

***a best practice rural subdivision  
design guide for:***

- Council decision makers
- land owners
- developers
- planners
- surveyors
- landscape architects
- architects
- engineers
- and others

# Rural Subdivision Design Guide

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details the vision, purpose, scope, intended users of this guide and links to related publications

## **01 context and core principles**

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describes the core principles of best practice subdivision design within the context of the Kapiti District rural area and the dune, alluvial and hill country landscapes

## **02 subdivision planning**

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illustrates the first stages of best practice subdivision design: identification and analysis of the wider context and identification of the characteristics, issues and constraints of the site

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illustrates the implementation of the core principles of best practice rural subdivision

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by:

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+  
**MWH**

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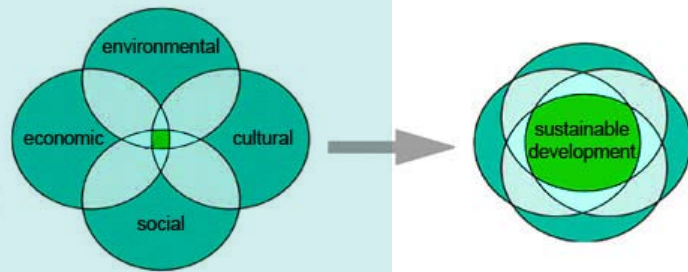
## introduction

The Kapiti Coast District is well known for its unique and distinct landscapes. This is not surprising given the dynamic land formation processes that continue to shape the water bodies, dunes, alluvial plains and hill country. As a result, the natural character of the dramatic coastline and the Conservation Estate (which covers half the land area) is often used to describe the district. Rural land, which takes up most of the rest of the land, also has a significant role to play in determining the character of the Kapiti Coast. Within the rural area there are a broad range of productive landuse activities including horticulture, dairy, pastoral and intensive farming. There are also a growing number of rural lifestyle farms and areas with rural residential living.

In recent years, and particularly along the coast and on the alluvial plains, the rural area has experienced significant subdivision and development pressures. This development can have positive spin-offs for the surrounding community, however, if it is not managed well it can threaten the qualities of the rural area that we all value. For example, where buildings are sited on prominent ridgelines and where there is excessive earthworks and intensive and sprawling development, open space and the potential for productive landuse can be lost.

*'this guide seeks to inform best practice in the design and layout of rural subdivision and should be read in conjunction with the District Plan'*





*Sustainable development integrates economic, cultural, social and environmental values, issues and constraints*

## ***vision / purpose***

The overall vision of this guide is to encourage best practice subdivision design that helps ensure the qualities of the Kapiti Coast rural area which we all value are maintained and enhanced.

The aim is to provide for win-win outcomes for the landowner, developer, community and the environment to provide for sustainable living in rural areas. The guide emphasises quality of design rather than strict adherence to the current District Plan rules and standards.

## ***scope***

Traditional approaches to rural subdivision have emphasised maximising lot yield and meeting engineering and surveying requirements. These elements are important, but rural subdivision must also maintain and enhance rural character and retain the productive potential of the land, while enabling those who wish to live in the rural area to do so without impacting adversely on the environment.

This guide provides practical examples of how rural subdivisions can be located and designed, from overall layout to the individual lot, in ways that achieve benefits to the subdivider, rural residents, the community and the environment.

It emphasises responsive and innovative design. Developers are encouraged to look beyond the minimum standards and consent requirements of the District Plan, and to explore opportunities that enhance the rural area, both now and into the future.

Subdivision designs that exhibit quality design and careful consideration of the issues identified in the guideline are more likely to be supported by the Council to ensure win-win outcomes are achieved.

## ***the Council's approach***

Kapiti Coast District Council is committed to the promotion of best practice sustainable outcomes. To achieve this, the following objectives underpin the subdivision design guide:

### ***> transparency***

Resource Management can too often become adversarial between groups. This guide communicates greater certainty to the community about how the Council will approach resource consent applications which seek alternative best practice subdivision design (that may not necessarily align with the current District Plan provisions).

**> partnership**

The best outcomes are achieved when participants have shared values and intentions. This guide aims to stimulate collaboration and mutual trust by outlining the Council's broad position and reasons for this, through the site design principles and 'win-win' parts of the guide.

**> equity**

The Council believes that all resource management decisions should be fair and reasonable. This guide emphasises the Council's commitment to a creative and realistic approach towards rural subdivision design.

**use**

The Rural Subdivision Design Guide is intended to assist the subdivider, those who will be responsible for designing the subdivision and the Council when assessing the merits of proposed subdivision. The guide forms part of the Council's Subdivision Development Principles and Requirements document. It has status under the RMA (s.104 (1)(c)) that is, it should be considered as part of the subdivision design and resource consent process. The design principles can also be used when reviewing the rural subdivision and development provisions of the District Plan.

No precise formula exists for the planning and design of rural development. The Rural Subdivision Design Guide outlines design principles that new developments are expected to observe but it allows flexibility in terms of detailed design.

**links**

Links with other Council and National initiatives:

- *Subdivision and Development Principles and Requirements & Supplementary Guidelines* (KCDC, 2006)
- *Environmental Guidelines for Rural Living, Kapiti and Horowhenua* (Boffa Miskell, 2001)
- *Subdivision Design Guide* (KCDC, 2007)
- *Kapiti Coast: Choosing Futures, Coastal Strategy* (KCDC 2006)
- *A Guide to Growing Native Plants in Kapiti* (KCDC, 1999)
- *Wellington Regional Council Native Plant Guide* (WRC, 1999)
- *Plant Me Instead* (DOC, 2005)
- *Cycleways, Walkways and Bridleways Strategy* (KCDC 2004)
- Greater Wellington's erosion and sediment control guidelines
- *Rural Design Guide* (Housing NZ, 2002)
- *Ki te Hau Kainga, New Perspectives on Maori Housing Solutions* (Housing NZC, 2002)
- *National Guidelines for Crime Prevention Through Environmental Design* (Ministry of Justice, 2005)
- *The Impact of Development of Rural Landscape Values* (MfE, 2000)
- *Urban Design Protocol* (Ministry for the Environment)

*'the council is committed to the promotion of best practice sustainable outcomes for the district'*

**users**

*The intended users of this guide are:*

- > council decision makers
- > land owners
- > developers
- > planners
- > landscape architects
- > architects
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- > engineers, and others





# 01

## context and core principles

There are a wide range of landscapes within the Kapiti Coast district. These range from coastal dunes, estuaries, rivers, and wetlands, through to the alluvial plains, foothills and the Tararua ranges. The majority of the land which is under pressure from subdivision and development can be grouped into three broad landscape types; the coastal dunes, alluvial plains and hill country. These are mapped on the District Plan Rural Subdivision Planning Map.

Within these three broad landscape types there are rural areas where most of the natural and cultural forms/elements, processes and patterns can be associated with productive landuse.

In the Kapiti Coast District, rural areas are characterised by large areas of open pasture interspersed with native bush, exotic forestry and rural amenity planting such as shelter belts, individual and groupings of trees. Pastoral areas with sheep, cattle, horses and deer are located alongside areas of intensive horticulture, cropping and market gardens. Expansive views of the rural landscape are available from public roads, through property boundaries marked with visually permeable fence lines. Buildings are typically clustered, and their form reflects the rural setting. Roads are predominantly sealed with metal shoulder, grass berm and drainage swales. Lighting levels are low, with street lights typically only present at intersections.





coastal dunes



alluvial plains



hill country

## ***Kapiti's three broad landscape types***

### ***> coastal dunes***

These landscapes can be found along much of the Kapiti Coast and may extend significantly inland. Characterised by remnant dunes, interdunal plains and wetlands these landscapes are highly valued for their natural character and the recreation opportunities they provide. Recent development pressures combined with their status under the RMA mean that there are a number of district plan provisions related to development in these landscapes.

Preserving natural character and maintaining public access to the coast are important issues to consider when designing subdivisions in the coastal dunes. Other issues that should be considered include:

- impact of earthworks on sensitive dune landforms
- provision of water, stormwater, grey water and waste water infrastructure
- how to minimise the impact on the dunes, in particular the foredunes, from erosion
- how to integrate structures into the dune formations
- the protection and enhancement of wetlands and coastal forest remnants

### ***> alluvial plains***

These landscapes are found mainly around Ōtaki and Te Horo and while already extensively subdivided (and under more recent development pressure) they are characterised by fertile alluvial soils and existing and potential productive landuse (dairy farms, cropping and intensive horticultural activities).

Loss of productive landuse potential and flood hazard are important issues to consider when designing subdivisions in these landscapes. Other issues that should be considered include:

- impact of earthworks on the distinctive river terraces
- reduced opportunities to visually integrate development into the landscape (except where there are significant areas of trees or where the land backs onto the hill country)
- greater soil type variations
- groundwater levels and ponding which affects building and stormwater, grey water and waste water sites
- how to preserve and enhance wetlands, alluvial forest remnants and habitat corridors for native birds and fresh water fish species
- how to best connect into surrounding suburban and urban areas
- how to retain the productive landuses

### ***> hill country***

These steep landscapes are characterised by their pastoral and forestry landuse, stream and river valleys, greater rainfall and remnants of native forest.

