

SCHEDULE 7: Greenbelt Residential Subdivision Design Guide

GREENBELT RESIDENTIAL SUBDIVISION DESIGN GUIDE

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Horowhenua - Greenbelt Residential Subdivision Design Guide

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How to Use this Design Guide

Document Structure

This Design Guide is organised into the following five sections:

1. **Introduction**
2. **Process**
3. **Outcomes**
4. **Guidelines**
5. **Appendices**

The Introduction section provides background information and explains terms used in this document.

The Process section sets out the process steps that anyone considering undertaking a subdivision should follow before lodging a subdivision application.

The Outcomes section sets out the end goals that applicants should be aiming for when designing a subdivision development.

The Guidelines section provides details on design methods and practical solutions that would assist in achieving the end goals set out in the Outcomes section.

The Appendices include the detailed road section requirements, useful references and sources of information to assist in the subdivision design process.

The Purpose

This Design Guide is relevant to all Greenbelt Residential zoned properties in the Horowhenua District Plan. The Greenbelt Residential zone is specifically intended to provide a residential living environment between the rural and urban areas of the district. They have been purposefully located in places that will enable easy connection to the urban areas to which they are bordering in order that people seeking a more open environment with some land will not need to travel long distances to access day to day amenities and facilities located in those urban areas (like schools, shops, work places).

The Greenbelt Residential zone responds to the demand for properties with an area of land that is able to accommodate small scale rural activities, a large garden and a house with an open outlook. There are also opportunities from the locations of these zones to create walkways and cycleways around the urban edge that would be beneficial to the public. The placement of larger lot residential development to specific areas is also intended to limit the adhoc development of 'lifestyle' blocks which fracture rural land areas in the wider district and make these rural areas less viable for productive land uses.



The Design Guide has been developed to provide guidance for those undertaking subdivision within this Greenbelt environment. The Design Guide provides a set of outcomes and guidelines to inform landowners, developers, potentially affected people and the wider community about subdivision development expectations within the Horowhenua Greenbelt Residential zone.

The Design Guide does not seek to impose rules on new development, or to prescribe specific design solutions. Rather, it offers a flexible framework within which developers and surveyors can work. Based on the existing character of the environment, this framework identifies key subdivision design principles to assist the integration of new subdivision development into the surrounding context and to enhance the character of the area. This means that while development proposals are expected to demonstrate a commitment to enhancing the character and quality of the area, there is flexibility in terms of detailed design.

The illustrations in the guide are intended to further clarify principles and outcomes outlined in the text, and are not intended to represent actual design solutions. Consistency with the Design Guide is a requirement of the Greenbelt Residential subdivision rules for all Limited Discretionary, Discretionary and Non-Complying subdivisions. It will still be relevant and beneficial to Controlled Activity subdivisions, although a Controlled Activity application can not be declined on the basis that it is not consistent with this Design Guide.

Advisory Note: *It is noted that the Design Guide covers a wide range of issues. Not all issues addressed in this Design Guide will apply to every subdivision, therefore, some of the guidelines will not be applicable. For example, if there are no waterbodies within, adjacent to or near the subject site, the applicant would not be expected to demonstrate that the subdivision design is in accordance with the guidelines relating to waterbodies.*

How it Applies

The Greenbelt Residential subdivision rules require that subdivisions are designed in accordance with the Design guide for Limited Discretionary, Discretionary and Non-Complying subdivisions. It will still be relevant and beneficial to Controlled Activity subdivisions, although a Controlled Activity application can not be declined on the basis that it is not in accordance with this Design Guide.

To demonstrate that the subdivision design is in accordance with the Design Guide, applicants need to demonstrate to the Council that the subdivision is in accordance with the following:

1. **The Process of the Design Guide.**
2. **The Outcomes of the Design Guide.**
3. **The Guidelines of the Design Guide.**

Read through the Design Guide so you are familiar with the format and content of the document and then begin by working through the process steps as set out in Section 2.

You will find it useful to refer to Section 4 throughout the Design Options phase of the process steps.

1.0 Introduction

The Design Guide serves as a method to implement the objectives and policies of the Horowhenua District Plan (HDP) in relation to Greenbelt Residential subdivision. There are a number of objectives and policies in the HDP (mainly contained in Section 2 of the Plan) that are relevant to Greenbelt Residential subdivision. By using the Design Guide in the design of subdivision development, consistency with these objectives and policies can be achieved.

It is important for applicants, developers, and surveyors to consult with the Council at an early stage of the development. Careful planning and consideration of alternative design solutions prior to submitting an application should increase the chances of obtaining subdivision approval and can have the added benefit of reducing uncertainty and the timeframe for processing the subdivision application.

