

*delivering on the community's plan*



# **STREETSCAPE STRATEGY AND GUIDELINE**

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# INTRODUCTION

The overall quality of a streetscape comes about as a result of many complex interactions between public and private space, user interests, underlying road function, wider socio-economics and the distribution of activities within space.

## TOWARDS A STREETSCAPE STRATEGY

The Kapiti Coast is a rapidly growing area. Increasing traffic, in terms of vehicular, pedestrian, and cycle, is creating an equally increasing need to ensure our streetscapes are safe, high-quality, and desirable for all users.

The management of streetscapes requires a comprehensive approach based on a careful balance between the often generic functional requirements of different modes of transport, the specific characteristics of a place and the nature of human reactions and interaction.

This guideline sets out the process and tools that will enable the Council to take a considered, comprehensive and coordinated approach to resolving competing and often conflicting interests within specific contexts. In particular it will help to:

- Establish a clear vision for different streets and the character of specific areas;
- Ensure a clear understanding of all factors affecting streetscapes, and the impact streetscape design can have on surrounding environments and choice of travel mode;
- Minimise future conflicts between different users of streets;
- Give guidance on what is both possible and desirable within different parts of the towns;
- Establish the most efficient way to minimise effects on the environment;
- Establish vehicular, pedestrian, and cycle safety and prioritisation of different transport modes appropriate to the use and character of individual roads;
- Create a distinctive character that is supported by the community including Iwi and other stakeholders;
- Simplify the decision-making processes related to street upgrades and allocation of funds;
- Give more robust guidance in the subdivision consent process on what are appropriate minimum standards for new roads.

## OUTCOMES SOUGHT

The Kapiti Coast's Subdivision and Development Principles and Requirements has the following transportation objective:

*“To plan, provide and maintain an efficient road network appropriate to the level of use that will ensure the safe and orderly passage of road users including cyclists and pedestrians throughout the Kapiti Coast District. The Council wishes to encourage pleasant, cyclable and walkable neighbourhoods which provide increased amenity. Enhanced connectivity, decreasing the area of ‘black top’, differentiating parking bays and providing associated landscaping.”*

This strategy and guideline supports the assessment of subdivision consents and upgrades of existing streets. It provides design guidance to enable a coordinated approach to streetscapes.

This strategy and guideline is specific to the urban environment as these streets not only service the majority of vehicular movements, they are also the most visible. They define the character of the area and leave a long lasting impression on those people visiting a particular locality. Although generically certain aspects can be replicated within the rural environment, focus and priority has been placed on the urban environment.

A tool-box of streetscape types are used as a base. The purpose of these is to demonstrate ways of resolving the complex issues facing the most common street types in the Kapiti Coast District.

## RELATED DOCUMENTS

The following additional references may be of assistance:

- **Ministry for the Environment:**  
**People + Places + Spaces;**
- **Ministry for the Environment:**  
**NZ Urban Design Protocol;**
- **New Zealand Transport Strategy;**
- **CPTED (Crime Prevention Through Environmental Design);**
- **Kapiti Coast District Council Sustainable Transport Strategy;**
- **Kapiti Coast District Council Subdivision Guidelines;**
- **Kapiti Coast District Council Development Management Strategy;**
- **Kapiti Coast District Council Medium Density Housing Guidelines.**
- **Iwi Management Plans**

# THE IMPORTANCE OF STREETScape

Streets are integral to the health and wellbeing of a town and its people. They form the main network structure of a town; provide access and services off which activities grow; are the key integrating public space within urban environments and provide opportunities for social interaction.

Streets make a significant contribution to the local character and overall legibility of settlements because they are the main way in which we travel through and experience different areas.

Adjacent land uses and the corresponding design of the street affect how people use and feel about a town. The safer and more visually interesting a street is the more likely people are to walk and spend time in it, thereby reducing the use of private vehicles and also increasing the likelihood of social interaction. Conversely the more hostile, heavily trafficked, and less safe a street feels, the more it will encourage car use and discourage community interaction. In the case of major traffic routes, such as State Highway One or main arterials, they can even split communities in half and prevent almost any interaction from occurring at all.

Streets also have a significant effect on the natural environment both by their construction and ongoing use. Increased stormwater runoff from impermeable surfaces and the associated pollutants from vehicles, can significantly affect the water quality in the streams and beaches where it is eventually discharged.

There are many competing ecological, social,

cultural, economic, and engineering factors that affect urban environments. Streets are a key piece of the public domain where all these factors come together and need to be balanced.

Effective streetscapes add value to the community by providing:

- **Health** benefits (through greater pedestrian and cycle movements);
- **Social** benefits (through greater contact between people and enhancement of cultural awareness);
- **Economic** benefits (through greater exchange between people);
- **Property value** benefits (through the 'reflection' of adjacent qualities onto the desirability of a particular property);
- **Environmental** benefits (through reduced impermeable coverage and piped stormwater, vehicle emissions from less vehicle use, and carbon capture by street trees).



Good streetscapes provide effective and efficient opportunities for all modes of movement. They also provide the optimum possible settings to achieve safe, prosperous, and desirable settings to live, work, and relax.



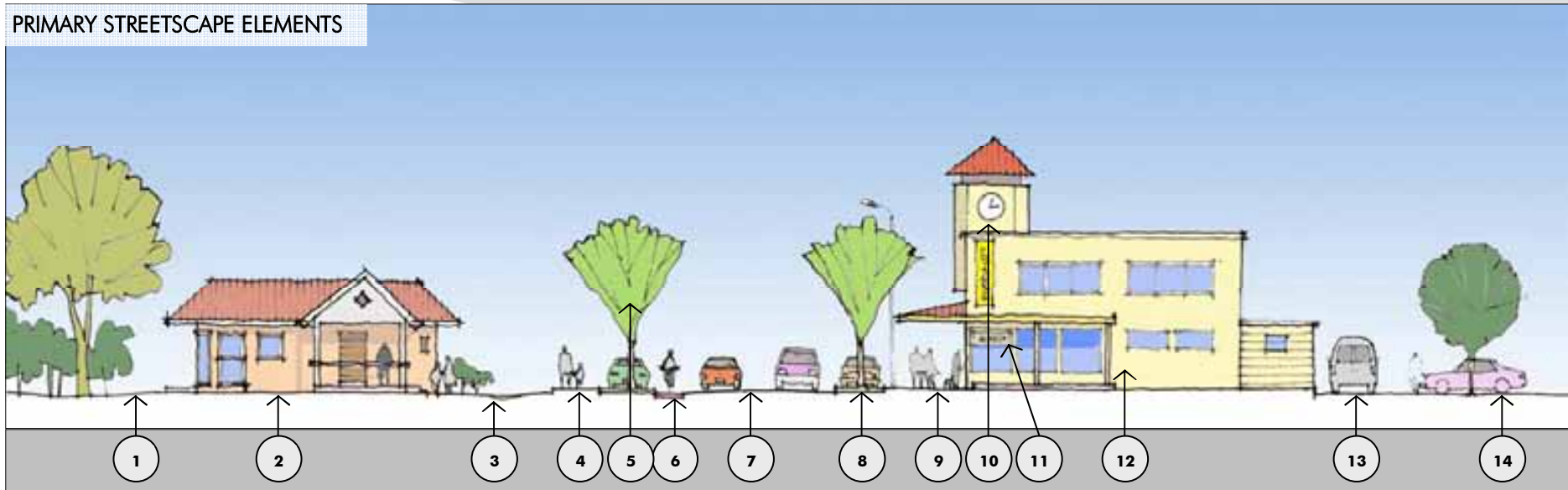
When a streetscape is 'working', the placement of public art and other elements within the space can occur. This can further enhance amenity and social interaction.

# ELEMENTS OF STREETScape

Street character is made up of established physical elements within a particular street environ. This then determines how the street is likely to be used. What elements are chosen (or ignored) in the construction and evolution of a streetscape can either address or heighten the conflicts between the different issues and competing interests that streets inherently face.

The primary elements of the streetscape are identified below:

## PRIMARY STREETSCAPE ELEMENTS



- 1 - private outdoor living spaces
- 2 - land uses
- 3 - green infrastructure
- 4 - pedestrian paths, furniture, lighting and street quality
- 5 - street trees and landscaping
- 6 - cycle lanes
- 7 - carriageway
- 8 - on road parking spaces and bus stops.
- 9 - pedestrian amenities

- 10 - landmarks and local identity
- 11 - advertising and signage
- 12 - travel patterns and business prosperity
- 13 - loading, servicing and waste
- 14 - off road parking

### Not shown but also relevant:

- 15 - services and infrastructure
- 16 - traffic calming.