Visual sensitivity or the risk of visual prominence is a significant issue to consider in designing subdivisions in these landscapes. Other issues that should be considered include:

- erosion and siltation of rivers
- access issues, minimising earthworks
- appropriate landuse - primary production opportunities on steep, exposed land
- how to enhance public recreational activities and to create links with the surrounding Conservation Estate



### **core design principles**

The core design principles provide a quick reference guide to best practice subdivision. They respond to the key issues and opportunities that need to be addressed in the design of rural subdivisions which significantly influence the quality of the rural area. These principles are illustrated in more detail in Section 3.

- > **select** a suitable site for subdivision. Some landscapes and locations have greater ability to absorb development than others. Rural subdivisions should complement the local identity of the Kapiti Coast and respond to landform and other site and surroundings characteristics. (3.1)
- > **integrate** natural elements, patterns and processes such as vegetation, landforms and water bodies to enhance the existing character, create identity and maintain and enhance valued and established natural ecosystems. (3.2)
- > **retain** the productive potential of the land. Clustering lots will result in the retention of balance areas with productive potential, opportunities to enhance biodiversity and recreational opportunities and encourage a sense of community. Provide a variety of lot sizes and consider ownership and management structure options to encourage a diverse and sustainable rural community. (3.3)
- > **preserve** heritage features including waahi tapu sites, heritage buildings / structures, natural areas and topographic features for future generations. This can be achieved in a manner that adds value and uniqueness to subdivisions and may provide a valuable framework for development. (3.4)
- > **connect** with the surrounding environment and community through walkways, cycleways, bridleways and the roading network to provide accessibility and choices which can reduce travel distances and vehicle emissions. Connect publicly accessible open spaces and reserves to the wider recreation network. (3.5)
- > **reduce** the impact of infrastructure to help maintain the long-term quality of the rural environment and create rural communities that are more resilient and are self reliant. Promote the use of alternative and low impact energy systems, water supply, waste, grey and stormwater treatment options. Consider appropriate scale, and use materials and detailing appropriate for the rural environment, when designing roading. (3.6)
- > **avoid** unnecessary earthworks, and minimise and mitigate unavoidable earthworks to maintain the natural landform. Design the layout and location of roads and building platforms to follow the lie of the land, avoiding steep slopes and adverse effects on aquatic environments and other natural systems. (3.7)
- > **complement** the rural character of the Kapiti Coast in the design and location of structures including buildings, water tanks, lighting, signage and fencing. The style of these structures has the potential to undermine rural character if it is borrowed from an urban or suburban context. (3.8)
- > **enhance** ecological systems and processes with a comprehensive planting strategy, providing a broad-scale framework that accommodates development while improving ecology. Use species characteristic of Kapiti Coast ecosystems, the rural landscape, suitable for the site conditions, and of a scale that relates to the underlying and surrounding landscape. (3.9)



# 02

## *subdivision planning*

The location, layout, and lot density of a subdivision in the rural area influences the landscape character by affecting the proportion of structures to open space, which in turn determines whether development dominates or nestles into the landscape. These factors can also influence the area of land available for productive landuse.

Given the effect that subdivision and associated development can have on the rural area it is essential that careful consideration is also given in the design process to the factors that determine the character of the whole subdivision and of each individual site.

A three stage process should be followed when planning and designing a rural subdivision:

- > **Stage I**      identify and analyse the wider context
- > **Stage II**     identify and analyse the characteristics, constraints and opportunities of the site
- > **Stage III**    design the proposal

This section of the guide sets out in more detail **Stage I** and **Stage II**, focusing on subdivision, however the principles and approaches are equally applicable to other forms of development. Stage III is discussed in Section 03 of the guide.

Subdivision planning and design should also be guided by the planning context, regional and district plans, and any approved structure plans. It should seek to enhance the Kapiti Coast environment and the community.



## 02 subdivision planning



wider context analysis example-refer to pg 33

### stage I identify and analyse the wider context

Careful consideration of the wider context and the site's place within it can add value to a subdivision and ensure a good fit with the surrounding rural area. Identifying and analysing the notable features and characteristics of the wider area and the pattern of surrounding development is an important part of the development process. The main factors to consider are:

Notable features or characteristics of the wider area:

- landscape or landform features such as dunes, wetlands, streams, rivers, vegetation and the water catchment
- significant views
- orientation and aspect
- wind direction and other climatic conditions

The pattern of development in the wider community:

- movement networks (arterial roads, local roads, actual and potential cycle, bridleway and walking routes)
- opportunities to connect, direct routes and walkable catchments
- open spaces, parks, and linkages
- heritage / cultural features
- proximity to settlements, schooling, community facilities, open spaces and reserves
- character and landuses of surrounding area



site characteristics, opportunities and constraints analysis example-refer to pg 35

### stage II identify and analyse characteristics, constraints and opportunities of the site

Site analysis and identification of the constraints and opportunities of a site should include these elements:

- topography and landform; plot contour lines to reflect general landforms
- vegetation; coastal plant communities, populations or threatened plant species, remnant and regenerating native bush, riparian vegetation, mature exotic vegetation and shelterbelts
- wildlife; terrestrial and aquatic
- natural features; wetlands, streams and other water bodies
- productive soils
- groundwater levels
- solar orientation
- wind and climatic considerations
- views and aspect
- existing buildings and structures, including fence lines and boundaries
- heritage and cultural sites and features
- access points and routes; including vehicle, cycleway, walkway and bridleway linkages
- ground contamination
- local sources of noise, dust, odour, vibration
- natural hazards – flooding, erosion, fault lines
- major services; HV power pylons and transmission lines, gas mains



The site analysis should be discussed with Council staff, neighbours and other interested groups to ensure all the relevant constraints and opportunities are identified (see Consultation section below).

### Benefits of this approach:

Identifying early and responding to site characteristics, constraints and opportunities:

- enables cost effective and responsive design
- identifies and accommodates natural and cultural elements in and around the site, retaining or creating a unique identity
- enables the subdivision to be integrated into its surrounding rural environment
- identifies issues 'up-front' before spending time and money on problematic responses
- enables innovative design that avoids the unnecessary loss of landform and natural features
- promotes development that retains the appearance of the dominant landform that visually links with the surrounding landscape

### Win-Win outcomes:

- saves time and costs in the design/redesign where constraints are not identified
- provides a better community and environmental outcome
- may streamline consent process where it can be demonstrated that there are significant benefits to the wider community and the environment
- Council may consider non-notified applications where there is a clear and logical community and environmental benefit
- encourages better quality rural subdivision and development
- protects and enhances productive landuse potential
- avoids rural amenity conflicts such as reverse sensitivity

### consultation

For larger scaled subdivisions, undertaking feedback sessions via informal on-site meetings is a great way to determine the level of support or otherwise from the community. If consultation is done at an early stage, community views and their understanding of the surrounding context may be accommodated within the design which could enhance the proposed development. It could also result in a smoother resource consent process.

Groups it is beneficial to consult with during the planning and design stages include:

- District Council officers
- Regional Council officers
- Local iwi
- Neighbouring property owners
- Department of Conservation
- User groups (i.e. sports teams, walking groups, horse riding groups)
- Historic Places Trust
- Community groups
- Service providers (electricity, gas etc.) and utility operators.







# 03

## *design principles*

Rural areas within the Kapiti Coast's dunes, alluvial plains and hill country have a distinctive character. Subdivisions that relate well to natural landforms, retain natural features as the dominant element, and concentrate buildings and roads away from prominent sites, will help retain and enhance rural character. The scale and intensity of the subdivision should also be consistent with the capacity of the locality to absorb development.

This section of the guide outlines in more detail principles that should be used when designing a rural subdivision. The site design principles are illustrated through diagrams and the use of these principles will help to ensure that the subdivision supports sustainable living in the rural area by creating a design that is low impact, fits into the surrounding landscape, maintains and enhances the rural character distinct to the coastal dunes, alluvial plains and hill country and preserves the productive capability of rural areas.



*once you have a subdivision concept, you should arrange to meet with the Council design and review team before you invest a lot of time, energy and resources into your project*

### ***stage III design the proposal***

In summary, the core principles emphasise and provide guidance on how to:

- select a suitable site for subdivision / development
- integrate natural elements patterns and processes
- retain the productive potential of the land
- preserve heritage features including waahi tapu sites, heritage buildings / structures, natural areas and topographic features for future generations
- connect with the surrounding environment and community through walkways, cycleways, bridleways and the roading network to provide accessibility and choice
- reduce the impact of infrastructure, and use low impact / alternate forms of infrastructure to create rural communities that are more resilient and self reliant
- avoid unnecessary earthworks, and minimise and mitigate unavoidable earthworks
- complement the rural character of each landscape type in the design and location of structures
- restore ecological systems and processes, and use comprehensive planting strategies to provide a broadscale framework for development while improving ecology

This section of the design guide illustrates these core principles in detail.

#### ***The Council's design and review team role***

It is important to identify the opportunities available on the site and any likely conflicts with the District Plan early on in the design process. The Council has specialist staff that can provide design advice for important areas within the subdivision such as degraded ecological sites. Early Council involvement will help identify and refine the subdivision design and avoid misunderstandings and differences during application processing. Participating in the design and review process also ensures you get consistent advice from the Council. Once you have a subdivision concept, you should arrange to meet with the Council design and review team before you invest a lot of time, energy and resources into your project.

