Subdivision Guidelines

Part 2

Contents **Page**

2.1 Development Structure

Aim

To achieve subdivision design and individual site development that reinforces and supports the overall vision for the Zone.

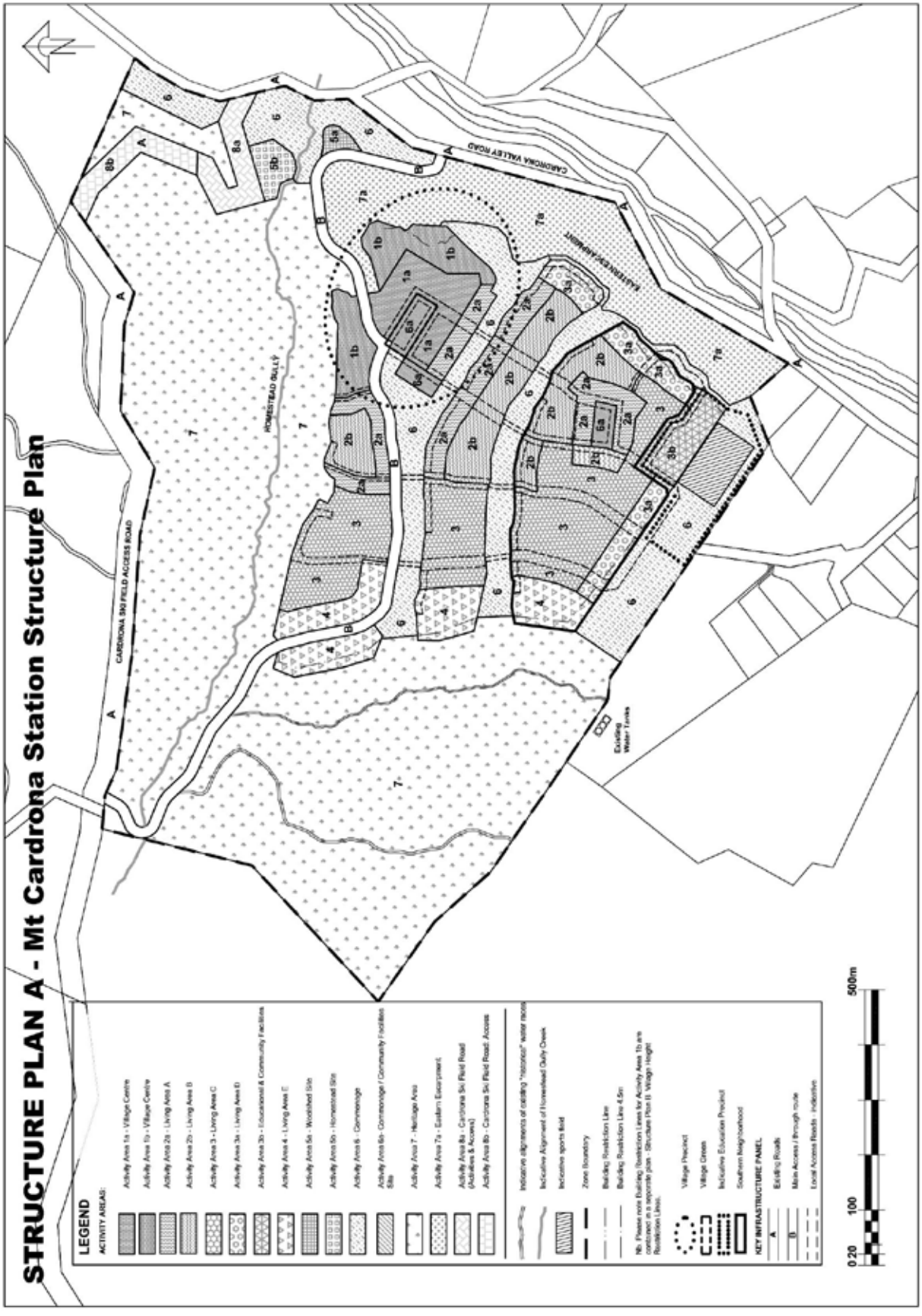
Guidelines

- Provide a mix of activities and intensity, with the highest intensity at the Village Centre and dispersing towards the periphery.
- Subdivision design and assessment build on the overall concept for the Zone, as illustrated in the master plan (below).
- Development should be staged to retain on-site amenity and a mix of uses as development progresses.
- Subdivision design should be influenced by the landform and vegetation to ensure minimal disturbance.

Master Plan

Controls

All subdivision must be in general accordance with the following structure plan:



Mount Cardrona Station
Design Guidelines

Subdivision Guidelines

Part 2

2-4

2011

QUEENSTOWN LAKES DISTRICT COUNCIL

MT CARDRONA STATION

2.2 Road Design

Including Footpaths, Street Furniture and Heritage Items

Aim

To create an interconnected street network that:

- Is easy to find your way around;
- Is safe and comfortable for different users (pedestrians, cyclists and vehicles);
- Responds to local topographical features;
- Reflects Cardrona's local character, avoiding the appearance of an urban environment;
- Reduces stormwater overflow.

Guidelines

Local Roads:

- No kerb and channelling
- Minimum width
- Chip seal
- Edges gently graded with grass swales and rocks

Roads extending through open space zones:

- Minimum width
- No kerb and channelling
- Provision for overland flow paths using either fords or rustic wooden bridges
- Landscaping comprising grey shrublands, grass swales and tussock

Village Centre:

- Schist kerb and channel
- Use of rock walls for fences
- Larger specimen trees
- Chip seal
- Minimum road width

Pedestrian access:

- Chip seal and gravel
- Pedestrian bridges rustic, using materials such as recycled timber.

Controls

The road layout will be provided in general accordance with the Mount Cardrona Station Structure Plan and the Roading Schedule provided on page 2-4 of these guidelines. The Roading Plan provided on page 2-4 illustrates where within the Zone the different road types identified in the Roading Schedule may be located, and cross sections of the various road types are provided on page 2-5.

Subdivision Guidelines

Roading Plan

Roading Schedule

Road type	A	B	C	D1 / D2	E	F	H
Road width (meters)	20m	20m	20m (to suit cut batter)	18	16-20m	10m	6m
Carriage way width (meters)	6.5m (meanders)	6.5m (meanders)	6.5m (meanders)	7m	5.5m	4.5m (with passing bays)	3.5m
Seal type	Chipseal (ashalt at intersections)	Chipseal (unsealed shoulder)	Chipseal	Ashalt	Chipseal (ashalt at intersections)	Chipseal	Chipseal
Parking	one side (2.5m wide)	none	none	both sides (2.5m)	one side (varies from side to side)	none	none
Footpath	1.4m (one side) (meanders)	none	none	2.2m (both sides)	2.0m (one side)	2.2m (one side)	none
Swale	grass swales (both sides)	grass swales (both sides)	stone lined (one side)	none	grass swales (both sides)	nil	stone lined (one side)
Kerb & Channel	n/a	n/a	schist k & c (both sides)	n/a	n/a	n/a	n/a
Lighting	bollards	bollards	bollards (flag pole light at intersection)	pole lights	bollards	bollards	bollards
Streetsigns	on walls/ fences	on walls/ fences	on walls/ fences	on walls/ fences	on walls/ fences	on walls/ fences	on walls/ fences

Typical Cross Sections of Roads at Mount Cardrona Station

Road A

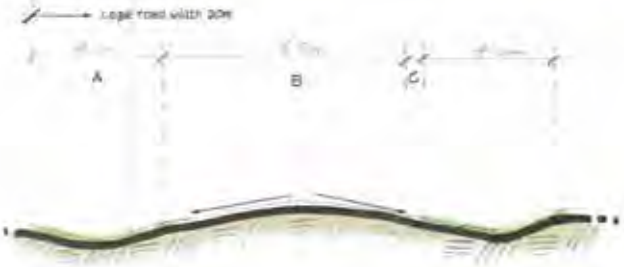
A - Footpath one side

B - Swale with grasses with flush nib concrete kerb

C - Chipseal road

D - Car Park

Road B

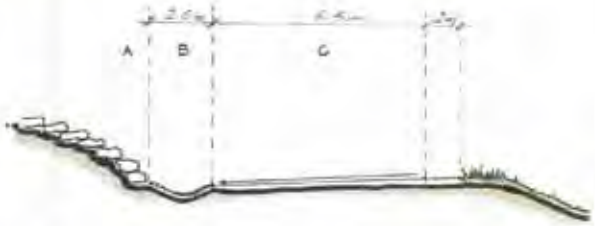


A - Grass swale

B - Chipseal road

C - Chip unsealed shoulder

Road C
Entry

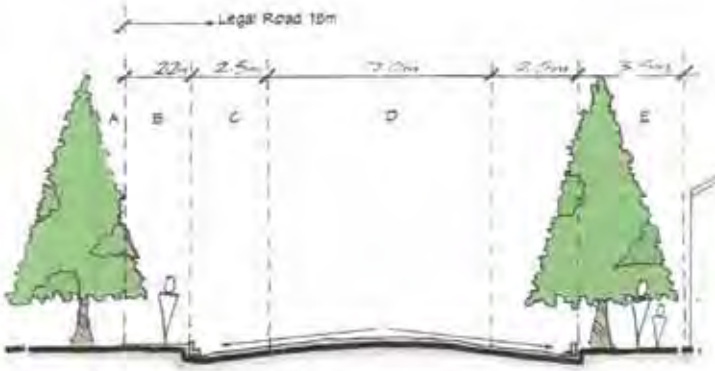


A - Stacked schist wall (machined)

B - River washed boulder swale

C - Chipseal road single crossfall

Urban Space D1



A - Central Square

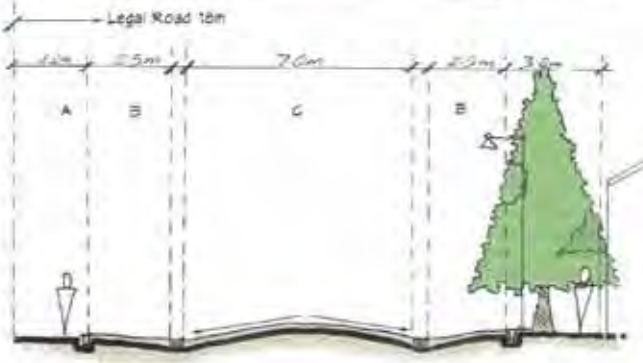
B - Footpath by square

C - Schist kerb

D - Road

E - Footpath next to shop front (setback may vary)

