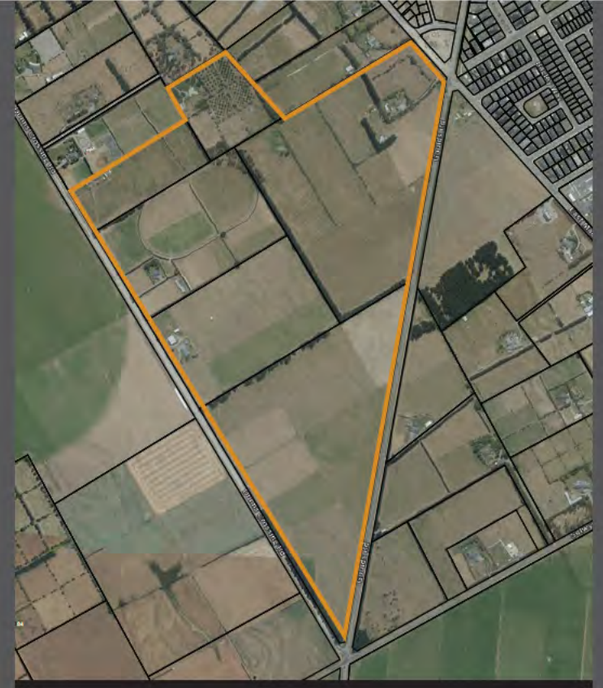

FARINGDON
OVAL

DESIGN STATEMENT

22 February, 2022

For: Hughes Developments Limited

Prepared by: Urban Acumen Ltd

urban
acumen

CLIENT	Hughes Developments Limited
PROJECT	Faringdon Oval
UA PROJECT NO.	20-016
DOCUMENT	Design Statement
DATE OF ISSUE	22 February 2022
STATUS	FINAL
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DOCUMENT CONTROL RECORD

This document provides the design background and rationale for the subdivision concept plan for Faringdon Oval.

The development of this indicative subdivision plan has been an iterative process over time, commencing in September 2020 and includes technical inputs from the wider project team.

The process followed prior to preparing this design statement includes:

- attending a briefing meeting with the applicant;
- undertaking a site visit;
- understanding the relevant physical and statutory design drivers, particularly Policy 1 of the National Policy Statement on Urban Development 2020, the Rolleston Structure Plan 2009;
- developing a conceptual subdivision masterplan; and
- testing and revising the concept in response to additional information, Selwyn Council advice, the changing statutory/ consenting context and current market trends and preferences.

NPS 2020 Policy 1:

Planning decisions contribute to well-functioning urban environments, which are urban environments that, as a minimum:

a) have or enable a variety of homes that:

(i) meet the needs, in terms of type, price, and location, of different households; and
(ii) enable Māori to express their cultural traditions and norms; and

b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size; and

c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and

d) support, and limit as much as possible adverse impacts on, the competitive operation of land and development markets; and

e) support reductions in greenhouse gas emissions; and

f) are resilient to the likely current and future effects of climate change.

1

location

The site is located on the south western corner of Rolleston, and represents a logical extention to its current urban area.

It is bordered by Dunns Crossing Road and Goulds Road and is located approximately 2.8 km (as the crow flies) from the town centre. Land to the north is zoned either Living Z or Rural Inner Plains (but currently the subject of a private plan change process (PC 76)). Lemonwood Grove Primary/Intermediate School is located less than 500m from the intersection of Goulds Road and East Maddisons Road.

The Faringdon local centre (South Point) and playground is located within easy walking distance of the eastern portion of the site (700 - 800m), as is the future neighbourhood centre in Faringdon South West.

Figure 1 Location

2

planning and physical context

The site is located on the urban edge of Rolleston and a change from rural to urban use has long been anticipated. It is identified as a residential area in the Rolleston Structure Plan (2009) as well as as a Future Development Area by the Cantebury Regional Policy Statement 2013.

The sites's immediate physical context is an area transitioning from rural to suburban through either private plan changes or under the COVID-19 Recovery (Fast Track Consenting) Act 2020. It interfaces with the recently consented Faringdon South West area across Goulds Road and other potential development areas to the north and west.

The surrounding area to the east and north is a fast growing residential community, characterised by single storey low and medium density development. The subdivision pattern is typically a grid, with straight roads providing long distance views. The residential character is provided, in part, by spacious road reserves and associated public open space corridors accommodating a variety of planting and footpaths and cycleways. A network of neighbourhood open spaces, connected by a network of pedestrian/cycle links adds to residential amenity.

Dunns Crossing Road forms the site's western boundary and functions as the interface with the adjacent (currently rural) area. Land west of Dunns Crossing Road is subject to plan change including:

- Private Plan Change 73 - 2000+ residential sites and two commercial areas
- Private Plan Change 81 - has been recently lodged with Selwyn Council to change rural land to Living Z Zone to accommodate residential development and a neighbourhood park

Goulds Road and Dunns Crossing Road are rural in character, with no kerb/channel. Given the current plan change requests, it is considered likely that the site will no longer form the edge of Rolleston's urban area and Dunns Crossing Road will become urban in nature. Development of the site will naturally extend already consented areas (Faingdon South West) and, if PC73 and PC81 are approved, essentially "fill in" the south west corner of Rolleston's urban area.

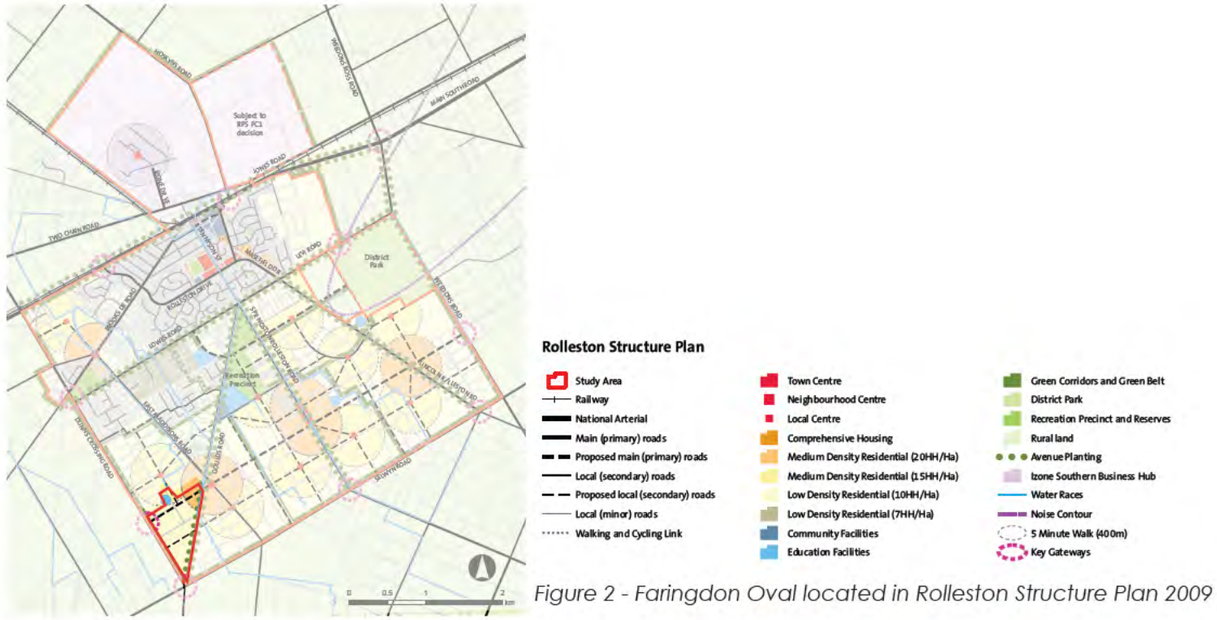


Figure 2 - Faringdon Oval located in Rolleston Structure Plan 2009

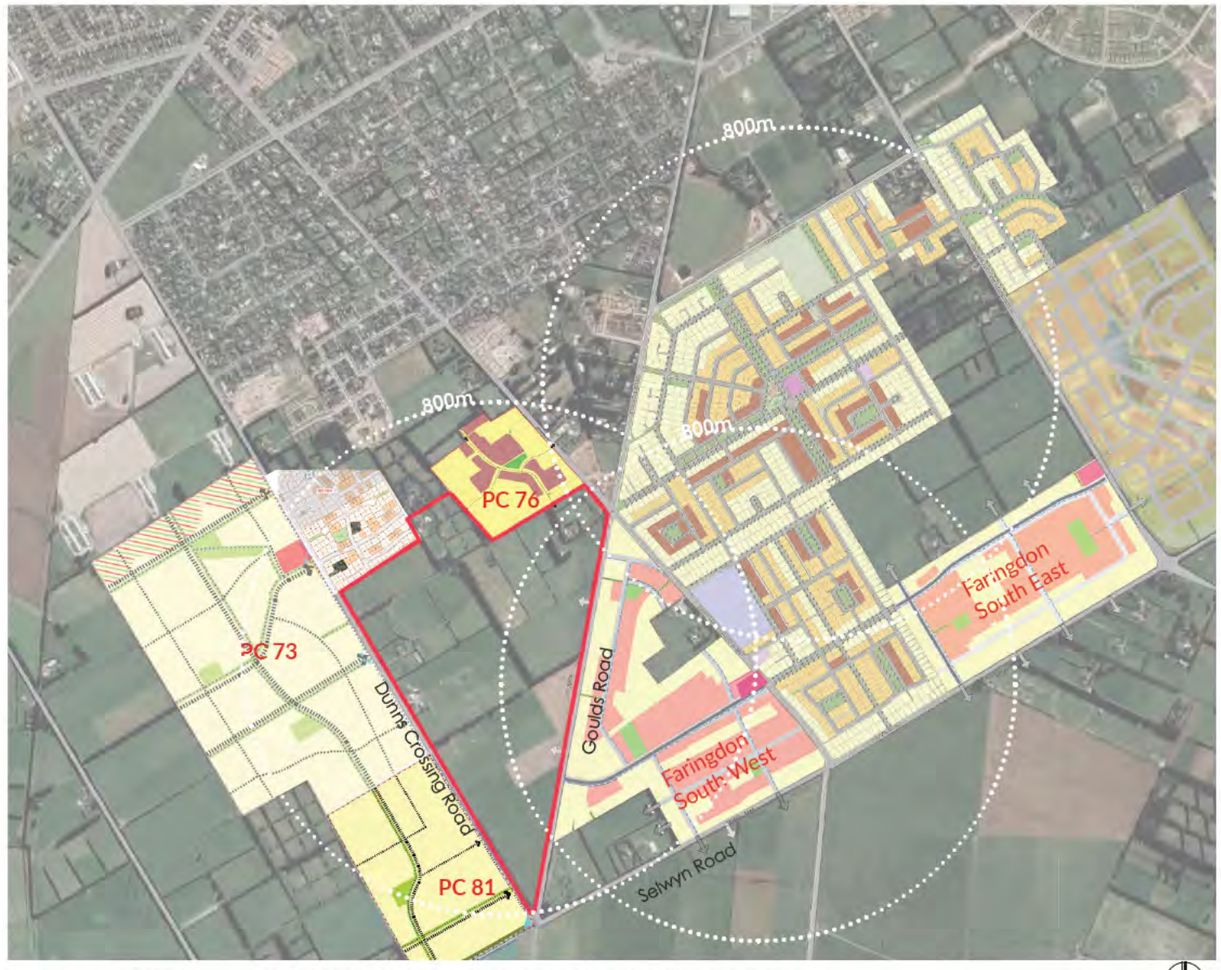


Figure 3 Faringdon Oval in existing and developing context

3

the site

The site measures approximately 69ha and is an irregular shape. It is comprised of a number of cadastral parcels of different sizes and shapes.

Typical of the Rolleston area, the land is generally flat and dissected by mature shelterbelts. There are a number of existing dwellings, none of which are intended to be retained.

The unusual geometry of the site is created by Goulds Road which dissects the orthogonal grid and connects the site directly to the centre of Rolleston.

Roads surrounding the site are straight and rural in nature, with no kerb/channels and often lined with shelterbelts.

Typical view along Dunns Crossing Road

Typical view along Goulds Road

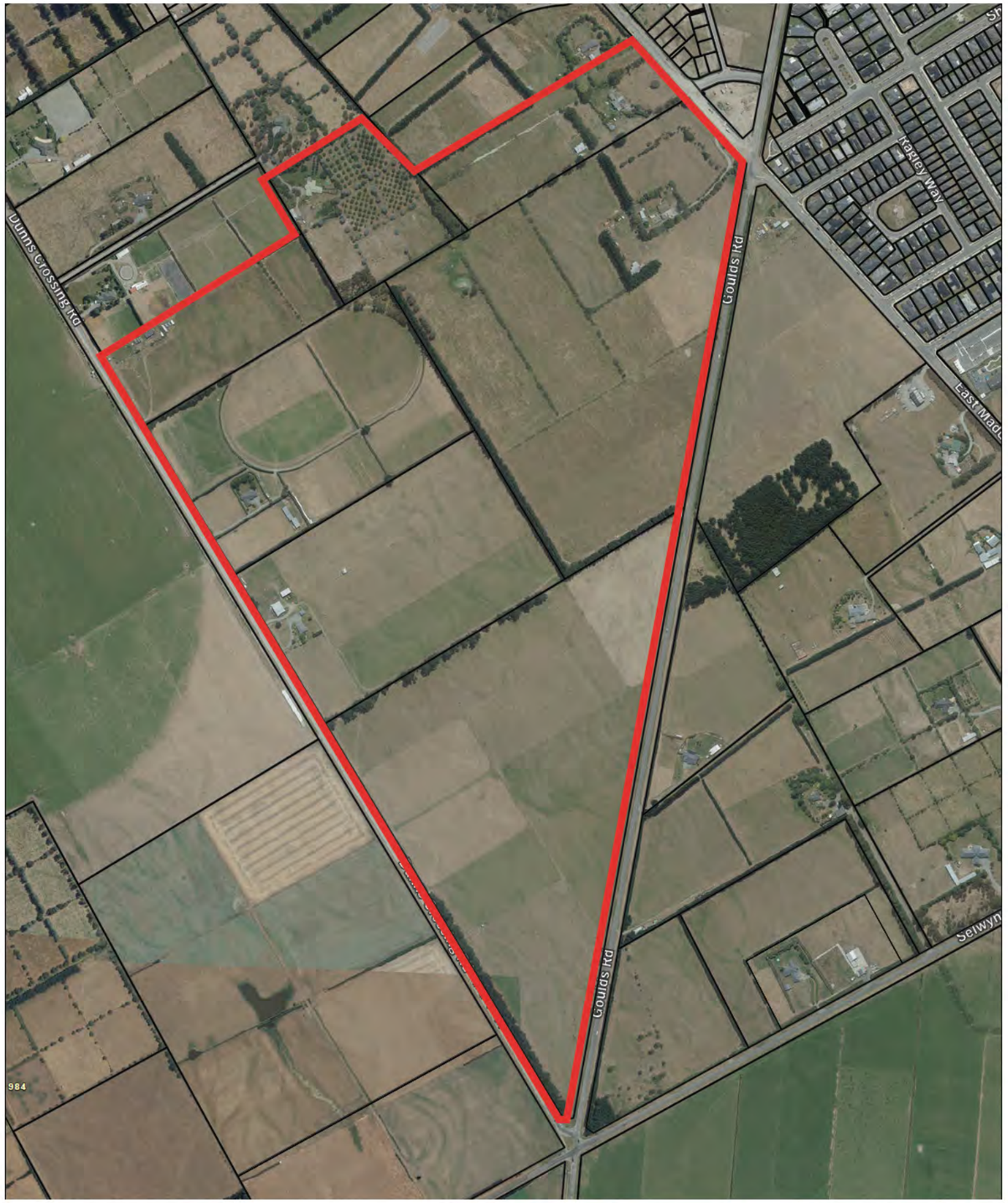


Figure 4 Aerial photo (source Cantebury maps)

0 0.1 0.2 0.3 0.4 Kilometres

4

analysis

opportunities

- accommodate a high amenity masterplanned community which can internalise any potential negative impacts on adjacent environments
- provide a mix of residential densities to provide lifestyle choice and support any non-residential uses, public open spaces and public transport
- create a new neighbourhood centre/heart and "village green" - the site is small enough to enable future residents to access centrally located facilities and services within an easy walking distance (800m)
- provide for integration with existing and future developments to the east, west and north, particularly with respect to active transport modes and the location of public reserves
- creation of a gateway feature at the Dunns Crossing/Goulds Road/Selwyn Road corner
- the site is flat and free of topographical development constraints
- continue the Faringdon feature of straight roads with long distance views, including towards rural surrounds (where applicable)
- spacious landscape character along Goulds Road and Dunns Crossing Road
- maximise north-south orientation of blocks to promote solar access to lots facing either east or west

constraints

- existing dwellings to be retained may influence the subdivision layout
- either existing or planned points of entry/intersections across Dunns Crossing Road, Goulds Road and across the northern boundary drive layout in order to achieve integration/alignment, particularly collector roads Shillingford Boulevard and Northmoor Boulevard
- the proposal to develop a roundabout at the intersection of Goulds Road and East Maddisons Road, and connect also in the site