Multiple lot subdivisions require more careful design considerations than single lot subdivisions as they have the greatest potential to generate adverse effects on the environment. Although the size and scale of a subdivision will mean that not all aspects of the Design Guide will always be relevant, the principles of the design approaches and techniques can be applied to the even the most basic of subdivisions.



2.0 Process

By following the process, applicants will find it easier and will be more likely to achieve the design outcomes in this Guide.

1. Research

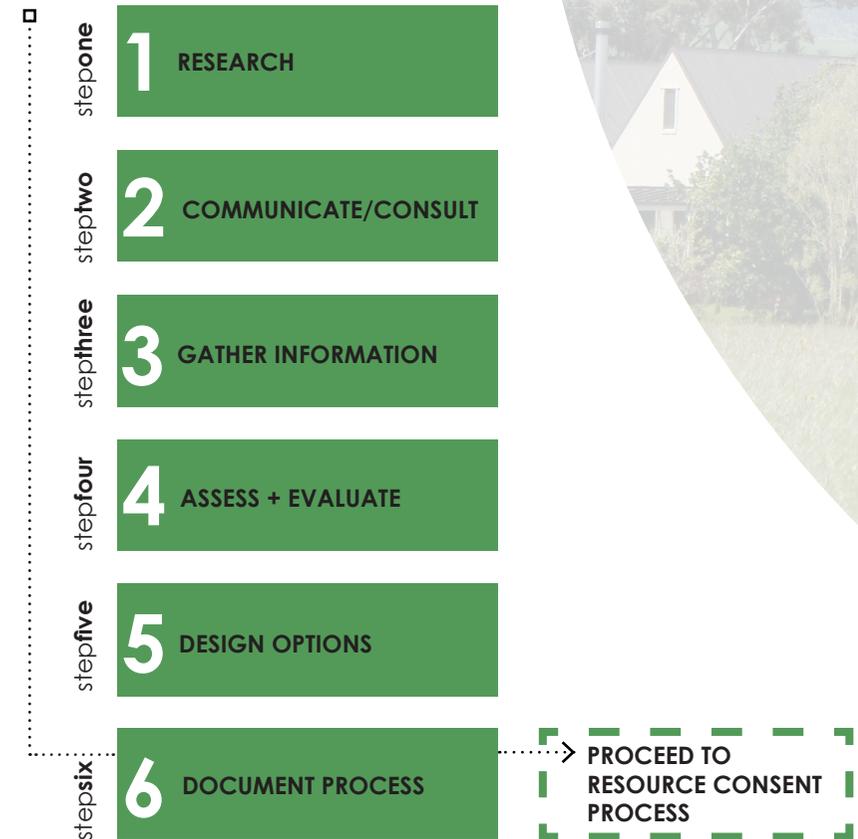
- Read the Design Guide, including all outcomes, guidelines and landscape advisory notes.
- Identify consent requirements, for both subdivision and landuse consents.
- Identify Structure Plan requirements (refer to schedule 8 of District Plan).
- Identify any encumbrances registered on the certificate of title such as covenants or consent notices.
- Visit the site including the surrounding area and become familiar with it in the context of the Design Guide.

2. Communicate and Consult

- Discuss your development ideas with Council staff and other potentially affected parties. It may be necessary to meet with the Council Officers more than once to develop a suitable design that can be lodged as a resource consent application.
- Consider your neighbour's interests. Discuss your development with them especially if your application is likely to be notified. You may find they have some really worthwhile local knowledge or ideas that could help your development.

3. Gather Information and Research

- Use the outcomes of this design guide as a checklist for collecting the right kind of information, and to determine which topics may require further research and investigation. In particular, ensure that the following requirements have been identified, recorded and mapped:
 - Landscape character and amenity attributes of the site and the surrounding landscape such as topographic features, coastal features, rural amenity values, vegetation patterns, landscape character attributes (including the land use, land cover and land form of the site) or other aesthetic qualities. Drainage features of the site and surrounding landscape, including surface water bodies, flood risk areas, ponding areas, topographical drainage patterns and coastal margins.
 - Social-cultural attributes, such as existing buildings, current and historic land use, heritage, archaeological and cultural sites, and local or community facilities including parks and reserves.
 - Productive land values of the site, such as soil type, topography, aspect and water.
 - Attributes that are relevant to the on-site disposal of wastewater – such as soil permeability, groundwater depths, slope and topography, aspect and surface water bodies.
 - Attributes relevant to the development of the site – such as transmission lines, stop banks, railway lines, natural hazards, neighbouring buildings and land uses.