Urban Space D2



A - Footpath

B - Car park

C - Road with schist channel

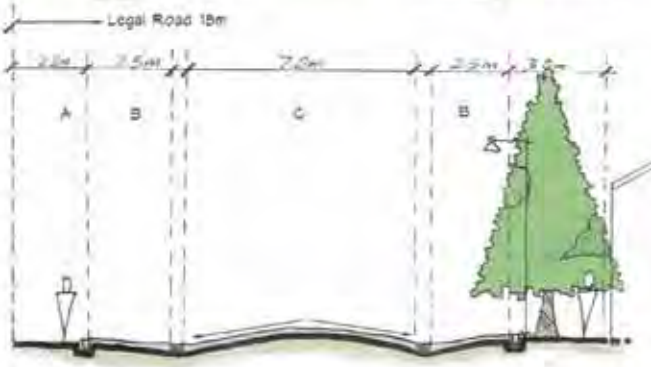
D - Car park

E - Footpath next to shop front

Urban Space D1

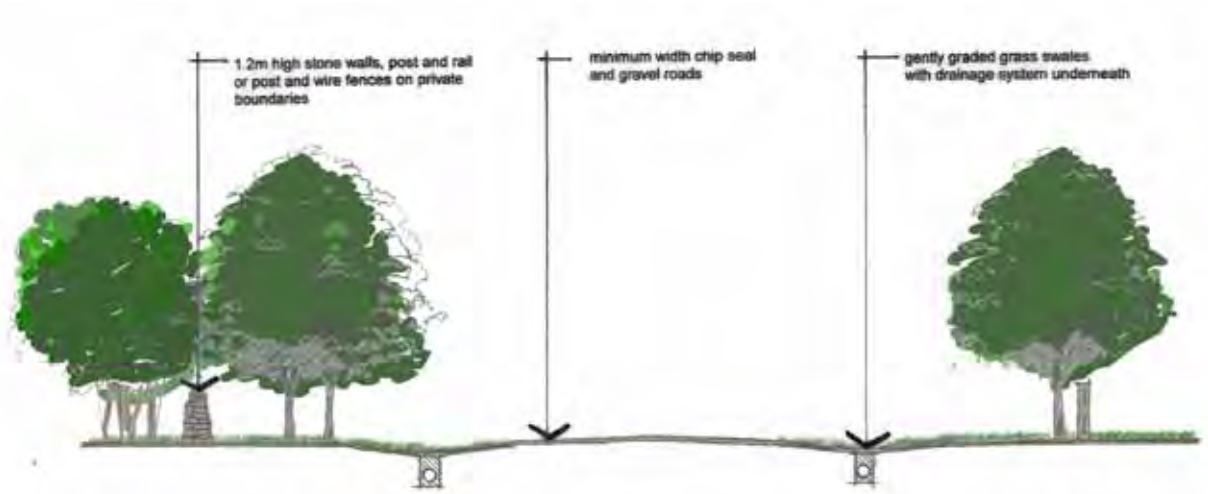
A - Central Square
B - Footpath by square
C - Schist kerb
D - Road
E - Footpath next to shop Front (setback may vary)

Urban Space D2

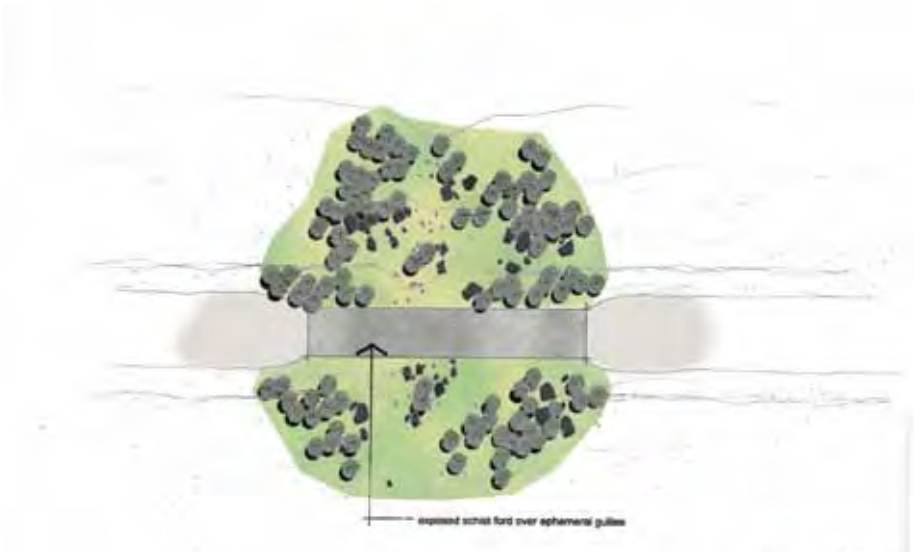


A - Footpath
B - Car park
C - Road with schist channel
D - Car park
E - Footpath next to shop front

Suggested road treatment



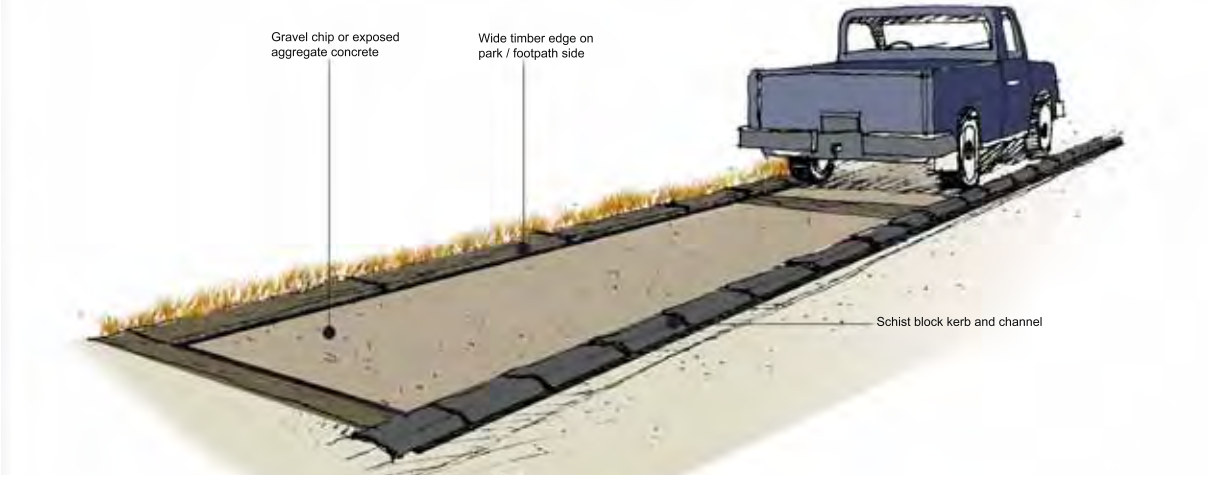
Roads extending through open space fingers



exposed schist ford over ephermeral gullies

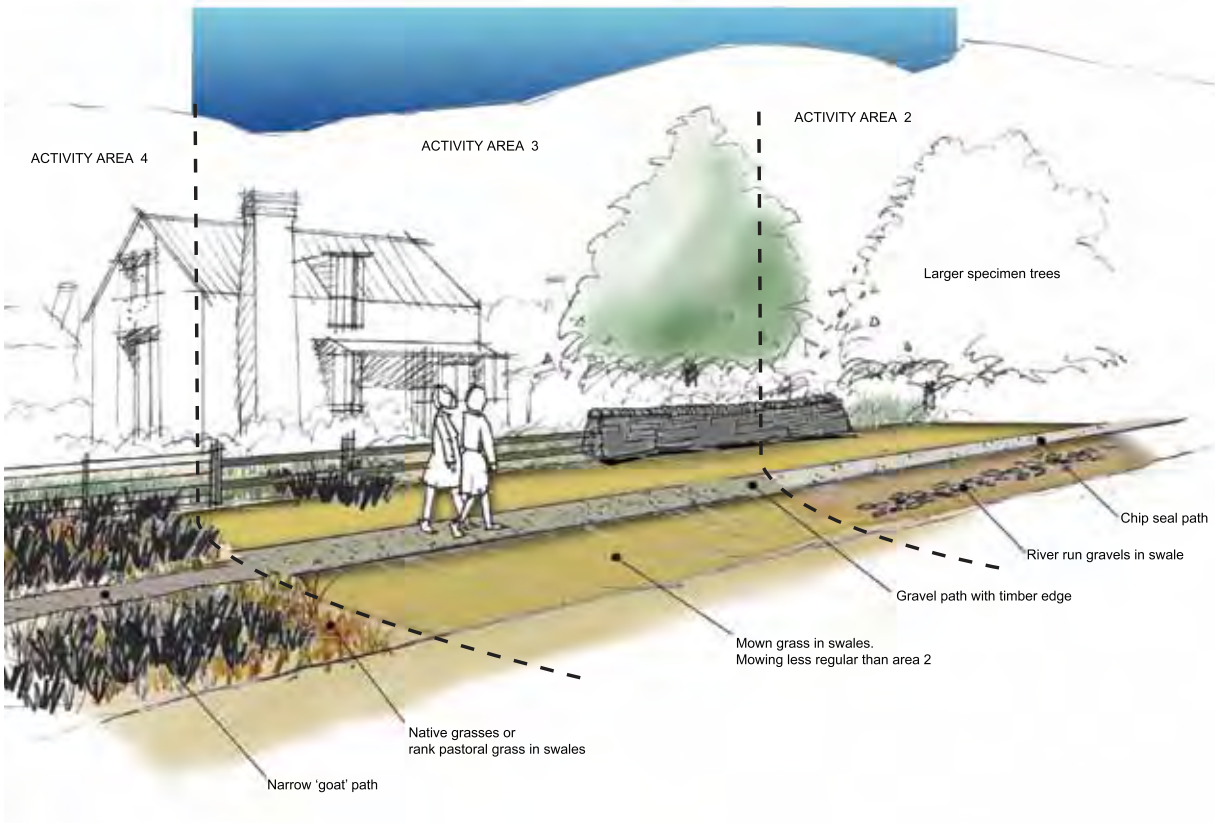
Landscaping and road design within the Village Centre

Village Centre Carparks



Footpaths

The following illustration depicts the different treatment of footpaths recommended for each Activity Area, reflecting the different characteristics of each area, and their distance from the Village Centre.