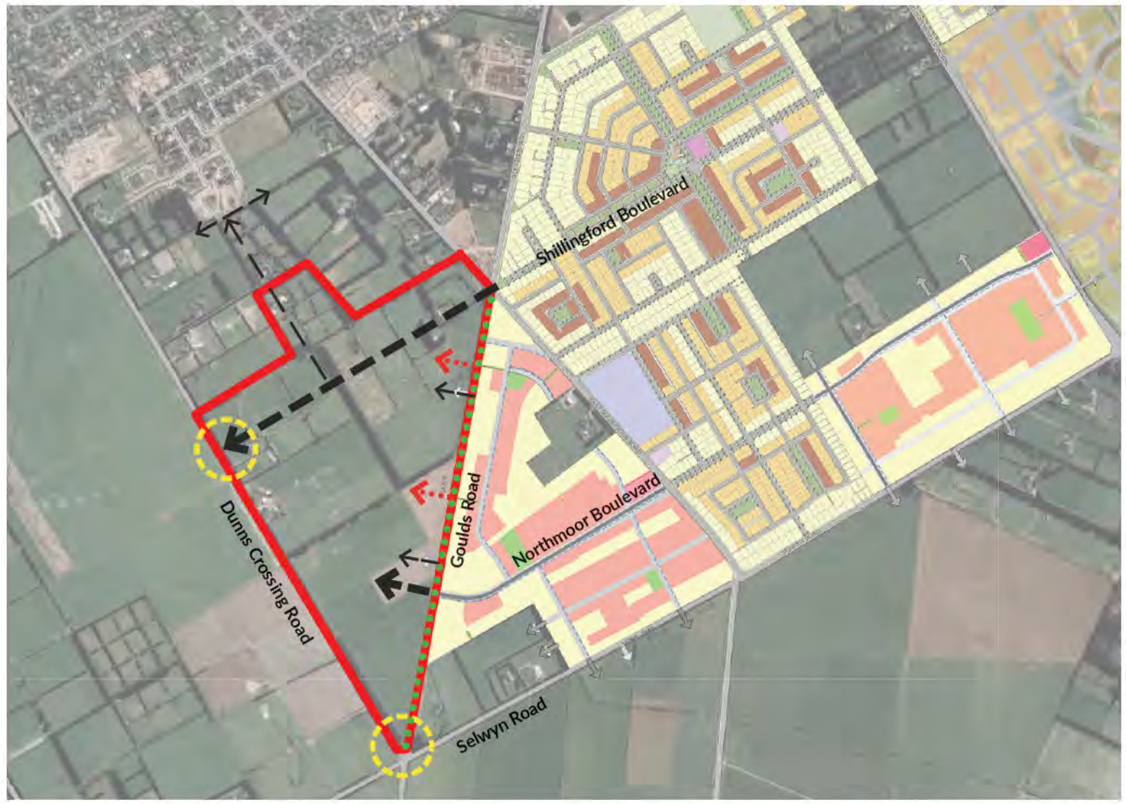


Figure 5 *Directions from Rolleston Structure Plan and adjacent development*

primary road

secondary road

pedestrian/cycle connection

gateway feature

avenue planting

5

design drivers

The Operative District Plan, including the Design Guide for Residential Subdivision in Urban Living Zones *(attached as Appendix 1)* **and the Rolleston Structure Plan** *(structure plan map and Appendix F Urban Design Principles Matrix, attached as Appendix 2)***, along with best practice urban design principles, provide the key urban design drivers for the development of the site as follows:**

Layout and Legibility

- promote a quality and compact urban form, with blocks that are small in scale in order to provide pedestrian, cycle and vehicular permeability
- retain and emphasise straight road patterns and views out to rural areas
- strengthen and reinforce the grid pattern
- adopt blocks with a predominant north-south orientation in order to maximise solar gain for dwellings
- provide higher density development at nodal points
- provide key gateways at Selwyn Road/Dunns Crossing Rd and on Dunns Crossing/proposed primary road intersection

Connections and Integration

- provide strong district linkages and a well connected built form which accommodates all modes of transport
- utilise existing rural roads to develop distinct urban areas
- future proof development to allow for future linkages/expansion delivering a clear movement hierarchy and continuing the road profile/design established by adjacent areas
- provide avenue planting along Goulds Road
- manage/limit high fencing on roads which have frontage to, but no access from strategic or arterial roads

Variety of Residential Options

- respond to market demands and preferences and provide a variety of residential lifestyle options, while maintaining the overall “spacious”character of living zones
- include medium density options which offer a range of housing typologies and price points, and promote more affordable options
- locate comprehensive housing close to local centres, areas of high amenity or accessibility

Community focus and identity

- provide a local attraction which functions as the heart of the new community and provides residents with access to daily convenience services
- provide an active recreational opportunity that provides residents in this, and the wider Faringdon area, with access to open space and opportunity for physical activity and wellbeing
- provide key gateways at Selwyn Road/Dunns Crossing Rd and on Dunns Crossing/proposed primary road intersection
- promote maori cultural landscapes

Access to open space and adding amenity

- create a continuous network of open space
- create ecological and open space links between town and rural land
- encourage the retention of natural, cultural and historic features which maintain the amenity of an area
- enable future residents with access to local recreation within easy walking/cycling distance
- locate large recreation areas at the periphery of dense urban areas
- include a neighbourhood park

6

the proposal

The indicative subdivision concept for the site is illustrated on the map below, along with its current and consented development context. *(The potential future development context to the west is illustrated in Section 2).*

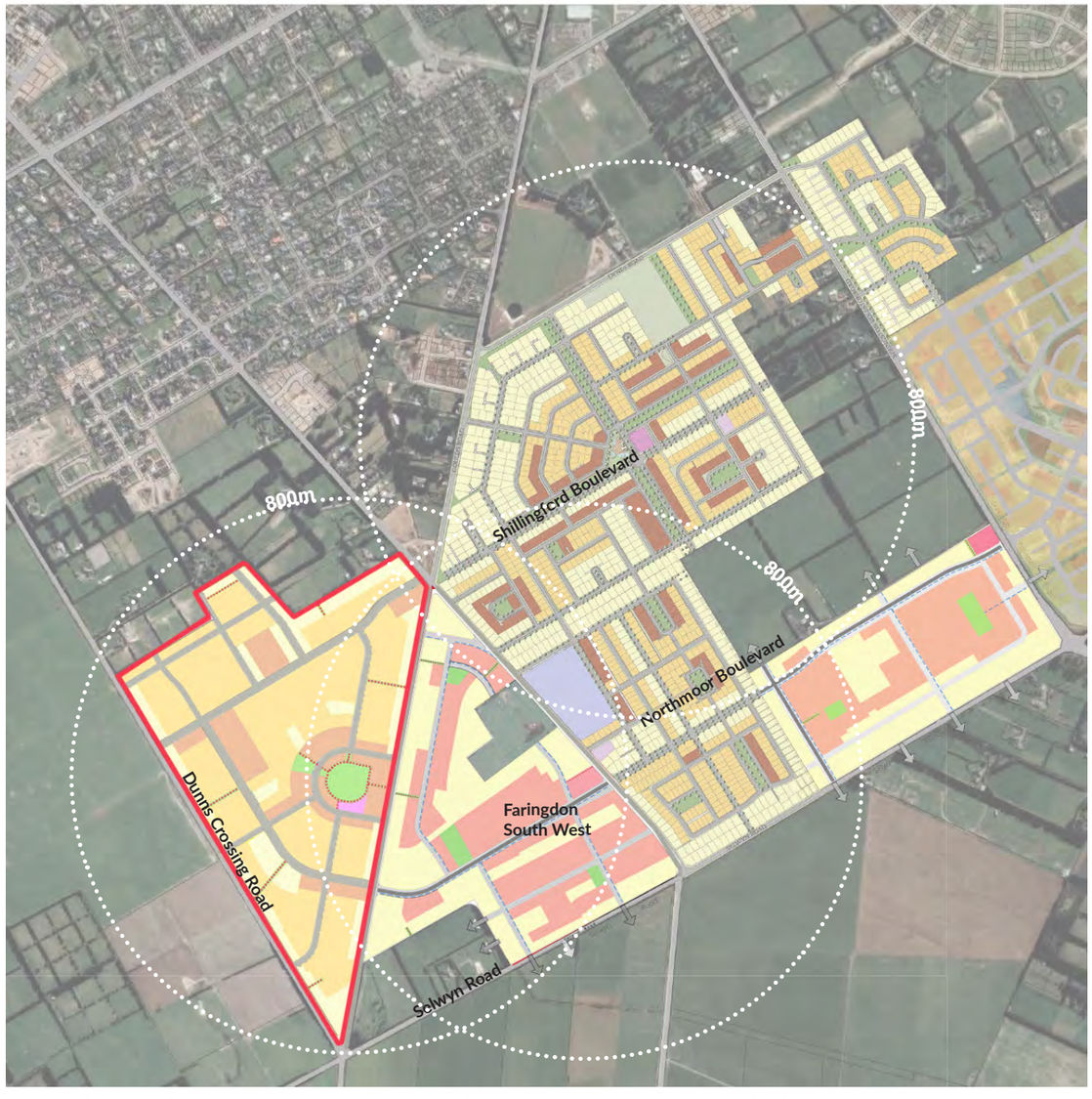


Figure 6 *Proposed subdivision concept in the wider Faringdon context*

Overall Structure and Block Pattern

The points of potential connection at a neighbourhood level with adjacent and existing residential development are also indicated on the concept plan. The locations of new intersections with Goulds Road are determined, in part, by the approved subdivision plan for Faringdon South West and include:

- an extension of Shillingford Boulevard through the site to Dunns Crossing Road to connect the local area back to the Faringdon local centre as well as provide long distance views out to the rural area
- extension of Northmoor Boulevard as a primary east-west collector connecting the site with Faringdon South West and South East
- an extension of the pedestrian and cycle network established by adjacent consented subdivisions, with a focus on priority for active modes and providing access to public transport routes, the primary school and public reserves

The overall spatial structure is a response to the following key drivers:

- the shape and geometry of the site
- the road intersections and entries established by the wider Faringdon area and particularly Faringdon South West
- the need to provide for future connections to the north, and potentially west

The proposed arrangement of movement corridors is designed to ensure future development is integrated with the surrounding context and anticipates future connection as required. It establishes a grid based movement network and block sizes which distribute local traffic, provide permeability and promote a choice of routes. The primary movement corridors connect the area to the adjacent Faringdon neighbourhood, the Faringdon local centre and the school. Connections also provide opportunity for residents to access neighbourhood parks.

The block pattern sets up a grid system which favours long straight roads but also responds to the diagonal alignment of Goulds Road on the basis of efficiency and safety. Views out to the rural environment are provided along Shillingford Boulevard and other secondary roads which meet Dunns Crossing Road.

Aligning with NPS Policy 1:

c) have good accessibility for all people between housing, jobs, community services, natural spaces, and open spaces, including by way of public or active transport; and

e) support reductions in greenhouse gas emissions;

The overall structure of the proposal integrates spatially with the surrounding pattern of urban development, enabling easy movement between development stages/parcels and their respective open spaces and neigbourhood centres/ services. The connected grid structure, permeable blocks and pedestrian links promotes access to public transport services on key routes which enable residents access to a wide variety of services and attractions in Rolleston.

The flat topography, actively fronted streets and shared paths encourage the use of active transport modes, reducing car usage and in turn, greenhouse gas emissions.

The inclusion of parks and a small neighbourhood within easy walking distance of residents in Faringdon Oval encourages walking and cycling and increases the opportunity for residents to meet their daily convenience needs without the need to use the car.

The overall structure is also driven by the inclusion of a circular public open space which provides a point of difference and focal point for the development. This facility sets up a circular/crescent road pattern which creates a unique sense of place for this neighbourhood. The secondary road network aligns with that in the Faringdon South West area and provides for connections to the north, thereby ensuring good overall neighbourhood connectivity.

Adopting blocks which have a predominantly north –south orientation is a sound urban design technique to maximize solar access for dwellings and minimize the number of north facing sections (where private outdoor space is shaded if located at the rear). This principle however, has to be balanced with other necessary responses, including the need to minimize road intersections on collector roads and make efficient use of the land resource and lot geometry. The subdivision design adopts north-south blocks where practical, while limiting the number of intersections to Dunns Crossing and Goulds Roads.

Movement Hierarchy

The subdivision concept plan indicates both primary and secondary roads and has the opportunity to confirm a variety of local roads and accessways in detailed subdivision design. A clear hierarchy of movement corridors assists with legibility, particularly important in a flat area such as Faringdon where there is very little topographic or natural features to aid wayfinding. Shillingford Boulevard and Northmoor Boulevard are indicated as the primary roads through the area and this is appropriate as these routes are primary connectors to the Faringdon local centre and other neighbourhoods. These routes will have a greater reserve width than other roads to allow for additional tree planting and a greater sense of spaciousness, both of which help to convey their primary collector roles.

Secondary routes are also indicated on the concept plan and provide for internal circulation and additional neighbourhood-to-neighbourhood connections.

Prioritising Public Transport and Active Transport Modes

By utilising a connected grid pattern and providing connections to adjacent neighbourhoods, the local centre and the school, the concept plan promotes active transport modes of walking, cycling and scootering. Shared paths (pedestrians, scooters and cyclists) are provided on the berms of primary roads to link the main collector routes and enable commuter or longer distance cyclists easy access to the wider area. These routes also benefit from the greater landscaping and planting provided in these corridors.

Breaking long blocks with pedestrian/cycle links provides permeability and convenience for active modes and convenient links to the collector roads on the boundary which are the logical bus routes. The additional off road shared paths also connect local open spaces and clusters of medium density housing to the wider pedestrian and cycling network, thereby responding to likely desire lines to destinations.

key vehicle movement

key pedestrian and cycle routes and links

Local Centre and Open Space

As the primary placemaking feature, the local commercial site (anticipated to be food and beverage/cafe) and the public open space will form the key community space/hub and contribute to the identity of the area. They have been imbedded in the local area but also located close to Goulds Road such that they are central and easily accessible by the wider south west Faringdon area. Whilst located close to Goulds Road, access to the future cafe and public open space is provided from local roads. Pedestrian access to the centre is provided from both Goulds Road and the local road network making it highly accessible to all modes of travel.

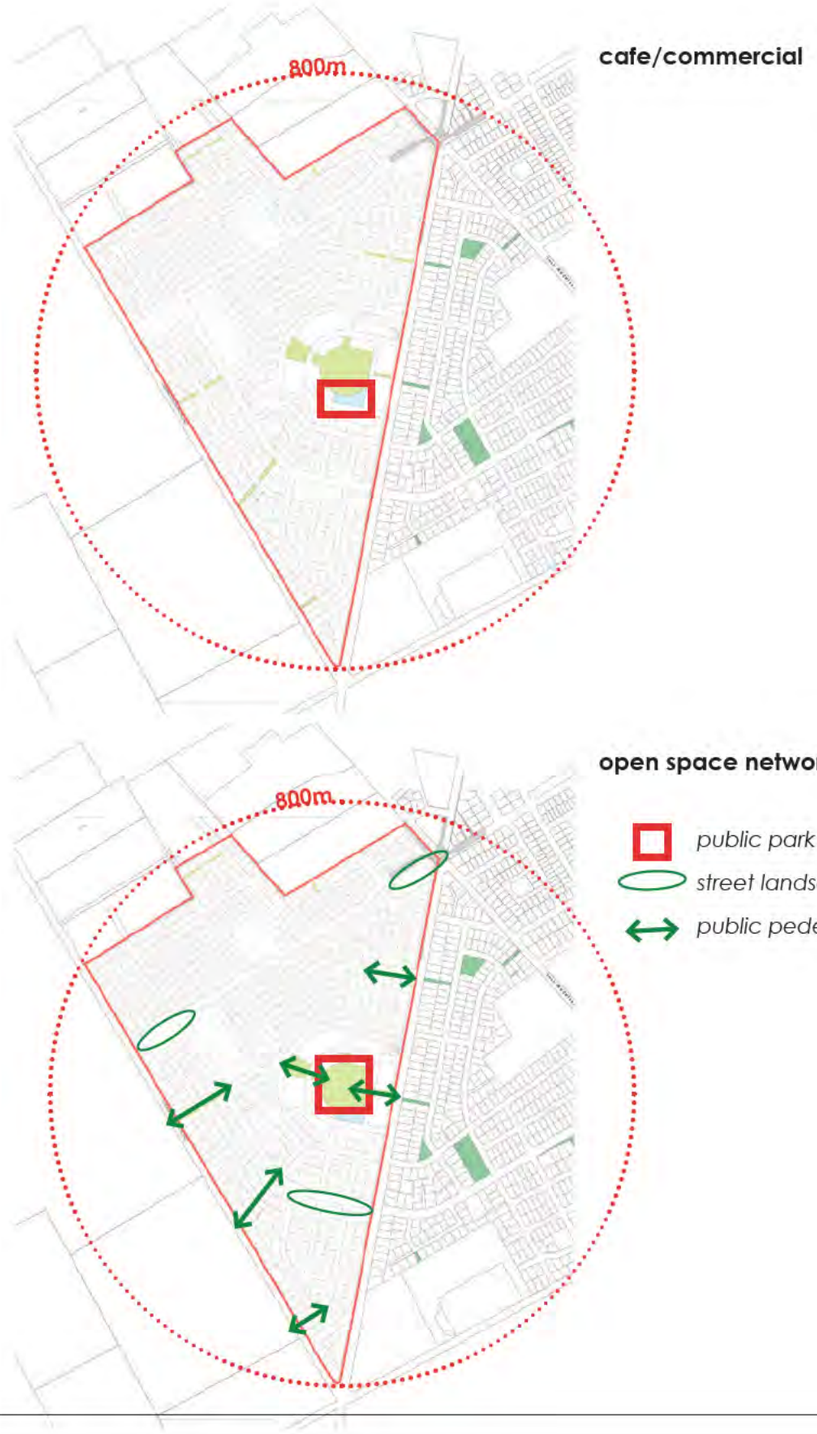
The proposed open space is intended to function as a "village green" for informal sports and play, passive recreation and a playground. It is located to:

- support the commercial activity through co-location
- enable easy access to the wider south west area of Rolleston
- be visible from key sightlines along roads/routes in the area
- have good frontage from roads, laneways or otherwise carefully managed interfaces to ensure passive surveillance
- provide opportunity for recreation within easy walking distance (10min/800m)for all residents in the development area
- be easily accessible by the shared pedestrian/cycling network, both that within the development area and that of the wider area (particularly Faringdon South West)
- be easily accessible by the local road network to reduce any traffic impacts on arterial streets

The concept plan has appropriate flexibility with respect to additional local roads, including those around the public reserve. There is thus inherent opportunity to:

- locate local roads around the full perimeter of the reserve if desired;
- have lots which directly adjoin the reserve where practical, where the orientation favours vehicle access from the other side, and the interface with the reserve can be successfully managed; and/or
- utilise shared or jointly owed spaces which have the same qualities as public streets but a narrower width and additional opportunities for placemaking/landscaping etc.