4. Assess and Evaluate

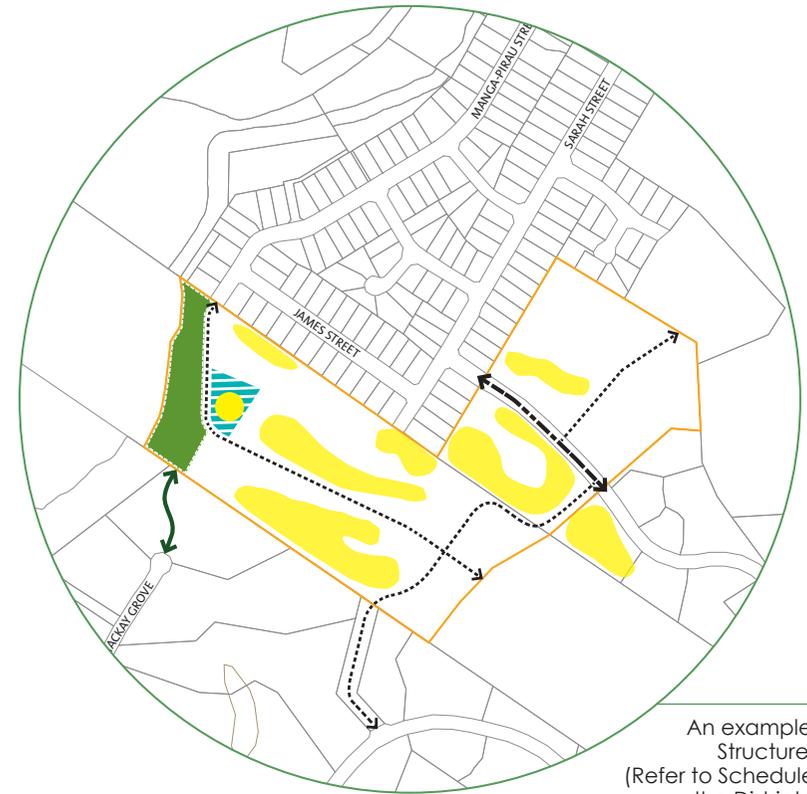
- Assess the information collected using the development outcomes in this Design Guide.
- Map and describe areas of the site where land development would potentially result in adverse environmental effects because of environmental constraints. This information is termed “constraints” information.
- Map and describe areas of the site where development could occur without adverse environmental effects that are more than minor. This information is termed “opportunities information”.
- Overlay the constraints information with the opportunities information from above. Use a map or maps to show areas that may be developed and areas that should remain undeveloped in terms of the outcomes of the Design Guide.

5. Design Options for Subdivision and Development

- Determine possible building location areas and allotment boundaries using the areas identified as opportunities for development. Apply the guidelines of the Design Guide when choosing sites and determining boundaries.
- Identify road, access, service infrastructure, stormwater and wastewater management options using the guidelines of the Design Guide.
- Draft possible design options for a subdivision and development proposal.
- Compare each design option against the design outcomes of the Design Guide.
- Select a preferred design option based on consistency with the outcomes and adherence to guidelines of the Design Guide.
- Generally the preferred design should avoid any adverse effects on amenity values, visual and environmental qualities, outstanding landscapes, natural features, natural habitats, and landscape character.

6. Document the Process

- Compile all of the documentation used in the process of design, including the information gathered, the assessment and evaluation process, the process of subdivision and development design.
- Explain and provide reasons for the preferred option.
- Submit all the process documentation together with the application to the Council.



An example of a
Structure Plan
(Refer to Schedule 8 of
the District Plan)

3.0 Outcomes

The outcomes sought by the Design Guide are set out below. These are that the subdivision and subsequent development will:

- ▶ Recognise and provide for the different landscape characteristics of the coast, plains or hills.
- ▶ Avoid adverse visual amenity effects.
- ▶ Avoid potential cross boundary conflict between productive and residential land uses by providing separation and buffer areas.
- ▶ Recognise and provide for natural drainage characteristics of the site to be retained or enhanced.
- ▶ Protect and enhance riparian margins of rivers and significant waterways.
- ▶ Avoid adverse effects on the ecological values of the Ohau River and Waikawa Stream environments.
- ▶ Include water conservation measures including rainwater storage, stormwater retention and wastewater recycling.
- ▶ Include wastewater management to ensure that there will be no adverse effects on soil, groundwater or other natural resources that are more than minor.
- ▶ Demonstrate a layout of building site areas, and access that cluster buildings in groups to maximise open space and outlook.
- ▶ Include vegetation and planting to maintain or enhance the visual amenity and character of the landscape.
- ▶ Protect and enhance wetland areas, natural habitats and remnant areas.
- ▶ Demonstrate a rural residential character that avoids urban forms and patterns of development.
- ▶ Avoid earthworks which significantly change the landscape or potentially create land instability.
- ▶ Avoid areas where there is a significant risk from natural hazards.
- ▶ Create open spaces as networks, including tree planting that links between natural features, public spaces or streets to provide recreation, amenity and a vegetation framework.
- ▶ Provide for road connections to existing road networks to facilitate good accessibility to existing urban areas.
- ▶ Protect and preserve any archaeological, heritage, or cultural values within the subdivision site.
- ▶ Demonstrate that the subdivision will result in the sustainable management and efficient use of land.