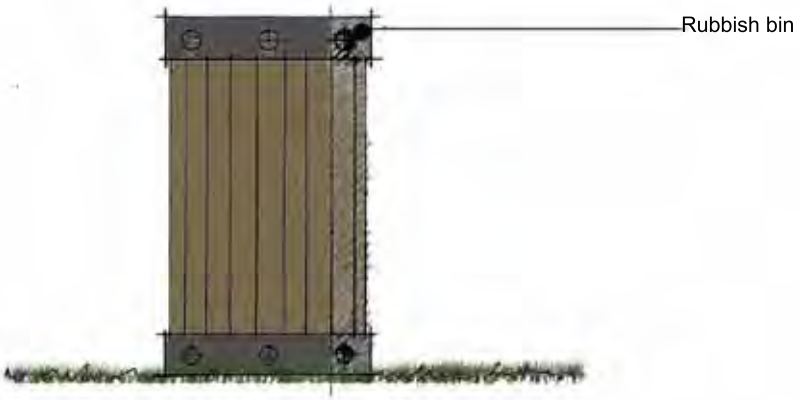


Suggested bridge design over historic water races (Area 7)

Street Furniture

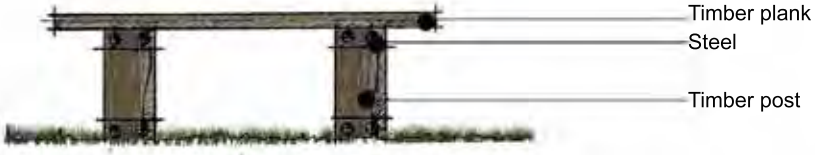
Should be of a consistent theme:

- Rustic;
- Rural character;
- Natural materials;
- Becoming more informal with increased distance from the Village Centre.

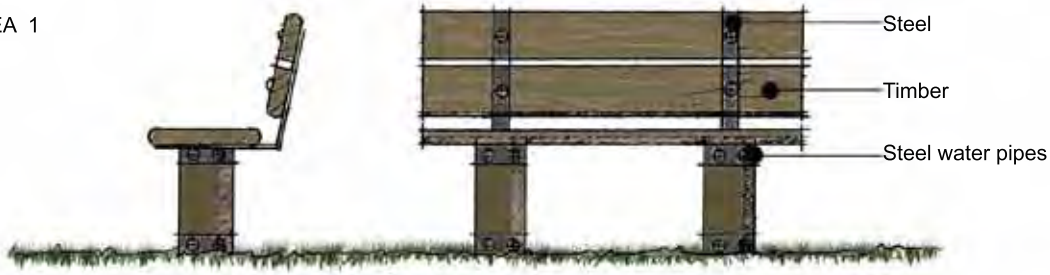


ACTIVITY AREA 7

ACTIVITY AREA 2 & 3



ACTIVITY AREA 1



2.3 Parking and Access

Aim

To achieve a parking system that provides safe, efficient and convenient access while retaining visual amenity, character and the amenity of pedestrian environments.

Guidelines

- Avoid locating parking areas at the front of sites.
- Where possible use rear access lanes, which are a useful means of locating parking and servicing areas to the rear of buildings.
- Within the Village Precinct, encourage provision of comprehensive underground parking.
- Within Activity Areas 3 and 4 use farm yard parking that provide parking for a number of dwellings.
- Design farm yard car parks so that they relate directly to the dwelling they serve, and are overlooked by that dwelling.
- Where possible locate vehicle entries away from pedestrian entries.
- Avoid locating garages where they overlook the street.
- Where significant earthworks are required to accommodate underground parking, the reinstated ground level should respond to surrounding landforms.

Farmyard Carpark

An area providing parking for adjacent residential units and secondary units (below).

Example locations of Farmyard Carparks

2.4 Lighting

Aim

Street lighting is provided throughout the Zone that ensures pedestrian and vehicular safety, while maintaining the values associated with the rural location and views of the night sky.

Guidelines

Street lighting is only provided when required as subdivision and development progresses.

All street lighting shall be in accordance with the Council's Lighting Strategy entitled 'Southern Lights'.

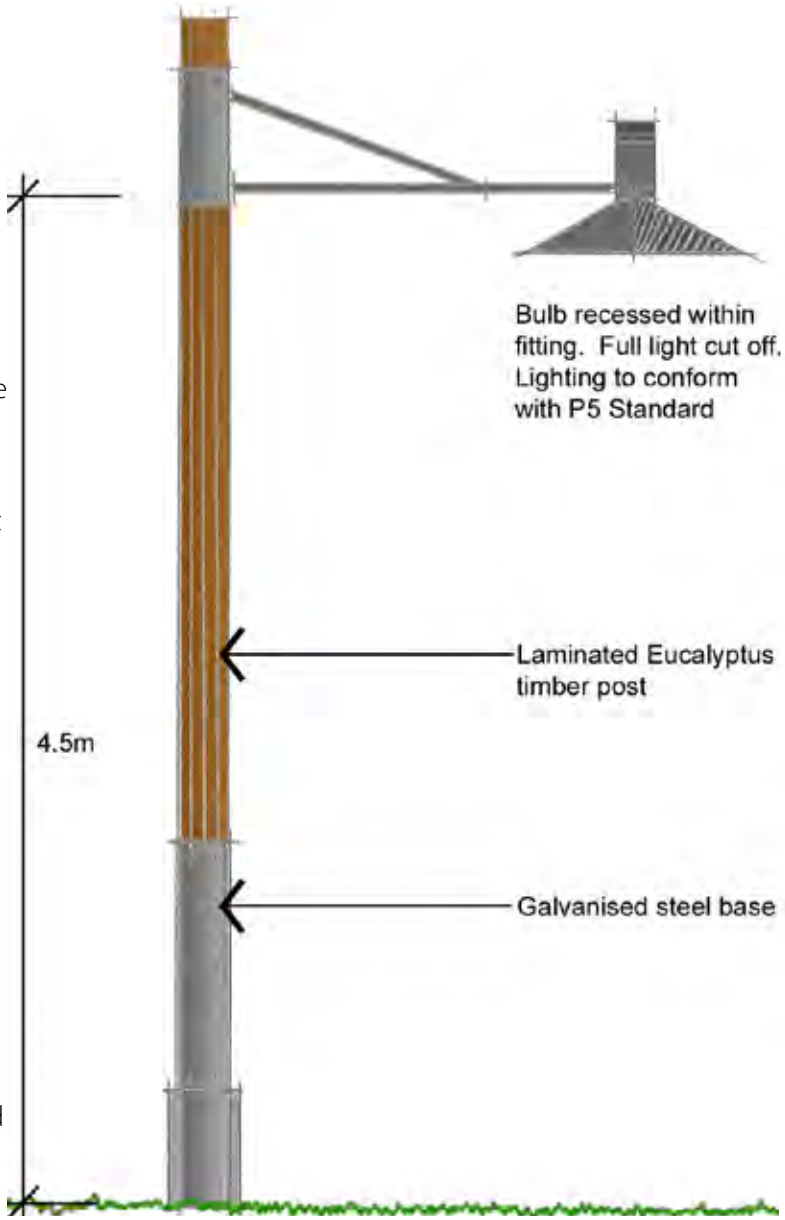
All lighting shall provide adequate light to ensure pedestrian safety, but shall be low level and of a consistent design and finish, and shall minimise light pollution.

Design cues for lighting have been taken from the past mining and farming activities.

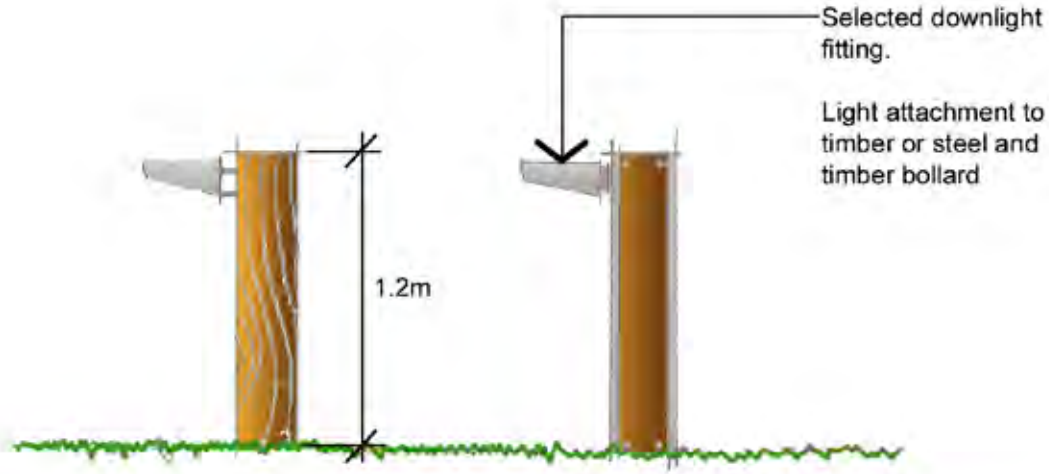
Two lighting designs will be used:

- Village Precinct and Area 2: 1m high bollards using recycled water pipes with a light inset, and lamp posts where required, in accordance with the illustration.
- Residential: 1m high bollards using recycled timber with steel straps and light inset.

Residential Lighting



Village Centre and Area 2 Lighting



2.5 Open Space Network

Aim

To ensure an interconnected network of open space that reinforces the overall urban structure and:

- Reinforces the landform patterns;
- Makes visual and physical connections to the wider landscape setting;
- Provides a focus for the local community;
- Is safe and comfortable for users;
- Meets active and passive recreational needs;
- Reinforces the existing character of the area.

Guidelines

- A village green should be provided at the Village Centre that is surrounded by active street level retail;
- Locate higher intensity residential activity adjacent to open spaces;
- Provide good visibility to open spaces. This can be achieved by locating street edges along the open space. This improves accessibility to the open space network and contributes to the safety of the spaces;
- Where dwellings are located adjacent to open space on their northern boundary, the dwelling should be designed so that living rooms (such as kitchens, living and dining rooms) front the open space;
- Open spaces should be located to reinforce key viewshafts to the surrounding landscape;
- Provide good linkages to a wider network of walking and bridle trails. These trails should connect to the Village Centre;
- Locate and configure open space to maximize good solar access;
- Use natural variations of topography to define open space configuration and design features;
- Use natural water courses to create features within the open space network;
- Use materials such as natural stone, and design cues from past mining and farming activities to contribute to the character of the open space network.
- Provide for a variety of active and passive open space areas.