A number of other, smaller public reserves are proposed along streets to assist with amenity and signal gateways.



Distribution of Medium Density Housing

The concept subdivision plan indicates the potential location of medium density housing, in the form of either smaller lots or "superlots" for the comprehensive design and consenting of dwellings and sites. Integrated/comprehensive design and consenting enables the careful consideration of residential amenity outcomes, ensuring good urban design outcomes while accommodating smaller sites and increased residential yield. These superlots are anticipated to deliver a range of medium density housing typologies, including duplexes and terraces.

Including medium density housing promotes choice and diversity with respect to the resident demographic, pricepoint/affordability and lifestyle. It promotes an efficient use of the land resource and infrastructure, encourages the use of public reserves and supports local neighbourhood centres. Medium density "vacant" lots (maximum average lot size of 500sqm and minimum lot size of 400sqm) are intended to comprise the majority of the site, approximately 60% of the total residential yield, to achieve an overall gross density of 15 dwellings per hectare. These lot sizes support the intention for Hughes Developments Limited to "design and build" and deliver completed houses to the market.

Superlots comprise approximately 20% of the total and low density lots make up the final 20%.

The distribution of residential density on the concept subdivision plan has been informed by best practice urban design which supports:

- highest density around amenity - namely locating higher density dwellings such that they can enjoy outlook over landscaped open space (either roads or reserves);
- higher density in proximity to local services and facilities - maximising the number of people that can conveniently access local shops, recreation and public transport services or key pedestrian or cycle routes; and
- locating higher density areas where they have little visual or physical impact on other existing or sensitive environments.

In the first instance, the concept plan locates superlots in close proximity of the proposed public open space and neighbourhood centre. This has the following urban design benefits:

- higher density around local services increases the number of people that can access these facilities easily by foot or other active modes, thereby reducing the dependence on private cars for local trips
- higher density in close proximity of services and facilities increases their viability and long term resilience
- the public open space compensates for smaller rear yards and reduced recreation opportunity on adjacent more compact housing typologies/sections;

medium density housing - vacant lots

medium density - comprehensive

Aligning with NPS Policy 1:

a) have or enable a variety of homes that:

(i) meet the needs, in terms of type, price, and location, of different households; and
(ii) enable Māori to express their cultural traditions and norms; and

b) have or enable a variety of sites that are suitable for different business sectors in terms of location and site size;

The subdivision concept provides a robust framework for a variety of residential typologies and includes both larger lots for larger detached homes as well as superlots for the comprehensive development of more compact dwellings, including attached housing e.g. duplexes and terraces.

Increasing the proportion of medium density housing (as either vacant lots of superlots) increases the overall yield and support for open spaces, public transport and neighbourhood services.

Providing the opportunity for smaller site sizes reduces the land cost associated with each dwelling, and promotes either smaller units or smaller building footprints (and double storey dwellings) and thereby encouraging a wider range of housing.

- there are higher numbers of dwellings surrounding the open space which promotes its active use, making better use of the land resource and more easily justifying investment and maintenance costs;
- higher numbers of dwellings around the reserve increases the levels of active and passive surveillance of the reserve, increasing real and perceived public safety;
- dwellings located closer together improves the spatial definition of the reserve, better defining its edges;
- superlots can utilise rear lanes which enable the removal of driveway crossings from the street and thereby the establishment of substantial/more feasible street landscaping areas;
- the park provide additional opportunity for on-street parking to support adjacent medium density housing which can have less parking provision on the streets due to the proximity of driveway crossings etc; and
- locating superlots around either public or private open spaces enables Council to assess the interfaces with the reserve through a subsequent resource consent process.

Whilst "density around amenity" is a strong determination of the location of medium/higher density residential typologies, it is not the only justification for the identification of medium density housing in attractive residential neighbourhoods. Other drivers for the inclusion of medium density clusters include wayfinding/legibility and visual interest in the streetscape. For example, superlots are located along Goulds Road to help signal key corners/intersections as well as the location of the public open space.

With respect to low density lots, the drivers for their location include:

- the location of larger lots adjoining Goulds Road provides a consistent built form with that in Faringdon South West and an overall spacious character, due to likely lower building heights and greater front yards and landscaping)
- larger lots adjoining Dunns Crossing Road provide an appropriate interface/transition to rural land on the opposite side (unless proposed private plan changes are approved) and lessen potential visual impact;
- larger lots on roads with comparatively higher traffic volumes (Goulds and Dunns Crossing Roads) reduce potential traffic conflict through less driveway crossings and greater opportunity for vehicles to turn/reverse on site
- larger lots on key routes (Goulds and Dunns Crossing Roads) generally result in fewer driveway crossings which in turn allows a greater provision of street trees and resultant overall neighbourhood amenity; and
- the inclusion of pockets of low density in an otherwise medium density street creates variety and visual interest.

Interfaces

Goulds Road

Goulds Road is a key entry point into Rolleston from the surrounding rural area and provides a direct route into the Rolleston town centre. As such, it contributes to the perceived amenity and character of Rolleston. It is assumed that Goulds Road will be upgraded to an urban standard with kerbs etc. and potentially accommodate a water race.

It is noted that some portions of Goulds Road (between Dynes Road and Shillingford Boulevard) has restrictions on individual vehicle access to private sections. In this subdivision concept, as in that for the Faringdon South West area, no vehicle restriction on access to individual lots is proposed. This is the preferred urban design outcome as it provides:

- active frontages where dwellings have front doors facing the street, and activity associated with people coming and going and therefore good passive surveillance of the street and thereby greater real and perceived safety
- no conflict between on-lot privacy for residents (where the desire is for high fencing) and maintaining surveillance and a sense of open on the boundary
- an efficient use of land without the need for additional circulation spaces (panhandles, jointly owned access lots etc.) for those lots adjoining Goulds Road

Specific fencing controls within the District Plan (supplemented by developer covenants) will ensure the Goulds Road frontage is consistent and presents a high amenity interface.

The Faringdon South West subdivision plan indicates low density residential development fronting Goulds Road which provides greater opportunity for dwellings to set back from the road and accommodate amenity landscaping, including specimen trees. In general, this outcome is mirrored by the subdivision concept for this site, except for that portion of the road frontage in close proximity of the commercial site and public open space centre where comprehensive medium density development is indicated.

In this instance, the benefits of medium density housing in this location include:

- greater residential density within close proximity of local commercial/cafe and recreation;
- greater passive surveillance over pedestrian spaces and walkways; and
- a contribution to identifying the location/gateway to the cafe and park, assisting with wayfinding and potentially signalling to road users the potential requirement to change behavior

As block dimensions are generally similar, the medium higher density lots are characterised by similar depths but narrower frontages. The dwellings are generally therefore closer together and perceived as being of higher density. Dwellings can still be setback from the front boundaries to accommodate landscaping (including large specimen trees) should this landscaping approach for Goulds Road be adopted at detail design stage. This is also facilitated by the orientation of the lots (north-west facing rear yard) which allows for good solar gain for narrower rear yards.

Dunns Crossing Road

Dunns Crossing Road is both the perimeter of the development area and the proposed urban area, with land to the west zoned as Rural Inner Plains or Living 3. However, proposed private plan changes 73 and 81 may change this land to urban area.

Notwithstanding the potential change from rural to urban land on the other side of Dunns Crossing Road, and in line with development along Selwyn Road on the southern boundary of the Rolleston urban area, low density/large sections are proposed along this road. This is generally consistent with the approach taken for Faringdon South West adn Faringdon South East. Dwellings along this boundary will be accessed directly from Dunns Crossing Road, ensuring dwellings address the street with front doors, habitable room windows etc. ensuring active frontage and promoting passive surveillance of the street space.

The benefits of locating low density lots along this road include:

- larger lots can better accommodate on-site vehicle maneuvering to reduce the need for vehicles to back out onto Dunns Crossing Road and cause potential traffic safety issues;
- larger lots have greater opportunity to accommodate on-site vegetation which will contribute to greener/softer interface with the adjacent rural environment (if unchanged); and
- detailed subdivision design and landscaping can adopt specific techniques to soften the interface if desired (e.g. greater front yards or landscaping).

Northern Interface

The concept subdivision plan accommodates linkages to potential suburban development to the north with both road links and pedestrian links.

7

conclusion

In summary, the subdivision concept plan illustrates an appropriate, sensitive and best practice design response, consistent with the Rolleston Structure Plan and policies and design guidance in the Selwyn Operative Plan. While detailed subdivision design will be the subject of a future design and consenting exercise, it directs the development of a new residential community which:

- has a legible spatial layout and hierarchy
- has a mix of lot/housing typologies, encourages a mixed community and a logical distribution of medium density housing
- has a strong identity associated with a local commercial site/cafe and public recreation space
- extends and aligns with the neighbourhood-to-neighbourhood road network in Rolleston's south west
- is easily accessible and permeable by active travel modes
- delivers a density of at least 15 dwelling units per hectare but maintains the objective of spacious character on key routes;
- meets some of the residents' daily convenience needs within walking /cycling/scootering distance
- provides good connection to adjacent neighbourhoods;
- responds sensitively to its interfaces and doesn't preclude landscaping strategies for Dunns Crossing Road and Goulds Road
- provides for integration with future residential development to the north

SELWYN DISTRICT COUNCIL

Subdivision Design Guide for Residential Subdivision in Urban Living Zones (2009)

APPENDIX 1

SUBDIVISION DESIGN GUIDE

Design Guide for residential subdivision in the urban living zones

September 2009

Urban Design Context

Selwyn DISTRICT COUNCIL

SELWYN DISTRICT COUNCIL

DESIGN GUIDE FOR RESIDENTIAL SUBDIVISION

in the urban living zones

Contents

1. Introduction

The purpose of this guide is to explain to developers, designers and landowners what the Selwyn District Council is seeking for its new subdivisions in and around the townships of the district. It is an aid to interpreting the provisions (objectives, policies, rules and assessment matters) of the Selwyn District Plan. For detailed engineering requirements reference should be made to the Engineering Code of Practice.

A book symbol is used throughout the guide to indicate where reference should be made to other documents.

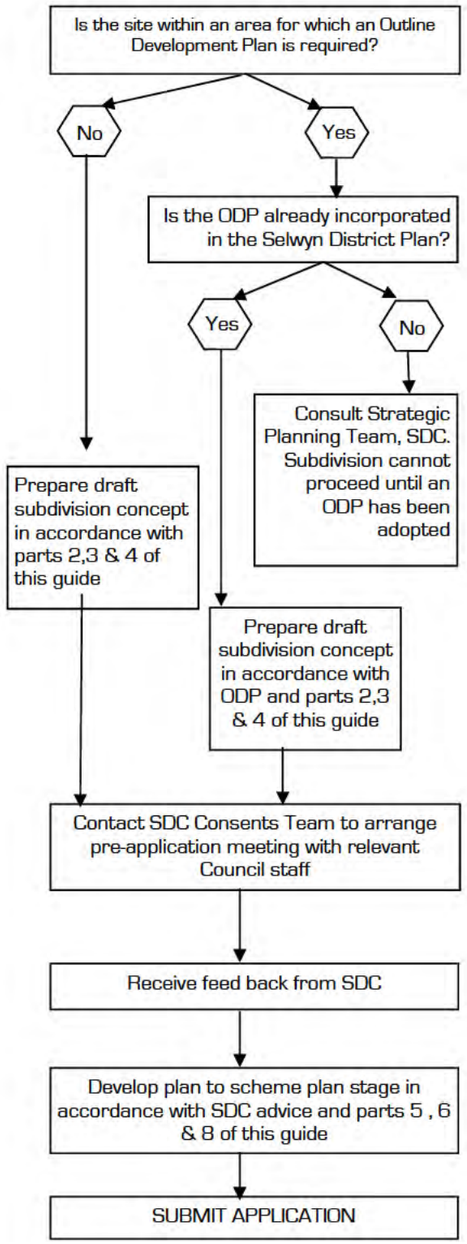
Flexibility in the application of standards and rules will be allowed at the Council's discretion, where the result is a design more suited to its context or other public benefit is gained.

The guide is set out in accordance with the steps that the subdivision design process should follow. The first step is to be clear what the qualities of the end product need to be. Secondly a thorough understanding of the site and its context needs to be gained. This will guide the design of the layout. Once a preliminary concept has been developed it should be discussed with Council staff at a pre-application meeting. This enables the applicant to gain an understanding of the Council's position on any given aspect of the proposed development and ensures that Council officers from different disciplines give consistent advice. Applicants and/or their agents should attend a pre-application meeting prior to submitting a resource consent application for any subdivision creating 20 allotments or more. The proposal can then be developed to scheme plan stage, following the guidance in sections 5 – 8.

A case study site is used to illustrate the development of a subdivision proposal.

Proposed Change No. 1 to The Environment Canterbury Regional Policy Statement requires an Outline Development Plan to be prepared for some greenfield development areas within the Selwyn District. The Outline Development Plan needs to be incorporated in the District Plan prior to seeking subdivision approval.

Pre-application subdivision process



2. What is a good subdivision?

A good subdivision is one that satisfies engineering and sustainability requirements, is profitable for the developer and has a good balance of the following qualities.

An ideal subdivision:

2.1. Is a special place
The subdivision has its own identity, yet fits in with the character of the township and the existing landscape and natural habitats. Existing site features such as mature trees and water bodies are incorporated, views are taken advantage of, any locally specific art or cultural references are incorporated or used as design cues.

2.2. Has a strong sense of community
People know their neighbours and are proud to live in this place. There are opportunities for people to meet and socialise. The subdivision becomes part of the wider local community.

2.3. Is attractive
The subdivision is not monotonous and dominated by the road surface. Instead there is variety in road and footpath patterns, types and amount of planting, section and building sizes and orientation, architectural styles and materials. The view along the street is of gardens, the fronts of houses and open spaces, not high fences and garages.

2.4. Is sustainable
The subdivision has a low impact on the environment and is resource efficient, both during construction and in the ongoing operation of its assets. High maintenance features are avoided. The street pattern is such that it remains functional over time as development intensifies or uses change. The subdivision makes use of the opportunities the site presents for water conservation and good solar access. Stormwater is re-used for garden or reserve watering or treated and disposed of on site and contributes to amenity or ecology..

2.5. Provides housing and facilities that people want
Section and house sizes and values are varied and meet the market demand. Community facilities are provided, within the vicinity or are able to be easily reached on foot, by bicycle or public transport. Residents have access to a network of varied open spaces, providing opportunities for passive and active recreation.

2.6. Is convenient and accessible
It is easy to get from the subdivision to community infrastructure like schools, libraries, shops, parks and sports and medical facilities and the wider road network. Everyone, including the young, disabled and elderly, is able to move around the local environment with ease, in safety and comfort.

2.7. Provides for walking and cycling and public transport
Opportunities for walking and cycling within the subdivision are seen as important as catering for motorised vehicles. Connections along user desire lines are formed to existing or potential routes beyond the site boundaries. Public transport is readily accessible within or near the subdivision.

2.8. Is free from crime
The subdivision feels safe and residents are able to watch out for each other. There are clear sightlines along pedestrian and cyclist routes. Parks, bus stops and community facilities are located so that they can be easily seen from surrounding houses and streets. There is clear ownership of land and a high standard of maintenance.

3. Contextual Analysis

In order to design a subdivision that has the qualities outlined above a comprehensive analysis of the site and its surroundings is necessary, prior to designing the layout. This will allow the development to take advantage of the natural and historical features of the site and relate well to its context.