#### ***3.1 select a suitable site***

The guidance put forward in Section 02 Subdivision Planning (stage I and stage II) can be used to analyse a site's wider context and to identify site characteristics, constraints and opportunities which determine whether or not it is able to absorb or accommodate development. Some landscapes have characteristics which mean they can more easily absorb development, these characteristics are outlined here, along with characteristics of land less able to absorb development.

##### **HOW to select a suitable site:**

Identify sites with characteristics better able to absorb development, which include:

- flat areas: lower spurs, terraces, toe of hill slopes

- areas of low visibility from public places
- areas with backdrops, and/or large numbers of trees and vegetation
- mixed use landscapes
- areas where productive landuse is marginal
- areas where there is existing development and community amenities
- areas where there are existing transportation connections
- areas that can accommodate on-site water collection, stormwater, grey water and waste water treatment or have easy access to existing infrastructure

Characteristics of land less able to accommodate or absorb development include:

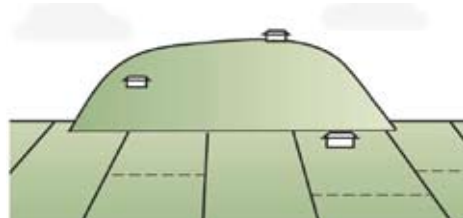
- landmark sites
- highly visible sites i.e. dune tops and ridgelines
- steep slopes requiring prominent earthworks
- areas recognised as having special significance; cultural, historical or ecological
- open, simple landscapes of undeveloped character
- areas with the potential for productive landuse and high quality soils
- sites traversed by major overhead and underground services infrastructure

**DO**



Ensure only land with higher absorption capacity is considered for subdivision.

**DON'T**



Avoid subdividing land that cannot absorb development.

- > Opportunities to live in the rural area are provided without adversely affecting rural character
- > Subdivisions that make a positive contribution to existing community amenities and connectivity
- > Ongoing costs related to the provision of infrastructure are minimised
- > Adverse effects of subdivision on the environment are avoided
- > Locating sites below ridgetops will reduce impacts on the visual amenity and will be less exposed to strong winds

## < Win-Win Outcomes

### 3.2 integrate natural elements, patterns and processes

Integrating natural elements such as vegetation, landforms and water bodies enhances the character and can provide a framework for development, while providing benefits in terms of maintaining and enhancing established natural ecosystems. Subdivisions are now increasingly being designed to take advantage of natural features within a site to create identity, and to reflect increasing community interest in environmental issues. Views to, or connections with, wider natural features such as Kapiti Island and the Tararua Ranges can also add value to the overall design.

Ecological systems (including the network of native vegetation remnants) are often associated with water: The Ōtaki and Waikanae Rivers, the numerous smaller water ways and the springs and wetlands that connect them.

Native vegetation in the district is diverse and generally tolerant of wind, drought, frost and a wide range of soils. Salt spray and soil moisture have a significant effect on the types of plants that can be grown near the coast. The rain shadow created when the prevailing north, north-west winds rise up over the Tararua Ranges, has an effect on vegetation closer to the foothills.



existing and new vegetation provides a framework to accommodate development



## 03 design principles



protect and enhance water bodies; rivers, streams and wetlands; they can form a valuable part of a site's identity and ecological function



retain and restore stands of remnant bush; these features could provide a framework for development

### Win-Win Outcomes >

For more information on rural living and plant species selection refer to:

- > Greater Wellington Regional Council website [www.gw.govt.nz](http://www.gw.govt.nz)
- > Environmental Guidelines for Rural Living, KCDC 2001
- > A Guide to Growing Native Plants in Kapiti, KCDC 1999
- > Wellington Regional Council Native Plant Guide, WRC 1999
- > Plant Me Instead, DOC 2005

- > When considering applications the Council will consider the investment in and value of the enhancement of ecological areas that may otherwise not have occurred as a positive effect
- > The Council may include the value of significant ecological benefits as part of the required reserve contribution

The effects of climate and landform combine to create distinct patterns of native vegetation (and ecological habitats) within each of the landscape types in the rural area. For example, the native climax or canopy species of each of the three broad landscape types are:

- > coastal dunes: titoki, matai and kanuka;
- > alluvial plains: titoki, matai, totara and kohekohe;
- > hill country: kohekohe, rewarewa, titoki, tawa, rimu, white maire, tawa, northern rata and miro.

### HOW to integrate natural elements, patterns and processes:

- retain and restore watercourses, streams and wetlands by planting stream banks and wetlands in suitable indigenous species
- retain existing vegetation, including mature exotic vegetation in appropriate locations
- seek the assistance of an ecologist or talk with the Council to identify the most appropriate method to restore a stream or wetland
- use planting to connect areas / remnants of native bush, and enhance watercourses and wetlands to form wildlife corridors

#### DO



Ensure important ecological systems are protected and enhanced.

#### DON'T



Avoid encroaching upon water bodies, vegetation and other natural elements

- design layout and building locations around a cohesive vegetation framework and topography and avoid encroaching on important ecological systems

### WHY - the benefits of this approach:

- provides for the long term sustainability of ecosystems and habitats by recognising natural processes
- maintains and enhances ecological value – e.g. riparian planting has been shown to decrease the nitrogen run-off from pasture by 90%
- protects prominent natural landforms that contribute to local character
- contributes to ecological connectedness and coherence
- protects indigenous vegetation and habitat
- creates and/or maintains the unique identity of a site
- increases public and private amenity
- reduces maintenance costs e.g. lawn mowing
- adds environmental and potential economic value



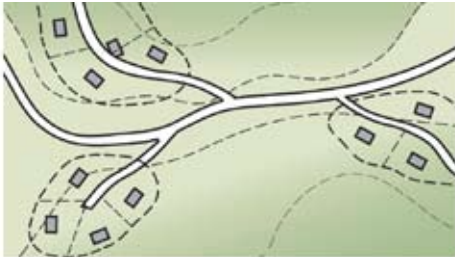
## 3.3 retain the productive potential of the land

Historically rural subdivision has often resulted in division of the land into lifestyle blocks with large distances between dwellings. This can result in inefficient use of the land, maintenance hassles, and the separation of dwellings resulting in a lack of community. One approach to remedy this is to locate dwellings so they form a cluster with a larger balance lot available for productive landuse, enabling people to enjoy the benefits of rural living without the need to fragment extensive areas of productive land.

### HOW to retain the productive potential of the land by creating appropriate subdivision layouts:

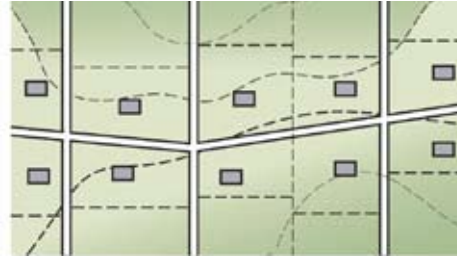
- create clusters or groups of buildings, with smaller lot and site coverage sizes, set within the contours of the land avoiding ridge tops, to enable large balance lots to be created

#### DO



Cluster lots to retain land for productive use.

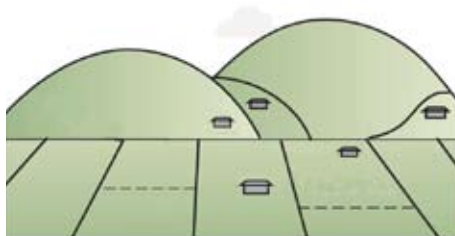
#### DON'T



Don't spread lots over the entire landscape.

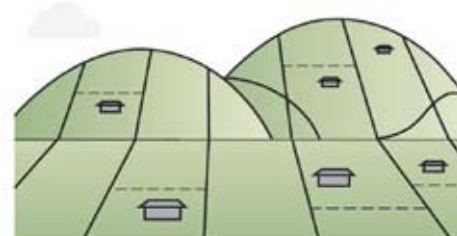
- retain balance lot(s) of an appropriate size and in appropriate locations, for each landscape type, for productive and/or ecological purposes

#### DO



Ensure balance lots are retained for productive/ecological benefit.

#### DON'T



Don't impose artificial patterns onto a landscape.

- For large balance lots in the hill country, an option for consideration could be the transfer of part or all of the balance lot to a conservation covenant or public ownership where there would be significant public benefit. This could also lead to an increase in the number of consented lots where there are demonstrable environmental and community benefits. Consultation with the Council and/or the Department of Conservation/QE II Trust etc. should occur at an early stage if these options are to be integrated.



productive landuse: market gardening



productive landuse: woodlot  
(potential to earn carbon credits)



productive landuse: grazing

## 03 design principles

### Win-Win Outcomes >

- > Retaining the productive potential of the land while providing for people who wish to live in the rural area
- > Greater sense of community with potential collective interest in protecting and enhancing rural character and the environment
- > Potential for higher lot yield if environmental and community benefits outweigh the costs of higher density
- > Simplifies the resource consent process where balance lots complement District Plan hamlet provisions

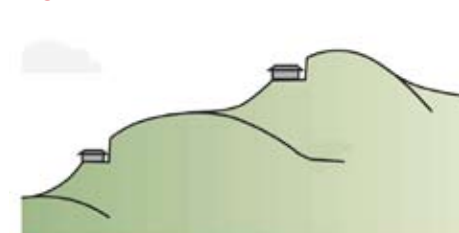
- identify naturally occurring building platforms to minimise potential earthworks

**DO**



Ensure naturally occurring building platforms are identified and utilised.

**DON'T**



Don't locate building platforms where unnecessary earthworks will be required.