Walkway Plan

The following plan identifies key open space areas, proposed walkway linkages and proposed public access easements.

Controls

Structure Plan C identifies walkways and access easements that must be provided at time of subdivision.

2.6 Landscaping

Aim

Landscaping is a key element in establishing the overall character of the Village. At the time of subdivision, the aim is to:

- Establish landscaping that builds on the natural and heritage values of the Cardrona Valley area and contributes to the amenity and character of the Village.
- Use plant species that are native to the site or do not have high water and maintenance requirements.
- Ensure that landscape treatment between the public and private realm is consistent, avoiding a distinct demarcation between the private allotments and the public realm.

Guidelines

- Incorporate a range of sustainable features into landscape design, including use of planting as a micro-climate control (e.g. landscaping as windbreaks);
- Utilise natural drainage patterns in landscape treatment;
- Utilise simple, natural and rugged landscape treatment in overall design;
- While regular street tree planting may be appropriate within the Village Centre, toward the periphery a more irregular placement and grouping of trees in strategic locations should be utilised;
- Within Activity Area 6, tree planting should be limited to strategic clusters of trees with the majority of the area retained in tussock and brown-top grasses;
- Within Area 7 planting of street trees should be limited, with any planting focusing on grey shrublands, tussock and brown-top grasses.

Schedule 1 identifies the plant species that are permitted within each Activity Area. Landscaping associated with subdivision or with any building will be assessed by the Design Review Board.

The following illustrations demonstrate appropriate landscaping within the open space/public areas of the Zone.

Planting Plan

Large deciduous trees in street and private allotments. Trees in street at regular spacings. Exotic and native plants in streets and allotments. Greater percentage of exotics.

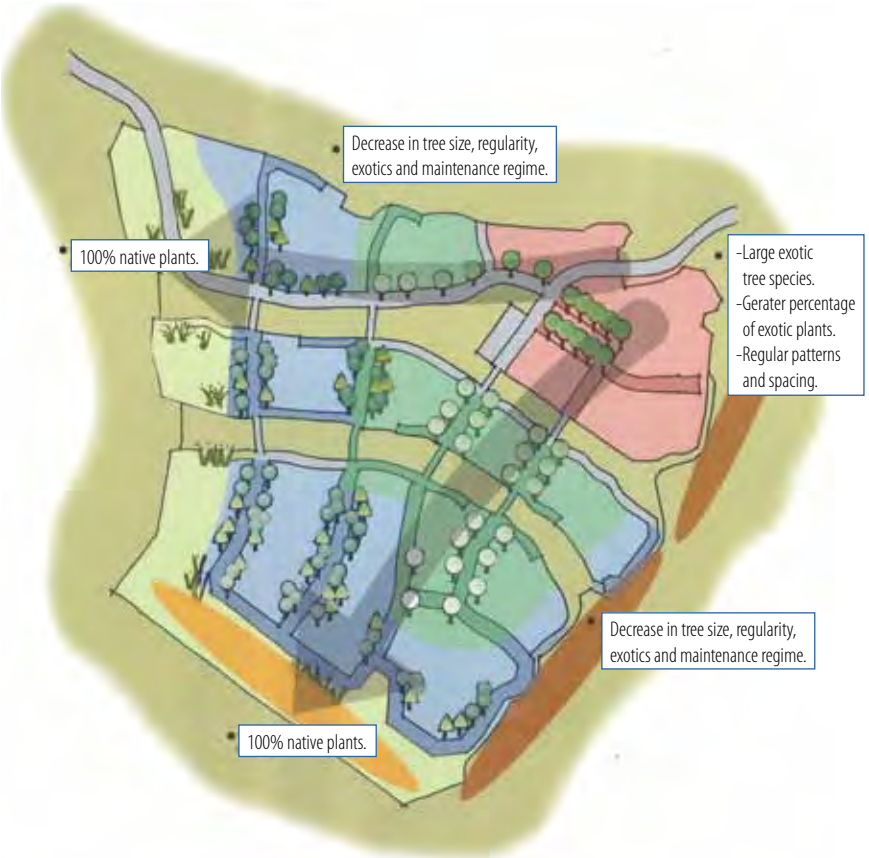
Native hedges, large to medium sized deciduous trees in streets and allotments. Maximum 2 species of trees at regular spacings in streets. Exotic and native plants in allotments.

Small to medium native and exotic deciduous and evergreen trees in streets. Maximum of 4 species in natural groupings. Native and exotic plants in allotments. Greater percentage of natives.

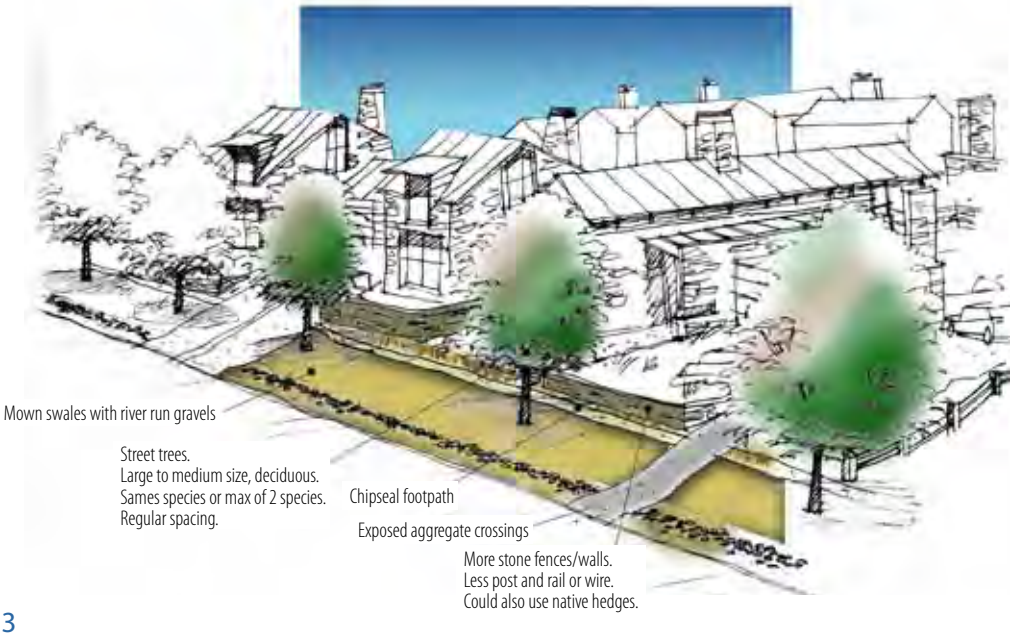
No street trees. Only native ground cover where necessary. Native trees, shurbs and ground covers in private allotments.

Natural pastural grass (not irrigated), native grasses and grey shrubland.

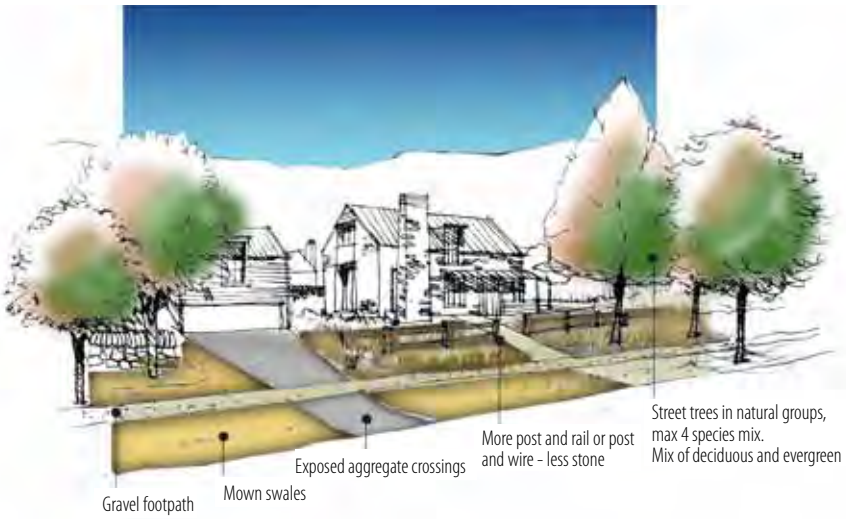
Mitigation planting.



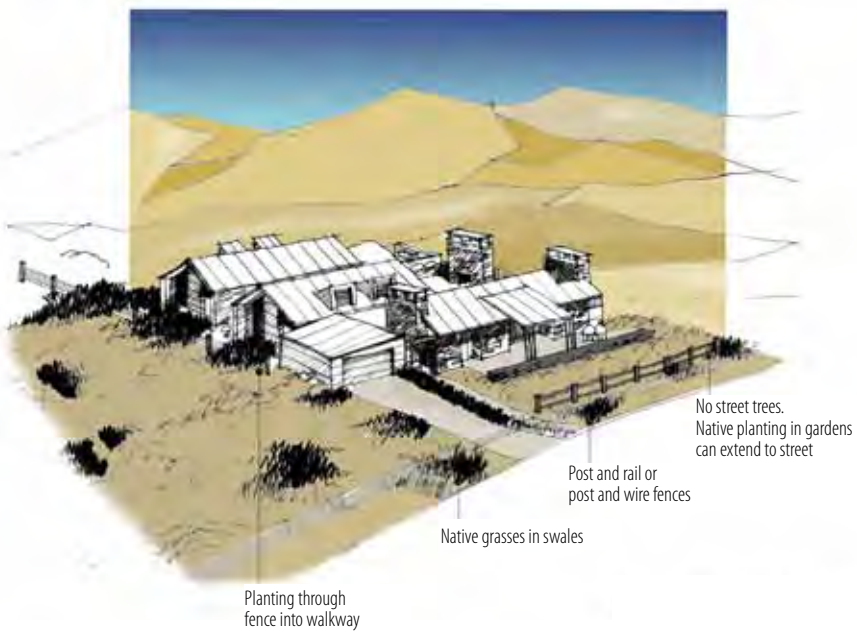
Activity Area 2



Activity Area 3



Activity Area 4



2.7 Mitigation Earthworks and Planting Plan

The following table lists the plant species that should be planted for mitigation purposes within different areas of the Zone. Please refer to Structure Plan D- Mitigation Earthworks and Planting Plan which shows the location of each of the planting areas.