Colour coding of the analysis categories is used to illustrate the aspects of relevance on the case study site., shown on pages 5 and 6

Matters to be considered:

3.1. Existing site features

The physical and visual aspects of the site.

- trees, shelterbelts and other vegetation
- site contours
- changes of level
- unstable ground
- site orientation
- prevailing winds
- water courses, (including water races)
- springs
- land which cannot be built on
- transmission lines
- areas which have been filled or are contaminated
- land liable to flood
- existing buildings and structures which have to be retained or removed
- nature and condition of site boundaries
- any natural, cultural or archaeological features to be preserved or respected (early consultation with Tangata Whenua and the New Zealand Historic Places Trust is advised)

3.2. District Plan site requirements

- any District Plan requirements such as setbacks from watercourses, shelter-belts and transmission lines
- road widening lines
- limited access roads
- buffers between uses
- landscaping
- any requirements included in an approved Outline Development Plan

Existing vegetation

Mature trees
Where mature trees exist on a site their suitability for retention should be investigated. Farm trees are often not compatible with new residential areas due to their size, tendency to drop branches or debris, or inability to survive when their growing conditions are altered. If they can be retained they should be located in public spaces and not private gardens.

Shelter belts
As well as providing shelter from prevailing winds for new residents, shelterbelts can maintain a rural character and be a feature of a new subdivision, However they can cause unwanted shading and need to be maintained. Selected segments of shelter belts might be retained where they can be maintained easily, are on the southern boundary of a site and adjacent to rural land or within or on the rural boundary of a reserve. They may be incorporated in the road reserve, where they will not cause problems such as root invasion or icing of footpaths and roads.

Native vegetation
Biodiversity is an important component of good subdivision design. Existing vegetation should be inspected by a botanist and remnant native vegetation (which is extremely scarce) identified so that the subdivision can be designed to safeguard that which is worthy of protection.

3.3. Surrounding activities

- adjoining land use zoning
- existing pattern of roads
- location of schools, parks, libraries and other community facilities, shops, places of employment, bus stops
- open outlooks, near and distant views
- the relationship of surrounding development to the site
- incompatible activities such as sources of noise, dirt, smell, and unsightliness

3.4. Movement patterns

- the surrounding road network and opportunities for its improvement
- existing and potential access points
- existing and desired pedestrian and cycling routes
- existing and potential bus routes
- roads to which direct access may be limited.

Transportation advice
The Council's Asset Management staff can provide advice on the road classification and standards, existing traffic movements, intended connections and any upgrading plans or requirements.

3.5. Open space and landscaping

- the need for playing fields, expansion of adjacent reserves or creation of new reserves
- areas where particular attention to landscaping may be required, particularly alongside major roads or adjacent to non-residential uses

Soil structure
It is important to avoid disturbance to soil structure, such as topsoil being washed away or compacted during construction. If the topsoil and litter layer remain intact this provides more fertile soil for landscaping and garden plantings and reduces the requirement for fertilizer and watering.

Local knowledge
It is advisable to consult Council staff, neighbours, community and interest groups to ensure that all issues have been identified and there are no surprises further down the track.

3.6. Stormwater management

- flow paths, stormwater catchments, site conditions
- the need for on-site stormwater management, such as detention and retention ponds
- any off-site areas that could be used for stormwater management
- collection and re-use of stormwater

3.7. Infrastructure

- existing or required sewer reticulation,
- access to and availability of a clean and secure water supply, with infrastructure supporting a logical network.
- availability and provision of underground power, telecommunication services and reticulated gas systems,
- service easements, pumping stations, electrical substations, etc.

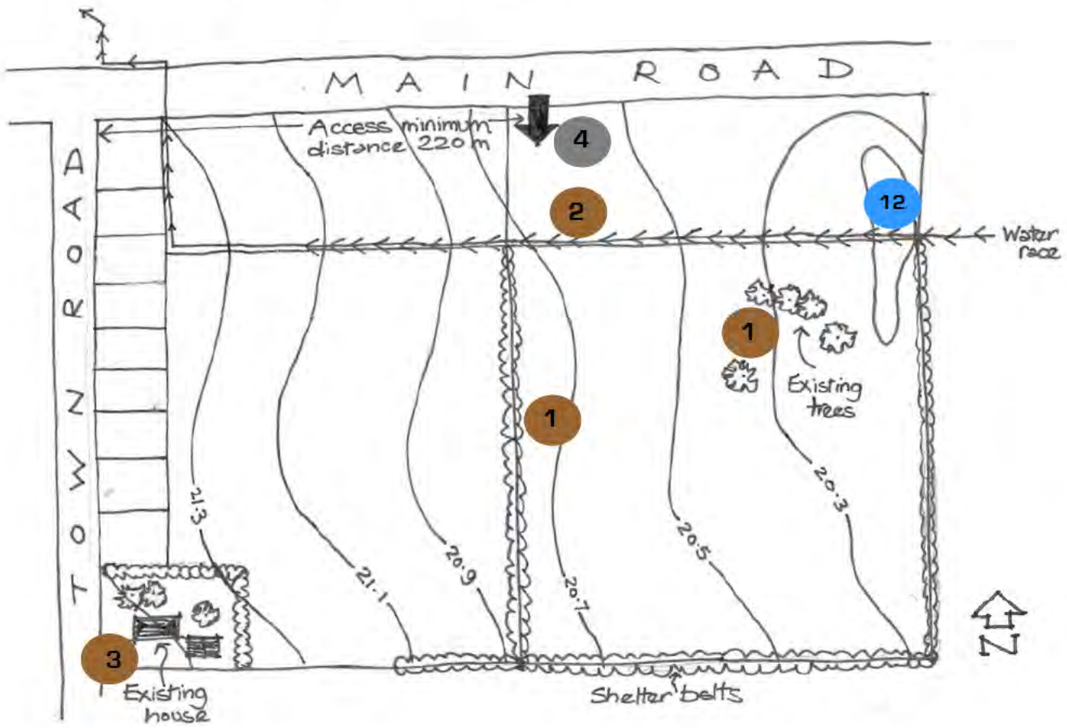
3.8. Staging

- the likely sequence and pace of development (this may be determined by infrastructure provision, housing market, planning strategies, ownership constraints)

Reserves advice
Developers should consult with the Council's Asset Management Department to establish whether there is a need for any reserves within the development site or whether the reserve contribution will be taken entirely as cash. In some situations Council will wish to use reserve contributions to put towards larger off-site parks or sports fields. Conversely Council may wish to purchase land within the subdivision to create a larger park than could be achieved by reserve contributions from the subdivision alone. Council will consider the recreational value of stormwater reserves on a case by case basis when calculating reserves contributions.

CASE STUDY - Site analysis

Note: This page to be read in conjunction with page 6



Design criteria derived from contextual analysis:

1 Try to retain existing trees and parts of shelter belt
2 Retain water race in some form—may need relocating
3 Incorporate existing house

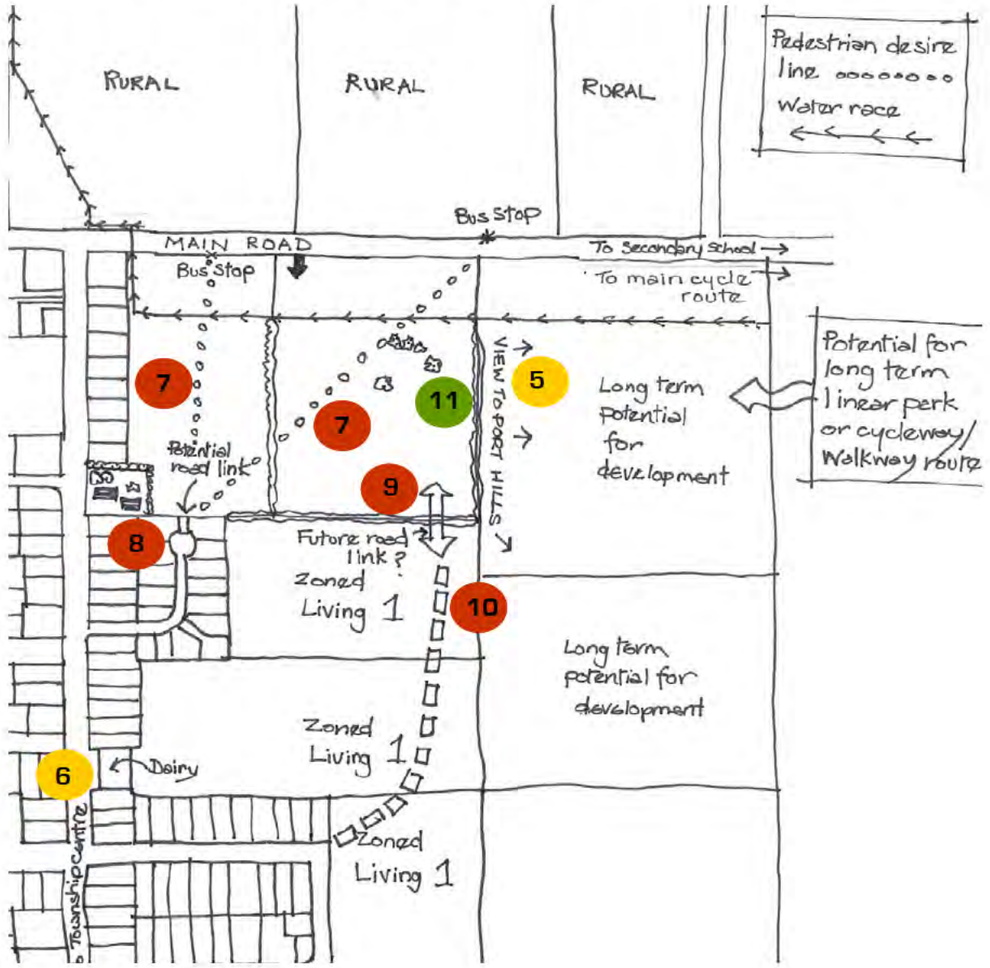
4 Junction with Main Road to be at least 220m from Town Road

5 Provide view to Port Hills from within subdivision
6 Enable easy access for new residents to dairy and township centre

7 Provide pedestrian/cyclist link from main road through site, to give access to bus stops and short cut for cyclists to school and rail trail
8 Provide road link to existing cul-de-sac head in south west corner
9 Provide road to southern boundary to enable connection to L1 land to south
10 Allow for potential long term road connections to land to the east

CASE STUDY - Wider area analysis

Note: This page to be read in conjunction with page 5



11 Local reserve required on site (advice from SDC)
Locate reserve to enable future extension to the east

12 Stormwater detention pond near eastern boundary, due to topography and amenity benefits
Use of stormwater run-off for irrigation of via underground storage

4 Layout considerations

The site and context analysis provides the basis for designing the subdivision layout.

In addition the design will need to satisfy a number of best practice criteria. All of these design parameters must be considered simultaneously. A best practice approach might include the development of different options that can be assessed against each other.

4.1. The character of the subdivision

Maximum advantage needs to be taken of natural features of the site. However, development land in the plains area of the Selwyn District can be flat, featureless and rectilinear in shape and imbuing the subdivision with a sense of place and a point of difference is a challenge. Off-site views and new reserves and tree planting can be utilised as design features. Creative use can be made of stormwater management components and water races. Deliberately varying typically straight road alignments and rectangular section shapes away from the obvious straight line geometry could be a possibility. Changes in street design, such as the use of narrower carriageways is another option. Variety in section sizes can be utilised to create a focus for the subdivision. Where there is a need for a community facility such as a school or a library within the subdivision or local shops are viable, they can form the nucleus of the new neighbourhood.

4.2. Type, location and size of open spaces

Open spaces within the subdivision should contribute to a network of varied open spaces in the wider neighbourhood. Some areas may be designed to be left in a more natural state. Such 'ecological parks' increase the range of habitats and visual interest, whilst requiring lower levels of maintenance.

Linear parks can be developed around watercourses and footpath and cycleway links, providing they are wide enough to function as a recreation reserve, otherwise they will be viewed as part of the transport network. They can form ecological corridors if they are of sufficient width (at least 50m) or connect key features.

Assessment criteria for reserves

Council has adopted* a set of criteria by which they determine the suitability of land to be acquired by the Council as reserve :

- Size, location and accessibility
- Frontage to a roading network
- Soils, gradient and topography,
- Landscape features and quality
- Potential for linkages and walkways
- Margins of waterways
- Proximity to other desirable features
- Potential for views into or from the site
- Eco-systems and biodiversity
- Significant mature vegetation
- Existing shelterbelts
- Historic and cultural significance
- Safety for users
- Potential for enhancement
- Any other criteria relevant to the particular development

*Development Contributions Policy, Selwyn Community Plan (LTCCP) 2009-2019, Volume 2, p40

Smaller local reserves provide amenity spaces and can include linkages. They may contain childrens play areas and other recreational facilities such as tennis courts, petanque etc.

Open spaces may be located so that they can be shared with schools

Locating reserves

The Council expects reserves in logical locations which contribute to the township recreation needs. If the location of the reserve is fixed (due to existing trees or the need to extend an existing or proposed reserve for example) the layout will need to be designed to respond to it. Otherwise the best location for the reserve will need careful consideration at the outset.

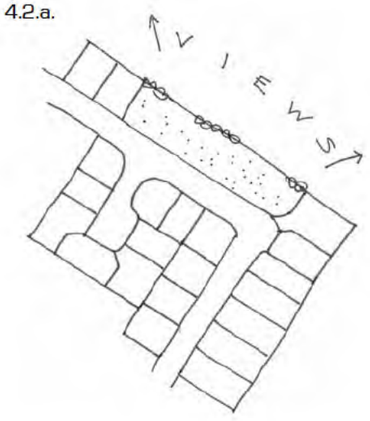
It is not acceptable to nominate a group of sections as the reserve after the layout has been designed. Nor will the Council accept land which clearly benefits only a limited number of users and the prime function of which is to add saleability to the development.

A local neighbourhood park should be at least 2000m² in size, easily accessible on foot for all residents of the subdivision and should be linked to the wider area as part of a network of accessible public spaces throughout the township. As a general rule residents should have access to a children's playground within a 400m radius of their home. A district sports field should be a minimum of 4 hectares or, if it is to accommodate club buildings, 8 hectares.

Places the reserve might go:

☐ At the rural boundary - so all residents can enjoy the rural outlook

4.2.a.

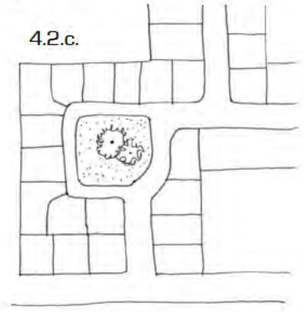


☐ At the entrance to the subdivision -

4.2.b.

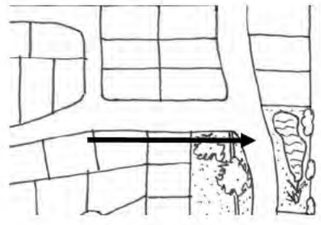
☐ In the centre of the subdivision - to create a focal point

4.2.c.



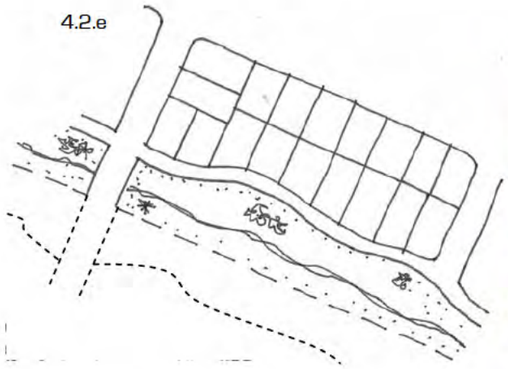
☐ To form a viewshaft from the road

4.2.d.



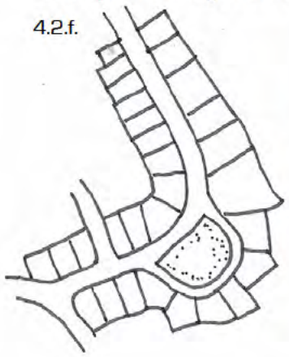
☐ Adjacent to the site boundary - so that it can be extended by a future reserve on an adjacent subdivision (back to back reserve)

4.2.e



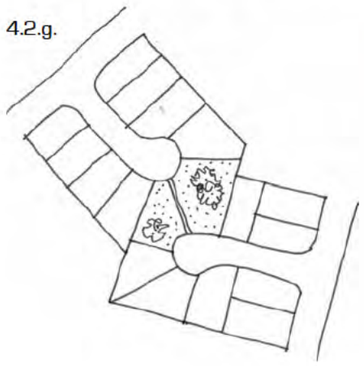
☐ In a strategic location that maximises the number of residents who pass by or through it as they come and go from their homes.

4.2.f.



☐ At the end of a cul-de-sac head - to provide a link to another cul-de-sac head or a footpath

4.2.g.



Fronting reserves
Houses should front onto reserves to form an attractive edge and enable casual surveillance. This will normally mean that the reserve has a long road frontage. Another alternative is to have a right of way serving the properties which front on to the reserve.

Right of way serving properties fronting the reserve

4.2.h.