### WHY - the benefits of this approach:

- maximises opportunities to maintain the open, unbuilt character of important ridgelines and hilltops
- minimises ground disturbance in site development
- minimises the visual impact of buildings in an open rural environment
- fewer roads and the potential for reduced infrastructure costs
- retention of open space and a distinct rural character within each landscape type
- retention of productive areas and/or land for conservation or recreational activities
- less maintenance for new landowners with reduced lot sizes and greater management options in the balance lots
- more sense of community and added security
- retention of views of the countryside with less interference from built structures
- provision of rural amenity for the new residents
- retaining the rural character and values that attract new residents in the first place with more scope to protect and enhance natural elements, patterns and processes within balance lots

### 3.4 preserve cultural heritage

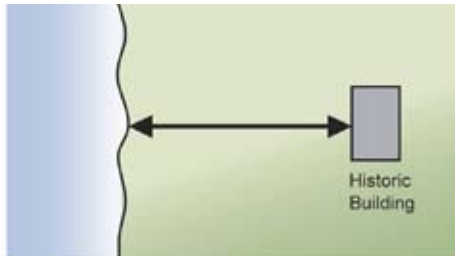
Sites may have important heritage features or historical associations which should be preserved. Identify and locate these sites before beginning the design process.

Maximise opportunities to preserve and enhance cultural heritage – waahi tapu sites, heritage buildings / structures, ecological, geological and archeological sites, and significant trees or vegetation groups; e.g. traditional and contemporary food collection areas, trade routes and flax mill remnants, trees and other vegetation.

## HOW to preserve cultural heritage:

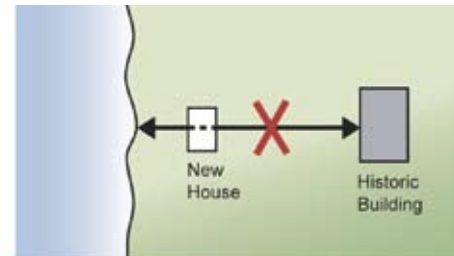
- access the Kapiti Coast District Council District Plan heritage register and the New Zealand Historic Places Trust national register to help identify specific cultural heritage sites
- consult with the local iwi authorities and Council officers to help identify sites of cultural importance and to determine the best ways to preserve each site
- the local library and the National Library in Wellington are also valuable resources for research into the history of a site and its surroundings
- locate new development so it does not dominate nearby heritage sites, and so it does not compromise the setting or the historic landscape connections of sites of cultural heritage

### DO



Ensure historic connections between site features and the surroundings are retained.

### DON'T



Don't compromise historic landscape connections.

- incorporate interpretation panels (if appropriate) at the sites of cultural heritage to provide a valuable education resource

## WHY - the benefits of this approach:

- community acceptance of proposed development
- recognition of heritage features will result in better future protection
- education value
- protection of heritage features and associations can result in a point of difference and sense of place

> When considering applications the Council will consider the investment in and value of enhancement of cultural heritage that may otherwise not have occurred as a positive effect

> The Council may include the value of significant heritage area preservation as part of development contributions

## < Win-Win Outcomes



The Kapiti Coast was well known for its flax industry



Marae and mahinga kai feature throughout the rural area



## 03 design principles



separate bridleways from vehicle carriageways  
(by drainage swale, level change or planting)



use of road materials and detail that reflect rural  
design standards



appropriate rural road construction in the  
coastal dune landscape



low use rural road; 'side friction' and perceived  
narrow width can slow speeds

### 3.5 connect roads, walkways, cycleways & bridleways

Transport corridors have multiple functions that need to be accommodated within a rural context. Best practice roadway design outcomes support different transportation options, i.e. vehicles and pedestrian, cycleways and bridleways, as well as making a significant contribution towards the amenity and ecological functions of an area. Any new development should consider the provision for connected recreation routes (pedestrian, cycleways and bridleways) into and around the site, as well as opportunities to connect into broader scale recreation networks such as coastal walkways. New, upgraded or renewed transport corridors can also help retain and enhance the distinct rural character within each landscape type.

This means that any proposed works to the roadway, or any associated infrastructure, should be carried out in a way that is consistent with the surrounding rural character, which in turn will help determine the speed environment of that road.

#### HOW to ensure roads and accessways are safe and well connected:

- implement methods and approaches so that traffic speed is lowered and consistent with that of the rural area, e.g. roads that are perceived as narrow or have 'side friction' can slow speeds
- provide for a range of transportation options, including pedestrian, cycleways and bridleways, considering compatibility of uses i.e. separate bridleways from vehicle carriageways
- ensure safe and efficient transportation function, this should complement traffic calming methods and lower traffic speeds
- connect publicly accessible open spaces with roads and/or walking, cycling and horse riding tracks, ensuring these spaces are visible to and protected by passive surveillance from the surrounding community
- aligning roads to follow the contours of the topography, avoiding prominent hill faces and ridges, will help to ensure that the development fits well into the rural area and minimise the need for earthworks

DO



Ensure roads are designed to follow natural contours.

DON'T



Don't build roads across prominent hill faces.

- plant cut slopes required for road and accessway construction to reduce sediment and pollutant runoff and adverse visual effects

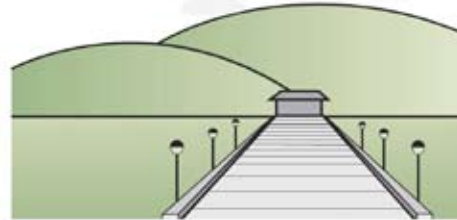
- use materials that reflect rural design standards, avoid the use of kerb and channel, use chip seal or loose road metal and provide swales for stormwater drainage, provide lighting consistent with that of the rural area minimising the ongoing maintenance requirements

## DO



Ensure road design responds to the rural character into

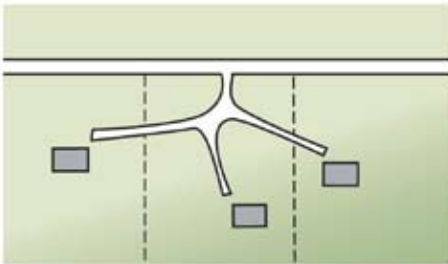
## DON'T



Don't introduce suburban design standards into the rural context.

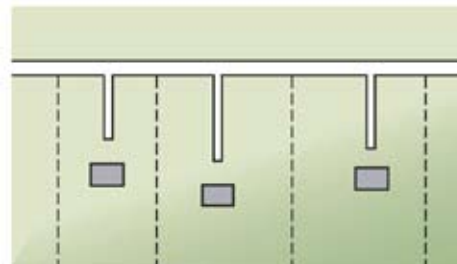
- restrict entrances off public roads to reduce the apparent level of development and retain spacious rural character. Avoid walled and gated entrances that suggest private enclaves

## DO



Minimise the number of entrances.

## DON'T



Don't construct multiple entrances.

- maximise opportunities to preserve and enhance access to rivers, swimming holes and native bush, including walking and horse riding trails
- roadways can assist with regional biodiversity by providing vital links to and between larger habitats, appropriate roadside planting can also enhance the ecological values of an area and the visual amenity. Use fish-friendly culverts where crossing water bodies is necessary

## WHY - the benefits of this approach:

- Reduced traffic speeds and improved safety for walkers, cyclists, horse riders and motorists
- Use of fewer resources through narrower carriageways and fewer roads
- Creates green corridors
- More attractive, quieter and friendlier roads



permeable surfaces reduce stormwater run-off and complement the existing rural character

> Subdivisions that complement the Council's sustainability initiatives associated with transportation networks and pathways

> Reduced carriageway width reduces construction and ongoing maintenance costs, retains rural character and slows traffic speeds making it safer for all road users

> Connecting to walkways, cycleways and bridleways will increase recreational as well as economic benefits to the district and increase interaction between the local and wider community

## < Win-Win Outcomes



## 03 design principles



on-site composting can increase self reliance and reduce the need for irrigation



on-site stormwater treatment can be used to complement wetland restoration

Major infrastructure including high voltage transmission lines and gas mains traverse the Kapiti Coast district. For guidance on development in proximity to these services refer to the relevant network utility operator and, for HVTL to:

> Guide for development near high voltage transmission lines (Transpower NZ Ltd, Sept 2006)

### Win-Win Outcomes >

> Low impact infrastructure complements the Council's sustainability initiatives associated with climate change, energy efficiency and managing water

> Resource consent processes are simplified where low impact solutions are more likely to meet permitted activity standards and rules

> Rates can be used in the provision of other public amenities, eg. public walkways, cycleways

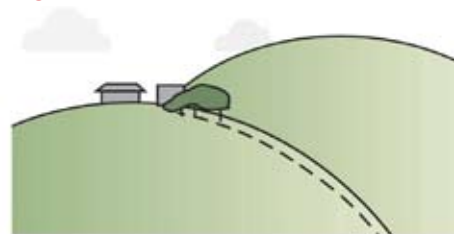
### 3.6 reduce the impact of infrastructure

Subdivision in rural areas is synonymous with the provision of on-site water supply and waste water treatment and disposal, telecommunication and electricity infrastructure. The cost of providing these services can be prohibitive in more isolated rural areas. Above ground services can introduce urban clutter into the landscape and draw attention to development, and while secondary structures such as water tanks are typical rural features they can become dominant if not located sensitively.