4.0 Guidelines

Building Location

- 1 Ensure that building sites are grouped rather than distributed across the whole site to enable efficient access and servicing and to provide for open outlooks.
- 2 Consider the location of buildings to take advantage of sun, shelter, privacy and outlook.
- 3 Ensure that where there is publicly accessible open space that there are dwelling buildings with an outlook to that open space to provide passive surveillance.
- 4 Ensure that at coastal locations buildings and ancillary structures such as water tanks are not in prominent positions when viewed from public spaces such as roads and the beach foreshore.
- 5 Consider the potential for deriving some compatible productive uses (such as trees) from the land by providing larger, possibly shared public spaces unencumbered by buildings.
- 6 Consider the potential for cross boundary effects from any adjacent rural land by placing building sites away from boundaries and utilising buffer separation distances between.
- 7 Ensure that buildings or structures are not in close proximity to the coastline or waterways to avoid risks of erosion or flooding.



Building Location and Vegetation

Greenbelt Residential Zone	---
Existing Landforms	---
Existing Waterways	---
Existing Vegetation	---
Proposed Open Space	---
Productive Use	---
House Site	---

Vegetation

- 1 Use new plantings to not only mitigate the adverse effects of development but also to positively enhance privacy, habitat values and outlook.
- 2 Ensure that remnant or regenerating areas of native vegetation or larger exotic trees are retained within the subdivision layout to provide some immediate structure shelter and identity to the new development.
- 3 Look to integrate existing trees and new vegetation within the development to provide focal points or provide privacy or shelter for buildings. Existing vegetation can give 'instant' maturity to a subdivision.
- 4 Consider the provision of groups, corridors and/or networks of planting within subdivision and development that will provide a vegetation 'framework' and within which recreational connections and pathways maybe located.
- 5 Ensure that trees and plant types are appropriate for the local conditions – the Environment Guidelines for Rural Living (2001) provides a list of species that are suitable for the different environments within the Horowhenua. Avoid species which do not reflect the typical character of the area.



Retain existing trees to provide immediate structure and identity



Consider the provision of groups and networks of planting to provide a vegetation framework



Locate buildings to avoid risks of flooding or erosion

Recreational Open Space and Public Access Networks

- 1 Ensure that public access is provided for through the provision of networks of open space and associated informal pathways.
- 2 Consider the location of any public access or pathway relative to the opportunity for surveillance from either a road or nearby dwelling building.
- 3 Consider the use of natural features such as wetland areas, waterways, gullies, coastal margins, ridgelines and hilltops, for open space networks and public access.
- 4 Ensure that public walkways are not visually cut off from adjacent properties through visually impermeable fences.
- 5 Consider sight lines from open spaces and public access ways to provide rural outlooks or to features such as the hills or coastline.
- 6 Consider how open space networks and associated improvements may provide ecological benefits such as linking between habitat areas.
- 7 Consider retaining large contiguous open spaces in common ownership and their development with low maintenance landscape treatment such as trees.



Recreational Open Space, Public Access Networks and Services

Greenbelt Residential Zone	
Existing Landforms	
Existing Waterways	
Existing Vegetation	
Proposed Open Space	
Pedestrian Pathways	
House Sites	

Services

- 1 Consider the management of building roof rainwater and its potential for collection and use for garden watering and other external uses with surplus discharge to ground soakage.
- 2 Minimise the hard stand areas external to buildings to reduce the need for stormwater management and consider the use of permeable materials for parking areas, driveways and paths to increase natural soakage capacity.
- 3 Minimise the 'hard' stormwater management network (such as pipes and culverts) through the use of swales and rain gardens for collecting, channelling and soakage of stormwater runoff from roads and paths, where ground conditions permit.
- 4 Ensure that natural systems such as wetlands, waterways and low lying areas are retained and integrated into the network for stormwater management.
- 5 Ensure that the appropriate ecological input is provided for the size, configuration, edge slope, plant material, management and maintenance of any wetland to be utilised for stormwater management.
- 6 Consider the opportunities to enhance the natural systems such as wetland, waterways and low lying areas for their ecological value and as parts of recreational networks.