Where a road frontage is impractical along the total length of the reserve boundaries, the quality of the interface should be secured either by ensuring that fences adjacent to private gardens are low or that screen planting is used to form a green edge.

Reserves can also serve a dual role by providing areas for the treatment and disposal of stormwater from a subdivision in heavy rainfall events.

4.3. Stormwater management
Stormwater should be viewed as a resource and not just a by-product of development. It can provide for a variety of uses and add value to the subdivision.

Stormwater management (quality and quantity) and low impact design should be considered early in the site planning process as these will usually influence the design of the subdivision. The amount of land required needs to be calculated at the site analysis stage and the most suitable locations identified, having regard to land levels, soil conditions, hydrology, public safety and down-gradient landowners.

On-site management of stormwater could include the use of swales, raingardens, rainwater tanks, stormwater retention basins and ponds, wetlands and riparian planting. This provides opportunities for enhancing the amenity and distinctiveness of the subdivision and can have ecological benefits (such as providing habitat). It can also contribute to the open-space needs of the development.

A progressively staged and co-ordinated treatment approach, to serve a wider area, is preferable to a single treatment measure in isolation (see Ref: 18). This includes at-source central measures where practical.

The 5 Waters
Council has adopted a Five Waters strategy which includes 7 sustainability principles for the management of water. The five waters are stormwater, wastewater, land drainage, water races and the reticulated water supply. Increased pressure on the use of water and the benefits of sustainable disposal mean that the Council is placing increasing importance on the responsible use of water. Peak (summer) usage is especially high and mostly driven by outdoor irrigation.

The ideal time to ensure the opportunities presented by the site are capitalised upon is when planning the subdivision design. The opportunity should be taken to reduce water wastage through re-use by such means as :

- Holding stormwater collectively in retention ponds or tanks to be used for irrigation of public areas.
- Supplying collective water systems to public areas via a 'third pipe' (recycled water)
- Installing rainwater storage tanks on individual sections
- Considering the use of wastewater for irrigation. This can be easiest on individual lots where a simple greywater reuse system can be used without the need for treatment

A lifestyle analysis of any opportunities should be undertaken to identify which ones are of most benefit in the short and long terms.

Installation of systems on individual lots after subdivision can be ensured by the use of covenants. The appropriate solution will depend upon site specific factors such as soil conditions, access to water races and the amount and type of reserves on site. A consent from Environment Canterbury may be required.

4.4. Water races

Water races are a resource and an opportunity. Their prime role is to provide water for stock in rural areas. While intended to be quite utilitarian in nature they do form a distinctive and attractive element in the flat landscape of the Selwyn District.

If the site has a water race running through it, it should be retained and enhanced if it is practical to do so. This can help to increase the attractiveness of the subdivision and introduce an element of biodiversity as well.

However:

- the water race network, or portions of it, may not be retained in the long term and consideration should be given to how the space will function if the water race is removed.
- The quality of water in water races varies and the treatment of the race should take account of this.

Where a water race is to be incorporated in the subdivision it should be located in a prominent location, either along the fronts of properties with a footpath alongside it or through a reserve. It may be necessary to realign the water race in order to achieve this.

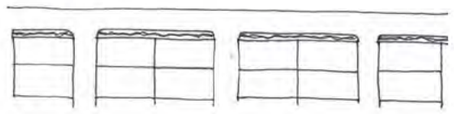
Water races should not be located between rear gardens as the level of maintenance can be variable, access is difficult, unauthorised ponds can be created that reduce its flow and any aesthetic benefit is restricted to just the adjacent landowners.

It can be difficult to accommodate swales and water races satisfactorily, because of the need for access across them to individual properties. For larger water races, bridges are preferred to culverts.

To limit the number of crossing points water races can be located:

☐ At the ends of streets:

4.4.a.



☐ Adjacent to limited access roads:

☐ In the centre of the road

4.5. A connected transport network

A well connected network of roads increases accessibility for residents allows for safer and more efficient movement of traffic, enables more efficient infrastructure provision and is more adaptable to changes or intensification in land use over time.

The movement analysis carried out in the contextual analysis will inform the design of the road layout.

The road layout needs to: .

☐ Be simple and logical so that it is easy for people to work out where they are and where they are going

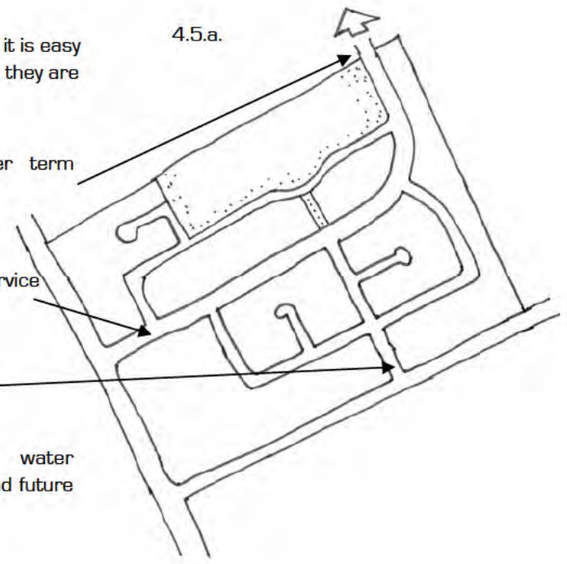
☐ Make allowance for longer term growth

☐ Make allowance for a bus service

☐ Connect to adjacent roads

☐ Support connectivity of water services between existing and future development

4.5.a.

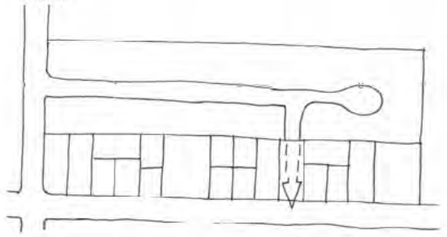


Transport Planning approach
There has been a shift in thinking that transport only revolves around providing roads. There is a need to give people a range of choices that meet their needs in an effective, efficient and affordable manner. The best way to achieve this is to incorporate different transport options early into land use and subdivision planning and design processes, whether this enhances walking and cycling connections or ensures residents have, for example, access to a bus service within 5 minutes walk of their home. Research shows that the majority of car trips undertaken are those under 2km long, and involve single occupant vehicles in urban areas, which is viewed as inefficient and can add to congestion. Transport systems need to be designed so that they are safe, attractive to use, support healthy lifestyles and social interaction, while minimising impacts on the environment by improving air and water quality and reducing noise.

Council believes its townships are perfectly poised to take advantage of more sustainable transport planning practices as they continue to grow and develop. While the role of roads and streets is still very important in this process, they also need to be "fit for purpose" (see Engineering Code of Practice). They need to make a positive contribution towards the amenity of the township with attractive and pleasant streetscapes, which are not always dominated by cars.

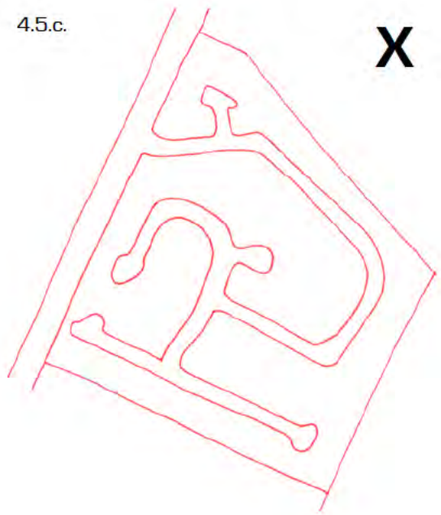
In some cases it may be necessary to acquire adjacent property to secure a connection.

4.5.b.



Where culs-de-sac are incorporated they should be limited in length and have access from a through road. Long meandering culs-de-sac and one cul-de-sac leading to another cul-de-sac do not meet the design criteria.

4.5.c.



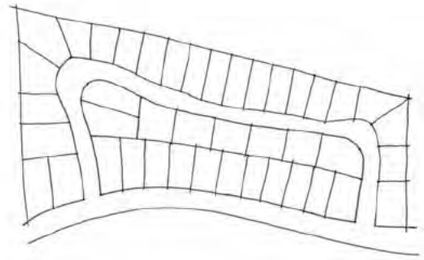
Bus routes
Bus services need to follow a direct route through the subdivision, without the need to double back. The location of the through route should aim to be within a 400m walking distance from every house.

All larger subdivisions are required to be vetted by Environment Canterbury to ensure that appropriate provisions has been made for buses. A guide entitled 'Providing for passenger transport within your subdivision' is available on the Selwyn District Council website (www.selwyn.govt.nz)

An alternative to the use of culs-de-sac is to include streets in the form of a crescent. These provide connectivity but also can be a quiet secluded street environment.

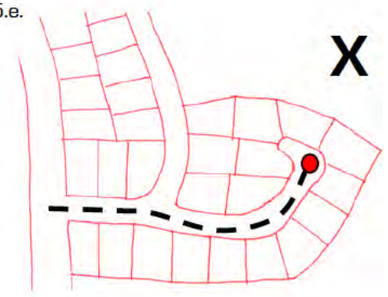
A crescent street form used instead of two culs-de-sac

4.5.d.



It should be clear which is the through route, so that visitors do not end up at a dead end

4.5.e.

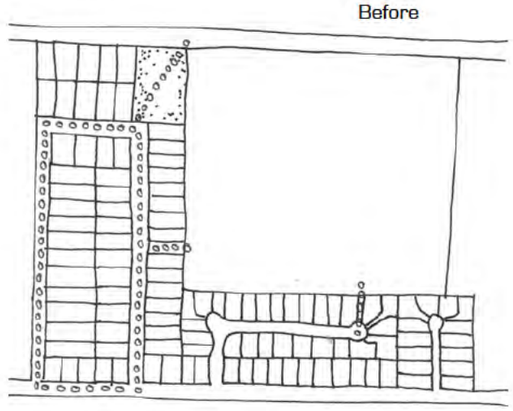


4.6. Network for pedestrian and cyclist movement
Pedestrians and cyclists will use the road network, but off-road connections can often provide shortcuts and a choice of routes. The analysis carried out in the contextual analysis will inform the design of pedestrian and cycle routes.

The subdivision layout should comprise walkable blocks with an average perimeter distance of no more than 800 metres.

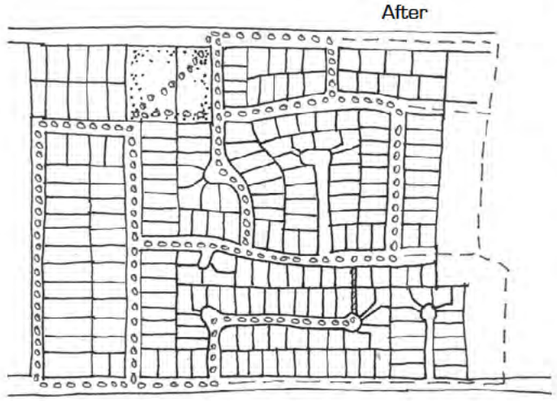
4.6.a.

Before



4.6.b.

After



The layout should also be designed so that an 800m block size can be achieved in conjunction with adjacent land. Where this land is undeveloped, allowance needs to be made for connections so that logically shaped blocks and routes can be formed when the land is developed. Where the land has already been developed, blocks should be completed where possible, utilising existing roads and connections.

Walkable residential blocks
A residential block is one or more residential sections. Its perimeter is defined as the shortest distance which it is possible to walk entirely around on publically accessible land.

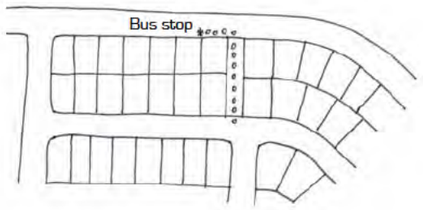
Before widespread car ownership, suburbs (including those in Christchurch, Lincoln, Prebbleton and Darfield) were laid out in blocks with a perimeter of around 600m-800m. More recently, block sizes have tended to increase and urban areas have become less walkable.

A block size of 800m (being an average 10 minute walk) ensures there is connectivity and a choice of routes through an area.

Where the block size is larger than this, choice is limited and walking trips become elongated and less convenient. Larger blocks become obstructions to direct walking routes and encourage the use of cars for short trips.

To further encourage walking and cycling care should be taken to:

4.6.c.

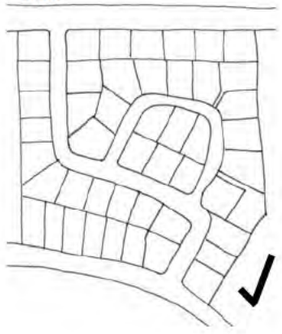


☐ Provide minimal deviation from desire lines

☐ Avoid the need for long and/or contorted pedestrian routes between houses:

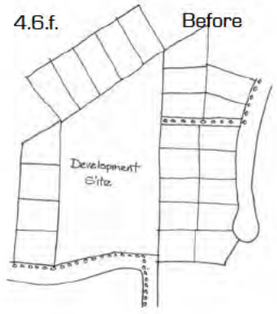
4.6.d.

4.6.e.

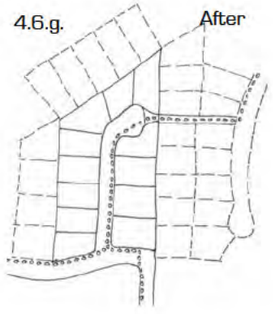


☐ Connect to adjacent pedestrian and cyclist links:

4.6.f. Before



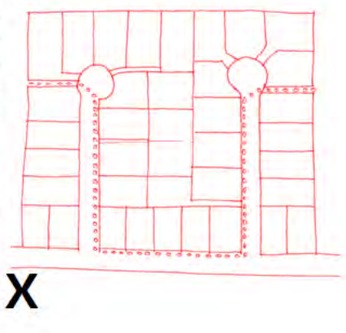
4.6.g. After



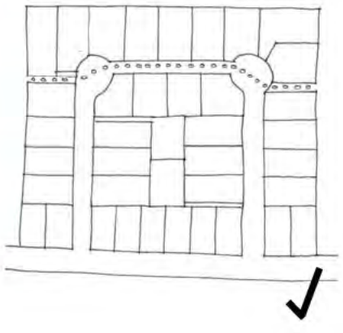
In some situations a link (Residents street, see p.21) can be used to connect two cul-de-sac heads to provide a more direct route along a path.

This method also has the advantage of reducing the number of rear lots.

4.6.h.



4.6.i..



4.7. Interface with State Highways and arterial roads:

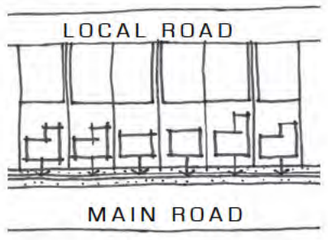
Council wishes to encourage a sense of community in its townships. Intervisibility between the fronts of houses and the adjacent street is an important aspect of being part of the community. Where a site has a frontage to a road where direct access is not possible, the layout will need to be designed to ensure that an appropriate interface occurs.

If the layout is designed so that the private gardens are adjacent to the road, the new owners will understandably want high solid fences for privacy and noise attenuation reasons. This results in an unsatisfactory outcome for the community. Instead, in most cases, the layout will need to be designed so that houses front onto the road (even though they are not accessible to it), so that the need for a high fence alongside the road is avoided.

This can be achieved by:

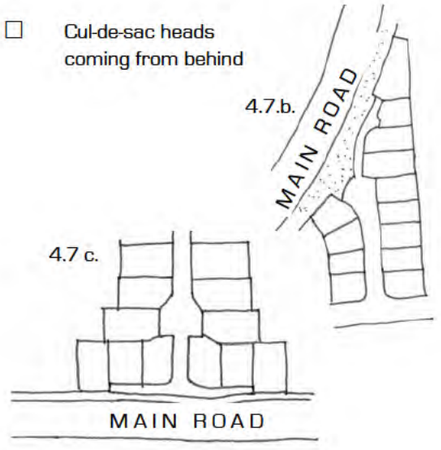
☐ Rear access lots when main road is on the south side:

4.7.a.



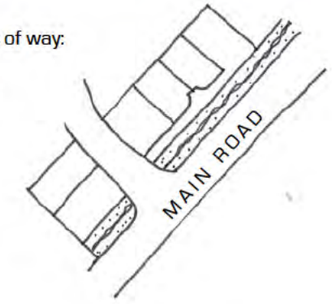
☐ Cul-de-sac heads coming from behind

4.7.b.



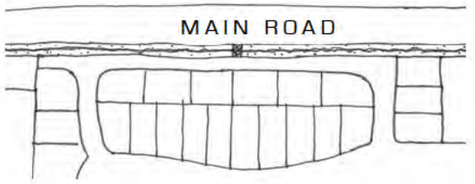
☐ A right of way:

4.7.d.



☐ Access from within the subdivision

4.7.e.