#### HOW to reduce the impact of infrastructure:

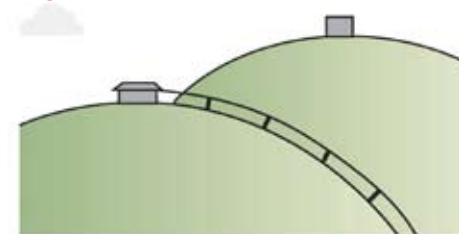
- install wind turbines, micro-hydro or solar systems to provide energy. Consider a carefully sited larger, single turbine supplying the needs of several houses
- facilitate on-site water supply and waste water treatment and disposal within the subdivision layout, providing communal waste water treatment facilities where appropriate
- facilitate on-site infiltration of stormwater from roads and other impermeable surfaces
- consider on-site green waste recycling, and greywater re-use for irrigation purposes
- where possible put services underground, or consider aligning them parallel to existing shelterbelts or so they have landform or vegetation as a backdrop
- design and locate infrastructure such as water tanks so they are absorbed into the landscape, avoid prominent locations and make use of vegetation to 'anchor' these structures

DO



Integrate infrastructure to reduce visual clutter.

DON'T



Don't spread infrastructure elements around the site.

#### WHY - the benefits of this approach:

- Reduces the consumption of non-renewable energy sources
- Rural communities are more resilient and are self reliant
- Use of wind turbines and alternative energy sources will reduce reliance on the national power grid
- Communal waste water treatment plants can provide a better level of treatment with less effect on the environment, and can be more economic

### 3.7 avoid unnecessary earthworks

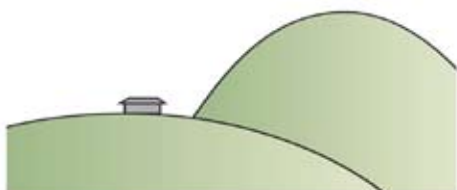
Earthworks for subdivision and development can have substantial and cumulative effects on the environment, silting streams and estuaries, and altering catchments. They can significantly alter topography and result in the loss of vegetation, which would otherwise enhance the character and identity of the subdivision. Earthworks in sensitive areas that are easily eroded (such as the coastal dunes) and on visually prominent sites are of particular concern, particular care should be taken in locating buildings in these environments.

Earthworks can be expensive and can have adverse effects on the environment if poorly managed. Best practice design solutions limit the extent of earthworks, reduce opportunities for erosion and sedimentation and retain and emphasise the site's natural features.

#### HOW to reduce the impact of earthworks:

- avoid unnecessary earthworks, limit earthworks (volume and area), avoiding disturbance to the natural landform and adverse effects on aquatic environments, and avoiding the need to dispose of large volumes of spoil to cleanfill sites
- design the layout and location of roads and building platforms to follow the lie of the land

DO



Ensure buildings are located on naturally occurring platforms.

DON'T



Don't undertake unnecessary earthworks.

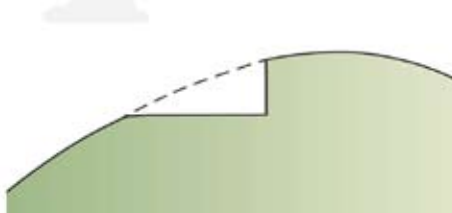
- where cuts and fills are required, these should be shaped to integrate with the surrounding natural landform

DO



Regrade and rehabilitate to reduce the adverse visual effects of necessary earthworks.

DON'T



Don't carry out aggressive earthworks.

## 03 design principles

### Win-Win Outcomes >

> Less earthworks reduces construction and on-going maintenance costs while retaining rural character

> Locating development away from ridgetops and steep slopes reduces the need for extensive earthworks and resulting adverse environmental impacts

> Minimising earthworks can simplify the resource consent process where proposals are more likely to meet permitted activity rules and standards

> Ecological systems, which are valued by the community, are more likely to be enhanced and maintained and become an asset to the development

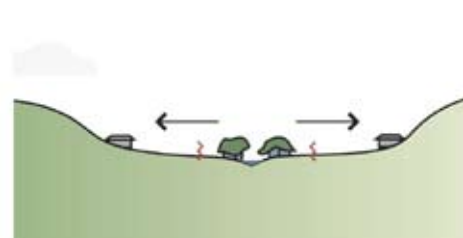
- retain the site's topsoil for productive purposes
- avoid subdivision that results in significant post-development earthworks on each lot to construct dwellings and driveways
- avoid carrying out earthworks in proximity to watercourses, follow natural patterns and create a buffer between earthworks and natural watercourses

#### DO



Avoid negative impacts on watercourses.

#### DON'T



Don't undertake earthworks without regard to the effects on watercourses.

### WHY - the benefits of this approach:

- Retains valuable landscape elements, and helps establish and retain character and identity
- Fewer site works and less construction costs
- Avoids 'flat earth' engineering approaches
- Maintains water quality in water bodies
- Reduces the scale of engineering structures such as retaining walls and engineered ponds

### 3.8 complement the rural character

The design and location of buildings and ancillary structures can have a considerable impact on the rural landscape. In cities it is built form which is the focus of attention. In rural areas, however, it is the water, land and vegetation forms which dominate. Intricate building designs that are constructed with highly modified and small scale building components may be appropriate in urban or suburban streets full of buildings, but will often look out of place in the larger scale, simpler rural landscape.

There are a number of techniques by which buildings can be made more sympathetic to their surroundings. Pitched roofs, verandahs and lean-tos are perceived as part of our rural heritage. Curved roofs have, in some landscapes, more recently become part of the rural vernacular.

Complementary buildings are also likely to reflect elements and patterns that contribute to the surrounding natural character, through the use of local natural materials.

## HOW to complement the rural character in the design and location of low impact structures:

- design buildings of an appropriate form, scale and style to complement the rural environment

### DO



Use existing development as an indicator of appropriate scale and style.

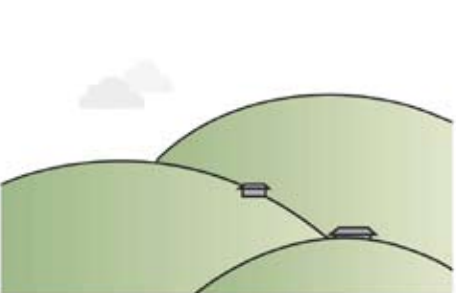
### DON'T



Don't use urban style buildings, or buildings associated with overseas landscapes.

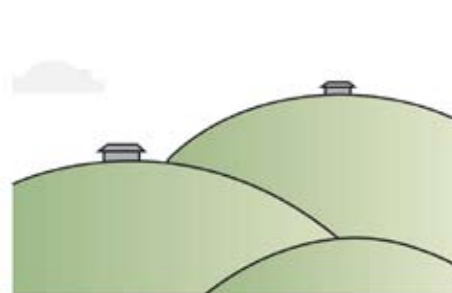
- use natural colours and materials, and materials associated with the rural environment such as corrugated iron and timber. Source materials locally, eg. local aggregates, timber and stone.
- make use of materials and colours of lower reflectivity to aid in the ability for built elements to be absorbed into the landscape
- use permeable materials (gravels and grass) to replace impermeable materials (concrete and paving)
- design and site buildings to maintain a low profile. Avoiding prominent locations such as the tops of ridges and dunes. Position buildings so their backdrop is land or vegetation

### DO



Avoid locating structures in prominent locations

### DON'T



Don't build on the skyline.

- consider clustering buildings at the base of the hill if the site is flat and backs onto the foothills. The hill will act as a backdrop to the buildings which will help to retain the open rural character and land for productive and or ecological habitat enhancement
- locate buildings so the landforms and trees provide shelter from wind and rain and help integrate or absorb the development within the landscape



well sited buildings in the coastal dune landscape



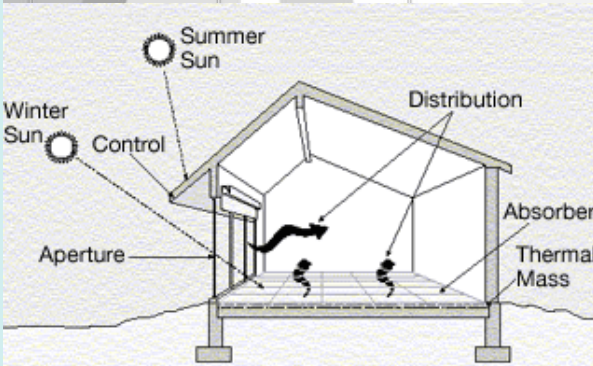
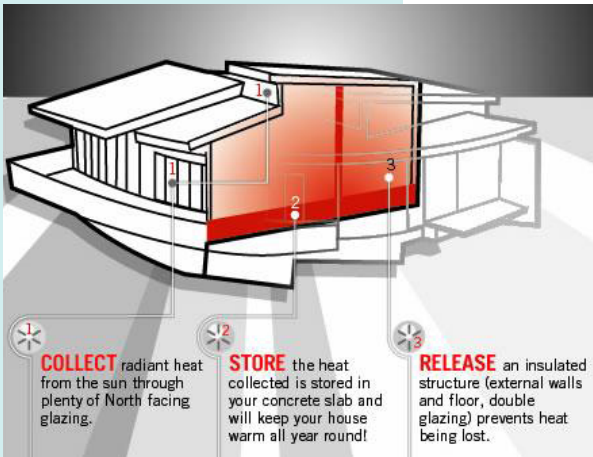
examples of dwellings which are well located and reflect the rural vernacular forms of pitched roofs and lean-tos



## 03 design principles



example of green roof technologies in building design



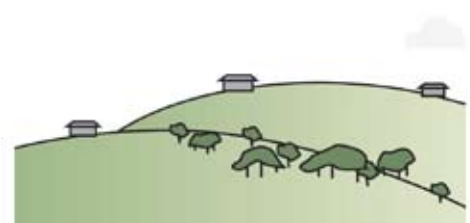
maximise passive solar gain in the design and orientation of buildings

DO



Use existing vegetation and landform to anchor development.

