# Appendix 4 – Rural Subdivision Design Principles and Guidelines

## 4.1 Introduction

This Appendix has been developed to provide design principles to assist people undertaking subdivision and building within the Rural Area, including the Coastal Environment, of the District.

The principles are intended to inform landowners, developers, potentially affected people and the wider community about how to create well-designed rural subdivisions that recognise and retain the rural and landscape character of the District.

The objectives and policies in the Plan set the broader framework for the expectations of subdivision in the Rural Area. These are implemented by the subdivision rules. The rules may require restricted discretionary, discretionary and non-complying subdivisions to be designed in accordance with these principles. These principles are also relevant, as guidance only, when designing controlled activity subdivisions.

## 4.2 Subdivision Requirements and Guidelines

To meet the requirements of the Plan, applicants must demonstrate to the Council that the general design principles (Section 4.3) are met through the proposed subdivision design, and amenity landscape specific design principles (Section 4.4) are met for any part of the subdivision within an applicable amenity landscape.

Not all of the principles will be applicable for each subdivision. The importance of some principles may also vary depending upon the scale and complexity of the subdivision. This will be factored in when assessing if a subdivision application is in accordance with these principles.

As well as the principles, this Appendix includes Things to Consider when Planning your Subdivision (Section 4.5) and a Low Impact Design Checklist (Section 4.6). These guidelines are useful to increase the subdivision's environmental sustainability and long-term economic and community value.

It is recommended that applicants arrange a pre-application meeting with Council staff at the earliest stages of the development of the subdivision proposal to clarify and resolve potential issues and seek advice. Careful planning and consideration of alternative design solutions prior to submitting an application should increase the chances of obtaining subdivision approval. They can also have the added benefit of reducing uncertainty and the timeframe for processing the application.

## 4.3 General Design Principles

Design should ensure that:

1. The site is suitable.
2. The subdivision is integrated with the rural landscape character, natural elements, patterns and processes.
3. The productive potential of the land is retained.
4. Heritage features and landforms (including sites of cultural significance) are preserved.
5. The subdivision connects with the surrounding environment and community.
6. The visual and physical impact of infrastructure on the rural landscape is reduced.
7. The need for earthworks is avoided or minimised.
8. Ecological systems and processes are restored or enhanced.

## 4.4 Amenity Landscape Specific Design Principles

The amenity landscape design principles set out the values and characteristics for areas within the District that are considered to have amenity landscape values. These provide matters to be considered when assessing the effects of activities in these locations.

The Landscape Units listed in the table below have an amenity rating shown in 'Coromandel Peninsula Landscape Assessment September 2011' by Brown NZ Ltd.

This landscape assessment report is filed in Council's electronic document management system (as two separate files):

- Landscape Units 1 – 43 (ECM Document Set No. 2354209)
- Landscape Units 44 – 88 (ECM Document Set No. 2354208)

## Amenity Landscape Specific Design Principles

| | | Unit No. Amenity Landscape – Coastal | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **6** Sandy Bay | **10** Te Kawau, Turipeka, Otautu Point | **11** Waikawau River inlet | **13** Little Bay | **14** Little Bay (coastal foothills) | **15** Tuateawa (coastal slopes) | **17** Te Whau Point |
| **Landform protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | | | |

| | | Unit No. Amenity Landscape – Coastal | | | | | |
|---|---|---|---|---|---|---|---|
| | | **21** Kennedy Beach | **23** Papaaroha to Tucks Bay (coastal slopes) | **26** Ruffin Peninsula tip | **27** Preece Point | **28** Te Kouma, Manaia headlands | **30** Pukewhakataratara (coastal slopes) |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | | |

| | | Unit No. Amenity Landscape – Coastal | | | | | |
|---|---|---|---|---|---|---|---|
| | | **32** Whangapoua Beach, Te Rehutae Point | **33** Whangapoua Harbour Escarpment | **35** Matarangi Beach | **36** Matarangi Bluff, Rings Beach, Kuaotunu Beach | **37** Black Jack Hill | **39** Kauwera Point, Whaorei Bay |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | | |

| | | Unit No. Amenity Landscape – Coastal | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **40** Opito Bay | **44** Tahanga and coasta escarpments | **47** Waitaia Bay and coastal hills | **49** Buffalo Beach | **51** Whitianga Harbour escarpment | **53** Maramaratotara Bay | **55** Cooks Beach |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | | | |

| | | Unit No. Amenity Landscape – Coastal | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | **57** Purangi River escarpment | **59** Hahei Beach | **65** Central-western coastline | **66** South-western coastline | **71** Tairua Beach | **72** Paku | **74** Pauanui Beach |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | | | |

| | | Unit No. Amenity Landscape – Coastal | | | | |
|---|---|---|---|---|---|---|
| | | **75** Pauanui headland | **77** Opoutere Beach | **79** Wharekawa Harbour escarpment | **84** Whangamata Harbour escarpment | **86** Whangamata Beach |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | |

| | | Unit No. Amenity Landscape – River Areas | | |
|---|---|---|---|---|
| | | **56**<br>Purangi River | **68**<br>Waihou River (eastern banks) | **88**<br>Otahu River |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | |

| | | Unit No. Amenity Landscape – Hill Country | | | | | |
|---|---|---|---|---|---|---|---|
| | | **7** Moehau Range (south eastern foothills) | **67** Thames foothills | **69** Coromandel Range (south eastern foothills) | **80** Momoparaua (northern slopes) | **25** Coromandel Harbour islands | **41** Great Mercury Island |
| **Landscape protection** | Built development and landform modification responds to the geophysical characteristics/constraints of the site and its surrounds. | | | | | | |
| | Protection of sandy beaches and adjacent dune systems, rocky promonotories and outcrops within the Coastal Environment is provided for. | | | | | | |
| **Visual effects** | Placement of buildings, structures, and infrastructure avoids hillsides, significant ridgelines, spurs and summits, particularly where landforms are un-vegetated and exposed to public viewpoints. | | | | | | |
| | Placement of buildings and structures, and management of height, materials, screening/re-vegetation and use of reflectivity colours minimise adverse visual effects. | | | | | | |
| | Placement of buildings, structures, and infrastructure on coastal headlands, slopes and edges are sympathetic to the landform, avoiding extensive earthworks and adverse visual effects. | | | | | | |
| **Landscape character** | The characteristics that contribute to the natural character of the coastal environment are recognised, preserved and enhanced. | | | | | | |
| | Subdivision is designed to protect the open space, character of the rural area and patterns of the rural landscape. | | | | | | |
| | Subdivision recognises and preserves wild and remote landscape values. | | | | | | |
| **Natural qualities** | Riparian margins, wetlands, perennial and intermittent streams and rivers maintained and enhanced. | | | | | | |
| | Remnant and regenerating indigenous vegetation cover, particularly pohutukawa within the coastal environment is preserved and enhanced. | | | | | | |

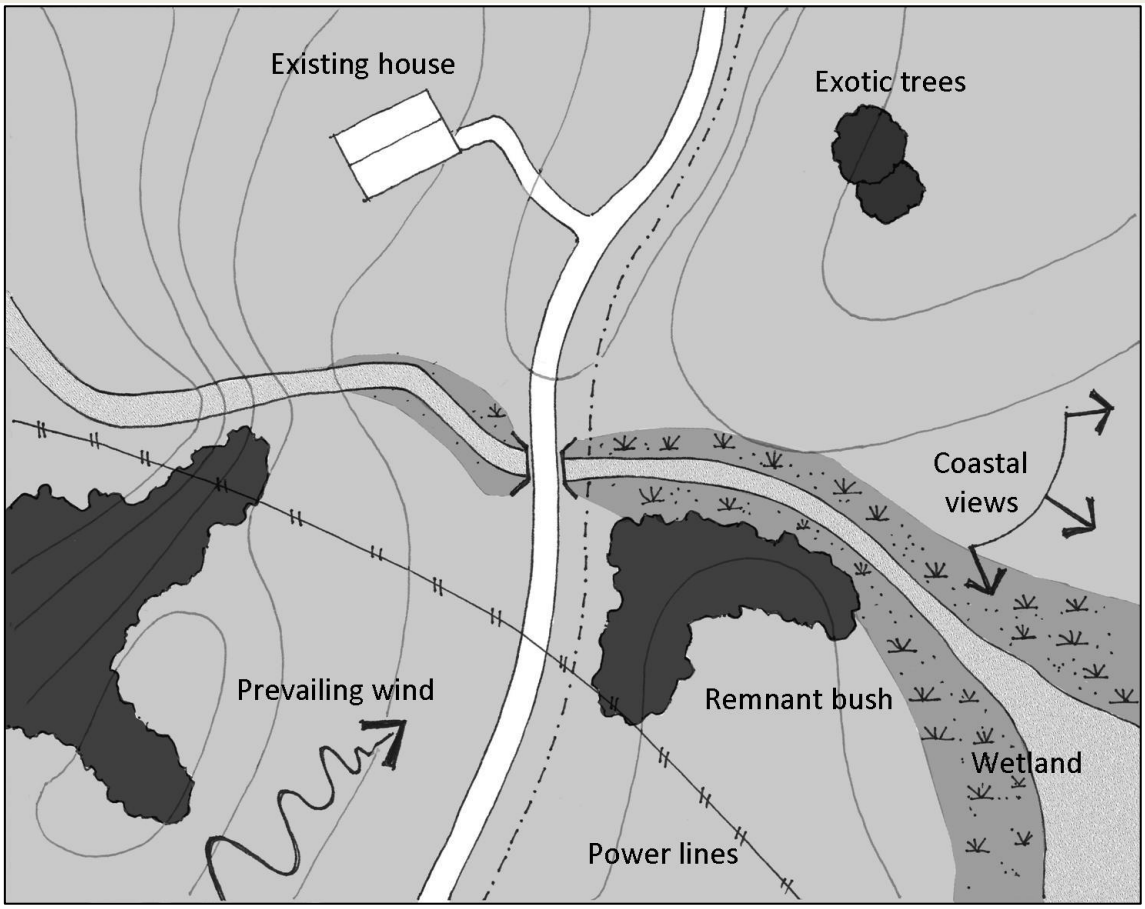
## 4.5 Things to Consider when Planning your Subdivision