Consider opportunities to enhance waterways for their ecological value



Ensure waterways are integrated to the network for stormwater management



Minimise the area of 'hard' stormwater management solutions

Subdivision Layout

- 1 Ensure that the layout of roads and lots recognises and provides for natural contours, (such as dunes or gullies or hills) to minimise the earthworks required to create roads and building sites.
- 2 Ensure that the layout of residential lots provides for a building site that requires a minimal level of earthworks to form.
- 3 Ensure that there is a pattern of connected roads and walkways that facilitate movement within the zone and to adjacent urban areas.
- 4 Consider the use of 'dead-end' roads only where the topography is steep, where there is a small number of buildings to be served by them, or there is no adjacent zoned residential land that a connection to could enhance ease of movement in the future.
- 5 Ensure that residential lot boundaries are located relative to natural features to avoid fence lines becoming prominent.
- 6 Ensure that existing natural features as well as degraded natural features (such as wetlands or remnant or regenerating native vegetation for example) are recognised and provided for.
- 7 Consider the retention of large areas of contiguous open space that is held either in common ownership or is part of the residential lot but with covenants that prevent buildings.



Subdivision Layout, Roads and Access

Greenbelt Residential Zone	
Existing Landforms	
Existing Waterways	
Existing Vegetation	
Proposed Open Space	
House Sites	

Roads and Access

- 1 Consider the function of the road network as to whether it is to be an arterial road, a collector road, local road or accessway and reflect this in the design to avoid roads that are over-scaled relative to their purpose and traffic volumes (Refer to the Road Sections in the Appendices and HDC Minimum Engineering Standards).
- 2 Ensure that road reserve areas are of sufficient width to accommodate the provision of stormwater swales and rain gardens (where the ground conditions are suitable), a shared walking and cycle path off the road, and street planting.
- 3 Ensure that street lighting is at low levels (bollard type). Minimise pole mounted street lighting by restricting its use to only at intersections of arterial or collector roads.
- 4 Ensure that roads and accesses to buildings complement the land forms and avoid large cut and fill areas.



Design roads to a scale which suits their purpose



Ensure road reserves are of sufficient width to accommodate stormwater swales



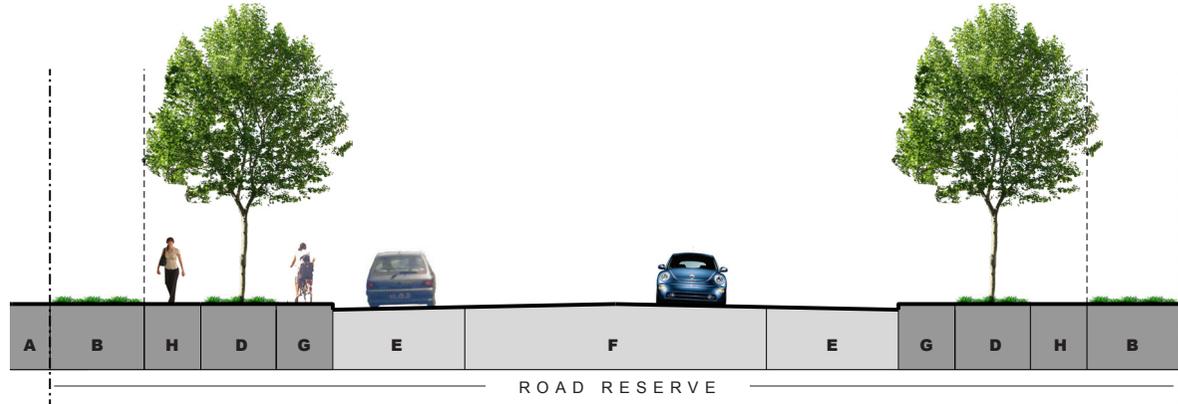
Avoid boundary lines and fences becoming prominent

5.0 Appendices

Road Section Details

Urban Arterial Road - Option 1

15m Sealed Carriageway, inc. parking to both sides



Note:

Tree root barriers to be considered in detail design to avoid service / construction conflicts. All trees subject to specific HDC approval or requirement.