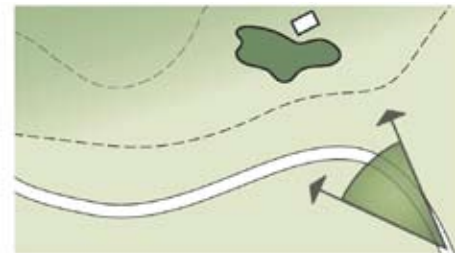
DON'T



Don't develop where there is no potential to anchor buildings with a background or visual context.

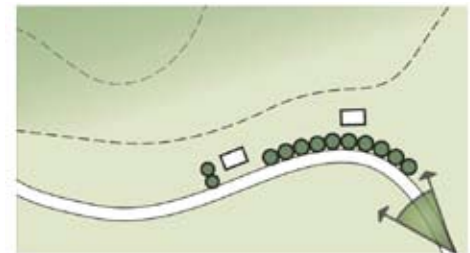
- design buildings to minimise the need for heating by adopting energy efficient technologies and designing for passive solar gain
- explore opportunities for environmentally friendly technologies, such as green roof construction
- align buildings with the 'lie of the land' not the boundary fence
- set back houses from road frontages, avoiding screen planting adjacent to roads where this does not fit the existing planting patterns in the area

DO



Retain openness by setting development back from roads.

DON'T



Don't enclose roads with development.

Features such as gateways, walls, lights, signs can emphasise the degree of development. The style of such features can also undermine rural character if they are borrowed from urban or sub-urban context. Fencing in particular communicates the difference between urban and rural areas.

- in areas where wire fencing dominates, it is better to use permeable fencing styles and hedges rather than solid walls
- avoid excessive and elaborate feature gateways, using signage only when necessary and to a minimum number and size. Make them simple and use natural and local materials

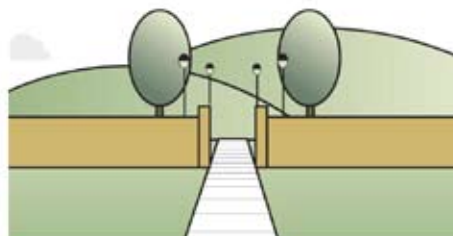


**DO**



Respect the existing rural character.

**DON'T**



Don't clutter the landscape with unnecessary features.

## WHY - the benefits of this approach:

- Retains valuable landscape elements and helps establish character and identity
- Reduces energy costs and reliance on the national energy grid
- Promotes healthy living and healthy homes
- Reduces negative effects of the development on the visual amenity of the landscape
- Local materials means supporting local business and the local economy

## 3.9 enhance ecological systems with a comprehensive planting strategy

Planting and vegetation patterns have as much impact on rural character as buildings. Comprehensive planting can provide a broadscale framework that absorbs development and enhances ecological systems. On the other hand, the distinct rural character of the Kapiti Coast may be undermined by planting which has a suburban scale and character, or creates a patchwork effect over natural landforms that reinforce lot boundary lines.

## HOW to enhance ecological systems with a comprehensive planting strategy:

- analyse the surrounding vegetation patterns and consider extending / reinforcing existing groups of trees, areas of natural vegetation, or shelterbelts (where they exist) so the subdivision ties in with the surrounding landscape
- make the most of opportunities to restore ecological systems, including degraded water levels where possible to enhance the long term health and welfare of the District's wetlands. Ecological systems have the potential to become valuable features of a subdivision or development (3.2)
- retain existing vegetation to provide context for developments and a level of maturity. In particular retain areas of indigenous vegetation for their ecological value and to form the basis of a native vegetation framework

> Designing homes to be low impact and which blend into the rural landscape will help retain rural character while enabling people to live in the rural area

> Encouraging and promoting sustainable living and healthy homes will potentially add to the sense of community by rural residents having a shared vision for their neighbourhood

> Buildings and structures that complement the rural character also support the Council's sustainability initiatives

> This can simplify the resource consent process where permitted activity rules and standards are more likely to be met

< Win-Win Outcomes



fencing options that complement rural character

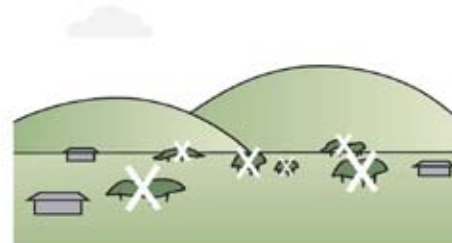
## 03 design principles

DO



Retain existing vegetation to provide a context for new development.

DON'T



Don't clear existing vegetation.

- design a comprehensive planting plan across the entire subdivision, of a scale that relates to the underlying and surrounding landscape, with species characteristic of the landscape type and suitable for the site conditions. Retain a sense of openness that is appropriate to the type of landscape in that rural area

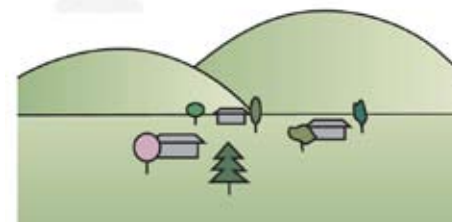
- use planting to provide a context for and to anchor development

DO



Do establish a cohesive planting framework.

DON'T



Don't apply a fragmented approach to planting.

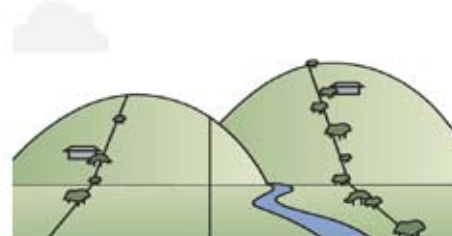
- use plants beneficial to the location. Avoid using plants that are invasive environmental weeds (refer to Plant Me Instead, DOC 2005)
- plant to follow topography and water bodies. Avoid planting on boundary lines that cut across hill faces

DO



Arrange planting to follow land form and waterways.

DON'T



Don't plant along arbitrary lines.

**DO**



Anchor development with stands of trees.

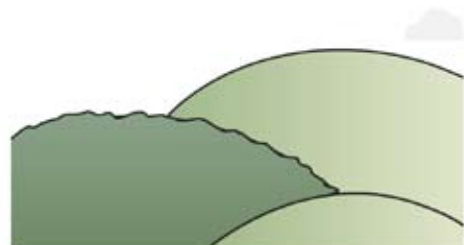
**DON'T**



Don't increase the apparent prominence of a building by isolating it in a landscape.

- avoid planting on boundary lines that cut across hill faces and close to roads if this will reduce the sense of openness
- design plantations to fit natural landscape patterns. Plantations often contrast with the colours and openness of the Kapiti Coast landscape, and due to straight edges and geometric boundary lines, can appear at odds with the underlying landform. Link to existing vegetation where possible

**DO**



Do plant woodlots to follow landform.

**DON'T**



Don't create boundaries that conflict with natural patterns.

## WHY - the benefits of this approach:

- contributes to district and regional biodiversity initiatives
- enhances or restores indigenous biodiversity initiatives
- opportunities for alternative productive landuse (flax plantations etc.)
- increases recreational opportunities
- regenerating areas may provide opportunities to earn carbon credits
- reinforces and complements established patterns of planting
- protects indigenous vegetation and habitat by connecting vegetation fragments and controlling weeds and pests

> When considering applications the Council will consider the investment in and value of enhancement of ecological areas that may otherwise not have occurred as a positive effect

> The Council may include the value of significant ecological benefits as part of the required reserve contribution.

> Potential for higher lot yield if environmental and community benefits outweigh the costs of higher density

## < Win-Win Outcomes





# 04

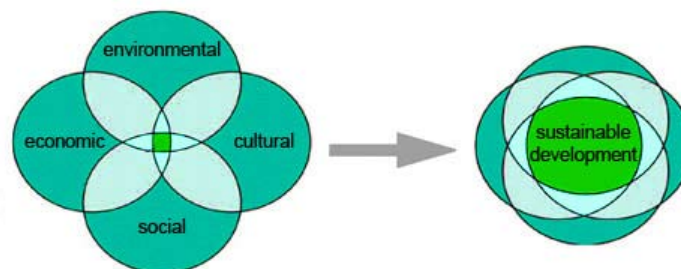
## design process

In this section of the guide, a 'fictitious' case study is presented that illustrates how the principles advocated within this guide can be used to improve the quality of a subdivision on a particular site.

Each of the three broad landscape types have different development issues, from resolving infrastructure and access issues in the coastal dune environment to preserving the productive potential and addressing visual prominence issues in the alluvial plains, to addressing access and enabling a variety of section sizes in the hill country.

The following model design illustrates a process for the design of a development in a coastal setting that has issues very similar to those experienced within the Kapiti Coast, in particular the 'lumpy' dune landform and watercourses abutting the alluvial plain. Throughout this process reference is made to the issues arising in the alluvial plains and hill country.