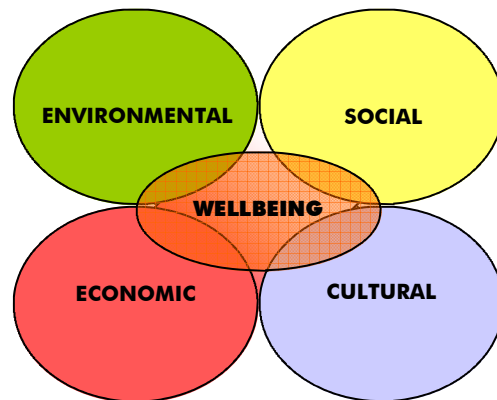
## ELEMENT SUMMARY

- 1 Private outdoor living spaces** – these relate to the provision of suitably private and useable outdoor living areas for residents, typically best located away and buffered from the street edge. Suitable location of the outdoor living area enables the land use to interface with the street in a positive manner.
- 2 Land uses** – these relate to the connection and access requirements different land use activities have with different street types. The design of the associated land use impacts upon amenity levels and the way in which a street functions.
- 3 Green infrastructure** – these relate to the desired avoidance of large impervious surfaces as are typically found within the street environment and the desire to sustainably treat stormwater runoff using low impact environmental design techniques. Amenity levels are retained when maintained and integrated into the street network.
- 4 Pedestrian paths, furniture, lighting and street quality** – these relate to the provision of quality and varied pedestrian orientated infrastructure found within the street environment aimed at promoting and encouraging an increased use of pedestrian facilities and networks.
- 5 Street trees and landscaping** – these relate to the softening of often harsh and bland environments adjacent to existing streets by utilising the road berm as a viable location for establishing street trees and landscaping. Additionally this looks at the improved character and amenity associated with quality street trees
- 6 Cycle lanes** – these primarily relate to the provision of alternative movement modes along existing streets which are sustainable, low impact and promote social wellbeing when safely incorporated into the street. The design of these can be varied and incorporate quality edges which improve the amenity of the road environment.
- 7 Carriageway** – this relates to the provision of numerous street types, with the intention of moving significant numbers of vehicles, historically disregarding alternative transport modes during the design process. Different carriageways generate either positive or negative effects dependant on a number of factors including location, size and traffic volumes associated with their use.
- 8 On road parking spaces and bus stops** – these relate to the accessibility, appeal and viability of land uses located along streets with the intention of allowing greater and improved access for all population groups within differing environments. If appropriately located, formed and displayed will result in safer street environments.
- 9 Pedestrian amenities** – this relates to the provision of a varied and visually appealing pedestrian environment which can be designed specific to a certain environment or with a desired theme. These can also be used to assist the movement of pedestrians across the street network, particularly when difficulties in crossing are present.
- 10 Landmarks and local identity** – these are relevant to the streetscape as the provision of certain landmark features can create a sense of place, location and interpretative assistance as people become familiar with certain locations visible from the street. Emphasis points reinforce local identity and create a sense of character within a locality.
- 11 Advertising and signage** – these relate to the street in a sense that they are often orientated directly towards the street environment, often without fully considering traffic or safety implication. Appropriate advertising can however enhance the visual character of the street, by providing variation and vibrancy.
- 12 Travel patterns and business prosperity** – these relate to the ‘movement economy’ many local businesses are dependant on in order to prosper. This concept identifies the travel patterns associated with different business types and their reliance on the continuation of good access and parking availability.
- 13 Loading, servicing and waste** – these relate to the provision of specific services, facilities and access requirements more typically associated with business sites in order to allow the efficient and effective functioning of their use. When appropriately formed and located ensure the efficient functioning of busier more popular streets.
- 14 Off road parking** – this relates to the provision of adequate parking areas which not only ensures business prosperity but also provides significant safety benefits. Where provided in a manner that caters for demand without dominating residential and business environs, a wide variety of design options allows for a positive setting to be established.
- 15 Services and infrastructure** – these relate to the often hidden services which are commonly located either below existing roads or within the road berm. Implications often arise when changes or upgrades are needed to these services, often impacting upon the functioning of the street network.
- 16 Traffic calming** – these relate to the provision of safer and slower street environments, particularly in those residential areas in close proximity to popular and busy land uses, e.g. schools. Traffic calming also assists, through different design options, a more variable street environment which can contribute positively to local amenity.

# PRACTICAL IMPLEMENTATION ISSUES

## COMPETING INTERESTS

There are many competing interests that can affect the design of a street. These interests predominantly include economic, social, cultural and environmental factors, but can also include some technical and legal issues. Some common factors that need to be considered are listed to the right. Many of these are interrelated. How these factors are prioritised are important because in any given context what is right for one street may not be right for another.



### ECONOMIC

- Cheapest option vs. best option;
- Industry priorities;
- Retail priorities;
- Private use of streets for gain; (outdoor dining etc.)
- Land ownership;
- Car parking;
- Servicing requirements;
- Tourism and eco-tourism opportunities;
- Development costs and opportunity costs.

### SOCIAL

- Safety;
- Social capital;
- Interaction;
- Children going to school;
- Demographics;
- Types of uses and accessibility / mobility;
- Community support / interest;
- Health;
- Identity.

### ENVIRONMENTAL

- Solar access and gain;
- Existing ecology;
- Sensitivity of waterways;
- Street trees & planting - species, Native vs. exotic
- Climate, topography & soil conditions;
- Orientation;
- Earthworks, geotechnical stability and geology;
- Reduced vehicle use and emissions;
- Stormwater volumes and quality; low impact design;
- Impacts on coastal / dunal landscape.

### CULTURAL

- Public use of streets for events;
- Café 'culture' or not café 'culture';
- Public art - pop art, youth art, or cultural;
- Naming;
- Historic character;
- Maori heritage;
- Aesthetics.

### LEGAL / TECHNICAL / PROCESS

- New development; (linked to subdivision controls)
- Traffic modes, flows and speeds;
- Carriageway widths;
- Services;
- Major changes to existing traffic routes;
- Existing land uses and built form;
- Future subdivision, land use and built form;
- Land ownership;
- Street lighting
- Bus route design
- Low impact design;
- Maintenance;
- Funding;
- Community acceptance and willingness to pay through rates;
- Prioritising;
- Flexibility; (and future proofing)
- Consent processes, including requirements and processing times;
- Changes to District Plan and other statutory / non-statutory tools. (regulation, advocacy, incentives etc.)



## COUNCIL'S LEVEL OF INFLUENCE

Most issues and elements affecting towns and streetscapes are not directly controlled by just one person or organisation. The adjacent table outlines some of the key elements and issues affecting streetscapes in relation to how much direct influence the Council actually has over them. With most of these issues, how the Council responds will have some impact on them in a cyclic action / reaction manner.

The table shows where Council:

- Has limited influence, predominantly responding to a given issue (e.g. local traffic safety). Council may have the ability to exert some indirect influence, but it is individuals or other institutions that actually make decisions;
- Has significant influence predominantly through legislation, including the Local Government and / or Resource Management Act, and dependent on landowner willingness to comply and the costs or effectiveness of enforcement (for example the felling of, or works to, a protected tree to improve views);
- Has the ability to manage outcomes through direct ownership of land or resources (where wider community buy-in and acceptance is maintained - often requiring substantial negotiation and consultation).

COUNCILS LEVEL OF DIRECT INFLUENCE		
Key elements and issues affecting streetscapes		Other parties with direct influence include:
Environmental factors	Native ecology	Nil
	Rainfall - average & flood potential	Nil
	Natural soil porosity & stability	Nil
	Natural topography	Nil
Minimal direct influence	Location of existing streets, property boundaries, land uses and built form	Nil
	Existing buildings not likely to change	Landowners; NZ Historic Places Trust
	Demographics - existing and future	Nil
	Property values and economic growth	Businesses, investors and developers
Some influence	Core infrastructure of existing services: gas, electricity wastewater, stormwater, water supply	Service providers, developers
	Traffic volumes and speeds	Individuals, passenger transport providers, Transit NZ, Land Transport NZ, NZ Police
	Changes to the state highway network	Transit NZ
	Future subdivision patterns, land uses & built form	Landowners, developers
Significant level of direct influence	Provision of car parking	Landowners, developers
	Protection and enhancement of heritage, and and community character	Landowners, developers, community groups, Tangata Whenua
	Contribution to the streetscape around new buildings and alterations to existing ones	Landowners, developers
	Minor changes to existing services e.g. under-grounding power lines	Service providers
	Use of low-impact technologies for managing stormwater	Landowners, developers, Regional Council
	Design of new streets	Landowners, developers
Ability to control	Changes to existing streets in Council ownership	Community, adjacent land owners and businesses
	Quality of pedestrian and cycle infrastructure, street trees and landscaping	Community, adjacent land owners and businesses
	Prioritisation of work	Community, adjacent land owners
	Funding mechanisms	Community, developers and businesses

# STREETSCAPE STRATEGY DEVELOPMENT

## A TOOLBOX APPROACH

To provide a coordinated approach to streetscapes different street types have been described and 'a toolbox' adopted. The toolbox identifies those basic types of streetscapes currently present and those sought within the Kapiti Coast urban environment, and presents a series of interventions that could be undertaken to help improve the quality of each.