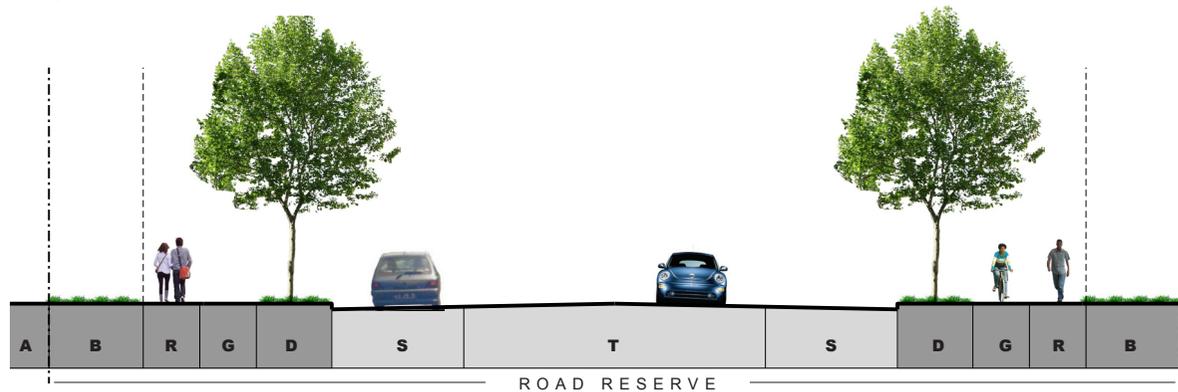
Carriageway in accordance with HDC MES

- A - parcel
- B - landscape berm
- D - 2m berm with clear stem street trees @ 15m centres
- E - 3.5m parking lane / services zone
- F - 8m carriageway (15m inc. parking lanes)
- G - 1.5m cycle lane
- H - 1.5m pedestrian footway

total road reserve dimension 25 - 30m

Urban Arterial Road - Option 2

15m Sealed Carriageway, inc. parking to both sides



- A - parcel
- B - landscape berm
- D - 2m berm with clear stem street trees @ 15m centres
- G - 1.5m cycle lane
- R - 1.5m pedestrian footway
- S - 3.5m parking lane / service zone
- T - 8m carriageway (15m inc. parking lanes)

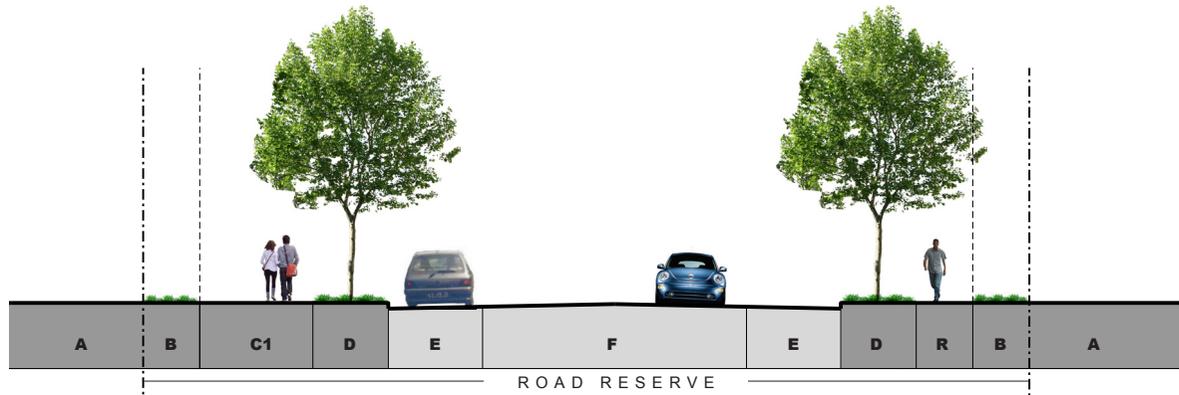
total road reserve dimension 25 - 30m

Scale 1:200 @ A4

Road Section Details

Urban Collector - Option 1

12m Sealed Carriageway, inc. parking to both sides



Note:

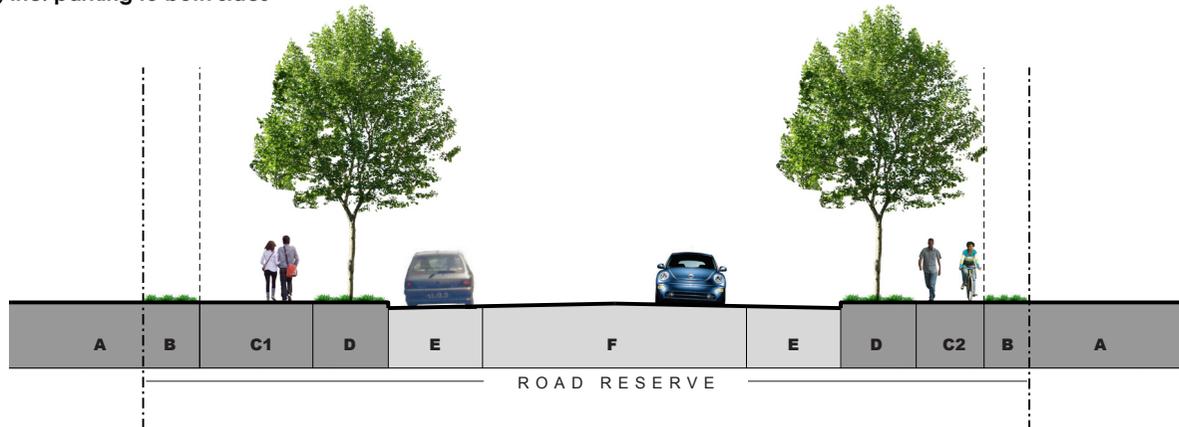
Tree root barriers to be considered in detail design to avoid service / construction conflicts. All trees subject to specific HDC approval or requirement.

