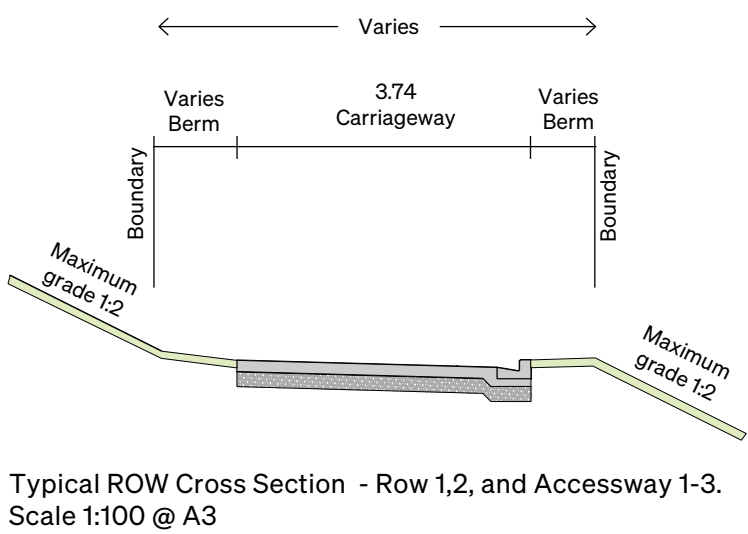
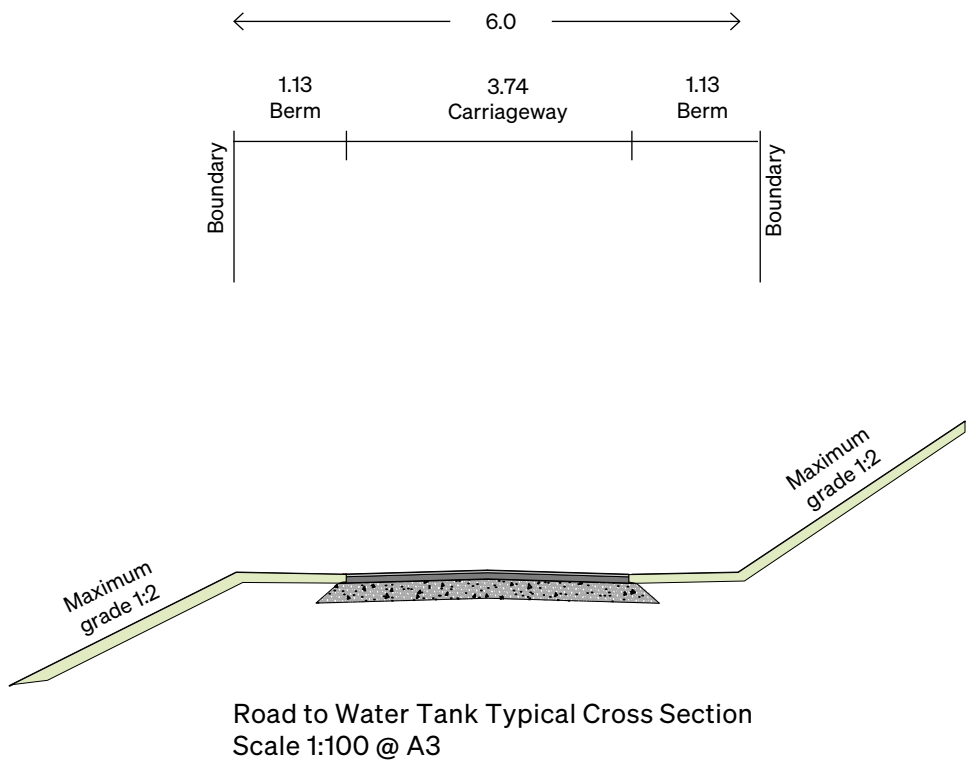
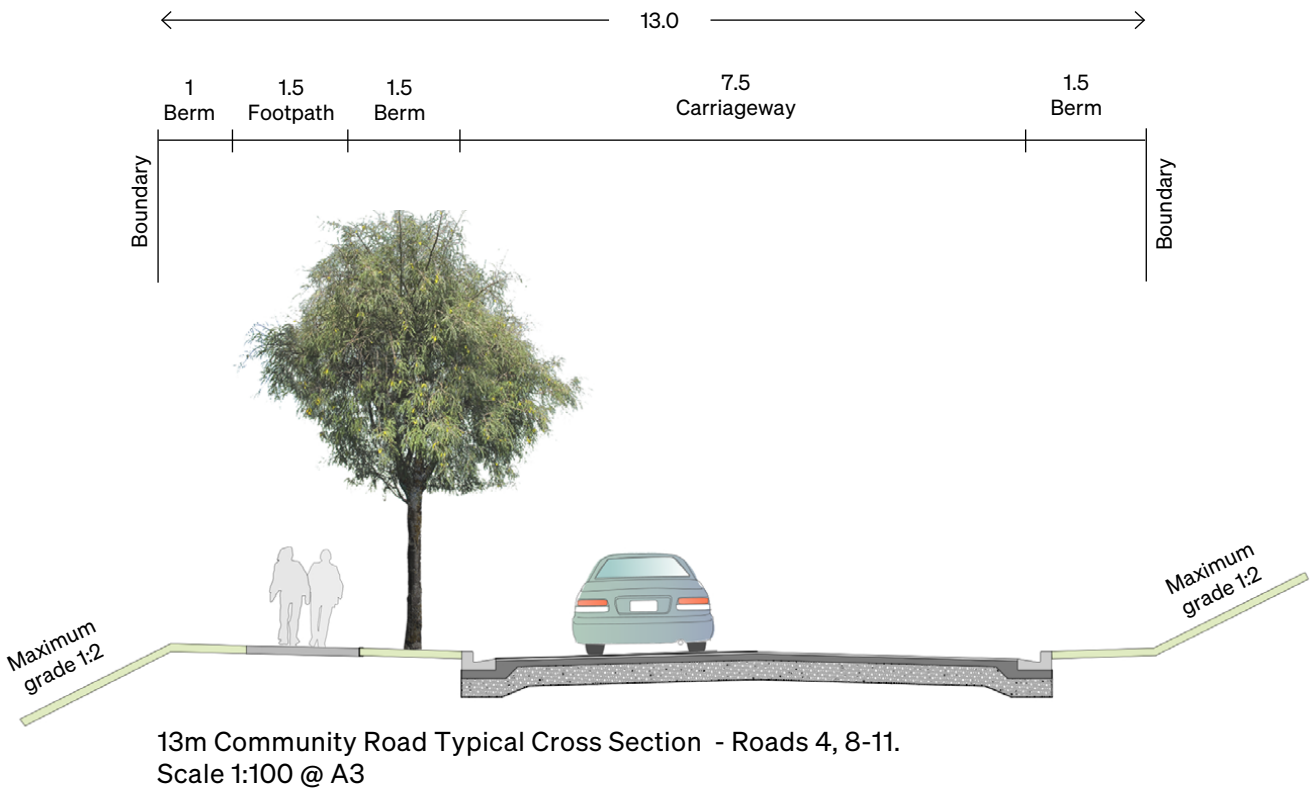
13m Interim Collector Road Planted Intersection Typical Cross Section - Roads 2 and 5.
Scale 1:100 @ A3