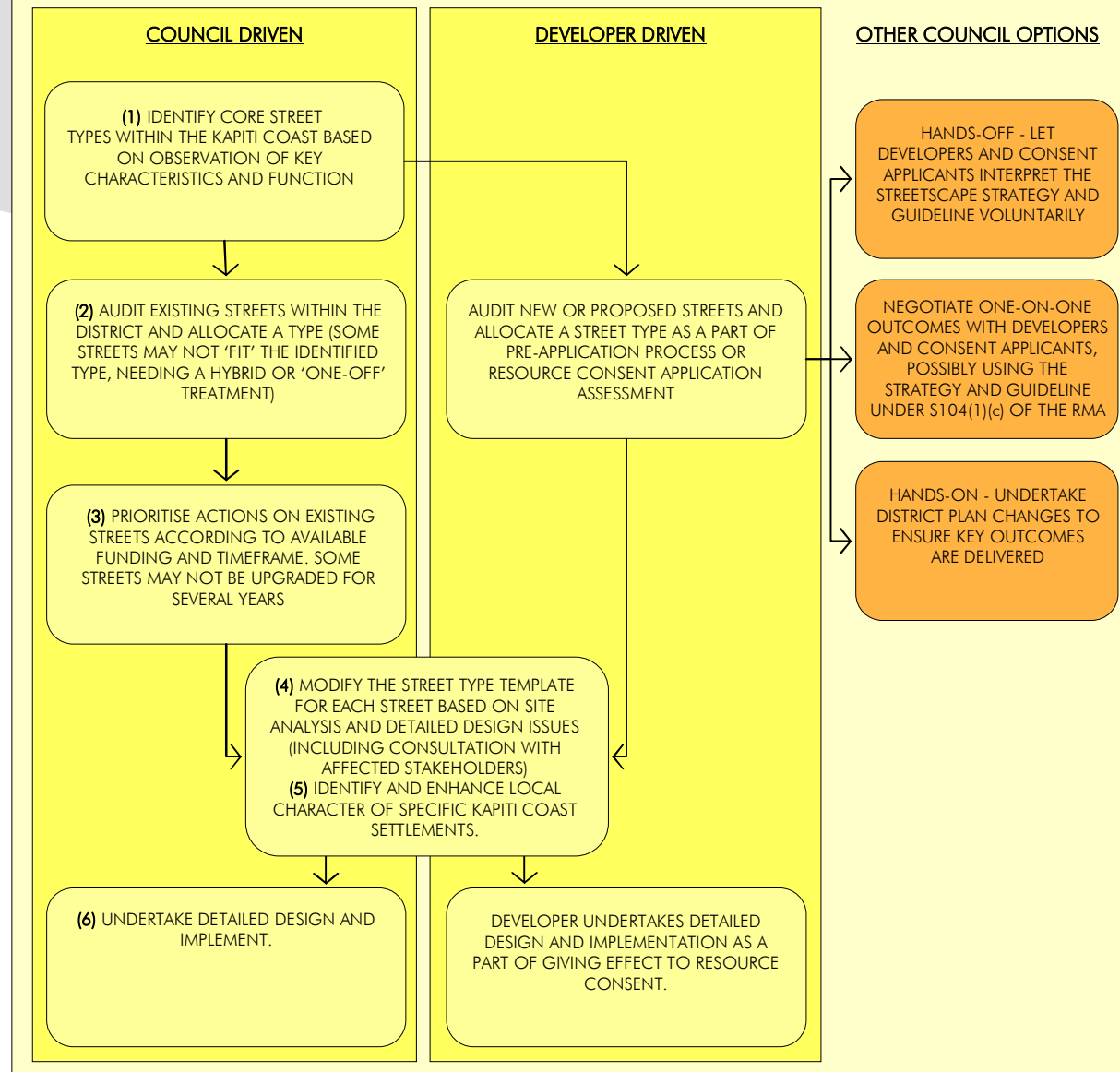
## DEALING WITH EXISTING STREETS

The Council can then classify the existing streets within the District and allocate the desired typology sought for each. This allows the Council to prioritise - based on available funding, resources, and timeframes - which improvements it wishes to undertake to ensure the best overall benefit to the District. Once decisions on the specific streetscapes to be improved have been made, detailed design and revision to the street type 'template' can occur and the works undertaken.

## DEALING WITH NEW OR PROPOSED STREETS

New streets are established largely as a result of private subdivision, although individual development of sites and resultant land use interfaces with the street are also very important. There are a number of approaches the Council can take, from leaving things entirely at the discretion of developers to introducing detailed provisions into the District Plan. Greater certainty and consistency would be afforded through changes to the District Plan especially in the management of individual uses, such as how they relate to the street. This would also benefit existing streets as individual sites get redeveloped over time.

## IMPLEMENTING THE STREETSCAPE STRATEGY



## 1 - IDENTIFYING CORE STREET TYPES WITHIN THE KAPITI COAST

The Kapiti District's road network and land use mix has been observed in order to identify the basic types of streets within the wider road network.

Along every street, there are parts that will exhibit similar land use characteristics and functions. These dominant characteristics can then be used to identify the areas where a distinct role and character could be enhanced through design intervention. These inform the 'ideal' indicators or qualities that would be exhibited within each street. For example, on a quiet residential street with a footpath on one side of the road and a very wide carriageway, there may be the opportunity to promote quiet amenity for residents. This can be done by narrowing the carriageway, planting more street trees, improving the pedestrian conditions, adding a cycle lane.

The basic street types identified within the Kapiti District are (refer to the 'Toolbox' section of the document for more detail):

- **State Highway One;**
- **Commercial Collector Road;**
- **Retail / Business Main Street;**
- **'One Step Back' from Main Street;**
- **Commercial Lane;**
- **Residential—Key Traffic Routes:**
  - ⇒ **Collectors;**
  - ⇒ **Arterials;**
  - ⇒ **Local Streets;**
- **Local Amenity Areas;**
- **Edges:**
  - ⇒ **Coastal;**
  - ⇒ **Riparian / Drainage;**
- **Lanes / Shared Right of Ways / Accessways.**

*Stormwater management, particularly that incorporating low impact environmental design can be applied in part to all of the above basic street types and as such has been included in the Toolbox section of this guideline.*



State Highway One is a distinctive street type, with unique issues based on its strategic role in the national transport / road network.



Streets along the coastal edge are unique due to their physical location. Any streetscape work needs to respect the existing ecological and environmental characteristics, including the sensitive ecology of the sand dunes and the high winds coming from the sea.

## 2 - ALLOCATING STREET TYPES

The Council (working with developers in the case of new roads) will broadly classify roads within the District, guided by the advice within the 'Toolbox' section of this document, according to the wider context of:

- **The role played by each road within the wider transport network, including traffic volumes now and anticipated for the future.**

This will include more than just annotating the existing road hierarchy of arterials down to local roads; it will include qualitative questions of 'what does this road actually do for the District?'. For example, some local roads will do nothing other than give access to the houses on it while others may act as key local routes (like being the main road used by children to walk to a school, or a main cycle-route).

- **The existing / proposed land uses, their associated density or intensity, and the overall character of the street.**

Factors contributing to character include building form, architecture, the relationship between buildings and the street, the type and amount of vegetation, traffic speeds and materials, shelter, maintenance of assets, and local demographics. All of these add up to create character-related perceptions such as barren, green, windswept, friendly, lively, boring, safe, dangerous, etc.

It is the evaluation of the existing / future land use and overall character of the street environment that will determine what streetscape type a specific road might be.

## 3 - PRIORITISING IMPROVEMENTS TO EXISTING STREETS

Once the Council has allocated street types across its network, it can begin the process of determining approximately what resources it can make available (principally through Annual Plan budget allocations and possibly Development Contributions on developments) to incorporate the streetscape guidance within this document.

There are a number of criteria the Council could use in undertaking any cost / benefit analysis for prioritising work, including:

- **What investment will have the greatest 'use' benefit?**

Focussing on those roads that have the highest volumes of user traffic.