### 4.5.1 Site Analysis

Site analysis and the identification of the constraints and opportunities of a site should include but not be limited to the following matters:

a) Topography and landforms, including contours
b) Vegetation: indigenous and exotic, remnant and regenerating bush, riparian vegetation, shelterbelts and mature trees
c) Wildlife, aquatic and terrestrial
d) Natural features including streams and wetlands
e) Productive soils
f) Groundwater levels
g) Solar orientation, wind and other climactic conditions
h) Views and aspect
i) Existing buildings, structures and infrastructure, including fence lines, boundaries, access and power lines
j) Heritage and cultural sites and features
k) Ground contamination
l) Reverse sensitivity issues
m) Local sources of nuisance such as noise and dust
n) Natural hazards
o) District Plan requirements and designations

### 4.5.1 Site Analysis




### 4.5.2 Choosing the right site

a) The location, layout and density of a subdivision in a Rural Area influence the landscape character by altering the proportion of open space to structures and associated infrastructure. It can also influence the area of land available for productive land use.

b) Equally understanding the landscape character including landform, ecology and prevailing land use will help with site selection and the degree to which the subdivision is able to be integrated with the existing landscape and natural character.

c) Careful consideration of the wider context and the site of the subdivision within it can add value to the subdivision and ensure a good fit with the surrounding Rural Area. Analysing the notable features and characteristics of the wider area and the pattern of surrounding development is an important part of the development process.

d) Notable features or characteristics of the wider area:
   i) Landscape and landform features such as the ranges, headlands, coastal edge, dunes, wetlands, streams and rivers, vegetation and the water catchment;
   ii) Significant views;
   iii) Orientation and aspect
   iv) Wind direction and other climatic conditions;
   v) Water runoff and drainage.

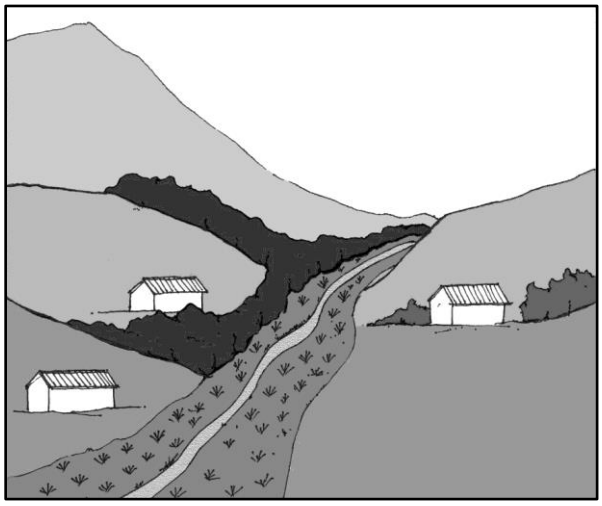
e) The pattern of development of the wider community:

### 4.5.2 Choosing the right site

i) Movement networks (arterial and local roads, actual and potential cycle and walkways, beach access);
ii) Opportunities to connect communities;
iii) Open space, reserves and linkages;
iv) Heritage/cultural features;
v) Character and land uses of the surrounding area.