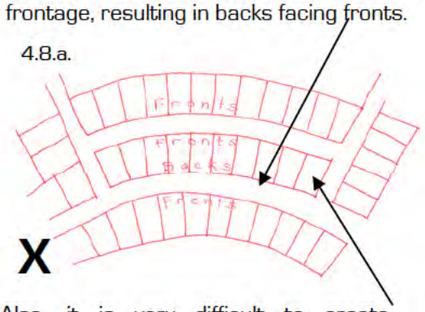


Where the development block is on the edge of a township, on the south side of the road, and/or there is no likelihood of residential development on the opposite side of the road, it may be acceptable to provide a 'green screen' to obscure a line of back fences from the road and maintain the illusion of a rural boundary. Where there are existing shelterbelts these could be retained and enhanced, otherwise extensive new planting will be necessary.

4.8. Interface between residential properties

Fronts of properties should face fronts of other properties, while backs should adjoin backs. This makes it possible to create attractive semi-public frontage with private space to the rear. In residential subdivisions some properties will face the sides of others, but care should be taken to avoid a road layout where properties have dual road frontage, resulting in backs facing fronts.

4.8.a.



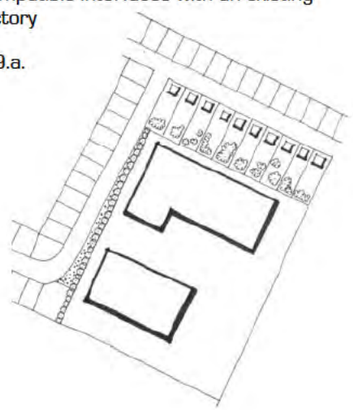
Also, it is very difficult to create a satisfactory interface with the street where corner sections have road frontage on three sides,.

4.9 Interface with uses which might affect residential amenity

A development site may adjoin a use which could potentially be a nuisance to new householders. Industrial , farming and forest activities can be unsightly, or emit noise, odours or dust. In order to avoid conflict between existing and new activities (reverse sensitivity) a buffer may be necessary. This may be in the form of longer adjacent sections, a perimeter road and screen planting or an intervening open space.

Compatible interfaces with an existing factory

4.9.a.

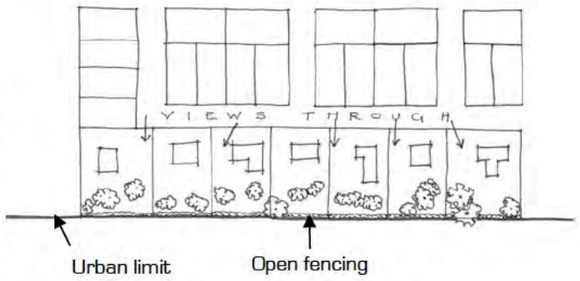


4.10. Rural/urban interface

Where development sites adjoin rural land careful consideration of the treatment of the edge of the subdivision is required. The edges of new subdivisions are often highly visible in the landscape.

Where the subdivision boundary is defined as the urban limit in the District Plan, a hard urban edge should be avoided. This may be achieved by a row of larger sections at the perimeter, with low fencing or hedging along their rear boundary. This format enables buildings to be set well back from the rural boundary and allows for more extensive garden planting so that the subdivision is less obtrusive in the rural landscape.

4.10.a



At the same time residents within the subdivision gain a sense of the rural land beyond, due to the larger garden areas which allow views through to the rural landscape.

Covenants may be necessary to manage fencing, so that the open aspect is retained.

4.11. Street orientation and section proportions

Streets should be aligned to take advantage of views and orientated so that houses have good solar gain.

Views

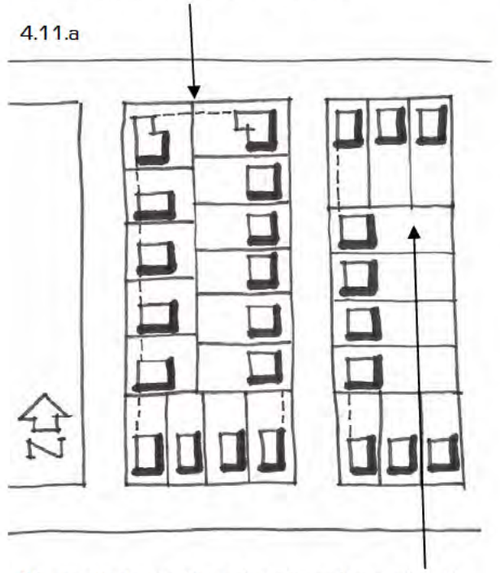
Views may be afforded of off site features e.g. towards the Port Hills or the Southern Alps or landmarks such as church spires. Alternatively views may be terminated by buildings or trees, giving a sense of enclosure.

Solar orientation

Consideration will need to be given to the orientation and dimensions of sections to ensure the receipt of sunlight in private gardens and living rooms.

Creating wider sections on the south or east side of the street will allow gaps to be left between the houses so that afternoon sun can penetrate to the rear gardens.

4.11.a



Alternatively south and east sections should be long enough to allow sun to reach over the house into the rear garden.

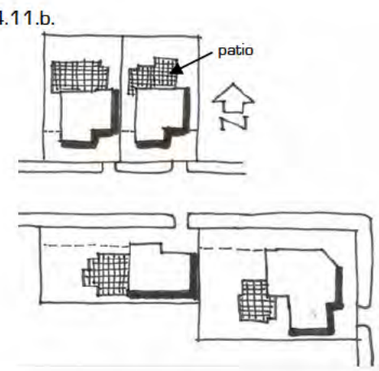
Corner sections

Corner sections can be difficult to develop. They may need to be larger to enable practical use and an attractive street frontage. Developers may wish to exercise more control over corner sections through the use of covenants or by developing them themselves.

House position

Even at this stage, consideration should be given to where the houses will be positioned on the section and where the private outdoor space (north and west side) and garage will be (south side). The layout should be designed to avoid the need for private garden space to be located between the front of the house and the street. It is intended that high solid fences are not erected in front of the house.

4.11.b.



4.12. Rear lots and Rights of Way

Rear lots and groups of sections accessed from a right of way should not be employed purely to minimise the amount of road provided by the developer. Serving each back lot by a private right of way is inefficient and creates a greater area of land devoted to vehicle access. Multiple accesses from rear lots onto the road can disrupt traffic and pedestrian flows along the footpath as well as look unattractive. The private right of way can cause friction between neighbours over their use and maintenance responsibilities (private right of ways are not maintained by Council) and houses on rear lots lack a visual connection with the street.

Rear lots and rights of way should therefore only be included where there is no alternative way of developing an awkward corner of the site, or where they are a good design solution, such as some situations alongside reserves, waterway or limited access roads.

Rear lots used to create a good interface with a linear reserve.

4.12.a.

It is intended that the District Plan will limit the number of properties without frontage to an adopted road to a maximum of 20% of the lots in any one greenfield subdivision.

This allowance is primarily for lots located on shared access ways (serving at least 4 properties). Such developments are expected to have a street-like amenity, comparable to an adopted road, having an open appearance without front fencing.

Rear lots and groups of less than four properties accessed via a right of way will be restricted to a maximum of half of the 20% allowance.

4.13. Incorporating existing properties and awkward shaped boundaries

Where an existing house is to remain the layout will need to be designed to incorporate it in a sensitive manner. It may be possible to take advantage of existing garden planting so that it provides a sense of maturity and a point of interest for the new subdivision.

Awkward shapes should be absorbed into the layout to avoid left over spaces or difficult road geometry.

4.14. Section sizes

A variety of section sizes should be incorporated within any one subdivision. This provides greater choice for purchasers and can help to facilitate a more balcanced community.

The Selwyn District Plan requires minimum average section sizes, as opposed to minimum section sizes. This allows for variation in size without diminishing the overall section yield. Smaller sections may be grouped together or dispersed throughout the subdivision.

Smaller sections may be located close to township centres, community facilities, open spaces or bus routes. Larger sections may be located on the rural edge or adjacent to existing residential development that had previously enjoyed a rural boundary.

In larger subdivisions variety in section sizes may be used to structure the layout to give a sense of place, with for example, an increase in section sizes as one moves away from a focal point.

5 : Street design

5.1. The balance of movement, access and place

Residential roads and streets perform a number of functions:

- they must provide for the movement of vehicles and people
- they must provide access to houses, businesses and community facilities.
- they provide an opportunity to enhance the streetscape and create a pleasant place for people

The Council wishes to encourage quality in public space and to allow for street design which is appropriate to its context.

A traditional engineering based approach to road design often prioritises the requirements of drivers above all the other functions of the street, which are fitted in around standardised road widths. However, in residential areas, vehicular traffic flow is not always high enough to justify it determining the overall street environment. The needs of other road users and the creation of a sense of place can be just as important as providing for traffic flow in certain situations.

The Council's general approach is that for lightly trafficked and shorter streets, some flexibility in the design of roads is appropriate, especially where this allows other objectives to be realized such as connectivity or high quality. Council will consider these as a positive effect in the consideration of subdivision applications.

The Council's Engineering Code of Practice details appropriate road widths for new subdivisions, based on traffic flow and the intended function of the roads. The design of new subdivisions should consider the width of carriageway that is appropriate to the movement function required and how this fits into the adjoining network of roads. At the same time, it should consider the elements needed in the street to create settings that are attractive and functional, with high amenity and a strong sense of place.

The aim of this guide is to provide for some flexibility and variety in subdivision design.

It is often preferable to use the minimum carriageway width, as over-engineering the roading requirement can take space from the place functions and possibly make the subdivision a less desirable place. This is not to say that a wide carriageway will not be permitted, but a decision should be made after considering whether a wider road is justified on amenity grounds, rather than purely for traffic reasons.

Only high movement roads, such as arterial and collector roads, have high enough traffic flows that movement becomes more important than other functions.

Functions of streets

The functions of streets include the following:

Movement	Place
Road (Path for cars and motorised vehicles)	Social Space
Public Transport function	Amenity Space
Cycle route	Stormwater disposal
Pedestrian route	Parking
Servicing and emergency vehicles eg refuse trucks, fire appliances"	Street lighting
	Distinctiveness

Social Space refers to places for people to be and can include seating areas, informal stopping areas with space for people to linger and space for children to play.

Amenity Space refers primarily to visual amenity and can include landscaping, street-trees, water races and other features, as well as buildings and the interface with private space.

Distinctiveness refers to whatever makes the street different from elsewhere. It can include road alignments, public art, distinctive stormwater management or the retention of historic trees.

5.2. Road and street types and hierarchy

The design of the road and street layout should reflect a hierarchy of roads and streets within the subdivision, while also being consistent with those either adjoining or planned for in the future. Sensible planning will contribute to a sense of place and will make the roads and streets easier and safer for drivers and pedestrians to navigate.

Road widths should be consistent with the position of the road within the hierarchy. Widths may decrease away from main roads as the amount of traffic decreases and they can be designed for slower vehicle speeds. At intersections, it should be clear which is the main road and which is a minor road.

The following describes the type of streets and roads that can be developed, from those designed only for property access, to those needed to move vehicles efficiently around a township.

1. Right of Way. A private access that is essentially a shared driveway, used to provide access to lots, where it is not feasible to have direct access to a public road.

Typically it can only service up to 6 lots at a time and may need to include passing bays and turning areas.

2. Cul-de-sac. A no-exit street, to be no longer than 150 metres in length with a narrow carriageway possible in some situations.

The limited use of these is acceptable but there is a general requirement for well connected streets.

3. Residents Street. A shorter and narrower connecting street or lane that serves only the needs of the adjoining property owners and not "through" traffic.

It can utilise shared spaces for vehicles and pedestrians and provide a higher degree of street amenity with planting and street furniture.

Residents streets can have a narrower carriageway width of around 5m if they meet the following criteria:

- It takes no more than 150 metres along the street in either direction to reach an adjoining road (i.e. they can be up to 300 metres long if they adjoin other roads at both ends - that are not the same type of street or a cul de sac)
- They provide access to a maximum of 10 housing lots per 150 metres along the street (i.e. a maximum of 20 lots)
- They have a slow design speed in the range of 20-30 kph
- They are designed for the safe passage of pedestrians and cyclists

These are an exception to the normal roading standards.

4. Neighbourhood Street. A street intended to cater for property access, but can accommodate a limited amount of through traffic. It has a carriageway width of around 7m and connects to the wider urban roads that subdivisions have historically provided. Design speed can be 30-40 kph and the layout can utilise parking bays to give the impression of a narrower street.

A neighbourhood street will have a pleasant streetscape that provides more opportunity to introduce plantings and street furniture as an enjoyable public space.

Discuss with Council staff
Developers contemplating the use of the above types of streets will need to discuss the following with the Council at an early stage:

- road reserve width
- carriageway layout
- parking requirements .
- paving materials
- lighting
- refuse truck and other large vehicle access eg delivery trucks, furniture removal, emergency vehicle access etc

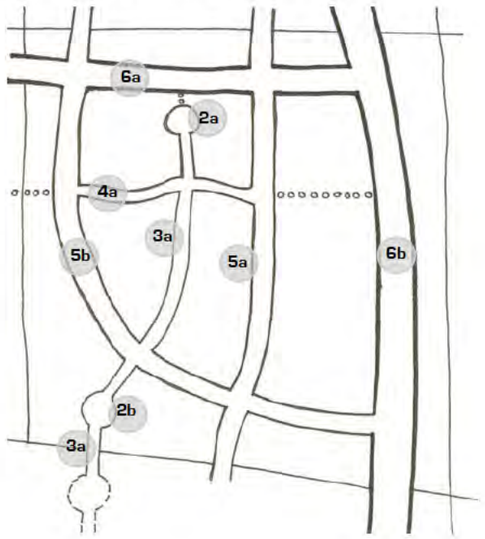
A component of any agreement by Council to utilise a street layout that might result in access restrictions, will be Council advising of this in the official Land Information Memorandum (LIM) issued to prospective and new property owners

5. Local Area Street. A street which provides the connection between the smaller streets referred to above and the more transport focused busy main collector and arterial roads. It should be designed to the more typical urban roading width of 8–9 metres and a 50kph design speed and will need to adhere to more stringent engineering standards. Like its busier collector and arterial road counterparts, it is likely to form part of a wider network of roads that could extend beyond the immediate development area.

6 Collector Road and Arterial Road. A road that can range in width from 9 -14 metres. Depending on the situation, a collector or arterial road is likely to have parking and cycling lanes and even some form of access control to improve safety and to ensure that traffic is moved as efficiently as possible. In urban areas it is likely to be used as a bus route and require bus stops to be positioned appropriately.

Collector and arterial roads comprise the principle main roads in a township, and connect to the roads and routes between townships and the districts wider network of higher speed rural roads.

Example of a road hierarchy



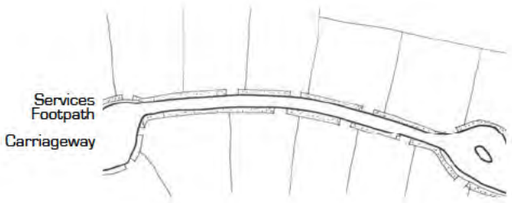
2a	Short cul-de-sac with walking and cycling connection to main road
2b	Short cul-de-sac with linkage to adjoining subdivision via 3a
3 a.	Residents street up to 300m long
4a.	Neighbourhood street with sinuous alignment and speed control
5a.	Local area street with street trees and parking bays
5b.	Local area street with stormwater swale along one side
6a..	Collector road providing connections to local streets
6b.	Arterial road with central islands, bus route and controlled access

Continuation of existing roads
Where an existing road is to be continued through a subdivision, the design of the street should reflect the existing design elements (such as road width and planting types). Variations are acceptable, but should be designed to enhance the street character rather than simply to fit in with the desired theme of the subdivision.