Species	common name	at planting	after 2 years	year4	year6	year8	year10	mature height
AREA 1								
The Matagouri bushes on the western edge of area 1 must be retained								
BROADLEAF/GULLY PLANTING								
SPACING: allow 1-1.5m spacings								
Nothofagus solandri var cliffortioides	mountain beech	1m	3.2m	5.4m	7.6m	9.8m	12m	20m
Nothofagus menziesii	silver beech	1m	3m	5m	7m	9m	11m	22m
Podocarpus hallii	Hall's totara	0.5m	1.1m	1.7m	2.3m	2.9m	3.5m	10m
Prumnopitys taxifolius	matai	1m	1.8m	2.6m	3.4m	4.2m	5m	22m
Griselinia littoralis	broadleaf	1m	2m	3m	4m	5m	6m	12m
Aristotelia serrata	wineberry,	1m	3.4m	3.6m	4.8m	6m	7.2m	8m
Aristotelia fruticosa	mountian wineberry	0.5m	1.1m	1.7m	2.3m	2.9m	3.5m	3m
Carpodetus serratus	putaputaweta	0.5m	1.5m	2.5m	3.5m	4.5m	5.5m	6m
Corokia cotoneaster	korokia	0.5m	0.9m	1.3m	1.7m	2m	2m	2m
#Hebe salicifolia	koromiko	0.5m	1.7m	2.9m	4.1m	5.3m	6.5m	4m
Hebe cupressoides		0.5m	0.9m	1.2m	1.7m	2.1m	2.5m	4m
Hebe odora		0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Hoheria glabrata	mountain ribbonwwod	1m	2.2m	3.4m	4.6m	5.8m	7m	8m
Kunzea ericoides	kanuka	1m	1.8m	2.6m	3.4m	4.2m	5m	5m
Leptospermum scoparium	manuka	1m	1.8m	2.6m	3.4m	4.2m	5m	5m
Melicytus lanceolatus	narrow-leaved mahoe	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Olearia hectorii	rare tree daisy	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Olearia avicenniaefolia	tree daisy	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Phyllocladus alpinus	mountain toatoa	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Pittosporum tenuifolium	kohuhu	0.5m	1.7m	2.9m	4.1m	5.3m	6.5m	10m
Plagianthus regius	manatu	1m	2m	3m	4m	5m	6m	12m
Pseudopanax colensoi var. ternatus	three finger, orihou	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	5m
Pseudopanax crassifolius	lancewood, horoeka	1m	1.7m	2.4m	3.1m	3.8m	4.5m	10m
Sophora microphylla	kowhai	1m	1.7m	2.4m	3.1m	3.8m	4.5m	10m
#Phormium tenax	swamp flax	0.5m	1m	1.5m	2m	2.5m	3m	4m

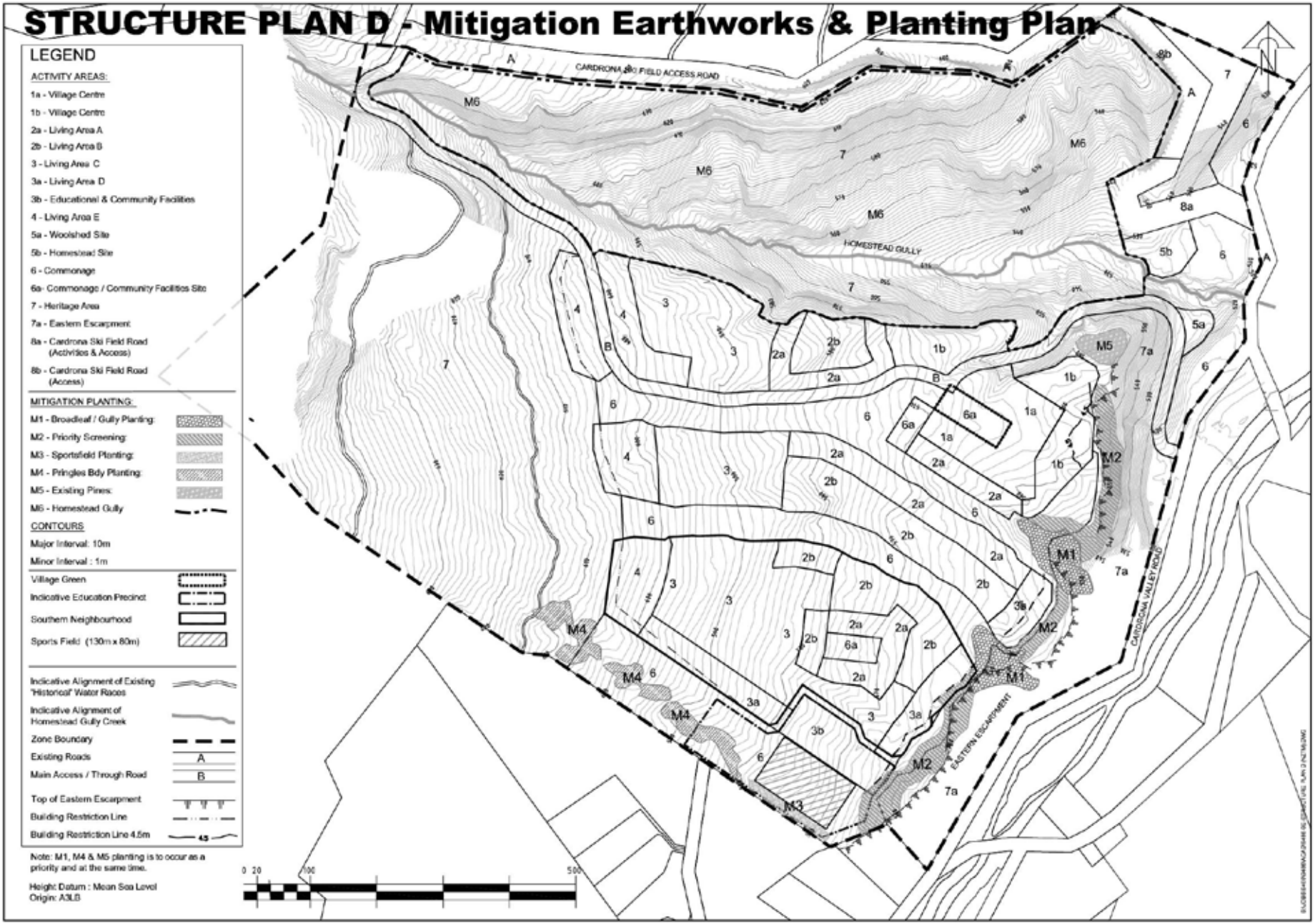
Species	common name	at planting	after 2 years	year4	year6	year8	year10	mature height
AREA 2								
GREY SHRUBLAND/BROADLEAF								
SPACING: groups of 5-8m diametre with 1-1.5m spacing within group. Plant groups lightly across escarpment 8 metres apart.								
Griselinia littoralis	broadleaf	1m	2m	3m	4m	5m	6m	12m
#Coprosma propinqua	mingimingi	0.3m	0.9m	1.3m	1.7m	2.1m	2.5m	6m
Coprosma rhamnoides		0.3m	0.5m	0.7m	0.9m	1.1m	1.3m	2m
Coprosma lucida	karamu	0.3m	0.9m	1.3m	1.7m	2.1m	2.5m	5m
Coprosma virescens		0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	3m
Coprosma rigida		0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	3m
#Coprosma rugosa		0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	3m
Coprosma linarifolia		0.3m	0.8m	1.3m	1.8m	2.3m	2.8m	8m
#Coprosma tayloriae		0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	3m
Carpodetus serratus	putaputaweta	0.5m	1.5m	2.5m	3.5m	4.5m	5.5m	6m
Dracophyllum longifolium	inaka	0.3m	0.6m	1m	1.4m	1.8m	2.2m	3m
Discaria toumatou	matagouri	0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	5m
#Hebe salicifolia	koromiko	0.3m	0.6m	1m	1.4m	1.8m	2.2m	3m
Hebe cupressoides								
Hebe odora		0.3m	0.5m	0.7m	0.9m	1m	1m	1m
Hoheria glabrata	mountain ribbonwwod							
Melicytus lanceolatus	narrow-leaved mahoe	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Myrsine australis	mapou, red matipo	0.3m	0.5m	0.7m	0.9m	1.1m	1.3m	1.5m
Muehlenbeckia complexa		0.3m	0.6m	1m	1.4m	1.8m	2.2m	2m
Olearia arborescens	tree daisy	0.3m	1.1m	1.9m	2.7m	3.5m	4m	4m
Olearia hectorii	rare tree daisy	0.3m	1.1m	1.9m	2.7m	3.5m	4m	4m
Olearia fragrantissima	scented tree daisy	0.3m	1.1m	1.9m	2.7m	3.5m	4m	4m
Olearia avicenniaefolia	tree daisy	0.3m	0.9m	1.5m	2.1m	2.7m	3.3m	4m
Phyllocladus alpinus	mountain toatoa	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	7m
Plagianthus regius	manatu	1m	2m	3m	4m	5m	6m	12m
Phormium cookianum	mountain flax	0.5m	0.9m	1.3m	1.7m	2m	2m	2m
Pseudopanax colensoi var. ternatus	three finger, orihou	0.5m	0.9m	1.3m	1.7m	2.1m	2.5m	5m
Pseudopanax crassifolius	lancewood, horoeka	1m	1.7m	2.9m	4.1m	5.3m	6.5m	10m

Species	common name	at planting	after 2 years	year4	year6	year8	year10	mature height
AREA 3								
SPORTSFIELD PLANTING								
SPACING: 3m apart								
Cuppressus macrocarpa	macrocarpa	1m	2m	4m	6m	8m	10m	15m
AREA 4								
PRINGLES BOUNDARY/SMALL GULLY AND TOP OF SMALL GULLY PLANTING								
(Grey Shrubland)								
SPACING: allow 1-1.5m spacings								
Carmichaelia kirkii	coprosma	0.3m	0.5m	0.7m	0.9m	1m	1m	1m
#Coprosma propinqua	mingimingi	0.3m	0.9m	1.3m	1.7m	2.1m	2.5m	5m
Coprosma lucida	karamu	0.3m	0.9m	1.3m	1.7m	2.1m	2.5m	5m
Coprosma rigida		0.3m	0.9m	1.3m	1.7m	2.1m	2.5m	4m
Coprosma virescens		0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	3m
Discaria toumatou	matagouri	0.3m	0.7m	1.1m	1.5m	1.9m	2.3m	3m
Hebe cupressoides	hebe							
Melicytus alpinus	porcupine shrub	0.3m	0.4m	0.5m	0.5m	0.5m	0.5m	0.5m
Olearia odorata		0.3m	0.5m	0.7m	0.9m	1.1m	1.3m	2m
Olearia cymbifolia/ nummularifolia								
Ozothamnus vauvilliersii	cottonwood							
(Indigenous Evergreens)								
SPACING: 4-5m	GRADE PB2							
Nothofagus solandri var cliffortioides	mountain beech	0.5 0.7		1m	1.5m	4m	6m	15m
Podocarpus hallii	halls totara	0.5 0.7		1m	1.5m	3m	5m	8m
Hoheria lyallii	mountain ribbonwood	0.5 0.7		1m	1.5m	2m	3m	4m