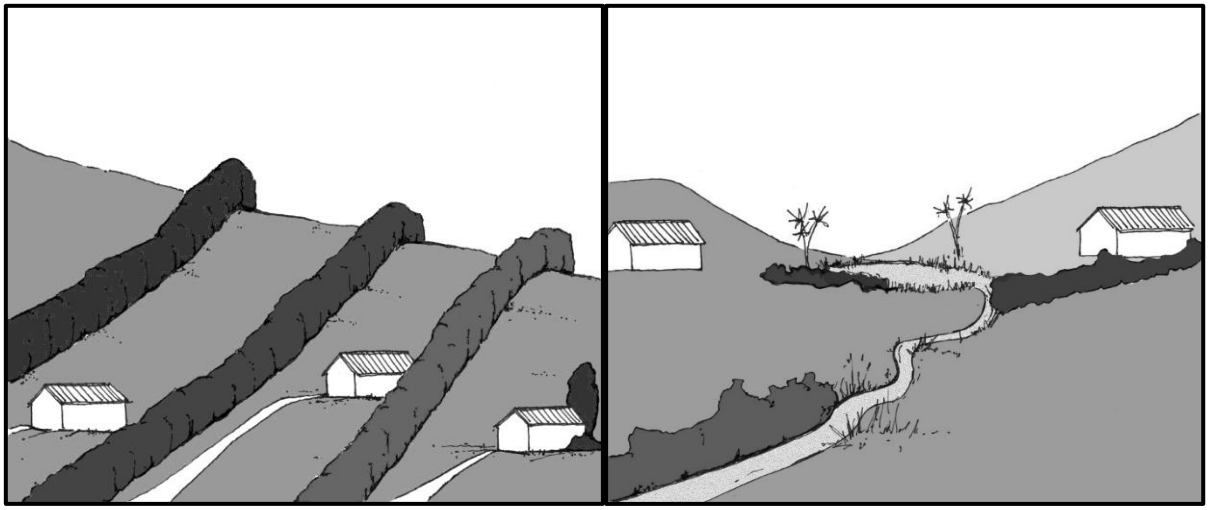
### 4.5.3 Landforms and Contours

a) Avoid the the use of gully and catchment areas for new lots as these areas can be ecologically sensitive and can offer opportunities for ecological enhancement and walking and cycle connections as part of a subdivision enhancing the character and value.
b) On flat sites at the foot of a hill or terrace locate new building sites near the base of the hill or terrace to provide a backdrop to the buildings and retain rural open space on flat land.
c) Use the existing road, agricultural, vegetation, development and drainage patterns in the broader landscape to guide the design of the subdivision.
d) On elevated, hill or dune country, make the subdivision fit the land. Vary and adjust lot sizes to fit the landforms and contours.
e) Provide roads and access that follow the landform and avoid construction on hill or dune tops.
f) On rolling or sloping land avoid straight roads that visually disrupt the landform. A uniform subdivision layout can negate the existing landform character on these sites.



### 4.5.4 Landscape Features

a) Natural or physical features such as sand dunes, streams and shelter belts on the site should be incorporated and enhanced as part of the subdivision.
b) Avoid felling trees and removing features until they have been assessed as to how they might be used to enhance the subdivision.
c) Incorporate existing landscape features into the layout of lots and roads. Use existing trees as focal points for entrances, roads, cycleways and paths.
d) Identification and protect heritage, archaeological, cultural and ecological sites and features within the site.
e) Integrate and enhance streams and other waterways as part of the open spaces in the subdivision.
f) Locate sites for new buildings so that existing landforms, shelter belts and trees provide shelter from wind.
g) Identify and incorporate views from the subdivision to the surrounding landscape.