Carriageway in accordance with HDC MES

- A - parcel
 - B - landscape berm
 - C1 - 3m shared pedestrian footway and cycle lane
 - D - 2m berm with clear stem street trees @ 15m centres
 - E - 2.5m parking lane / services zone
 - F - 7m carriageway (12m inc. parking lanes)
 - R - 1.5m pedestrian footway
- total road reserve dimension 21 - 23m

Urban Collector - Option 2

12m Sealed Carriageway, inc. parking to both sides



- A - parcel
 - B - landscape berm
 - C1 - 3m shared pedestrian footway and cycle lane
 - C2 - 1.8m shared pedestrian footway and cycle lane
 - D - 2m berm with clear stem street trees @ 15m centres
 - E - 2.5m parking lane / services zone
 - F - 7m carriageway (12m inc. parking lanes)
- total road reserve dimension 21 - 23m

Scale 1:200 @ A4

Road Section Details

Urban Local - Option 1 (for low volume parking areas) 9.5m Carriageway, inc. parking to one side



Note:

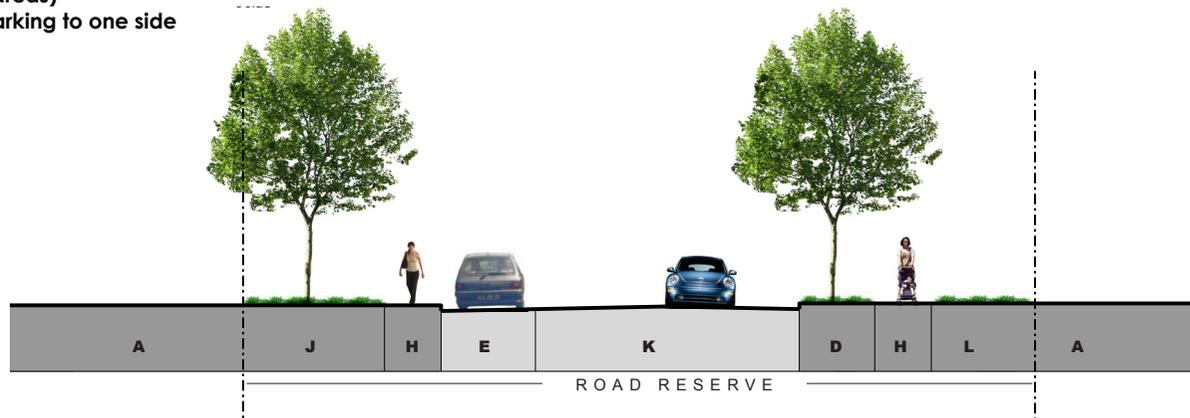
Tree root barriers to be considered in detail design to avoid service / construction conflicts. All trees subject to specific HDC approval or requirement.

Carriageway in accordance with HDC MES

- A - parcel
- E - 2.5m parking lane / services zone
- H - 1.5m pedestrian footway
- J - landscape berm with clear stem street trees @ 10m centres
- K - 7m carriageway (9.5m inc. parking lane)

total road reserve dimension - 20m

Urban Local - Option 2 (for high volume parking areas) 9.5m Carriageway, inc. parking to one side



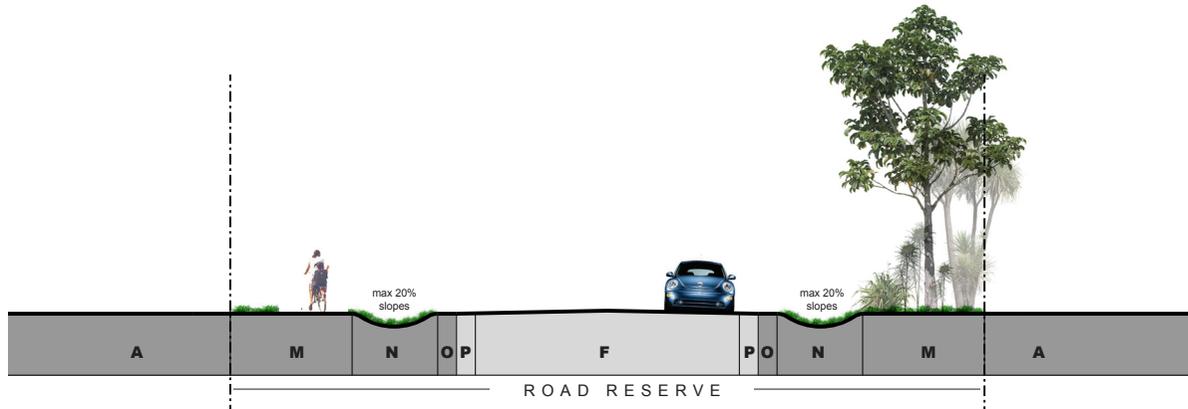
- A - parcel
- D - min. 2m berm with clear stem street trees @ 10m centres
- E - 2.5m parking lane / services zone
- H - 1.5m pedestrian footway located within berm area
- J - landscape berm with clear stem street trees @ 10m centres
- K - 7m carriageway (9.5m inc. parking lane)
- L - landscape berm