- **What investment will have the greatest 'awareness' benefit?**

Focussing on those roads that have the greatest 'demonstration project' value, which may involve doing those roads that are most prominent, or are physically the 'easiest' to complete.

- **What investment will have the greatest 'quantity' benefit?**

Focussing on those roads that need the least or cheapest work, allowing more to be achieved within resource constraints.

- **What investment will have the greatest 'specific amenity' benefit?**

Focussing on comprehensive outcomes that will benefit particular interest groups one at a time, for example, by focussing on all those roads that form a cycle route or public transport route.

## 4 - MODIFYING THE STREET TYPES

Having identified a base streetscape type the next step involves deciding on what components of that type suit the specifics of the site and whether any further modifications are required. Some key points to consider include:

### Specific transport network requirements:

- Is the street on a key cycle route and is a dedicated cycle lane required because of high volumes?
- How much car parking will be required?
- Should parking be restricted to encourage alternative routes / modes?
- How can parking bays be best treated or provided? Are turning bays needed at intersections?
- Will an additional traffic lane ever be required?
- Is it on a bus route?
- What in the way of bus stops and bus priority measures are required?
- Is intersection design needed to cater for buses?
- Are traffic calming measures needed, such as chicanes of speed bumps, to slow traffic.

### Type and amount of pedestrian use:

- What width of footpath is required?
- How busy / fast is the traffic on the street?
- Are there safety issues?
- Is it a commuter route for pedestrians?
- What about school children?
- Is it used for shopping?
- What type of surface should be used?
- What about recreational use such as running,

walking the dog, horse riding or kids riding bikes?

- What about accessibility and mobility for mobility scooters, wheelchairs, pushchairs?

### Ecological characteristics of the area:

- What is the ecological domain of the area (refer Kapiti Coast District Council Environmental Guidelines for Rural Living)?
- What trees and landscaping currently exist?
- Other flora and fauna issues?
- Climate?
- The topography and soil porosity?
- How will these affect what stormwater measures can be implemented and what species of trees, grasses, and other plants will survive and best suit the site?

### The architecture and built form of the area:

- What sun access exists to indoor and outdoor living spaces?
- Are buildings at the street edge or set back?
- How high are the buildings?
- Do garages dominate the street?
- What about front fences and walls?
- What is the architectural era / character of the buildings?
- What scope is there for change?
- What future development is expected?
- What District Plan provisions will affect this?

### Location of existing services:

- Where are the existing services located? Can

these be changed?

- Is there funding to underground power lines?
- What methods of managing stormwater are being used?
- Can low impact environmental design technologies for stormwater treatment be incorporated?

### Social, cultural, and historical features:

- Are schools or community facilities close by?
- Are there distinctive views?
- Is the area in close proximity to a Maori heritage site? What is its story?
- Are there any unique stories behind street names? historic buildings?
- How can these unique aspects of a site be reflected in distinctive landscaping, specialised pedestrian facilities, street furniture to admire views, plaques, artwork, information or interpretation boards?

### Future development:

- Budgets for construction and maintenance?
- Funding sources?
- District Plan development provisions, and design guides?
- Do the community, adjacent landowners, and other organisations need to be consulted?
- Consult with Iwi. Is Tikanga Maori a consideration?
- What are the timeframes?
- Are there other factors that can impact on the feasibility of a design and its appropriateness to any given road.

## 5 - ENHANCING LOCAL CHARACTER

Every town within the Kapiti Coast District has its own distinct character. This is a product of its location, history and current population and can include mis-shapen trees along a wind swept coast, historic buildings, a 1970's sculpture or even the lack of kerb and channels on some streets. When adopting then modifying a street type it is important analysis of the local character issues are considered. This ensures that in taking a more standardised approach to street design, the unique character of each town is not lost.

***Any modification of core street types need to have special regard to the character values identified by the communities of each township.***

### Existing character elements

Preserving everything that is valued, completely intact and in its original form is not always possible and as such in important community areas, (such as commercial main streets) a clear rationale of why certain changes are getting preference over others is needed. Often solutions are found in the technical detail relating to engineering and landscape design and will have to be addressed in the detailed design stage through consultation prior to the commencement of works.

### New elements

Besides preserving existing character elements there is also the potential to create new elements that will create a distinctive 'sense of place,' strengthen existing character or be used in new areas to establish character.

Street tree and landscaping species, paving materials, street lights, seats, even rubbish bins and public toilets, playgrounds, sculptures, murals, signage and information boards are all publicly provided elements that can contribute to a distinctive 'sense of place'.

Character is not created solely by the public realm, and individual and collective building design (including form, materials and colour), shop windows, commercial signage, front gardens, fences and landscaping species also all contribute to local character. In some cases design codes relating to these elements can be established to ensure a comprehensive 'character'. Sometimes this can be a public

initiative (which is increasingly common in 'heritage' areas of New Zealand), or a fully private (developer) initiatives, such as covenants on new housing or subdivision developments.

All streetscape components need to work together, even though they are not usually created at the same time, or by the same people, and can be subject to significant change over time. It is important that when different professionals are commissioned to undertake work, whether it be the development of a private house or the upgrade of a public street, that they and their clients aim to achieve the design outcomes sought for the specific street.

## 6 - DETAILED DESIGN BASED ON TECHNICAL REQUIREMENTS

### An integrated approach

Engineering, landscaping, and architectural components of street provision all need to be designed in an integrated manner with the wider design objectives for the street type and the specific characteristics of the site in mind. Streets should not be designed in isolation or without respect for the outcomes sought by other professions involved, or the community who have to live with it.

### Master plans

In streets that have a high ecological or public profile, (such as a town main street, or along a sensitive area of coast line) Council may want to invest in the creation of a master plan for that street. This is possible (in the case of existing streets where it is the 'client') and can combine the transportation, land use, ecological and open space, landscape, architectural, and other relevant elements into one clear vision that can be used by any individual component or party to guide their specific project or tasks (such as upgrading footpaths, replacing a front fence, new buildings, new signage etc.)

In the case of proposed streets, developers should clearly communicate the outcome sought for a given streetscape and include measures that will ensure this is delivered over time, as a part of their application.



# A TOOLBOX OF TYPES

## STATE HIGHWAY ONE

State Highway One runs through the entirety of the Kapiti Coast, often through or directly adjacent to the fringe of the main centres. This is a nationally strategic route that focuses on the mass-movement of vehicles.

Transit NZ has recently been mandated by the Government to operate the highway system in a sustainable manner. While access to highways is very limited and they do not function in any sense like a conventional street (for example pedestrian and cycle use is often discouraged for safety reasons), they still act as an important 'front door' for the District given the amount of traffic that moves past. Reflecting this, businesses often seek to locate prominently and display signage for this reason.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- The lack of access to highways means they are often treated as 'backs' to land use, with solid fencing and poor interfaces presented. The use of back-lane or slip-road approaches in particular can reduce connection issues.
- Reverse sensitivity issues (especially related to large freight vehicles in terms of noise, visual and air pollution) means uses turn their backs to highways, which causes the loss of passive surveillance;
- State Highways are not designed for pedestrians

or cyclists, as such there are inherent safety issues that limit crossing opportunities to selected signalled interchanges within certain town centres;

- Changes to the strategic network, including new or realigned sections of the highway and new on / off ramps can isolate communities and further limit crossing opportunities;
- Large-scale concrete barriers or acoustic fences can present monotonous mass for several continuous kilometres, reducing the quality of views of the District;
- Interchanges act as critical entry / departure gateways to the District and towns within it. The opportunity to integrate these with land uses, specific art or architectural statements, and other treatments to maximise this 'front door' effect have traditionally been ignored in other places.

### KEY TREATMENTS INCLUDE:

- **Provide specific 'gateway' streetscape treatments** at the key Kapiti Coast State Highway One interchanges;
- **Slip roads** (even if set well back to ensure reserve sensitivity issues are managed) **allow some street frontage and reduce the visual effects of solid 'back' fences and barriers** by providing opportunities for landscaping;

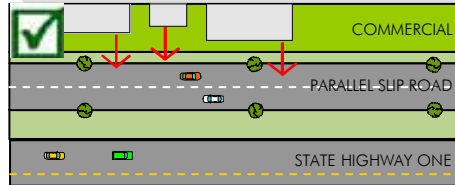
- **Developing low-impact stormwater treatments** such as swales at the interface of State Highway One and residential areas will provide a good amenity buffer;
- **Optimise the utility of areas with the highest exposure to State Highway One** by providing for business or employment uses. This will avoid the need for high barriers and fencing for privacy or amenity, meaning that uses can directly engage with the motorway and take advantage of the 'movement economy' of passing traffic. Signage associated with these uses should be very carefully managed to avoid clutter;
- Seek to **treat the use of concrete or other large-scale barriers or medians with surface or colour treatments** to avoid monotonous visual blandness;
- **Provide and encourage landscaping** which maintains sightlines and coordinates with surrounding land uses.