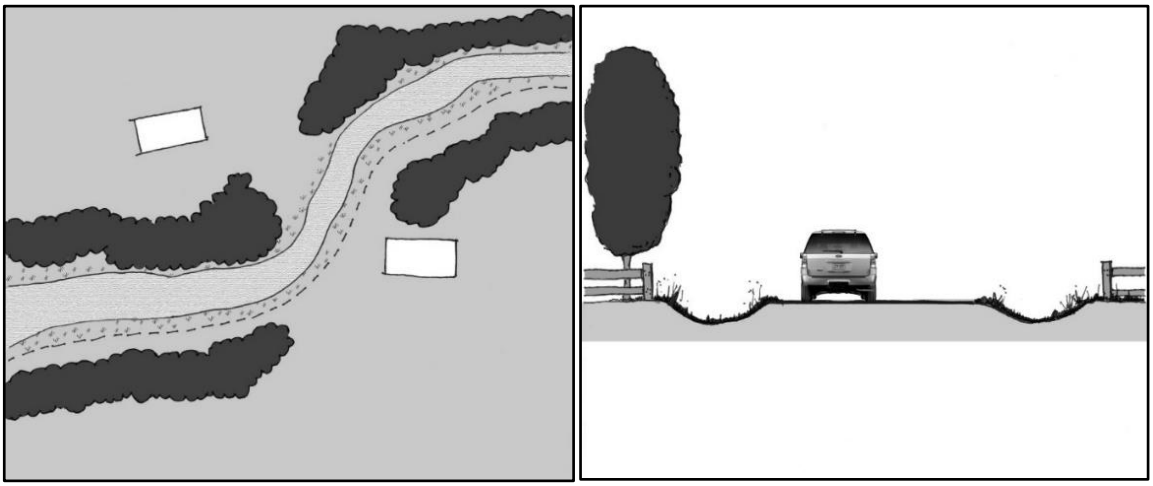


### 4.5.5 Stormwater

a) Create an esplanade reserve or access strip along a waterway.
b) Ensure that riparian planting is carried out along any river or stream and that appropriate species are used.
c) Minimise road widths and the use of impervious surfaces.
d) Reduce flow velocity by using swales and retention ponds on sloping lots
e) Consider vegetated filter strips and vegetated swales to control sedimentation.
f) 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.
g) Ensure that the appropriate ecological expertise is provided for the size, configuration, edge, slope, plant material, management and maintenance of any wetland to be utilised for stormwater management
h) Enhance natural systems such as wetlands, waterways and low lying areas for their habitat value and as part of recreational and amenity networks.
i) Retain the natural drainage characteristics of the landscape including drainage contours, wetlands and streams and integrate them into the network for stormwater management.

### 4.5.5 Stormwater

j) Detain stormwater on site to enhance ground water replenishment and/or to provide an alternative source of non-potable water for a range of uses including fire fighting and irrigation.
k) Fence off riparian areas to prevent stock access to waterways.
l) Avoid earthworks in close proximity to surface water bodies.
m) Provide separation distances between the margins of waterways and building development.



### 4.5.6 Wastewater

a) Ensure that the disposal field of any wastewater system is located on terrain that is suitable for the disposal of wastewater in terms of soil permeability, drainage, slope, groundwater depth, waterways proximity and aspect.
b) Locate disposal systems so that they do not compromise or become compromised by existing or proposed features including waterways, road and buildings.
c) Encourage effluent disposal fields to be planted and landscaped through thoughtful siting of the disposal fields. The Environmental Guidelines for Rural Living (2001) provide a list of species that are suitable for filtration planting.

### 4.5.7 Water

a) Encourage water conservation principles such as rainwater storage and stormwater detention in the design and layout of the subdivision.
b) Collect and store rainwater from roofs of buildings and impermeable surfaces.

### 4.5.8 Roads, Access and Fencing

a) Consider the function of new roads and access within the road network to decide whether it is to be an arterial road, a collector road, local road or access way and choose the appropriate design (Refer to Section 3 of Council's Code of Practice for Subdivision and Development October 2013).
b) Ensure that road reserves are of sufficient width to accommodate the provision of stormwater swales and rain gardens (where ground conditions are suitable), a shared walking/cycle path off the road or planting.
c) Footpaths and cycleways do not need to follow roads. Consider making these meander along waterways or past areas of interest with good views of the broader landscape.

**4.5.8 Roads, Access and Fencing**

d) Ensure that roads and accesses to buildings complement the landforms, avoiding extensive earthworks or earthworks that cut across natural patterns of land leaving visible scars.

e) Consider the location of buildings and building sites together with their access to minimise the length of road or driveway required, and to protect any identified ecological sites or features (including remnant forest and wetlands) within the site.

f) Cluster sites and buildings to enable shared access to reduce the amount of road required and also to reduce the number of entrances onto the road network.