EXAMPLES OF ROAD TYPOLOGIES AND USE OF THE ROAD RESERVE CORRIDOR

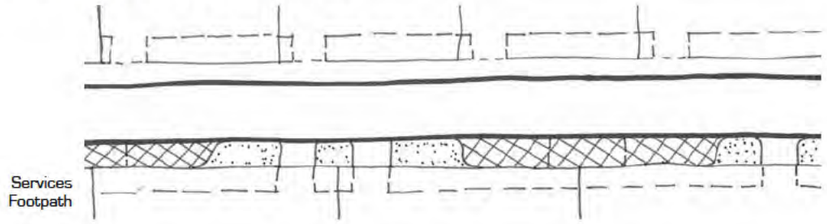
Cul-de-sac less than 150 metres in length with narrow carriageway.—possible in some situations

Residents Street—an exception to the normal roading pattern

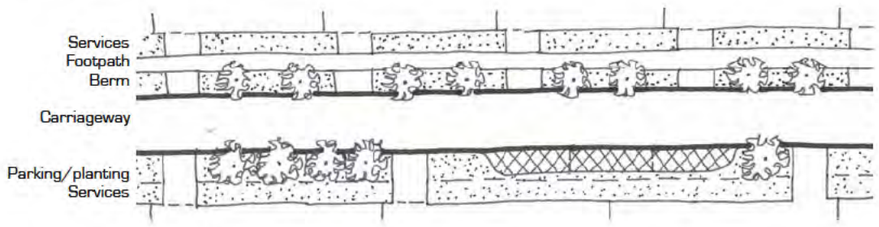


Neighbourhood and Local Area Streets

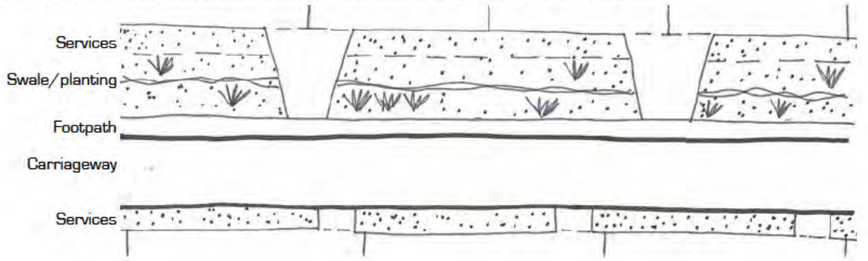
A street or larger cul-de-sac, minimal width, with services within private property boundary possible in some situations if easements are put in place allowing access



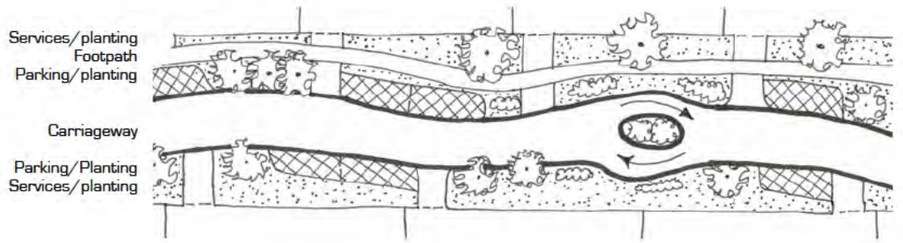
Use of street trees parking bays and separated footpath



Street that incorporates a stormwater swale on one side with parking on carriageway

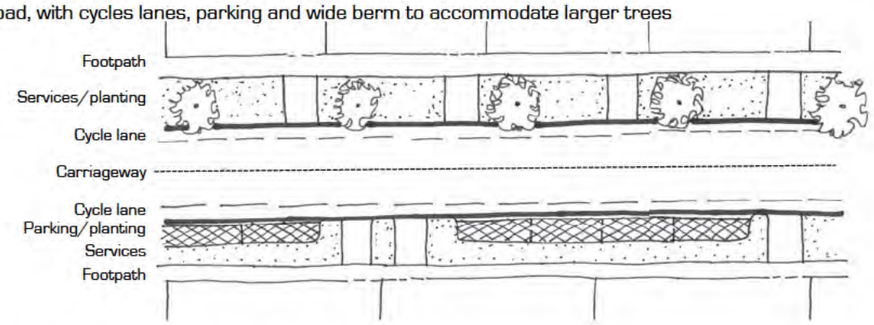


A more sinuous alignment with parking bays and speed control device

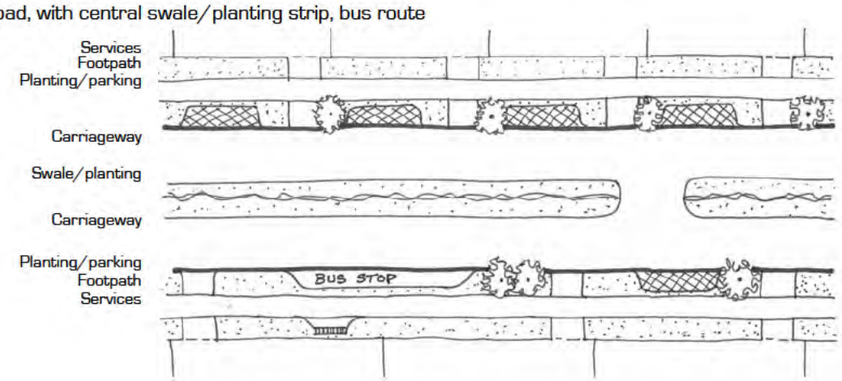


Collector and Arterial Roads

Busier road, with cycles lanes, parking and wide berm to accommodate larger trees



Busier road, with central swale/planting strip, bus route



5.3. Pedestrians and cyclists

The road network in a new subdivision also needs to be designed around the needs of pedestrians and cyclists. They can experience greater inconvenience than car users if their desire lines are not catered for and may be deterred from walking and cycling. The liberal use of culs-de-sac has the potential to increase walking and cycling distances.

In most circumstances cyclists can be safely accommodated on the carriageway, but on busier arterial and collector roads a wider combined off-carriageway pathway for pedestrians and cyclists could be used instead of cycle lanes.

The prolific use of road narrowings, speed humps and other traffic calming measures can be difficult for cyclists to negotiate. Similarly the use of rough or uneven surfacings like heavy set cobblestones can make walking and cycling hazardous.

Designs should not disadvantage the needs of disabled or physically impaired people. Appropriately placed and designed crossing points allow pedestrians and mobility scooters to continue along preferred routes without unnecessary deviations in order to cross roads.

Feature entranceways to subdivisions (for instance those in the middle of roads) should not obstruct pedestrian desire lines, or the visibility of traffic, due to the vegetation planted in them.

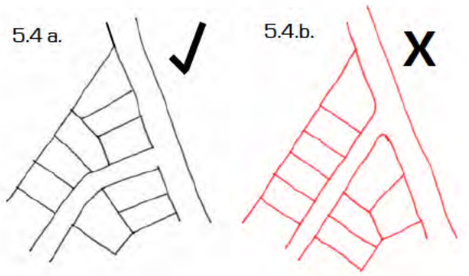
Traffic calming device which does not endanger cyclists and pedestrians

5.4. Intersection spacing and design

The District Plan details the minimum distance required between intersections and property entranceways. However, this may not always be possible to achieve. Where a lesser spacing between intersections is advantageous from a design perspective it should be discussed with the Council.

Where intersections cannot be offset the required distance, it may be appropriate to form a crossroads or roundabout. A roundabout can also be utilised as an entrance feature and a speed control device. They need to be designed to allow the passage of larger vehicles like refuse trucks. However, larger roundabouts are less conducive to the needs of pedestrians and cyclists.

For traffic safety, a road should join another road as near as possible to a right angle and not an oblique one.



5.5. Parking

Allowance should be made for on-street parking, this could be provided on the carriageway, but equally in parking bays or within the centre of a turning head. Typically one on-street space should be provided for each property.

Some matters to consider with on-street parking:

- that it does not detract from the street scene
- that it is convenient for users
- that it does not impede the emptying of refuse handcarts
- that it is easy to clean by street cleaning machines
- that it is located so that vehicles are not vulnerable to break-in or damage
- that it does not cause problems for other road users or pedestrians

Parking bays should be separated by berm areas from any adjoining footpaths and cycleways to avoid collisions when opening the car door.

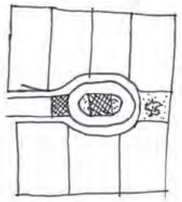
It is usually preferable for parking space to be visually separated from the carriageway, for instance by the use of different surfacing. such as concrete pavers. They should be flush with the road. Parking bays can be screened through the use of landscaped areas between them. This also help to slow traffic and contribute colour and amenity to the street scene.

5.6. Cul-de-sac heads

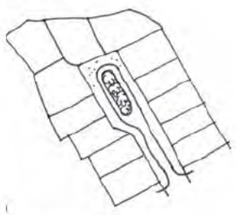
Cul de sac heads should be designed as an attractive focal point and should not be merely a large expanse of asphalt for turning vehicles. The road area should be kept to the minimum required for vehicle manoeuvring.

Design features might include paved parking spaces, trees, planting, artworks, rain gardens, decorative street lights and plinths.

5.6a.



5.6.b.



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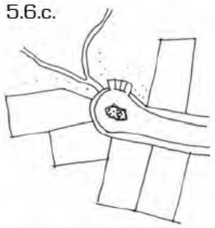

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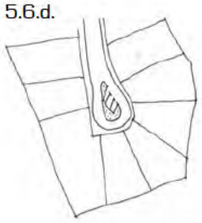

5.7. Rights of way

Where they are necessary, rights of way can be used to create a more private, secluded environment and, because they minimise the amount of hard surface, can look very attractive, if carefully managed. Many District Plan rules that apply to road frontage, (for example garage setbacks and fence heights) also apply to frontage with private accessways.

The use of shared turning space in a right of way allows more semi-public space to be provided between sections, creating a sense of openness. Furthermore, it reduces the need for on-site turning which takes up space on the section and requires large areas of hard surfacing.

5.8. Property access

A multitude of poorly positioned driveways to individual properties can disrupt traffic flows, and impair the visual and physical continuity of the street scene. The effect can be minimised by narrowing down driveways or pairing them. This can allow longer stretches of berm and less obtrusive driveways.

Vehicles exiting from driveways can be hazardous to passing pedestrians and cyclists, particularly young children, if visibility is poor. This can be avoided by keeping any fencing or planting below driver's eye level.

The location of driveways needs to take into account the position of street trees, light poles, parking bays etc. House designers sometime overlook these aspects when working from subdivision plans.

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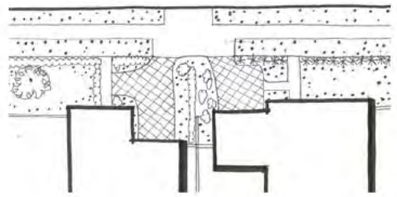
Paired property accesses

5.8.a.



5.9. Services

Code of practice

The street layout will need to be designed to take account of the need for services and for access to those services. These can usually be accommodated within a 1 - 2m wide corridor, which is preferably positioned under the berm, but may be under the footpath or the adjacent private property frontage, if easements are provided to enable servicing access. This corridor should be clear of trees or other obstructions. Therefore where street trees are intended, space should be allowed for them outside the service corridor, with sufficient clearance so that services are not damaged by roots as the trees grow.

5.10. Rubbish collection

Code of practice

Subdivisional roads shall be designed to allow for the safe passage and operation of the Council's large waste collection trucks and shall provide sufficient kerbside space for rubbish, recycling and organic waste collection wheelie bins.

Dead-end roads and cul-de-sac heads shall be designed to allow waste trucks to turn without reversing, and shall take account of the effects of parked cars and central islands.

Waste trucks will not travel on private access roads and rights of way so the effects of bin placement on adjoining public roads needs to be considered.

6. Stormwater management

6.1. Stormwater quantity

Reducing stormwater run-off is desirable for environmental and ecological reasons as well as reducing the need for, and in particular demand on, potable water infrastructure.

Stormwater quantities can be reduced by minimising the area of hard-surfacing (impervious surface) within the development. Roads can be designed with narrowed carriageways and more permeable paving in parking areas, e.g. cobblestones (see section 5 for examples of road types). The width of driveways can be reduced to the minimum needed for parking and turning.

6.2. Stormwater as an asset

Treatment of stormwater runoff can be provided in such a way as to achieve both ecological and public amenity benefits e.g. wetland swales within utility reserves which are integrated with adjoining pedestrian walkways.

Planted swale

Low Impact Urban Design and Development

Low Impact Urban Design and Development (LIUDD) is a practice that includes measures to manage stormwater onsite, to mimic as close as is practical the natural flow that existed before the land was developed and incorporates and protects natural site features.

LIUDD has the advantages of:

- Allowing groundwater recharge through infiltration
- Treatment of pollutants in the water before it flows into the receiving environment
- Slowing the release of stormwater in peak rainfall to reduce floodrisk
- Maintaining ecological value

6.3. Design of stormwater management facilities

Stormwater management facilities, such as stormwater basins, will usually be accommodated on separate stormwater reserves. For reasons of safety, amenity, easier mowing and maintenance, they should have a gentle side slope.

Attention should also be paid to the depth of facilities. They should not be so deep that they undermine the usability of the land for other purposes, become a hazard or have continually lying water (unless a wet pond or wetland is required by geological conditions)

Underground storage can be employed for re-use in irrigation.

6.4. Use of road reserve for stormwater management

The limited use of road reserve for stormwater management by shallow facilities such as grass swales, or centre median islands, may be acceptable, but fundamentally the capacity of road reserve land to accommodate this function is limited.

The design must be well integrated into the street design. It must be safe for vehicles, cyclists and pedestrians and make a positive contribution to street amenity. Deep areas or drains close to the edge of the road or footpaths create a hazard, are difficult to maintain and collect litter.

Roadside swales should be wide enough to provide sufficient capacity without appearing to have been squeezed into the berm. They should have a gentle side slope gradient. They should not require bridges or culverts to be constructed to access sections. If this cannot be achieved then alternative options should be followed.

Swales are usually grassed but Council will consider allowing alternative types of planting where water quality objectives can be met and the maintenance requirements are considered to be no greater than traditional grassed solutions.

The use of a shallow central median island that enables adjoining single slope carriageways to drain into it is a generally acceptable approach, as is the use of turning head centres.

Cut outs in kerbs can also be used in some situations, e.g. car parks, to allow stormwater run-off from hardstand areas to drain directly into rain gardens and swales, avoiding the use of sumps and pipes.

The use of hard engineering solutions (such as open concrete tanks) is not appropriate in the road reserve.

References 16, 17 and 18, Appendix 1, may be used as a guide.

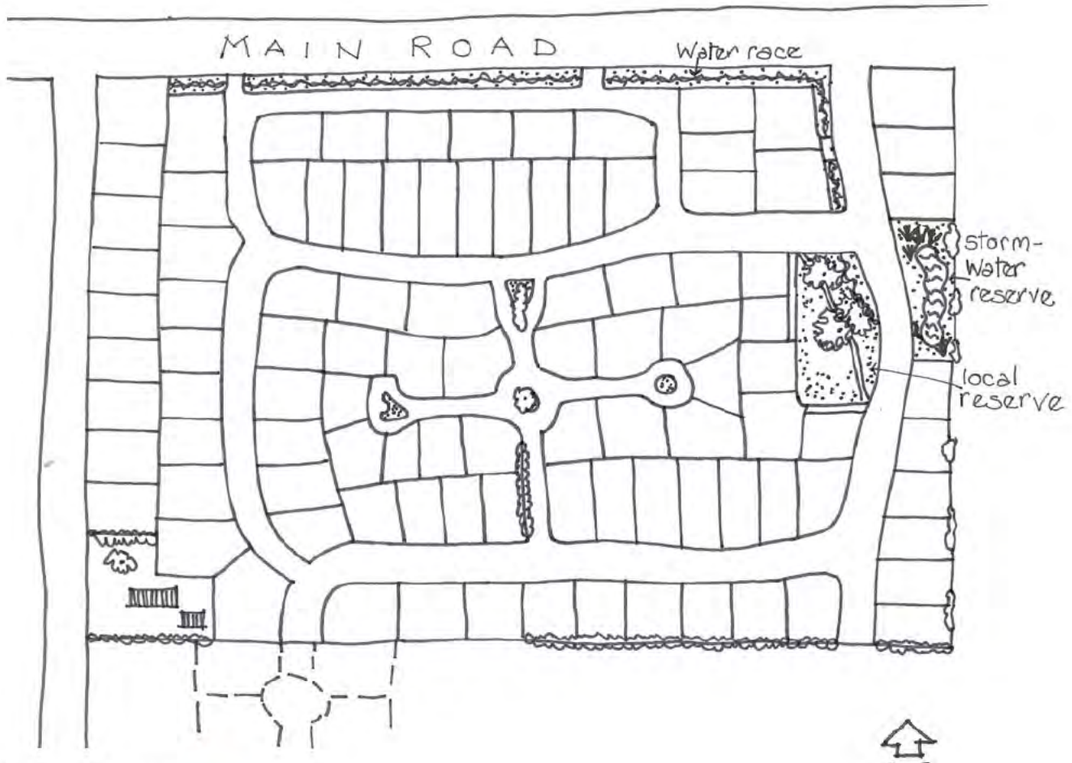
Central swale

Rain garden

Cross section of road type 4B with median retention basin

6.4.a.