The model design exercise identifies a number of the practical issues that can arise with designing subdivisions. It also identifies how these can be overcome through quality design.



## 04 design process

### stage I identify and analyse the wider context

Before you begin to develop a site specific design for your site you need to consider it in relation to its wider context. Understanding the unique elements, patterns and processes that contribute to the surrounding area can add value to the development and ensure that the final design fits well with the rural area. This wider context analysis will also help you to identify key constraints and opportunities considered in Stage 2 of the design process.

In particular this analysis should consider:

#### Notable features or characteristics:

> *landscape, biodiversity and landform features*: such as dunes, river terraces, valleys, hills and escarpments, water bodies, significant native and exotic vegetation.

> *significant views and aspect*: can you see significant landmarks - Kapiti Island, Tararua Ranges, the sea and/or a river? Where can the site be seen from? Which are the most highly visible areas of the site?

> *orientation and aspect*: locate north to understand how the sun moves across the site.

> *wind direction and other climatic conditions*: identify where the prevailing and cold winter winds are coming from. Is the site subject to high levels of rainfall?

#### The patterns of development:

> *recreation networks*: are there any pedestrian, bridleway and cycle routes in the wider site area or recreation facilities (horse riding arena, sports fields, bush walks)?

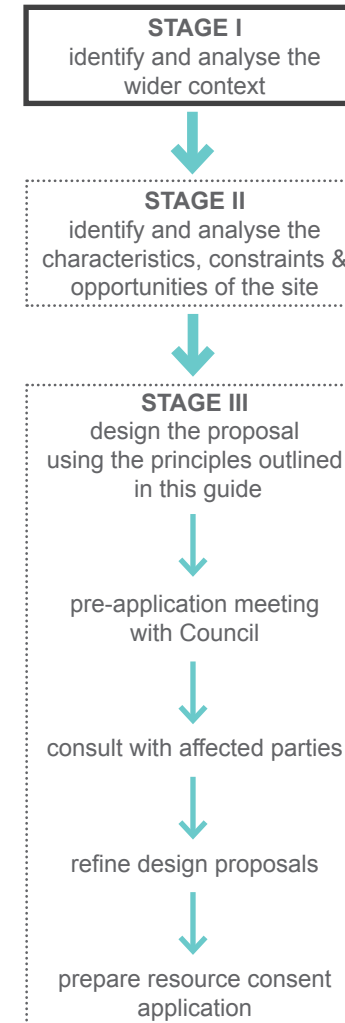
> *vehicular networks*: arterial and local road network and thoroughfares.

> *open spaces, parks, and reserves*: are there any public reserve areas &/or is the river corridor within or nearby the site?

> *heritage/cultural features*: locate any marae, historic sites, historic buildings.

> *proximity to public amenities*: schools, church, public transport (bus and train), community halls.

> *character and landuses of surrounding area*: what mix of development is nearby? Is it open space, residential and/or productive? What types of productive landuses? Where are built forms located? And what are their functions - community / cultural use, dwellings or structures such as sheds and water tanks associated with rural productive use?



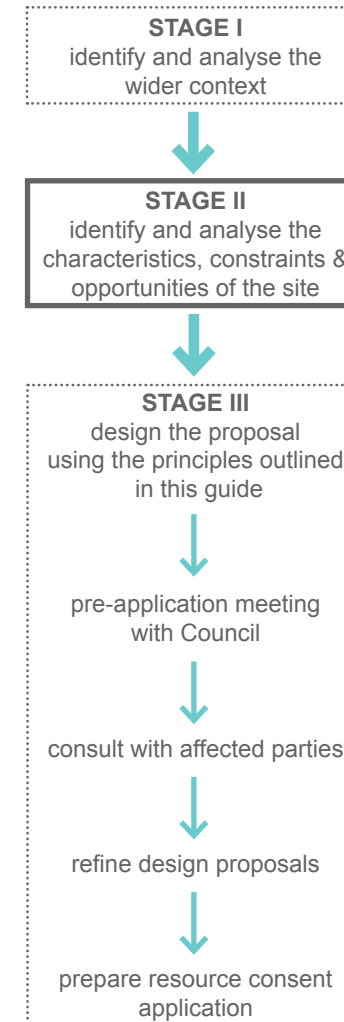


## 04 design process

### **stage II** *identify and analyse characteristics, constraints and opportunities of the site*

An in-depth analysis of the site is the next stage of the design process. Combined with an understanding of the wider context this analysis should highlight the site's characteristics, and the key constraints and opportunities that will influence the design and add value to the overall process. In particular this analysis should identify:

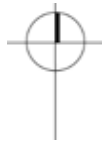
- > *topography and landform*: dunes, terraces, escarpments, valleys, ridgelines, etc.
- > *solar orientation*: the location of sun rise and sun set in summer and winter.
- > *wind and climatic considerations*: including micro-climates within the site, exposed and sheltered locations.
- > *patterns of existing vegetation*: including native bush, riparian vegetation, mature exotic vegetation, shelter belts, wood lots, and vegetation associated with productive landuses.
- > *natural features*: wetlands and streams.
- > *wildlife*: terrestrial and aquatic, which natural features are they associated with?
- > *groundwater levels*: test to determine the groundwater level and identify man-made ponds and drainage channels.
- > *productive soils*: what is the soil class in different areas of the site, what are the resultant existing landuses (soil testing may be required to determine soil class)?
- > *natural hazards*: what is the extent of flooding across the site in significant rainfall events? Are there areas of erosion or fault lines within the site?
- > *views and aspect*: where in the site are views of the surrounding landscape obtained?
- > *existing buildings, structures and infrastructure*: locate existing built elements. Can existing infrastructure support proposed development?
- > *heritage and cultural sites/features*: within and adjacent to the site.
- > *vehicle access points and routes*: where are the best access points to provide good circulation and linkages? Where are no-go zones in terms of required earthworks, ecological / productive areas that would benefit from protection?
- > *cycleways, walkways and bridleways*: existing and opportunities for establishing and connecting into existing recreational networks.
- > *contamination*: identify sources and locations of contamination, including ground contamination, noise, dust, odour, vibration.







- site boundary
- infrastructure no build zones
- potential vegetation framework
- potential vehicle access points
- potential development areas
- potential ecological restoration areas
- 1:100y flood zone
- soil class
- potential recreation linkages (walkway / cycleway / bridleway)



## *stage III design the proposal*

In the final stage of the design process, once analysis of the site and its surroundings and the opportunities and constraints for development have been identified, the site specific design of the proposal can be approached using key layers. These layers are generated from both the analysis of the site's characteristics and the opportunities and constraints the site presents, and the core principles of best practice subdivision and development outlined in Section 03 of the guide.



### **physical form**

Select a site suitable for subdivision. Consider the physical form of the site, its topography - locate high and low points, views in and out of the site, boundary locations, orientation and aspect, and relationship of the site to its surroundings.



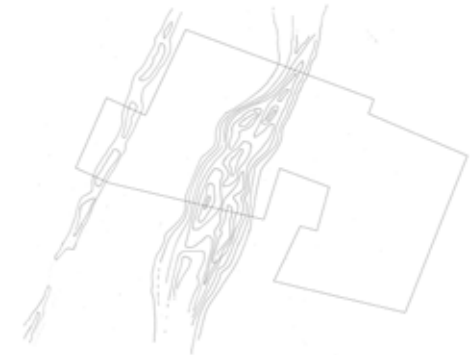
### **vegetation**

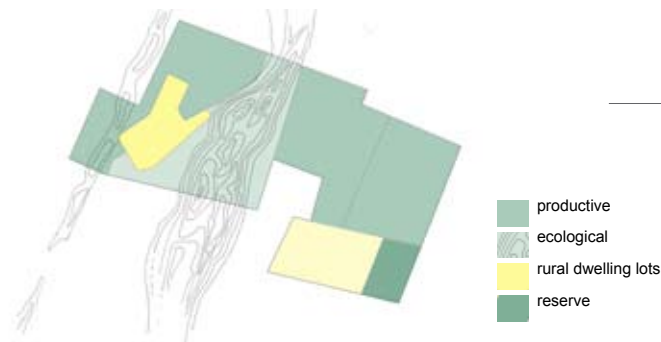
Establish a vegetation framework based on existing exotic and native vegetation, streams, wetlands and other water bodies. Connect isolated native vegetation remnants, and work with the existing vegetation features in the site and surroundings to establish a vegetation framework to absorb development and complement the rural environment. Future management options should also be considered for example through; incorporation, trust, lease, home association groups, covenant (QEII), community group relationships and managment by the district or regional Council.



### **waterways bodies**

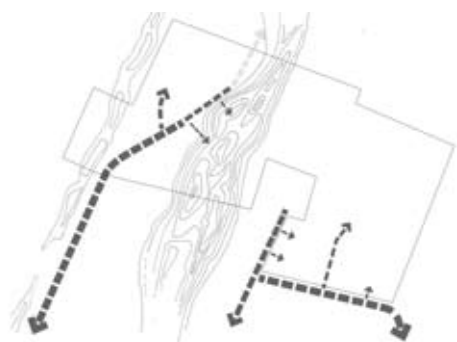
Restore watercourses, streams and wetlands. Where watercourses have been channelled to drain land look for opportunities to naturalise and rehabilitate as part of wider ecological systems (ie. interdunal wetlands). Explore options for on-site collection, retention and treatment of stormwater and the potential for collection of rainwater or treatment of greywater for irrigation purposes.