total road reserve dimension - 20m

Scale 1:200 @ A4

Road Section Details

Greenbelt Residential Collector 8m Carriageway



Note:

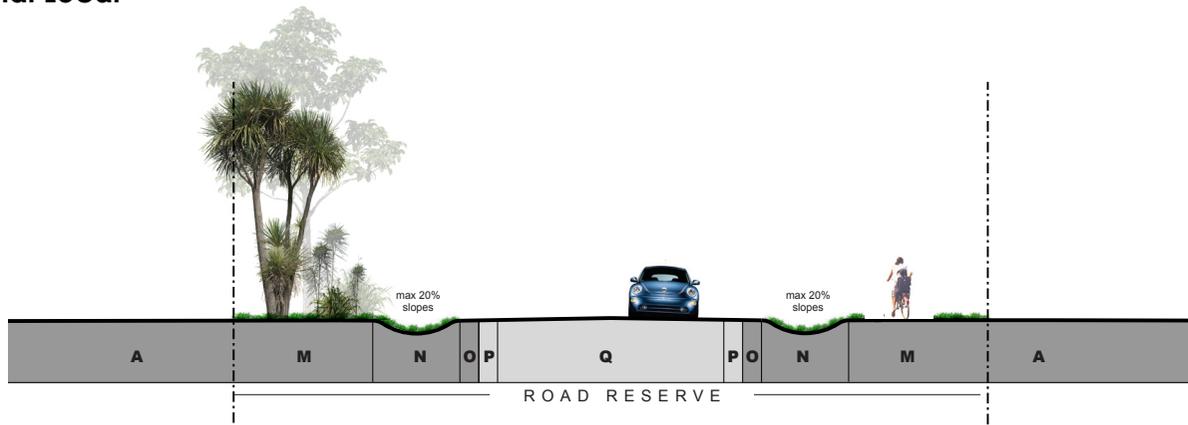
Tree root barriers to be considered in detail design to avoid service / construction conflicts. All trees subject to specific HDC approval or requirement.

Carriageway in accordance with HDC MES

- A - parcel**
- F - 7m carriageway (8m inc. sealed shoulder)**
- M - landscape berm with layered native vegetation clustered to vegetation linkages, water courses and slopes, plants to be frangible to carriageway edge. 1.8m wide cyclepath to one side of carriageway only - to be min. 1.5m from parcel edge.**
- N - grassed swale centre to be min. 2m from edge of seal**
- O - 0.5m shoulder (not sealed)**
- P - 0.5m shoulder (sealed)**

total road reserve dimension - 20m

Greenbelt Residential Local 6m Carriageway



- A - parcel**
- M - landscape berm with layered native vegetation clustered to vegetation linkages, water courses and slopes, plants to be frangible to carriageway edge. 1.8m wide cyclepath to one side of carriageway only - to be min. 1.5m from parcel edge.**
- N - grassed swale centre to be min. 2m from edge of seal**
- O - 0.5m shoulder (not sealed)**
- P - 0.5m shoulder (sealed)**
- Q - 5m carriageway (6m inc. sealed shoulder)**

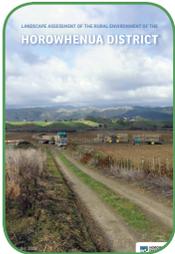
total road reserve dimension - 20m

Scale 1:200 @ A4

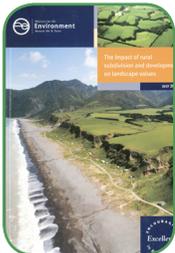
Reference Documents



Environmental Guidelines for Rural Living – Kapiti & Horowhenua (2001)



Landscape Assessment of the Rural Environment of the Horowhenua District (October 2008)



The Impact of rural subdivision and development on landscape values (July 2000) MFE

For More Information

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