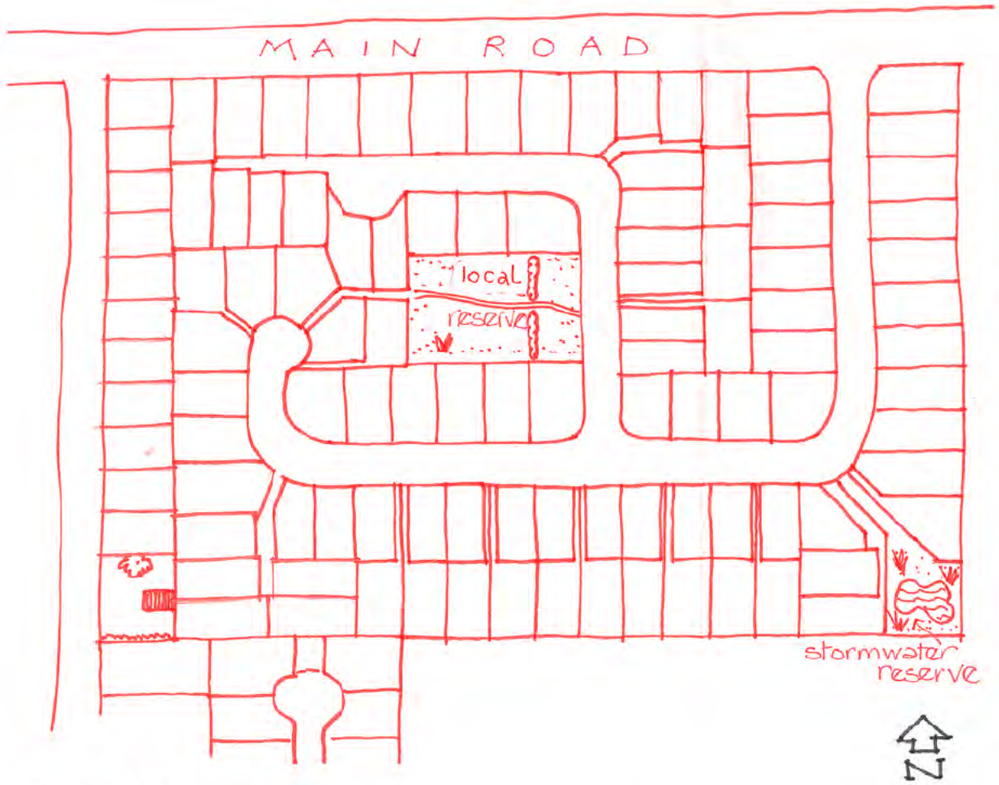
CASE STUDY SITE - in accordance with design guide advice ✓



Design features:

- Some existing trees retained (3.1)
  Water race becomes an amenity feature (4.4)
  Existing house accommodated well (4.13)
- Good interface with main road (4.7)
  View to Port Hills from reserve and road (4.11)
- Connected road network (4.5)
  Short culs-de-sac only (4.5)
  Road connections to adjacent land (4.5)
  Provision made for long term extension of road to south [(4.5)
  Pedestrian/cyclist network within site and connecting to off site activities (4.6)
  Walkable blocks (less than 800m) (4.6)
- Reserve in high profile location (4.2)
  Provision made for long term extension of reserve to east (4.2)
- Stormwater management used to create amenity and water reserve (4.3)
  Good connectivity of water services (4.5)
- Section dimensions vary to suit orientation (4.11)
  No rear lots (4.12)
  Limited use of R.O.W—only to provide good interface with reserve (4.12)
  Variety of section sizes (4.14)

CASE STUDY SITE - unacceptable X



Design problems:

- Only small section of shelter belt retained other existing trees removed
  Water race not incorporated
  Existing house very close to new properties
- Poor interface with main road—likely to result in a high fence
  No views out from within subdivision
- Pedestrian access from cul-de-sac head bounded by backs of properties and has no clear view through
  No provision made for long term extension of road to south
  No pedestrian/cyclist or vehicle connection from the site to surrounding area
  Only one small walkable block
- Reserve in central position but lacks profile and properties back onto it.
  No provision made for long term extension of reserve to east
- No advantage taken of stormwater management requirements
  Dead end water services may cause long term maintenance problems
- Little variation in section sizes
  Large number of rear lots and properties accessed from rights of way.
  Section dimensions do not vary to suit orientation

7: Detailed Elements

7.1. Character and identity

Detailed elements of the subdivision can create a special character and a specific identity. The choice of elements should follow a consistent theme appropriate to the context of the subdivision. Opportunities to celebrate the natural and cultural history of the land and its environs should be seized.

7.2. Paving, street furniture and hard landscaping

Code of practice

Paving, street furniture and landscaping need to be viewed as positive contributions and not only functional items. These elements must:

- be robust
- be easy to maintain
- stand the test of time
- have a sense of order and continuity
- contribute to the identity of a neighbourhood
- not cause clutter or obstruction.

Elaborate entrance features are not encouraged and will not be accepted by the Council if they are assessed as an ongoing maintenance liability, or they detract from the integration of the subdivision into the wider township.

7.3. Road edges

Roads without kerbs are more rural in character. Generally streets and roads should have kerb and channel in residential zones. There are some exceptions, such as smaller townships where there is good drainage and where a more rural character is sought to be retained, for example, Coalgate.

7.4. Footpaths and walkways

Consideration should be given to the way in which pedestrians and physically impaired and disabled people can move around the subdivision, on foot, in wheelchairs or on mobility scooters. It is important that features such as pedestrian cutdowns, footpath alignments that follow pedestrian desire lines at intersections, central pedestrian refuges and lighting can be incorporated where they are needed.

7.5. Fencing

High solid fences around the front gardens of properties are unattractive and give an unwelcoming appearance to the subdivision. They limit the intervisibility between private and public space and are associated with higher rates of crime. The front yard should be viewed as a semi-public space rather than a private one.

Where fences are constructed along side property boundaries they should stop or step down when they reach the front yard setback.

High front fences on corner sections are highly visible and should be avoided. It is intended that only one frontage of a corner section will be permitted to have a fence greater than 1m in height. This must be setback at least as far as the front of the house.

Along rural boundaries 'farm style' fencing will form a more rural interface than a close boarded fence. Another alternative is to plant a hedge. Or a combination of fence and planting can be used.

Fence and hedge established prior to removal of shelter belt

7.6. Street trees

Code of practice

Street trees add greenery, unity and quality to the street scene and can be used to provide a sense of identity for the subdivision. Other benefits include reduced traffic speeds when combined with a supporting road design, more pleasant walking environments, absorption of pollutants, reduction in storm water run-off and adding value to adjacent homes.

Street trees need to:

- be located appropriately in relation to properties (i.e. not causing undue shading, icing, or obstructing driveways);
- not impede vehicular or pedestrian movement;
- be selected to suit the growing conditions;
- be easily maintained and replaced
- not cause nuisance (e.g. dropping sticky substances, fruit or excessive leaves)
- avoid damaging footpaths or subsurface utilities
- not impair street lighting
- not be planted directly in carriageways or service corridors

Early planting can lead to street trees being damaged during construction or requests from section purchasers to remove street trees because they do not allow them to position their driveways where they wish to. Developers could leave street tree planting until the end of the construction period.

Another alternative is to plant trees on private property frontages instead of in the street. This approach could be used to create a more informal character to the subdivision.

7.7. Roadside planting

Code of practice

Plants should be suitable for their location and growing conditions, not cause a nuisance and encourage biodiversity

Developers should be mindful of the future maintenance of any planting they carry out. Neither the Council nor homeowners wish to be burdened with landscaping which requires watering and more than minimal upkeep. Residents are more likely to mow grass than tend planting beds.

Irrigation

Irrigation needs to be considered for street trees, planting and reserves.

In dryer and windier situations, for example Rolleston, newly planted street trees need to be supported by an efficient trickle irrigation system from the outset to enable them to become established and to grow. Usually as they mature their reliance on these systems reduce to the point they are no longer needed.

7.8. Street names and signs

Themed street names can be selected to give the subdivision a sense of identity. Names of local significance will be welcomed. Street name frames and posts can also be customised to suit the character of the subdivision and matched with lamp posts and other street furniture .

7.9. Lighting

Code of practice

Streetlights should be chosen to reflect the character of the subdivision.

Ornate streetlamps are incongruent in the Selwyn townships and can be energy inefficient, difficult to maintain and rattle in high winds. High efficiency lights of a more simple and classic design, utilising dark green or black painted metal poles are more appropriate.

8: Other matters

8.1. Covenants

Subdividers may wish to introduce extra controls over the development of sections. Building style, materials, positioning of garages, fences and planting all contribute to the character of a subdivision and covenants could be introduced to ensure that the original ideals are upheld.

Aspects covenants might cover:

- Location of two storey houses
- Treatment of front yard – fencing, planting
- Style and location of garages
- Management of lots and common areas to conserve biodiversity, energy and water

If covenants are used to control the size of a house on a lot, they should be appropriate to the size of the lot. In recent times the use of large size house covenants has led to restricted housing choice.

8.2. Higher density subdivisions

The Council wishes to provide for a variety of lot sizes to suit different lifestyle choices. This includes smaller sized traditional lots as well as the comprehensive development of medium density housing. The design of higher density housing is the subject of a separate guide.

8.3. Gated subdivisions

Gated subdivisions provide a particular lifestyle choice, which some people are attracted to, generally for reasons of security and exclusivity. However, gated subdivisions do raise some issues for Council. Research shows that residents of gated subdivisions are not necessarily any less vulnerable to crime. Problems can arise when maintenance costs increase as the development ages. There may be reluctance on the part of gated subdivision residents to support amenities for others in the larger community, as well as paying for their own private facilities, leading to them seeking a reduction in their rates.

Gated subdivisions, particularly larger and more urban ones, can have an adverse impact on the wider community. They prevent through pedestrian and road access and are not able to be served by public transport, which can affect the overall viability of a route. They may have public open space which is not accessible to non-residents. Furthermore gated subdivisions can create social divisions within a community.

Developers contemplating a gated subdivision are asked to balance any benefits of enclosing a subdivision against potential longer term issues for the residents and costs to the wider community.

Subdivision Design Checklist

Good practice design criteria:

	✓
• Design the subdivision to be a place that is convenient and accessible for all, is attractive, feels safe, is easy to navigate and has its own character and identity	
• Foster a sense of community through a choice of housing, provision of facilities and opportunities for casual social interaction	
• Facilitate walking, cycling, and public transport	
• Identify and maximise the potential of any natural or man made site features such as trees, watercourses or changes in level	
• Ensure that the new development relates well to its context and takes advantage of views	
• Make maximum use of required reserve provision to enhance the quality of the subdivision and contribute to a wider network of open spaces.	
• Protect natural habitats, encourage biodiversity and respect and interpret the natural and cultural heritage of the land	
• Take advantage of stormwater management requirements to add value to the subdivision	
• Design road network to be simple and logical	
• Make good vehicular and pedestrian connections to surrounding areas	
• Restrict the use of cul-de-sacs and where used keep short	
• Avoid the need for long and/or contorted pedestrian routes between houses	
• Pay attention to interfaces – with the road, with reserves, with adjacent houses, with rural land and non-residential uses	
• Avoid the need for high fences along road frontages and reserves	
• Design lot dimensions and orientation to maximise access to sunlight	
• Ensure section shapes and sizes can accommodate houses without compromising public amenity or private outdoor space	
• Avoid rear lots	
• Incorporate existing properties sensitively	
• Absorb awkward shaped boundaries into the layout	
• Avoid the need for features which are costly or difficult to maintain	
• Build-in adaptability	
• Allow for refuse collection, large vehicles and emergency vehicles	
• Consider location of services and road enhancements when designing the road reserve	

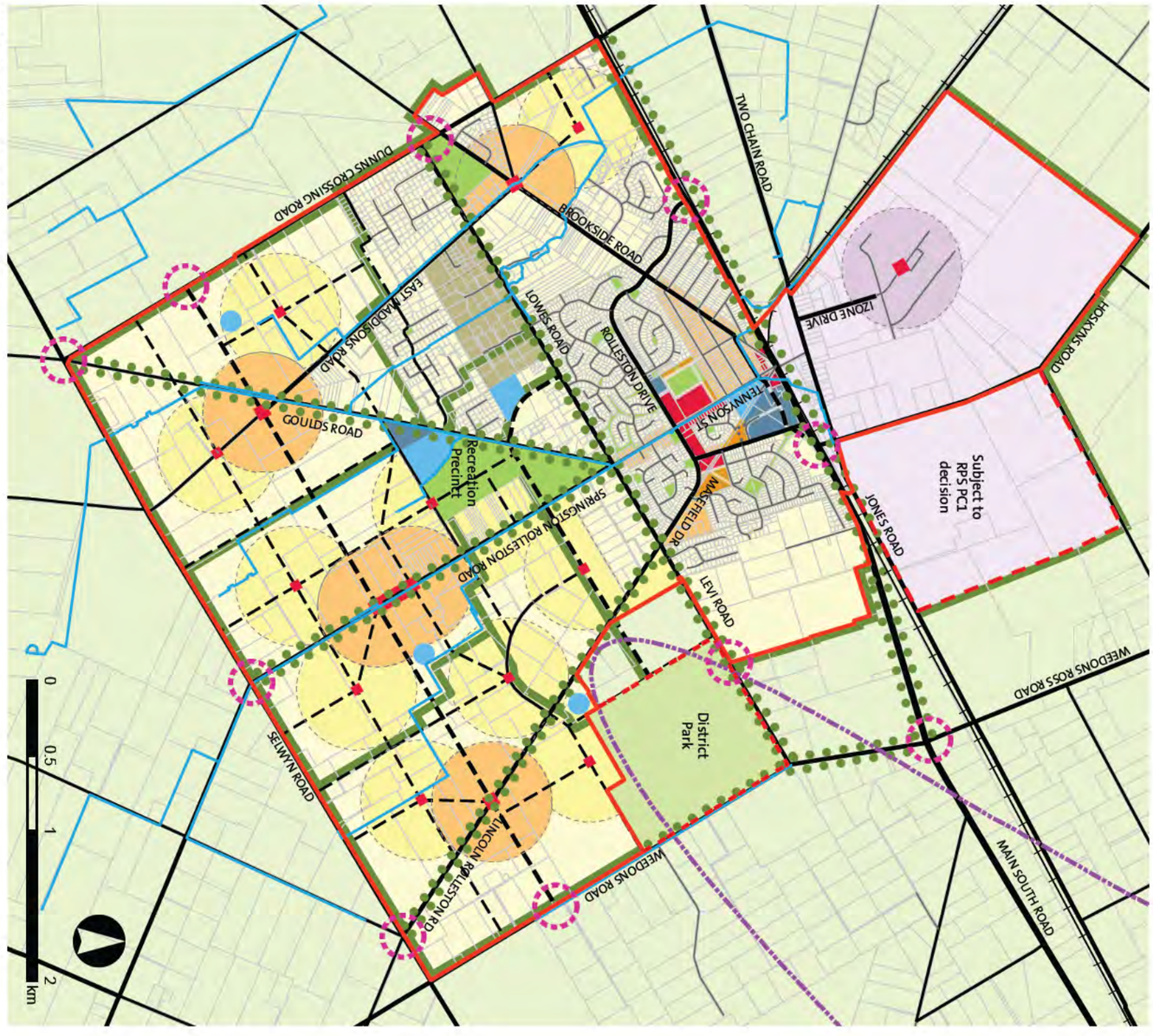
Appendix 1 Reference Documents

1. Selwyn District Council, Selwyn District Plan www.selwyn.govt.nz
2. Selwyn District Council, Selwyn District Council Policy Manual , January 2005
3. Selwyn District Council, Selwyn Community Plan (LTCCP), 2006-2016
4. Selwyn District Council, Towards a high standard of urban design in new subdivisions , Issues and Options Report, December 2005
5. Selwyn District Council, Engineering Code of Practice
6. Selwyn District Council, Open space strategy
7. Selwyn District Council, Walking and cycling strategy
8. Selwyn District Council, A guide to the management of water races in the Selwyn District.
9. Selwyn District Council, Five waters strategy
10. Standards New Zealand, Subdivision for people and the environment, SNZ HB 44:2001
11. Ministry for the Environment, People, Places + Spaces, A design guide for urban New Zealand, www.mfe.govt.nz/urban
12. Ministry for the Environment, Urban Design Case Studies, www.mfe.govt.nz/urban
13. Greater Christchurch Urban Development Strategy, www.greaterchristchurch.org.nz
14. Environment Canterbury, Providing for passenger transport within your subdivision www.ecan.govt.nz
15. Department for Transport and Department for Communities and Local Government, Manual for Streets, www.communities.gov.uk
16. Christchurch City Council (CCC) 2003. (Parts A & B) Waterways, Wetlands and Drainage Guide (WWDG).
17. Auckland Regional Council (ARC) 2000. Low Impact Design Manual for the Auckland Region. Technical Publication No.124 (TP124).
18. Auckland Regional Council (ARC), 2003. Stormwater Management Devices Design Guideline Manual. Technical Publication No.10 (TP10).

Extracts from the **ROLLESTON STRUCTURE PLAN**

- **Structure Plan Map**
- **Urban Design Matrix**

APPENDIX 2



Appendix F Urban Design Principles Matrix

Structure Plan - A Well Designed Town Development Principles	New Zealand Urban Design Protocol - Seven Design Qualities						
	Context	Character	Choice	Connections	Creativity	Custodianship	Collaboration
1. Strong regional and district linkages	✔			✔		✔	
2. Establish a clear hierarchy of centres	✔	✔	✔	✔	✔	✔	✔
3. Integrate land use and movement	✔	✔	✔	✔	✔	✔	
4. Higher density development at nodal points	✔	✔		✔	✔		
5. Overlapping mix of land uses		✔	✔		✔	✔	
6. Regenerate existing residential areas through shared amenities	✔	✔			✔	✔	✔
7. Create a continuous network of open spaces			✔	✔	✔	✔	✔
8. Create ecological and open space links between town and rural land			✔	✔	✔	✔	
9. Provide a public edge to public open space					✔	✔	
10. Utilise existing rural roads and landscape features to develop distinct urban areas	✔	✔		✔	✔		
11. Protect and enhance existing landscape features and incorporate into urban form	✔	✔			✔	✔	
12. Locate large recreation areas at the periphery of dense urban areas			✔			✔	
13. Protect views to distant regional landscape features and along rural roads	✔	✔		✔	✔	✔	
14. Protect historic and culturally significant sites or features	✔	✔				✔	✔
15. Utilise existing roads where possible	✔	✔		✔			
16. Consider climatic conditions	✔			✔	✔	✔	
17. Future proof the Structure Plan for further expansion of the town				✔	✔	✔	✔
18. Enhance and Promote Maori Cultural Landscapes	✔	✔				✔	✔

urban