Growing size will depend on conditions and irrigation

AREA 5								
MOUND PLANTING NORTH EAST OF THE VILLAGE CENTRE								
Populus lombardy	poplar	0.5 0.7		2m	4m	6m	8m	30m
Salix babylornica	willow	0.5 0.7		1m	3m	5m	8m	0m
Cedrus deodara	cedar	0.5 0.7		1m	3m	4.5m	6m	10m
Quercus robur	oak	0.5 0.7		1m	2m	4m	8m	20m

STRUCTURE PLAN D - Mitigation Earthworks & Planting Plan



2.8 Design Review Board Process

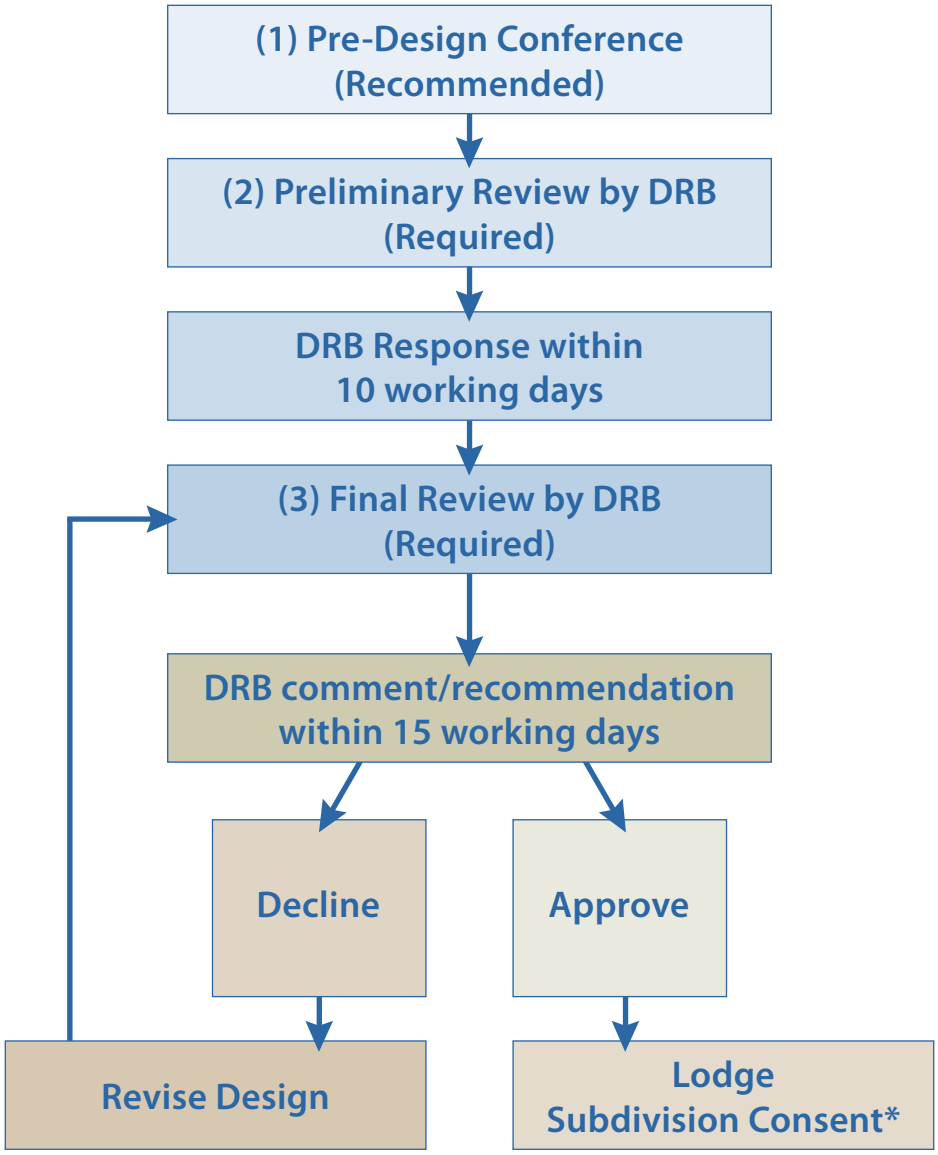
This section outlines the Design Review process for subdivision consents.

2.9 Requirements

The approval of the Design Review Board (DRB) is required prior to lodging subdivision consent.

2.10 Design Review Process

The Design Review Process takes place in three steps (explained on the next page):



* Please note that approval by the Design Review Board does not guarantee subdivision consent will be granted.


2.10.1 Pre-Design Conference (recommended)

Prior to the preparation of any drawings or designs for formal DRB review it is recommended that the owner (and/or owners consultants) meet with the DRB for a pre-design conference. This provides an opportunity to discuss the characteristics of the site, the vision for the Zone and the purpose of the guidelines. It also provides an opportunity to explain the Design Review Process, and its relationship to the subdivision consent process.

2.10.2 Preliminary Review

This meeting provides an opportunity to present design ideas and sketches to the DRB and gain feedback prior to more detailed designs being undertaken. This process helps to avoid unnecessary costs by enabling feedback prior to significant and costly work being undertaken on an inappropriate design.

Information Requirements:

1. General subdivision layout
2. Conceptual landscape design including roading design

2.10.3 Final Review

Once preliminary approval is gained, detailed designs can be undertaken. Information submitted to the Design Review Board at this stage should clearly demonstrate the response to the aims and guidelines set out in the Guidelines. The detail of information submitted should correspond with the scale and complexity of the subdivision proposal. Generally, the following information should be provided:

- All plans should be A3 and drawn to a suitable and clearly identified scale and should clearly identify a north point;
- A 'site context analysis plan', showing the site in relation to surrounding features including surrounding streets and open spaces, surrounding subdivision pattern, adjoining site development (both constructed and consented), solar orientation;
- A site plan showing all potential building footprints, boundary treatment, location of driveways;
- Details of landscape treatment including:
  - Roading, fencing, walls, boundary planting;
  - Plant list including species, size at planting and size at maturity for strategic planting.

Once the DRB has received this information, a meeting will be scheduled with the owner and/or consultants to review the application. The DRB will review the material and provide comment, and then discuss the application with the owner/consultants.

Following this meeting the DRB will provide an approval or recommendations for refinement in writing. If refinement is necessary a second meeting may be required before approval can be given.

2.11 Progress and Changes

Following approval, any changes to the approved design must be presented to the DRB and approved prior to making those changes.

The DRB will check progress of the subdivision and associated landscaping to ensure that it complies with the approved plans.

If changes have been made that have not been approved, the DRB will issue a Notice to Comply, and will require the owner to either gain approval or resolve the discrepancies.

2.12 How does this review process relate to the subdivision consent process?

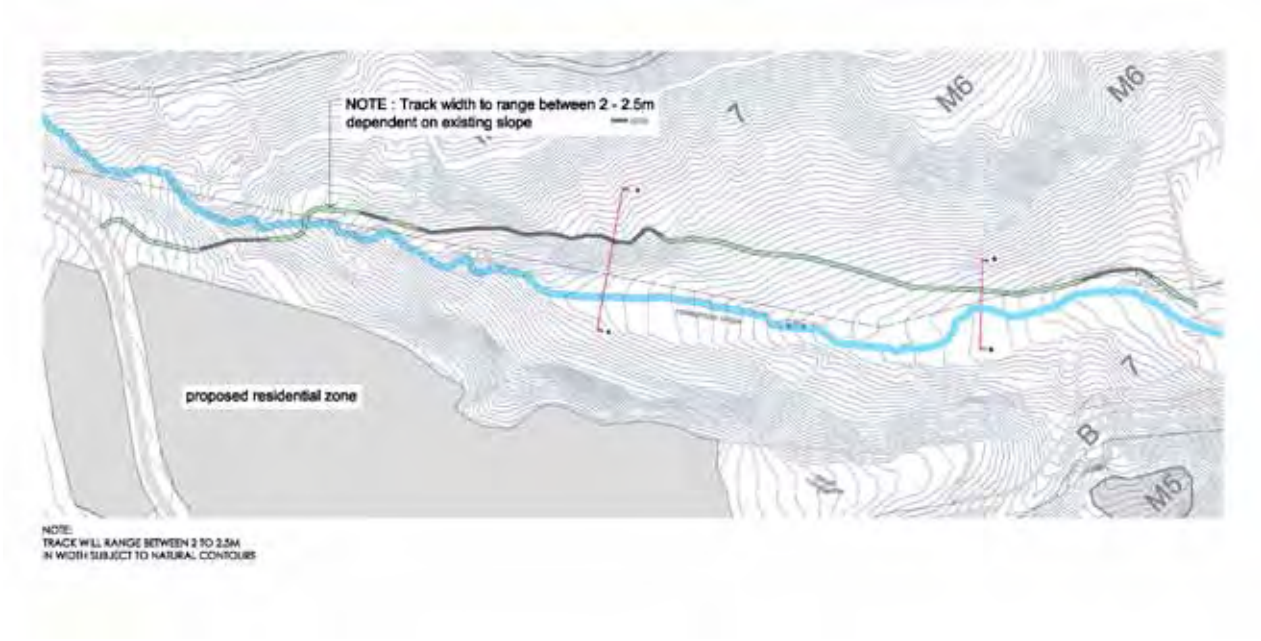
The District Plan provisions for subdivision provide the basic parameters for subdivision within the District. All subdivision is a controlled activity (where it meets the site and zone standards of the District Plan).