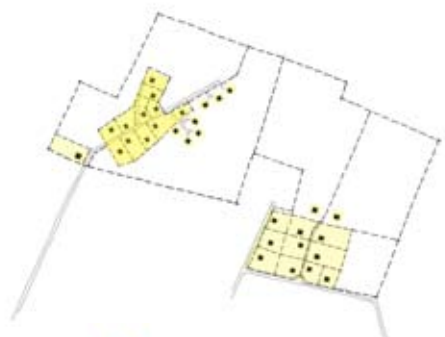
## landuse

Considering topography and the surrounding and current site landuses, identify potential landuse zones including areas of revegetation, rural productive, dwellings, ecological and recreation / reserve areas within the site. Options for land ownership can also be considered in this layer including individual lots privately owned, land in joint tenancy, tenancy in common and public land ownership.



## access

Considering the topography and surrounding vehicular network locate potential new access points and routes appropriately to minimise disturbance to landform. Locate potential vehicle connections into and around the site, and identify potential future connections. Consider also how the vehicle access might connect with the recreation network. Explore opportunities for undergrounding of services to minimise impacts of development.



## lot layout

Identify areas/land suitable for development. Keeping in mind the permitted lot sizes in the rural zone and the potential benefits of clustering lots together to enable productive landuses to be retained. Consider proximity to areas of the site appropriate for stormwater and wastewater treatment. Look for opportunities to implement sustainable energy sources; wind turbines, micro-hydro.



## circulation

Provide connected recreation routes (pedestrian, cycleway and bridleway) into and around the site. Consider the compatibility of uses - separate bridleways from vehicle carriageways. Look for opportunities to connect into broader scale recreation networks, to hill country, river and coastal walkways.

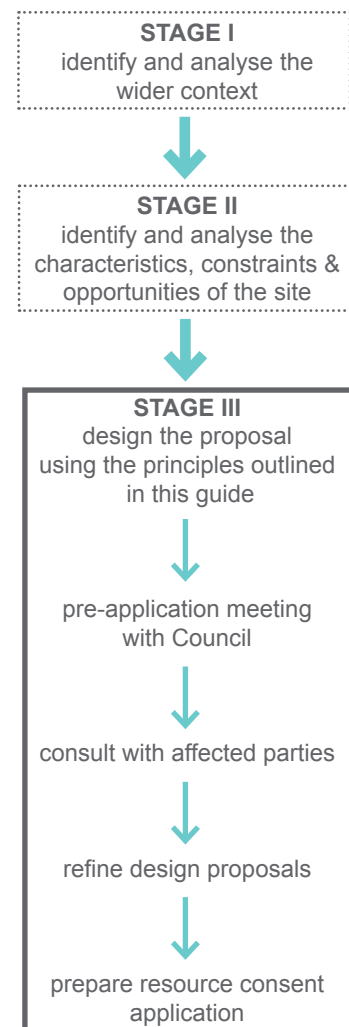


## 04 design process

### stage III design the proposal

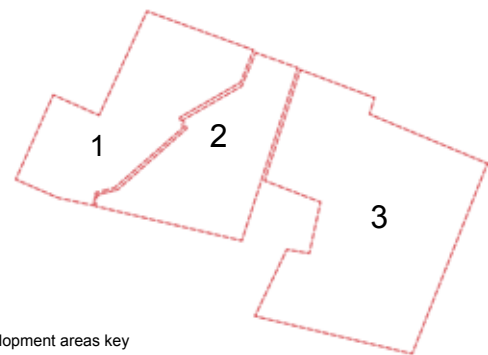
The core design principles from section 03 are illustrated in this model design through key design elements:

- > Varying lot sizes for rural dwellings are provided in the three areas, size and location respond to the site's characteristics and comply with the existing rural subdivision and rural hamlet rules.
- > Natural elements, patterns and processes are integrated and enhanced with sensitive areas of the site, including the foredunes and dune tops, protected without compromising the natural character of the coast, views and access to the beach. Interdunal wetland areas (previously channelled) are restored and habitat created for native plants and animals.
- > Landuse is closely related to productive potential and hazard patterns with residential lots located on less fertile soils outside the flood zone, and productive rural landuses in the form of grazing, orcharding, market gardening and woodlots, etc., provided for.
- > A hierarchy of vehicle access ways and tracks, located to follow the lie of the land and minimise earthworks and impermeable surface areas. Swales and retention areas provide for integrated stormwater management and habitat creation.
- > Public walkways, cycleways and bridleways are provided throughout the site establishing connections with the nearby marae and into the wider recreation network that exists along the beach and river, and into the adjacent native bush reserve areas.
- > Infrastructure developed for the site is low impact, with alternative energy systems (wind turbines) incorporated and stormwater collection, retention and treatment on-site.
- > A variety of land ownership and future management structures are in place; including reserve management plans, dune restoration plans and design guides for future dwellings and associated features are incorporated to 'lock in' the quality of the design, enhance pedestrian access and preserve productive landuse potential, and complement the rural character.
- > Lowland forest, wetland and dune biodiversity are enhanced in association with public open space, pedestrian links and stormwater treatment.



### Ownership and management structures:

- **Development area 1 (interdunal plains)**  
Lots are a minimum of 1ha and an average of 4ha. A balance lot is retained (by the existing landowner) for productive landuse with areas of covenanted wetland and regenerating lowland forest. Public access agreements establish defined tracks to the beach and through the covenanted area.
- **Development area 2 (lower slopes of the back dunes)**  
Nominated building sites are appropriately located in one large lot (>40ha) with common ownership. This lot incorporates areas of wetland, revegetation of the dune to include lowland forest species and areas of productive forestry. Public access agreements link the two main parts of the development.
- **Development area 3 (alluvial plains)**  
Lots are 4ha minimum and an average of 6ha. With two of the 12 lots of a significantly greater size, owned and managed in productive landuse by the individual land owners with public access agreements establishing access to the nearby river and beach.



Development areas key





*the result - a sustainable development appropriate for the rural environment embodying the core design principles:*

- > **select**  
a suitable site
- > **integrate**  
natural elements, patterns and processes
- > **preserve**  
the productive potential of the land
- > **protect**  
cultural heritage
- > **connect**  
roads, walkways, cycleways and brideways
- > **reduce**  
the impact of infrastructure
- > **avoid**  
unnecessary earthworks
- > **complement**  
the rural character
- > **restore**  
ecological systems through planting

## key

- |  |   |
|--|---|
| connected & extended native vegetation remnants          | dwellings   |
| revegetated dunes  | public recreation routes; walkways, cycleways & brideways |
| restored interdunal wetlands, stormwater retention areas | drainage channels - planted                               |
| woodlot  | alternative energy systems - shared wind turbines         |

There are a number of mechanisms available to the Council, developers and interested parties (through consultation or submissions) to ensure that the design elements of the subdivision are implemented and maintained over the lifetime of the neighbourhood.

### ***resource management act***

The Council has the ability to grant consent to subdivisions on the basis of their consistency with the District Plan and any other matters considered by the Council to be relevant. This includes the ability of the subdivision to meet the design recommendations of this guideline, under Section 104(1)(c) of that Act.

The Council can impose conditions on any consent it grants requiring the:

- Approval of engineering works (detailed design of earthworks, roads, and infrastructure)
- Implementation of the scheme plan and design including landscaping
- Consent notices to register relevant requirements on the titles of new lots in perpetuity
- Maintenance and monitoring of infrastructure, including obligations for a set period after the release of the Section 224 Certificate
- Legal and physical protection and restoration of areas of native vegetation, wetlands and habitats

### ***consent notices***

Consent notices can be registered on the titles of new lots to identify information relevant to the development of that lot and can include conditions which must be met on an ongoing basis. Traditionally consent notices have been used to inform landowners of geotechnical constraints. However, they are also increasingly being used to provide for the ongoing maintenance of on-site infrastructure, the protection of natural features, and the management of buildings on a site.

Consent notices can be used to:

- Require the development of communal waste water treatment plants and their continued maintenance
- Protect features on the site from inappropriate earthworks or development, including vegetation and water bodies
- Ensure buffers from hazards (building line restrictions) and minimum floor levels
- Manage the placement and location of buildings on a site
- Require physical and legal protection of ecologically important areas and their ongoing management

**covenants**

Covenants and encumbrances are private legal mechanisms, used by many developers to lock in the quality of their subdivision design. These are registered on the titles of the new lots and can cover a wide range of obligations, including standards and guidelines for:

- The design and location of dwellings and garages, and the manner in which a dwelling connects with and relates to the road. Typically these can be very short, requiring dwelling design to comply with minimum architectural / building quality standards
- The preservation and protection of vegetation, native animals, threatened species, landforms and water bodies.
- The development of communal waste water treatment plants and their continued maintenance
- The maintenance of common amenities and services
- Fencing restrictions, e.g. to preserve open character

**maintenance**

The design of a subdivision should include consideration of the maintenance requirements and the ongoing or 'life span' costs of any public or private infrastructure or facilities.

The ongoing quality of a neighbourhood is dependant on good design choices, robust materials and infrastructure and a cost effective maintenance regime.

Private amenities and balance lots (created by clustered development) can be managed through a range of ownership options including body corporate or home owners' association.