## STATE HIGHWAY ONE

### URBAN LAND USE INTERFACE WITH STATE HIGHWAY ONE

1

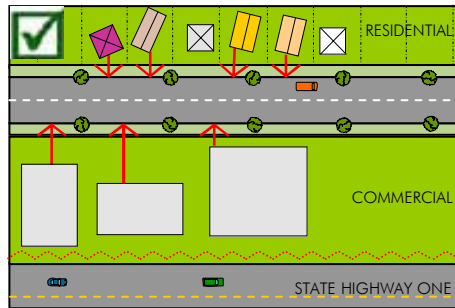
Most suitable option.



(1) Parallel road / slip lane allow commercial uses to have effective access (red) and a visually prominent frontage facing the highway rather than rear service areas of low visual amenity.

2

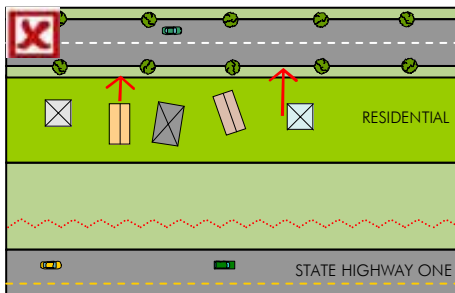
Suitable secondary option.



(2) Residential housing is well buffered from State Highway One by commercial uses which can utilise the highway proximity for signage and advertising along their backs.

3

Undesirable option.



(3) The wide grass berm provides an inefficient buffer to avoid residential reverse sensitivity. Often residential 'backs' - generally solid fencing and screening (commonly vandalised) allows no visual connection to the highway (preventing surveillance of cyclists and other users).

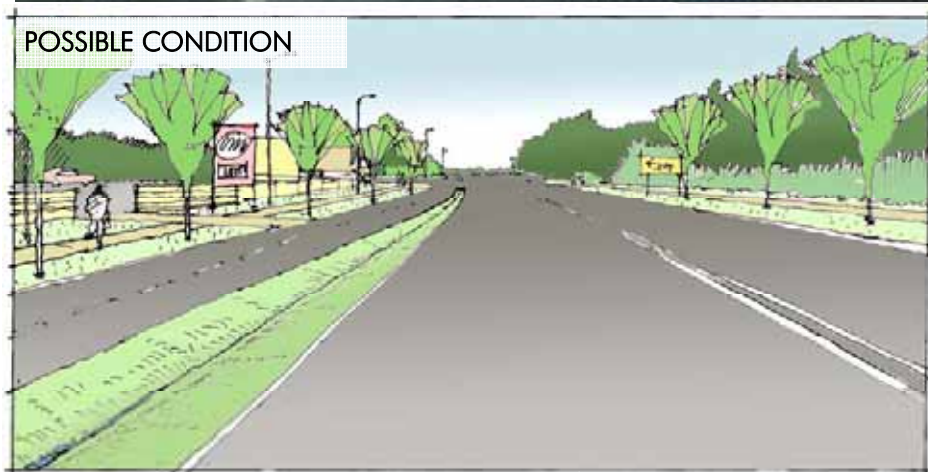
### EXISTING CONDITION



State Highway treatments often involve several historical conflicts with land use type and access, particularly in urban and semi-urban areas.

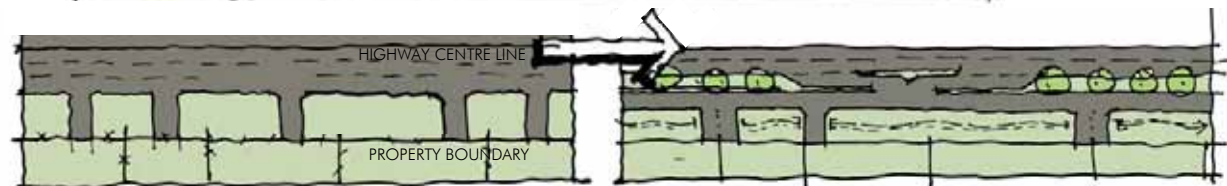
This creates practical issues as the State Highway becomes a de facto local road for certain functions. Where possible cooperation between the Council and Transit NZ may identify opportunities to relieve these tensions.

### POSSIBLE CONDITION



Numerous mechanisms exist to enable the formation of safer access for lengths of the State Highway subject to 'clusters' of private land access points.

In dealing with 'new' urban areas, careful planning of land use interfaces with the State Highway can avoid poor outcomes such as vacant 'dead' strips of wasted land buffering residential zones.



The wide grass berm / buffer zone along the edge of the highway is made narrower to create a slip lane that enables access off the State Highway. Pedestrian and cycle routes can be provided along the slip lane. The grass medium with street trees is used to form a visually permeable buffer between the busy traffic and adjacent activities.

## COMMERCIAL COLLECTOR

These streets are characterised by high volumes of traffic and relatively recent low-density commercial development. This includes large format retail stores and industrial activities. Easy movement of goods is a primary requirement for these areas, with wide carriageways, cycle lanes and flush medians being commonly used to help fulfil the transport related requirements of the street. Large areas of on-site car parking is often required, with many activities being highly reliant on private car use.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Managing through traffic and car parking in a way that enables easy access to properties for trucks and cars, as well as a safe route for pedestrians and cyclists;
- Large-format uses tend to seek car parking at the frontage for driver ease which precludes any sense of good frontage being achievable;
- Sufficient flexibility for future pedestrian amenity requirements as well as vehicular movements, with land uses that may change over time;
- Often characterised by large warehouse type buildings with blank walls that detract visually from the street and diminish safety levels;
- Permeable paving and other low-impact design treatments may be unsuitable for areas used by heavy vehicles;
- Pedestrians can have no opportunity to safely

cross the road for considerable distances unless intersections are signal-controlled;

- These roads are often very long and straight which can encourage drivers to speed unknowingly, and provide an ideal setting for those wishing to deliberately speed.

### KEY TREATMENTS INCLUDE:

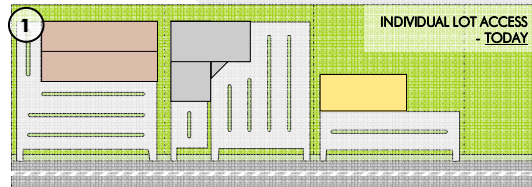
- **Keep carriageways and flush medians to a width suitable to the volume and type of traffic.** If traffic calming is used around pedestrian crossings (such as speed bumps or chicanes), design them so heavy or emergency service vehicles can easily pass;
- **Land uses should front the street**, especially retail which should be orientated and have access to the street. Smaller tenancies between larger ones for offices / retail and other uses that create a more positive relationship with the street and essentially hide these big boxes and blank walls;
- **Use multiple materials, colours, and façade design** to break down the mass of unavoidable large blank walls;
- **On-street parking bays should contrast with the carriageway**, this can be achieved by using differing materials, colours;
- **Place regular crossing opportunities along the road** (every 800m minimum). Pedestrian refuges in the flush median may suffice if full pedestrian crossings are deemed unsuitable;

- **Directory signage** (not attached to buildings) **should not be illuminated** (except for those uses requiring evening use such as petrol stations and restaurants), and no larger than 1sqm surface area. Signage attached to buildings should be no greater than 5sqm in surface area. Luminance should not exceed 1000 Lux. Integration with street lighting minimises street clutter;
- **Break up on-street parking areas with landscaping** and trees, at least at the rate of one tree every six spaces;
- **The street frontage is an inappropriate location for loading and waste storage / collection** which should only occur at the rear of buildings;
- **Provide pedestrian canopies for shelter** over every point of pedestrian ingress / egress; (excluding fire escapes)
- **Where possible buffer footpaths and cycle lanes** (where they are not located on the carriageway) **from the traffic**;
- **Integrate rain gardens** where possible, as the large size of buildings can capture significant quantities of rainwater;
- **Make vehicle crossings as narrow as operationally possible** to reduce risks to pedestrians.