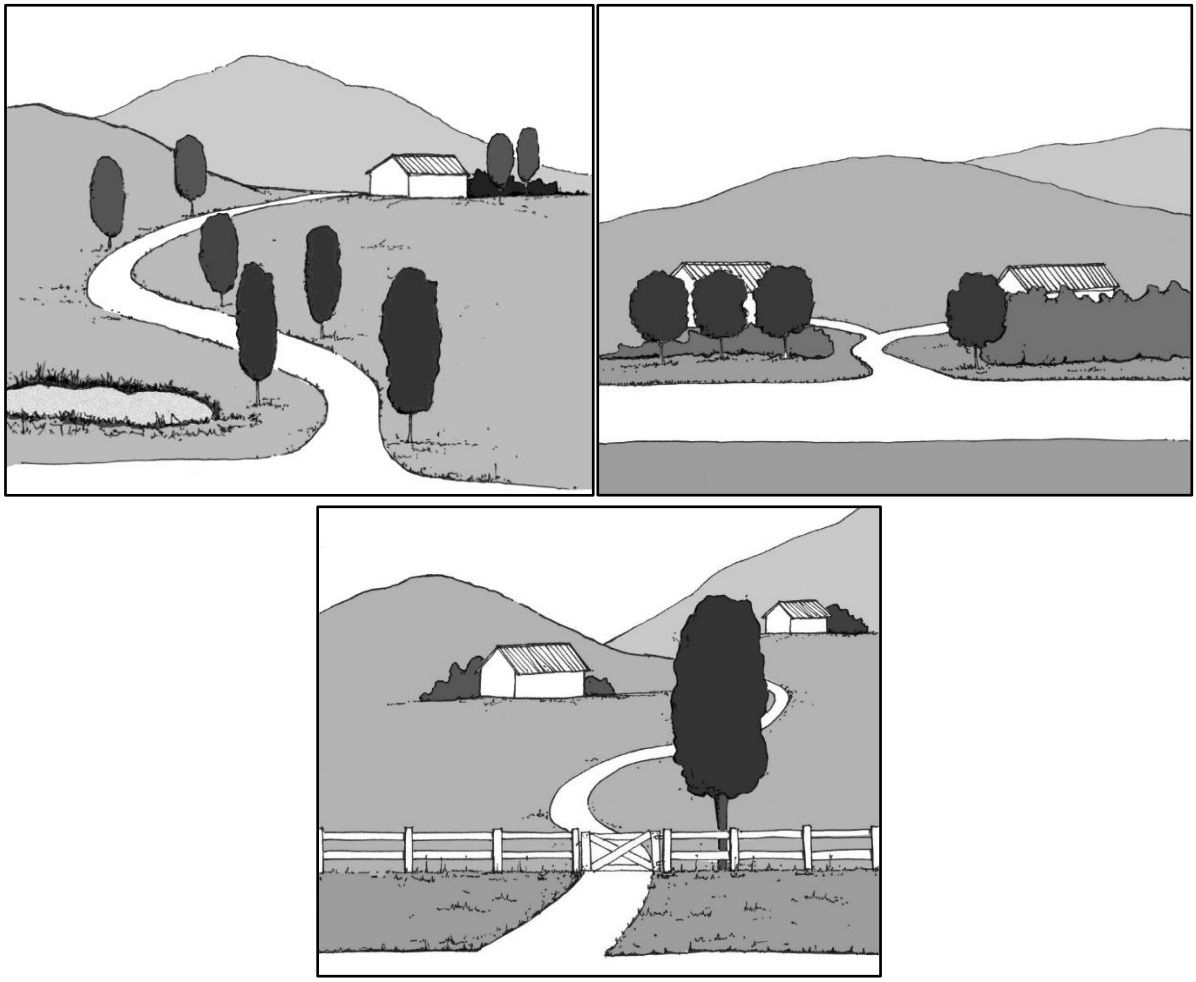
g) Provide rights-of-way with sufficient legal width to accommodate any future subdivision.

h) Design the road to create the traffic environment desired (wide, straight roads will encourage faster speeds than a narrow curved road).

i) Provide for the transport needs of rural productive land uses in the design and layout of roads and access.

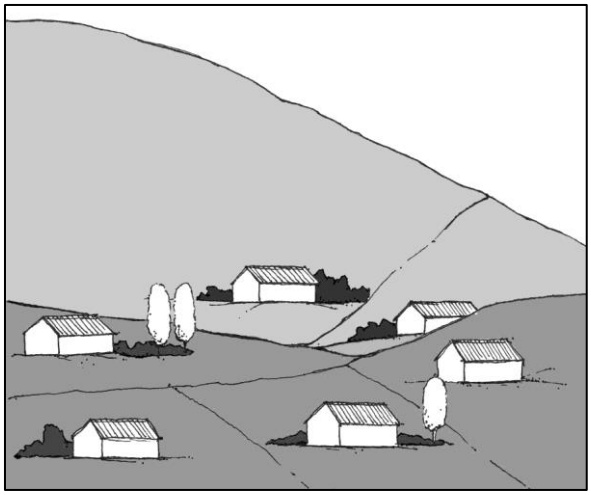
j) To retain views and the open rural landscape character, consider planting hedges and trees as alternative means to fencing. Where fencing is provided, encourage permeable fencing appropriate to the rural character.

k) Consider private covenants to control the location, design, colour, materials and height of fences.