13m Interim Collector Road Typical Cross Section - Roads 2 and 5.
Scale 1:100 @ A3

Street Typologies - Continued

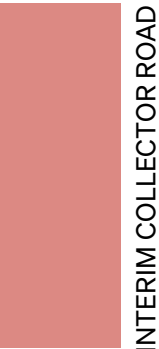
* Tree locations will be impacted by lighting design and will be finalised at detailed design stage.



Street Tree Plant Palette

A variety of suitable locally found native tree species have been combined to create a hardy street tree palette for the development. The trees selected will provide both a local feel in conjunction with seasonal change and shade.

We propose using medium sized tree species in conjunction with root barriers within the road reserves that have 1.5m wide berms.



INTERIM COLLECTOR ROAD



Beilschmiedia tawa
(6×4m @10 Yrs)



Plagianthus regius
(5×3m @10 Yrs)



WIDE COLLECTOR ROAD



Alectryon excelsus
(8×5m @10 Yrs)



Metrosideros 'Maungapiko'
- Southern Rata Hybrid
(5×3m @10 Yrs)



COMMUNITY ROAD



Sophora microphylla
(6×5m @10 Yrs)



Pseudopanax crassifolius
(4×2m @10 Yrs)



Hoheria angustifolia
(6×3m @10 Yrs)

Intersection Plant Palette



Coprosma acerosa 'Red Rocks'
groundcover coprosma



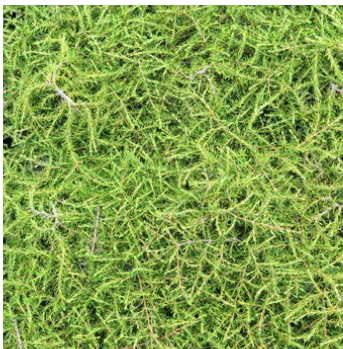
Sophora prostrata 'Little Twister'
columnar dwarf kōwhai



Hebe albicans
Mt Arthur hebe



Parahebe 'Snowcap'
white hebe



Coprosma acerosa 'Hawera'
groundcover coprosma



Phormium 'Black Pepe'
ornamental flax



Carex testacea
orange sedge



Muehlenbeckia axillaris
creeping wire vine



Phormium 'Tom Thumb'
ornamental flax

ROUGH MILNE MITCHELL
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