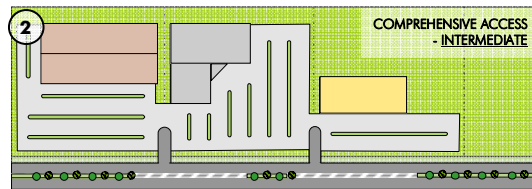


## COMMERCIAL COLLECTOR

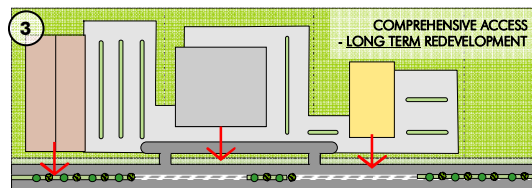
There is a critical relationship between the ability to establish landscaping and pedestrian refuge areas within a roadway and the way in which land uses gain access. Comprehensively planned property ingress / egress on major commercial collectors or arterials can overcome the need for a consistent manoeuvring / access median. In addition, shared car parks reduce the total amount of parking spaces required by each individual use.



(1) Here the streetscape is dominated by large parking areas. Many existing conditions have this configuration, with each lot having its own (often multiple) ingress / egress points.



(2) Over the medium term, property access can be consolidated through a combination of 'sharing' between adjacent properties, and the Council providing access points that behave like short cul-de-sacs. This enables the central flush median to be replaced in selected areas with a grass median and street trees.



(3) Eventually land uses will be re-developed as markets and / or property values change over time. This can allow the requirement of new buildings to be located to properly connect with and contribute to streetscape. Having already established common points of connection to the street, incorporating comprehensive ingress / egress for users, out of the main traffic stream, is made easier.

Today

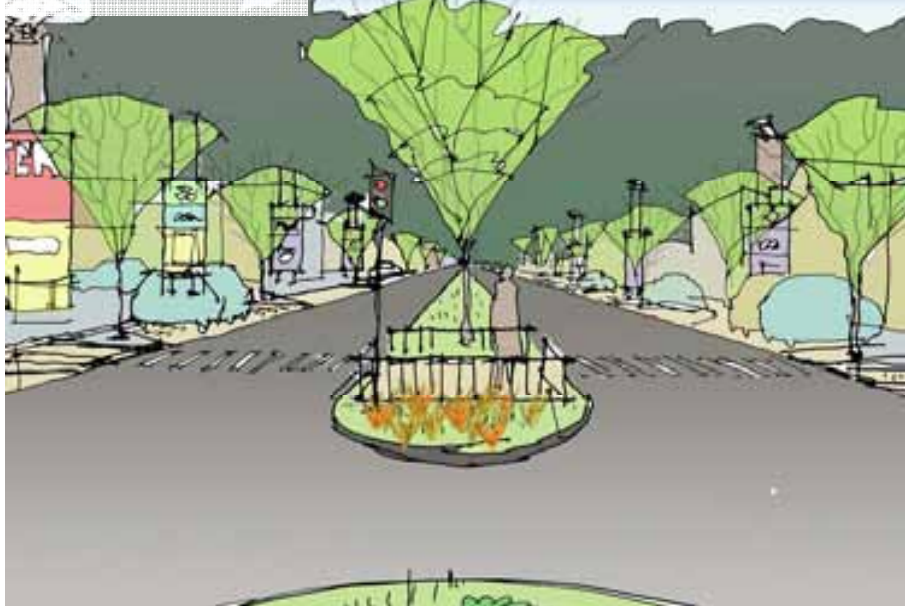
In 7 years

In 14 years

## EXISTING CONDITION



## POSSIBLE CONDITION



Commercial collectors are often very linear, located adjacent to areas of flat commercial or industrial land uses. Competing demands for signage can often dominate the streetscape.

As these environments change over time, the introduction of factory outlets, supermarkets, 'warehouse' style big box uses and other retailing can help change the urban structure of these 'corridors' into 'nodes', with greater expectation to accommodate shoppers, pedestrians, and parking.

A key challenge along these roads can be that a lack of regular signalled intersections coupled with wide, busy carriageways create difficulties for pedestrians trying to cross. The use of the flush median can become a safety issue as - especially in congested periods - vehicles can use it to drive towards property access points rather than simply enter it when necessary. Providing regular crossing opportunities for pedestrians in conjunction with a clear street theme (signalling a specific environment to drivers) can help to reduce the severance effect caused by these routes.

## BUSINESS MAIN STREET

These streets are a focus for commercial activity and community interaction. They have historical origins in the wider north-south movement of trade to and from Wellington harbour. These streets have formed the core from which town centres have grown. They are the busiest pedestrian areas but passing vehicle traffic is still critical to the survival of businesses along them. How these key streets are designed and managed can have a substantial effect on local identity, the functioning of the town centre as a community focal point, how businesses function and the vibrancy of future economic growth within the Kapiti Coast.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Managing through traffic and car parking in a way that gives priority to the pedestrian and ensures wheelchair mobility;
- Providing critical connections to passenger transport without undermining the main street amenity; (e.g. noise, diesel fumes etc.)
- Creating an environment that people want to spend time in and subsequently spend money;
- Street-tables, unobstructed views of shop windows, perceived easy access to car parking and signage will attract customers;
- A wide range of uses including general business and retailing, entertainment, commercial and some residential (but not at ground floor) all support a vibrant town centre and need to be compatible with the streetscape design used;

- The uniqueness and identity of each town centre needs to be clearly identifiable, and specific to each centre to maintain its amenity and character;
- Street-based retail is highly sensitive and subject to severe disruption. Successful main streets need strong continuance between key anchors (e.g. supermarket) and carefully designed to facilitate and promote pedestrian trip continuance along the length of the 'strip'.

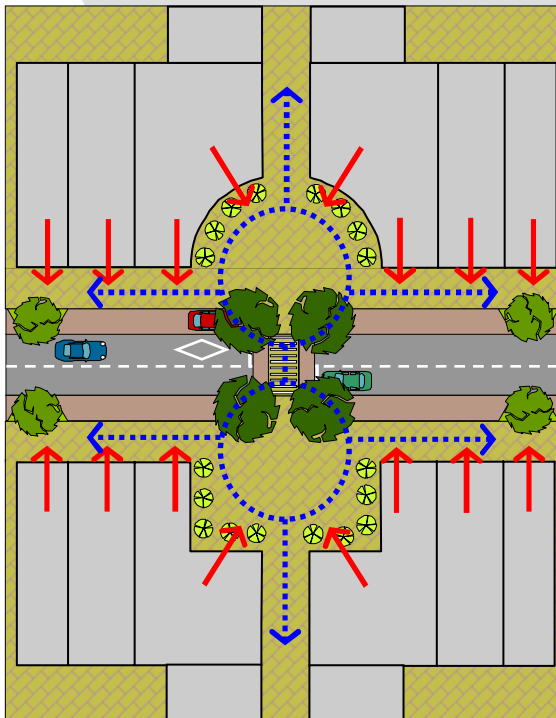
### KEY TREATMENTS INCLUDE:

- **Narrow carriageways and widen footpaths** wherever possible. The use of permanent 30km/h limits could be investigated;
- **Street lighting** using good quality fittings to provide increased levels of lighting and a positive visual contribution to overall street furnishings.
- Ensure pedestrian canopies are in accordance with the District Plan provisions with a minimum depth of 2.0m and unbroken for as long as possible along the street - **buildings should provide 100% building frontage** (with no building setbacks) with vehicle access from the rear;
- **On-site parking should be located behind buildings**, never at the frontage. Service lanes can be used to good effect;
- **Promote 'active' land use edges** which are diverse, glazed and with main entrances obvious;
- **Loading for small tenancies is acceptable from the street**, using on-street parking bays.

For medium sized uses (150 - 300sqm GFA), dedicated on-street loading areas (marked P10) are required. Large premises (>300sqm GFA) should provide their own off-street loading, accessed from a service lane;

- **Vehicle access to the main street can damage retail continuity** and should only be provided where there are no other options;
- **Street trees are critical elements to maximise amenity**, and should be integrated with on-street parking to retain the viability of continuous canopies over the footpath;
- **Provide essential public amenities regularly**, such as rubbish bins, benches, community notice boards etc;
- The private use of public space (e.g. outdoor dining associated with a restaurant) can be very positive but should be managed to **ensure good access for pedestrians** is maintained;
- **Differentiate between uses and modes of movement by providing a variety of surface materials**, particularly between on-street parking, pedestrian crossings, carriageways, and footpaths in order to clearly demarcate 'ownership';
- **Manage signage** especially when occupying the footpath; (e.g. sandwich boards)
- **Parallel parking is preferred** over angled parking for safety reasons, particularly where large numbers of pedestrians and cyclists are present.

## BUSINESS MAIN STREET



The placement of pedestrian crossings is a key part of the overall pedestrian movement system (blue). They should be located in places that reflect natural route 'junctions' linking destinations. This will give them greater legibility as well helping to facilitate the convenient and direct movement of people to where they want to go - a critical component of successful street-based town centres.