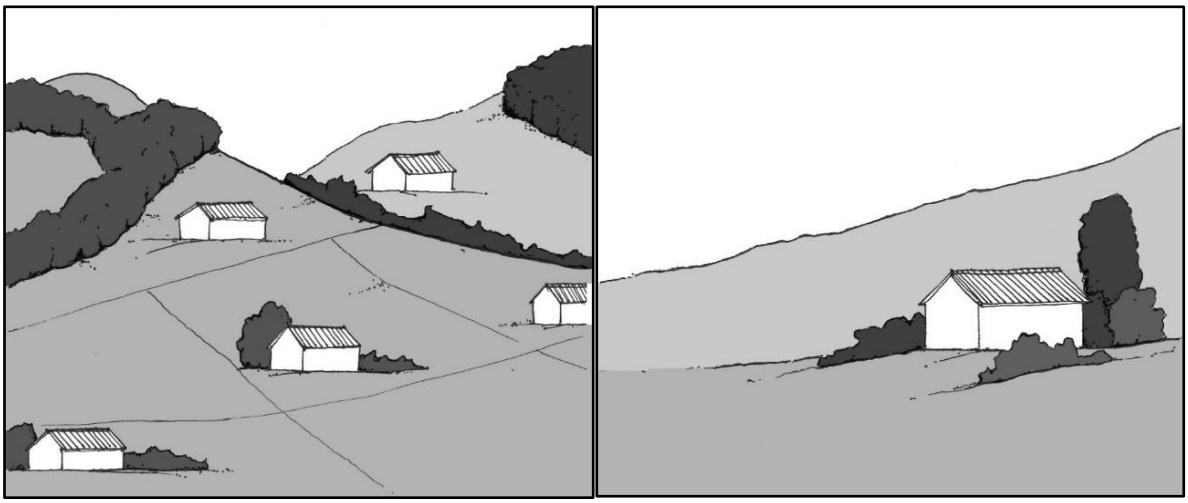
### 4.5.9 Lot Boundaries and Layout

a) Provide a variety of lot shapes and sizes, in keeping with landscape values, the topography of the site and the landscape character of the surrounding environment.
b) Lot boundaries should follow natural landscape contours and geographic features.
c) Establish lot boundaries in a way that will minimise the potential for reverse sensitivity effects between current and future rural productive uses.
d) Ensure that highly versatile land is not unnecessarily fragmented by lot boundaries. Cluster building platforms.
e) Do not determine boundaries in elevated and prominent locations against the backdrop of the skyline to avoid blocking view shafts through impermeable fencing.
f) Where large balance lots are provided as part of the subdivision ensure that the layout and design of the balance lot complements the other lots in the subdivision.
g) Where a Conservation Lot is provided as part of the subdivision, consider providing a buffer area between the protected feature and the lot boundary.



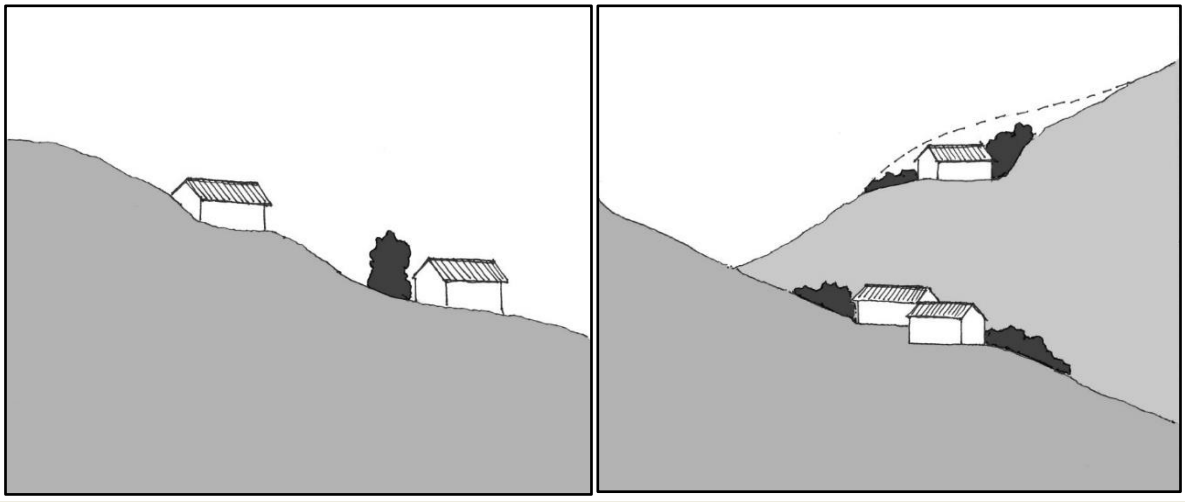
### 4.5.10 Planting and Vegetation

a) Use planting to mitigate the adverse effects of development and enhance the site or landscape.
b) Ensure that remnant or regenerating areas of native vegetation or larger exotic trees are retained and integrated within the subdivision layout.
c) 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.
d) Provide a planting framework to define building sites and screening between properties.
e) Ensure that trees and plant types are appropriate for the local conditions - check vegetation list provided by the Council. Avoid species which are not characteristic of the landscape type of the area.
f) Provide a range of plant species to encourage increased biodiversity.
g) Ensure the layout of plants reflects the existing patterns in the landscape. These may be the geometric patterns of paddocks, or curves that follow a river or the contours of ridges and gullies. Provide naturalistic planting patterns on sloping landscapes, whilst geometrical planting patterns are more acceptable on flat landscapes. Clusters of planting can both mitigate and identify housing in the landscape.
h) Extend existing areas of native bush.
i) Extend clusters of trees into the site as part of the subdivision design to help the subdivision appear as part of the existing landscape.
j) Consider the use of covenants to control the protection of existing trees and the plant species that can be used near areas of native vegetation.