It is recommended that DRB approval is gained prior to lodging the subdivision consent with the Council for the following reasons:

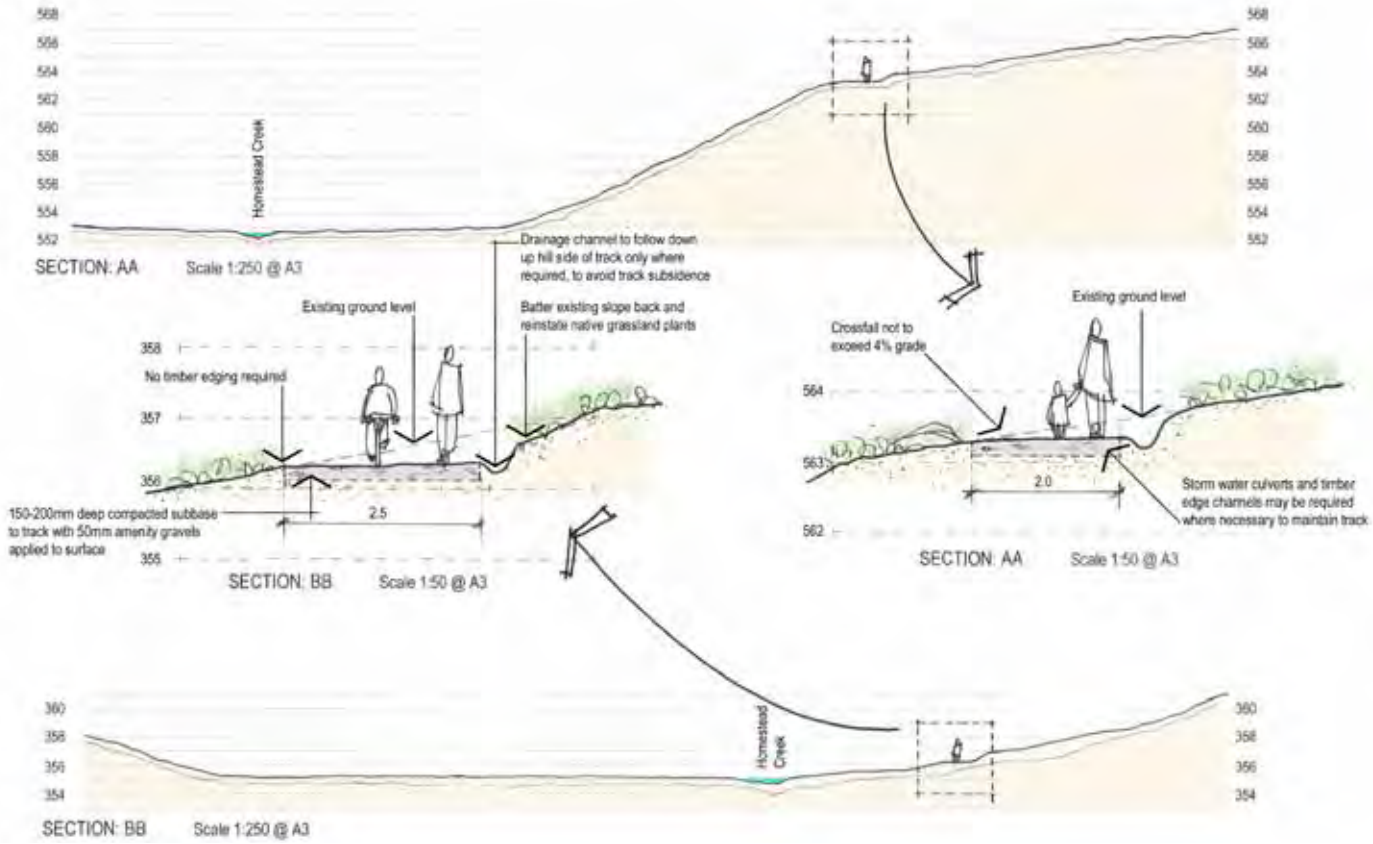
- The DRB may be able to assist in amending the design so that it complies with the District Plan rules.
- If changes are required as a result of conditions placed on resource consent, approval can be gained from the DRB for the amended design.
- Where the subdivision design differs from the Council's engineering standards, but is consistent with these guidelines, the DRB can assist in justifying these differences.

2.13a Proposed Homestead Creek Track

Mount Cardrona Station – Proposed Homestead Creek Track

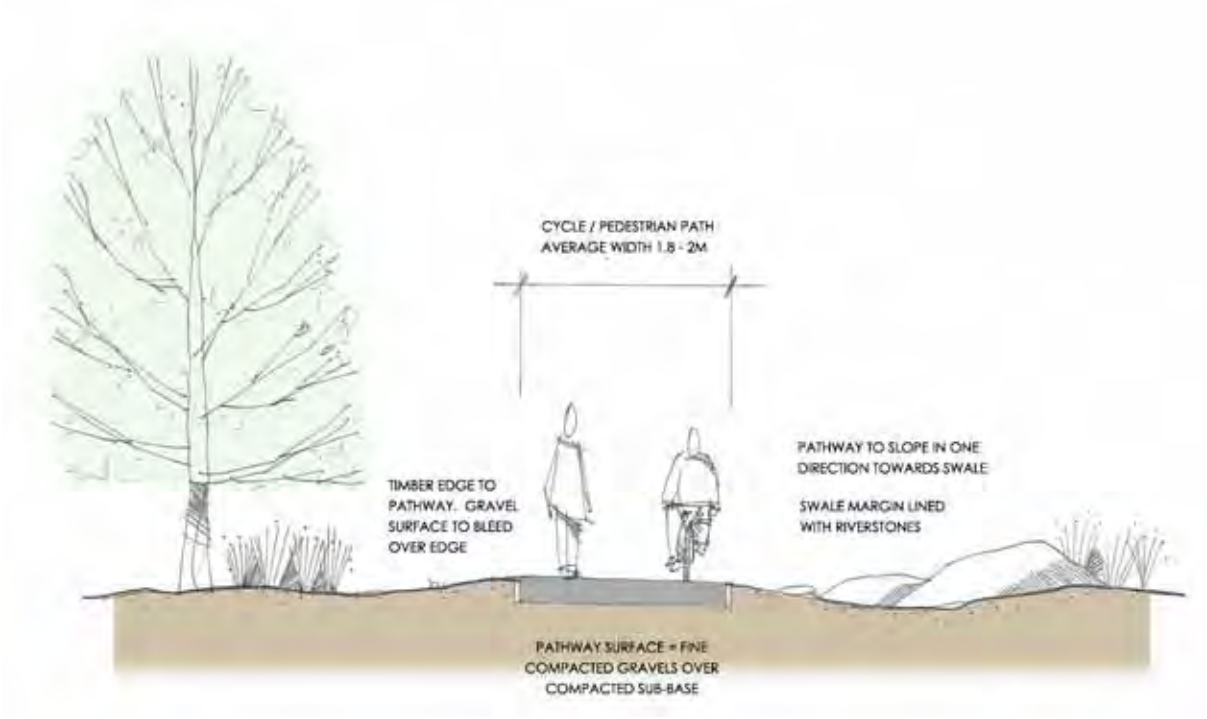


Mount Cardrona Station – Section Details for Proposed Creek Track

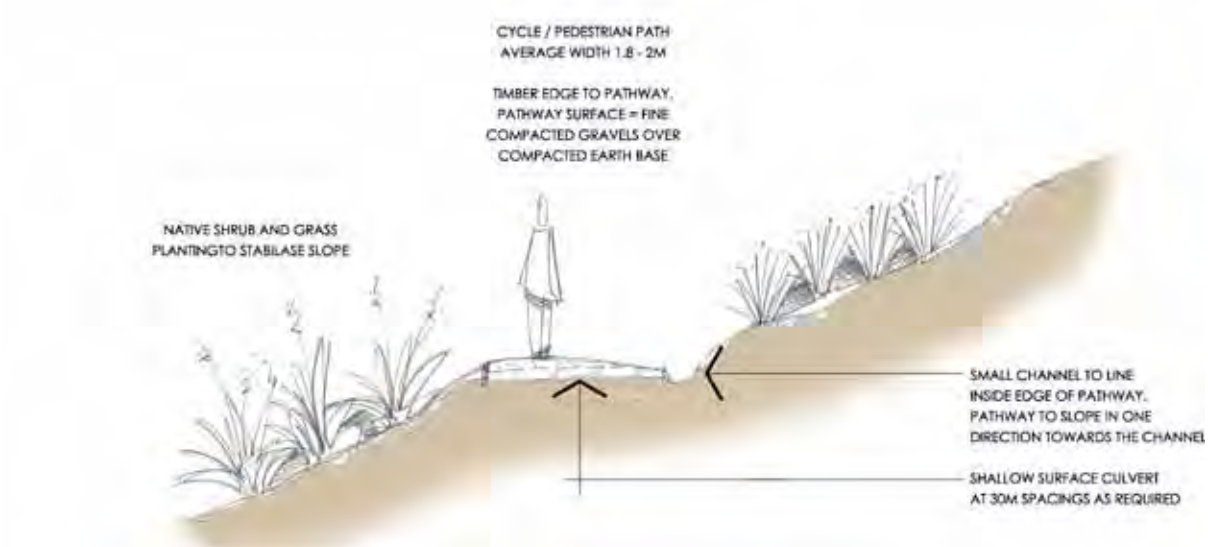


2.13b Proposed Reserve Walkway

Mount Cardrona Station – Proposed Proposed Reserve Walkway – Activity Area 7a - Plan A



Mount Cardrona Station – Proposed Proposed Reserve Walkway – Activity Area 7a - Plan B



Schedule 1: Planting List

Mount Cardrona Station: Plant Species for Activity Areas

"Y" indicates species can be planted, * indicates street tree, # indicates wetland/stream planting.