In this example the pedestrian amenity is heightened by land uses that open up to the street and an enlarged pedestrian area. This greater circulation space around the crossing area allows people from multiple directions to cluster without crowding the footpath and allows businesses to retain footpath signage, seating, and other landscaping.

Finally, the use of parallel parking rather than angle parking where possible helps to make the road environment safer for pedestrians and cyclists using the roadway.

## EXISTING CONDITION

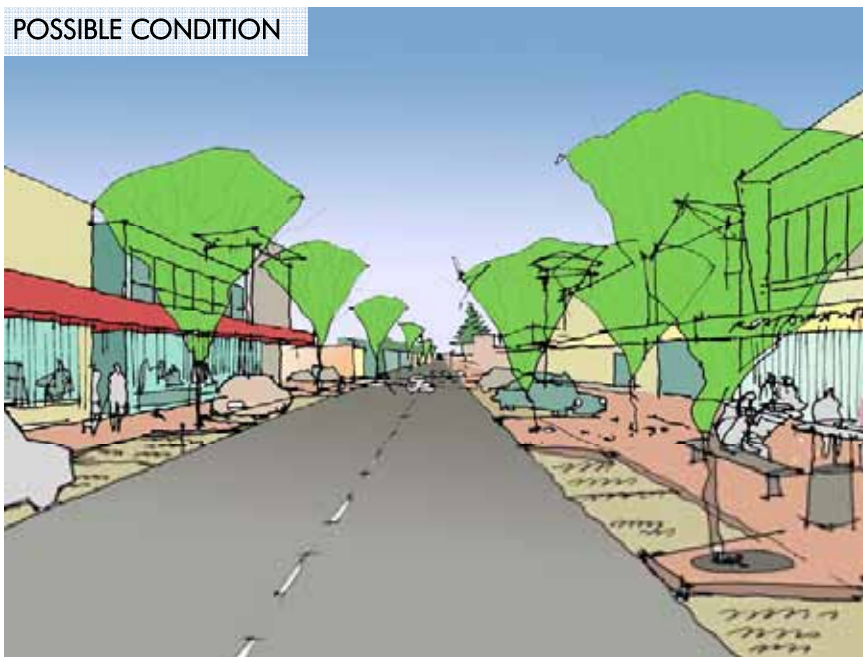


This main street is typical of the Kapiti Coast, with one to two level buildings and verandahs facing out to the footpath and road.

There has been a limited use of street trees and overall the carriageway character (extensive asphalt) dominates the streetscape in the absence of any other strong element (such as landmarks or feature buildings).

For safety reasons angled parking is not preferred as this results in poor visibility (and subsequent safety issues) particularly when high numbers of pedestrians are present within this public realm.

## POSSIBLE CONDITION



To help emphasise the shared nature of streets within town centres and business main streets, colour variations to the carriageway itself can help signal caution to drivers. This can be heightened by marking parking lanes in different materials and colours than the carriageway. The use of permeable paving surfaces can be used for stormwater treatment purposes.

Clustering street furniture and the use of quality materials help to psychologically express pedestrian priority in these areas.

Windows instead of solid walls encourage activity and create visual interest along the street.



## 'ONE STREET BACK' FROM MAIN STREET

These streets fall into two categories - existing residential, and existing commercial use. Both are characterised by the fact that they are close to the main commercial and retail centre of the town and are important streets for town centre car parking (particularly for employees). They are the logical location for commercial expansion of a town centre, and also the location of 'secondary' uses that do not always need the high-exposure (and more expensive) location of being in the main street itself (such as accountants and other professionals, or light industrial uses such as vehicle mechanics). These streets can also be highly suitable for intensive residential developments when within a five minute walk of the main town centre.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Managing the friction caused when an area redevelops and intensifies;
- Ensuring flexibility in building form in recognition that the area and uses will change over time;
- Ensuring the commercial fringe areas continue to provide car parking and easy access to the main shopping areas in the town centres;
- Planting street trees now so that they mature in advance of when improved residential and pedestrian amenity is required;
- Often the houses on these streets are amongst the oldest within the local area, and can have

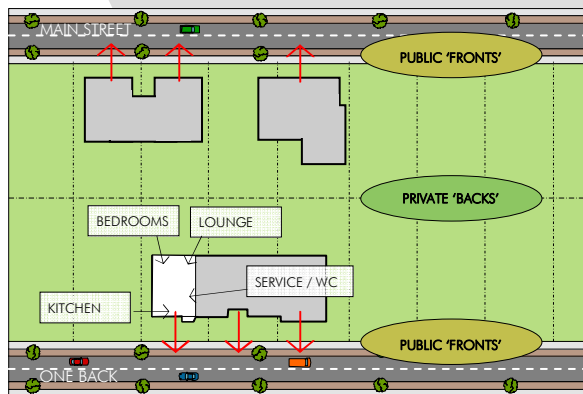
significant heritage value irrespective of formal recognition by the NZ Historic Places Trust or District Plan. Demolition of these houses for development can be a source of significant community unease.

### KEY TREATMENTS INCLUDE:

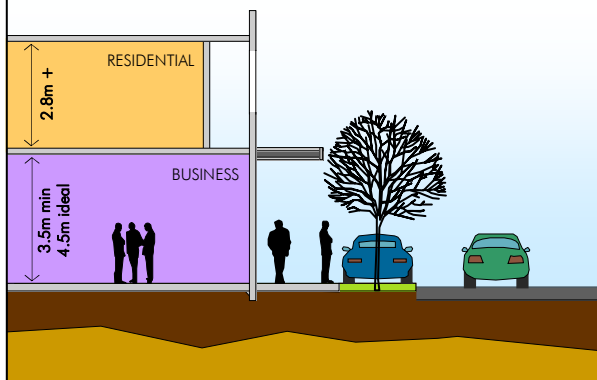
- **Street trees should be planted** in the on-street parallel parking lane at approximately every 18 - 24m apart (approximately every three or four spaces). On existing residential streets the use of deciduous trees may be desirable;
- **Street lighting** using good quality fittings to provide good levels of lighting.
- **Provide narrower carriageways which still allow convenient movement** of relatively large volumes of all forms of vehicular use;
- **Land uses should front the street.** Commercial uses should have no set-back from the street and pedestrian canopies at least covering the pedestrian entrance / departure points; (excluding fire escapes)
- **Residential uses should be set back no further than 3.0m**, with garaging set back at least 5.0m. In commercial areas where residential is to be located at ground floor, the use of level manipulations should be employed to maintain privacy and a good separation between the public and private realms. As an alternative, when in the context of other existing houses, residential uses should locate halfway between the street boundary and the existing dwelling;

- Depending on the retail sensitivity of the main street, **public transport may be better located on this type of road** where it laterally intersects with main street. This may require the formation of convenient and direct access to the main street in terms of clear pedestrian links;
- Design intersections to cater for **turning buses** where necessary.
- **The long-term growth of centres can necessitate the rezoning of this type of street** to allow conversion of residential uses to small-scale new-economy type uses such as professional offices (accountant, architectural designers, media designers etc.) or service-type uses (tailors, hairdressers etc.). This can however create off-street customer car-parking difficulties that need to be managed by the Council;
- **Maximise the provision of on-street car parking** where possible, including the use of angled parking to provide ample employee and shopper spaces; (include where necessary P30 - P120 controls to support shopper parking)
- **Provide on-street parking at the side or rear of uses** to allow them to establish good frontage with the street;
- Where a residential use converts to a business use and on-street parking exists, **consider reducing the off-street parking requirement** when it could only be provided along the front, reducing streetscape quality.

## 'ONE STREET BACK' FROM MAIN STREET



ABOVE: 'One street back' streets are popular for intensification due to higher amenity values than those found typically on the main street. Residential uses should be able to function without compromising either their own amenity, or the viability of adjacent commercial uses. In this example sensitive bedrooms and the lounge are located to the rear, towards the sun and away from the noisy street where the kitchen still provides frontage and opportunities for surveillance.



ABOVE: Development in and around town centres should be adaptive to changes in local socio-economics. The simplest way to achieve this is through providing ground floor spaces with a stud height of at least 3.5m and a floor plate with load-bearing external walls allowing flexibility in the internal division of space. Increased stud heights allow a range of retail, business, or residential uses to easily operate.

## EXISTING CONDITION



These streets are often important for local traffic (through traffic often relies on the main street or a formal bypass due to the historical way townships in the Kapiti Coast have developed). Many shoppers and workers will use these streets to access the land uses along the main street.

These streets also tend to be the closest conventional development gets to mixed use due to the co-location of residential uses, businesses that cannot locate on main street (such as vehicle servicing or affordable offices), and new businesses as a township grows.