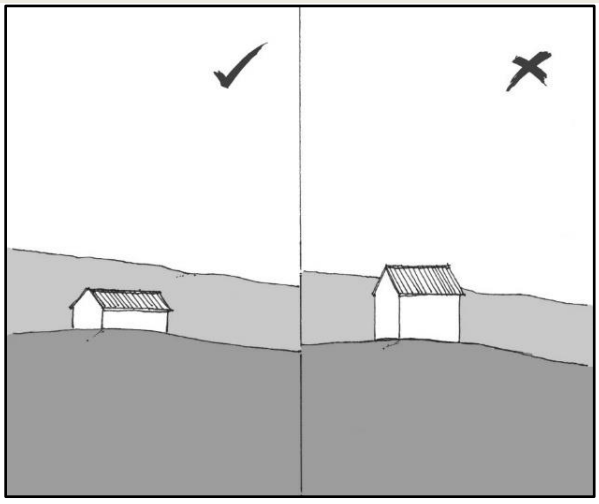


**4.5.11 Building Sites and Design**

a) Locate buildings against a backdrop (such as sand dunes, terraces or with planting behind) or where they will be unobtrusive within the landscape.
b) Cluster the building sites together to reduce the amount of road and to provide open outlooks.
c) Align buildings and building sites within the contours of the land.
d) Minimise site excavation retaining the natural contours of the land.
e) On sloping land, site buildings down the hillside with a low profile.
f) Consider the use of private covenants to control:
    i) The location of dwellings;
    ii) The style, design and character of buildings;
    iii) The use of recycled building materials;
    iv) The use of alternative and renewable forms of energy;
    v) The use of sensitive exterior materials and colour schemes for new buildings.
g) Locate building sites to take advantage of site features such as shelter, privacy, outlook and sunlight.
h) Provide opportunities for passive surveillance from building sites to shared public space and access.
i) In coastal landscapes locate building sites, buildings and ancillary structures such as water tanks in visually unobtrusive positions when viewed from public spaces such as roads and the beach.
j) Consider the opportunity for shared productive land within the subdivision.
k) Ensure that building sites, buildings and structures are not in hazard-prone areas.
l) Ensure that reverse sensitivity issues are avoided when locating building sites.



### 4.5.11 Building Sites and Design



### 4.5.12 High Quality Soils

a) Undertake a soil analysis on any site that is going to be developed.
b) Keep soil disturbance to a minimum; bare soil is much more susceptible to erosion than soil covered by vegetation. In addition both the length and the steepness of the land slope substantially affect the rate of soil erosion by water. The proximity of the receiving environment impacts on the degree of sediment delivery. The longer and slower the flow path the more sediment can be deposited.
c) Consider overland flow paths rather than enclosed channels (also see stormwater section 4.5.5).
d) Develop in stages to stabilise soils with vegetation as the subdivision progresses.
e) Retain land in viable parcels that has high productive values (high class soil) for present or future productive land uses.
f) Separate and/or buffer existing and future potential rural productive activities from residential land use activities.
g) Ensure that the productive potential of highly versatile land is not compromised through the siting of new boundaries or buildings.
h) Remove and relocate quality topsoil where it may be re-used for rural productive purposes.

#### 4.5.13 Open Space Public Access

a) Use natural features such as wetland areas, waterways, gullies, coastal margins, ridgelines and hilltops, to accommodate open space networks and public access.
b) Provide contiguous open spaces in common ownership with low maintenance landscape treatment as part of the subdivision.
c) Provide public open space areas for recreation, conservation and/or amenity to encourage social interaction and healthy liveable communities.
d) Ensure the design of open space has taken into account the impact of sun and wind and how the space will be used.
e) Provide sight lines from open spaces and public access ways to rural outlooks or to features such as the coastline.
f) Integrate open space areas with other design outcomes, such as stormwater management, riparian enhancement and landscape protection.
g) Clearly define ownership and management responsibilities of shared or public areas within the subdivision.
h) Consider the development of a management plan detailing the long-term maintenance and use of the land where there is shared ownership of an un-built area.
i) Clearly define the long term ownership, management, maintenance and funding responsibilities of infrastructural services such as water supply and waste management systems.

## 4.6 Low Impact Design Checklist

1. Can roof/site runoff be reused to reduce the volume of stormwater runoff?
2. Has the percentage of impervious surfaces been kept to a minimum?
3. Have lots been clustered as far as practicable?
4. Have road widths and lengths been reduced?
5. Have all options to minimize soil disturbance and vegetation clearance been explored?
6. Have existing features (trees, water bodies, wetlands) been well integrated into the design?
7. Are all anticipated structures commensurate with the surrounding landscape?
8. Does the site's water runoff post-development equal the runoff pre-development?
9. Are lots oriented to receive maximum exposure to sun?
10. Has a maintenance plan been included into on-site wastewater treatment systems?