Species	Common name	Approx height	Area 1a & 1b	Area 2a & 2b	Area 3 & 3a	Area 4	Area 5a	Area 5b	Area 6	Area 6a (& Area 6 surrounded by 2a&1b& 6a)	Area 7	Area 7 Homestead Valley North face	Area 7 Cardrona Valley Escarpment
Trees													
Acer cappodocium rubrum	maple	15m	Y	Y	Y*								
Acer davidii "George Forest"	maple	medium sized tree	Y	Y	Y*								
Acer griseum	paperbark maple	10-12m	Y	Y	Y*								
Acer platanoides	Norway maple	15-20m	Y	Y									
Alnus incana "aurea"*	golden alder		Y*	Y*	Y*		Y	Y					
Alnus cordata*	Italian alder		Y*	Y*	Y*		Y	Y					
Alnus glutinosa*	Alder		Y*	Y*	Y*		Y	Y					
Betula utilis "jaquemontii"*	Himalayan birch	10-15m	Y*	Y*	Y*		Y	Y					
Carpinus betulus	European hornbeam	15-20m	Y	Y*	Y		Y	Y					
Carpinus cordata	Sawa hornbeam	10-15m	Y	Y			Y	Y					
Castanea sativa*	Sweet chestnut	12-15m	Y*	Y*					Y	Y			
Cornus alba 'kesselringii'	dogwood	1.5m	Y	Y			Y	Y					
Cornus capitata	Himalayan dogwood	9m	Y	Y	Y		Y	Y					
Cornus forida	Flowering dogwood	9m	Y	Y	Y		Y	Y					
Fraxinus angustifolia*	narrow-leaved ash	20m	Y*	Y*									
Fraxinus angustifolia "Raywood"*	claret ash	15-20m	Y*	Y*									
Fraxinus ornus*	ash	12-15m	Y*	Y*									
Fraxinus velutina*	desert ash	9m	Y*	Y*	Y								
Gleditsia tricanthos var. inermis*	Honey locust	20m		Y*									
Griselinia littoralis	broadleaf	10									Y		
Koelreuteria panniculata	golden rain tree	12-15m		Y	Y								
Nothofagus solandri var cliffortioides*	mountain beech	15m		Y*	Y*		Y	Y			Y		
Nothofagus menziesii*	silver beech	15m		Y*	Y*		Y	Y			Y		
Pittosporum tenuifolium	kohuhu	10									Y	Y	Y
Plagianthus regius*	manatu	12m		Y*	Y*	Y*	Y	Y					Y
Podocarpus hallii	Hall's totara	10m			Y						Y		
Populus nigra var italica	lombardy poplar	15-20m						Y					
Prumnopitys taxifolius	matai	15									Y	Y	Y
Prunus sargentii	cherry	10m	Y	Y*			Y	Y					
Prunus species	orchard species	6m						y					
Quercus afares*	Algerian oak	15m	Y*	Y*			Y	Y		Y			
Quercus canaryensis x robur*	canary oak	15m	Y*	Y*			Y	Y		Y			
Quercus ceris*	Turkey oak	20m	Y*				Y	Y		Y			
Quercus coccinea*	scarlet oak	15m	Y*	Y*			Y	Y		Y			
Quercus ellipsoids*	pin oak	15m	Y*	Y*			Y	Y		Y			
Quercus ilex*	holly oak	15m	Y*	Y*			Y	Y		Y			
Quercus rubra*	red oak	20m	Y*				Y	Y		Y			
Sequoiadendron giganteum	Wellingtonia	30m						Y					
Sophora microphylla	kowhai	8m	Y		Y*						Y	Y	Y
Tilia cordata varieties*	lime	20m	Y*				Y	Y					
Tilia platyphyllos*	large leaved lime	20m	Y*				Y	Y		Y			
Ulnus parvifolia*	elm	15-20m	Y*	Y*			Y	Y		Y			
Ulnus procera Luis van Houtte*	golden elm	15-20m	Y*	Y*			Y	Y		Y			

NOTE: asterix denotes street trees*

Mount Cardrona Station: Plant Species for Activity Areas

"Y" indicates species can be planted, * indicates street tree, # indicates wetland/stream planting.

Species	Common name	Approx height	Area 1a & 1b	Area 2a & 2b	Area 3 & 3a	Area 4	Area 5a	Area 5b	Area 6	Area 6a (& Area 6 surrounded by 2a&1b& 6a)	Area 7	Area 7 Homestead Valley North face	Area 7 Cardrona Valley Escarpment
Grasses/Small Shrubs													
Aciphylla aurea	golden speargrass	1m	Y	Y	Y	Y	Y	Y			Y		
Aristotelia serrata	wineberry,	10m									Y	Y	Y
Aristotelia fruticosa	mountian wineberry	2m									Y	Y	Y
Astelia nervosa	alpine lily	1m			Y	Y	Y	Y	Y		Y	Y	
Astelia fragrans	bush lily	1.5m			Y	Y	Y	Y	Y		Y		Y
Berberis sp.		1.5m					Y	Y					
#Carex secta	niggerhead	1.5m									Y	Y	Y
#Carex buchananii		0.5m											Y
Carmichaelia petriei	native broom	2.5m	Y								Y	Y	
Carmichaelia kirkii	scrambling broom	1 to 2m									Y		
Carpodetus serratus	putaputaweta	10m									Y	Y	Y
Centranthus ruber	Red valerian	0.5m	Y	Y			Y	Y					
Chaenomeles speciosa		3.0m											
#Chionochloa conspicua	bush tussock	2m							Y		Y		Y
Chionochloa rigida	snow tussock	1.5m	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	
Cistus sp.	Rock rose	1.5m	Y	Y			Y	Y					
Coprosma acerosa	low growing coprosma	0.5m				Y					Y		
Coprosma intertexta		3m				Y			Y		Y		
Coprosma linarifolia		5m									Y		Y
Coprosma lucida	karamu	4m							Y		Y	Y	Y
#Coprosma propinqua	mingimingi	3m				Y			Y		Y	Y	Y
Coprosma rhamnoides		1.5m				Y			Y		Y	Y	
#Coprosma rugosa		3m				Y			Y		Y	Y	Y
#Coprosma tayloriae		2.5m				Y					Y	Y	Y
Coprosma virescens		3m				Y			Y		Y	Y	
Cordyline australis	cabbage tree, ti	6m									Y		Y
Corokia cotoneaster	korokia	2.5m				Y					Y	Y	Y
#Cortaderia richardii	toitoi	2m	Y	Y	Y		Y	Y	Y		Y	Y	Y
Daphne mezereum		0.75m	Y	Y			Y	Y					
Dracophyllum longifolium	inaka	2.5m				Y					Y	Y	
Discaria toumatou	matagouri	3m				Y			Y		Y	Y	
Euonymous alatus	Winged spindle tree	1.5m	Y	Y			Y	Y					
Festuca novae-zelandiae	hard tussock	0.5m	Y	Y	Y	Y	Y	Y	Y		Y		
Forsythia ap.		1.5m	Y	Y			Y	Y					
#Halocarpus bidwillii	bog pine	3m									Y		Y
Hamamelis sp.	Witch hazel	3.0m	Y	Y			Y	Y					
Hebe cupressoides		2m			Y	Y	Y	Y			Y	Y	
Hebe odora		1m			Y	Y	Y	Y			Y	Y	
#Hebe salicifolia	koromiko	2.5m			Y	Y	Y	Y			Y	Y	Y
Hoheria glabrata	mountain ribbonwwod	5m			Y	Y	Y	Y			Y	Y	Y
Kunzea ericoides	kanuka	7m									Y	Y	
Lavandula sp.	lavender	0.5m	Y	Y			Y	Y					

Mount Cardrona Station: Plant Species for Activity Areas

"Y" indicates species can be planted, * indicates street tree, # indicates wetland/stream planting.

Species	Common name	Approx height	Area 1a & 1b	Area 2a & 2b	Area 3 & 3a	Area 4	Area 5a	Area 5b	Area 6	Area 6a (& Area 6 surrounded by 2a&1b& 6a)	Area 7	Area 7 Homestead Valley North face	Area 7 Cardrona Valley Escarpment
Grasses/Small Shrubs													
Leptospermum scoparium	manuka	5m									Y	Y	Y
Melicytus lanceolatus	narrow-leaved mahoe	5m				Y					Y		
Melicytus alpinus	porcupine shrub	1m				Y			Y		Y	Y	
Myrsine australis	mapou, red matipo	8m									Y	Y	Y
Muehlenbeckia complexa	Muehlenbeckia complexa	2m			Y	Y			Y		Y		
Myrsine divaricata	weeping mapou	3m				Y					Y	Y	Y
Olearia aborescens	tree daisy	6m									Y		Y
Olearia avicenniaefolia	tree daisy	6m									Y	Y	
#Olearia bullata		4m									Y	Y	Y
Olearia cymbifolia/nummularifolia		2m				Y	Y	Y			Y	Y	
Olearia fragrantissima	scented tree daisy	8m									Y	Y	Y
Olearia hectorii	rare tree daisy	6m									Y	Y	Y
#Olearia lineata		6m									Y	Y	Y
Olearia odorata		3m				Y					Y	Y	Y
Ozothamnus vauvilliersii	cottonwood	2m	Y	Y	Y		Y	Y			Y	Y	Y
Phormium cookianum	mountain flax	1.5m	Y	Y	Y	Y	Y	Y	Y		Y		Y
#Phormium tenax	swamp flax	3m	Y	Y	Y		Y	Y	Y		Y	Y	Y
Poa cita	silver tussock	0.6m	Y	Y	Y	Y	Y	Y	Y	Y	Y		
Poa colensoi	blue tussock	0.3m	Y	Y	Y	Y	Y	Y	Y		Y		
Pseudopanax colensoi var. ternatus	three finger, orihou	5m	Y	Y	Y	Y*	Y	Y	Y		Y	Y	Y
Pseudopanax crassifolius	lancewood, horoeka	6m	Y	Y	Y	Y*	Y	Y			Y	Y	Y
Phyllocladus alpinus	mountain toatoa	5m				Y					Y	Y	
Pyracanths sp.		2.5m	Y	Y			Y	Y					
Ribes sp	currants/gooseberries	2.5m	Y	Y									
Rosa species (old fashioned shrub in particular)	roses	2m	Y	Y			Y	Y					
Rosmarinus officinalis	rosemary	1.0m	Y	Y			Y	Y					
Thymus sp.	thyme	0.3m	Y	Y			Y	Y					
Viburnum sp.		1.5-3.0m	Y	Y			Y	Y					
NOTE: hatch # indicates swamp/water edge species													
Climbers													
Humulus lupulus 'Aureus'		6.0m	Y	Y									
Rosa species		8.0m	Y	Y									
Parthenocissus tricuspidata	Boston ivy	20.0m	Y	Y									
Lonicera japonica 'Halliana'	honeysuckle	10.0m	Y	Y									
Lonicera x americana	honeysuckle	7.0m	Y	Y									
Wisteria sinensis	Chinese wisteria	30.0m	Y	Y									
Vitis coignetiae	Crimson glory vine	15.0m	Y	Y									