## POSSIBLE CONDITION



Parking is typically a major issue on these streets. Management of bays may be required to provide for both long-stay worker parking and short-stay customer spaces. To do this a certain number of angled parking spaces are appropriate, where adequate sightlines can be achieved to facilitate safe manoeuvring.

On-street parking should be simple to retain as much energy and focus on the street rather than the off-street parking lots. Focussing this energy can help improve the viability of business uses on these streets, that do not naturally attract the same level of custom from passing trade as a main street does.

Development over time should be required to overlook and enclose the streetscape.

## COMMERCIAL LANE

These areas are usually associated with new industrial and commercial areas located along the Commercial Collector streets, and occasionally around existing town centres. They are predominately used for accessing off-street car-parking and service areas for businesses. They can be either public or privately owned. This utilitarian character often sees them poorly maintained however in the future it is predicted that they will become important in supporting economic growth and future development, especially where they are located in areas with a strong retail / commercial focus. They can become important routes to support local movement and growth around centres.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Providing access for trucks and service vehicles required for commercial and industrial uses;
- Providing access to off-street car parking areas (both for staff and customers) related to adjacent retail and commercial uses, in particular large format retail stores;
- Flexibility for future growth in commercial uses and the ability for service lanes to transition into streets on intensification;
- Limited scope for permanent low impact stormwater management techniques;
- Safety and security for people and property,

especially after business hours in areas with regular, but not intensive public use, such as single use retail areas;

- These are often located 'mid block', with residential and other uses backing directly onto them;
- They are often of limited width, reducing the ability to provide for pedestrians, cyclists, or landscaping.

### KEY TREATMENTS INCLUDE:

- **Service lane reserves should be wide enough to allow transition into future streets** (minimum of 8.0m width), particularly when associated with retail and commercial uses;
- Allow for staging options such as narrower service lane with a footpath on only one side but **preserve** (through rules, caveats or other measures) **adjacent land, enabling space for future pedestrian amenity** on any redevelopment;
- **Plant street trees 'now' to provide future amenity.** These should be located on only one side of a service lane and in a way that enables the future transition of service lane into a future street;
- For safety and security **avoid planting bushes that limit visibility and form entrapment spots** (e.g. that a person can easily hide behind), keeping landscaping to either ground cover or

street trees. This is in line with Crime Prevention Through Environmental Design (CPTED) principles;

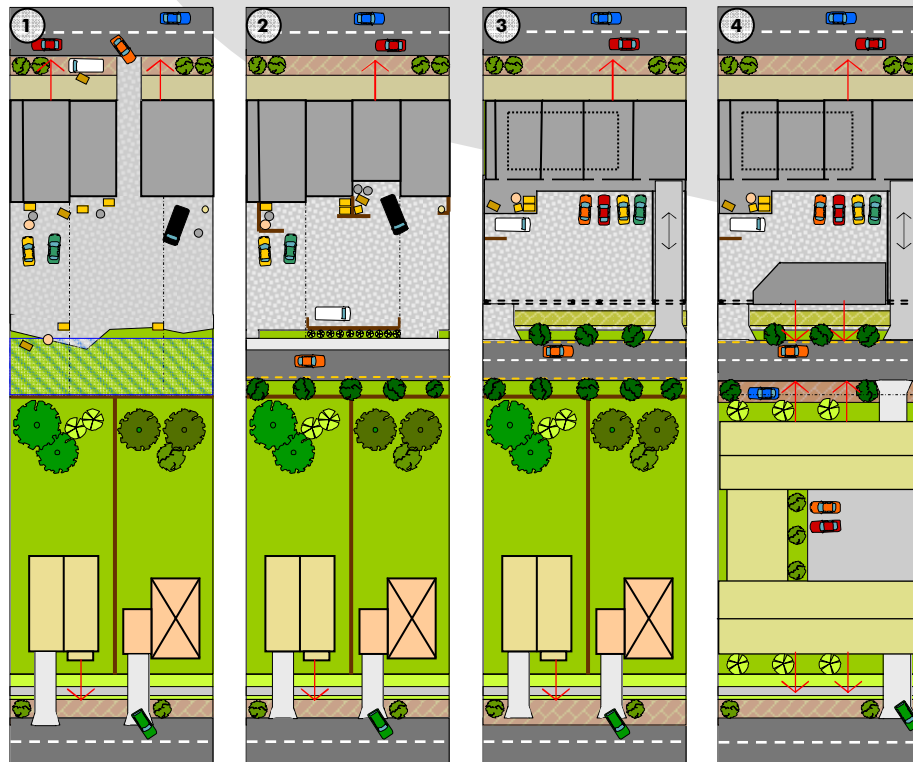
- In car parking areas **keep carriageways to a reasonable minimum**;
- **Appropriate lighting is essential** for pedestrian safety. Use low-level bollard lighting that will not become a nuisance to adjoining uses;
- **Blank walls should be avoided** where possible. Highly glazed active frontages will often not be viable at first, but windows that provide views into buildings can still be provided at appropriate intervals;
- **Carefully screen service and loading areas** to maintain amenity;
- Where possible, **design the building so that part of the building itself can help buffer noise** generated by any associated noisy servicing within the vicinity;
- Where the lane runs along a common boundary, **provide footpaths along the 'internal' side of the lane** to reduce public / private conflicts along any common boundary;
- **Allow limited servicing to occur on the street** at certain times of the day to reduce nuisance on properties adjacent to the service lane.



## COMMERCIAL LANE

LANE TRANSITION INTO A STREET OVER TIME (possible growth scenarios)

Today → In 5 years → In 10 years → In 15 years



**STAGE 1** - Around the existing centres service lanes can exist only as a designation under the District Plan, with all property access from the primary commercial lane. Loading also occurs on this lane using on-street customer parking bays.

**STAGE 2** - A formed lane with residential buffer landscaping and a footpath on the 'business' side. Servicing is screened to minimise nuisance and staff access is now possible without using the primary commercial lane where a better frontage occurs.

*Representative of the Possible Condition diagram to the right.*

**STAGE 3** - Residential and office redevelopment occurs above the ground floor (with parking on first level by ramp). Better pedestrian conditions provided on private land to optimise service lane, staff parking and screened loading at ground level.

**STAGE 4** - Full transition to a street occurs with redevelopment of the residential properties over time as the centre grows. Private land used to create on-street visitor parking for residential, which now fronts the existing and new street conditions. New ground floor commercial tenancy allows frontage and surveillance of the street.

## EXISTING CONDITION



This above rear lane provides virtually no pedestrian amenity. The area is dominated by monotonous poorly defined parking areas and the rear façades of commercial buildings. Limited access and the lack of designated waste areas result in an environment that is unlikely to encourage population and business growth.

## POSSIBLE CONDITION



After renovations some of the properties now provide rear entry's and a clear pedestrian route through to the primary commercial lane has been established from the rear of the buildings. Street trees, pedestrian lighting incorporated into bollards and defined landscaping / car parking areas create a basic level of amenity that makes this area more attractive and seemingly safer, thus encouraging pedestrian use at all times. The above diagram is consistent with development patterns expected within the Stage 2 transition.

## RESIDENTIAL - KEY TRAFFIC ROUTES

These streets are predominantly residential in nature and are classified as either arterials or collectors based on their role in the road hierarchy and the traffic volumes carried each day. These streets are often typified by wider carriageways with four lanes or at least two wide lanes that could be easily marked into four lanes in the future. They tend to have on-street parking on at least one side but often both, although usually with no formal marking.

The frontage condition is often marked by higher solid fencing to mitigate the greater vehicle nuisance associated with these routes, and because these roads are often higher up in the road hierarchy, they often also have local shops, schools, and main bus routes located along them.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Residential interfaces often result in large solid fences along the frontage to mitigate vehicle nuisance, particularly if lots are developed in 'infill' and private outdoor spaces are located to the front;
- Providing positive pedestrian experiences encourages walking and cycling despite the high traffic volumes that can be present;
- Providing adequate crossing opportunities for pedestrians and mitigating the severance effects that can be caused by wide, busy roads;
- Integrate bus stops and other infrastructure with the footpath;

- Design intersections to cater for turning buses
- Making other activities on the road (schools, local shops etc.) accessible and coordinate logical walking patterns with crossing opportunities;
- Roundabouts and other mechanisms that have minimal disruption to the flow of through traffic can make hostile pedestrians environments, including difficulties for those people wishing to cross;
- Vehicles leaving the carriageway fast and entering properties by taking wide-angled turns, reduces pedestrian safety;
- Street trees need to be managed to ensure they do not restrict sightlines from vehicles.

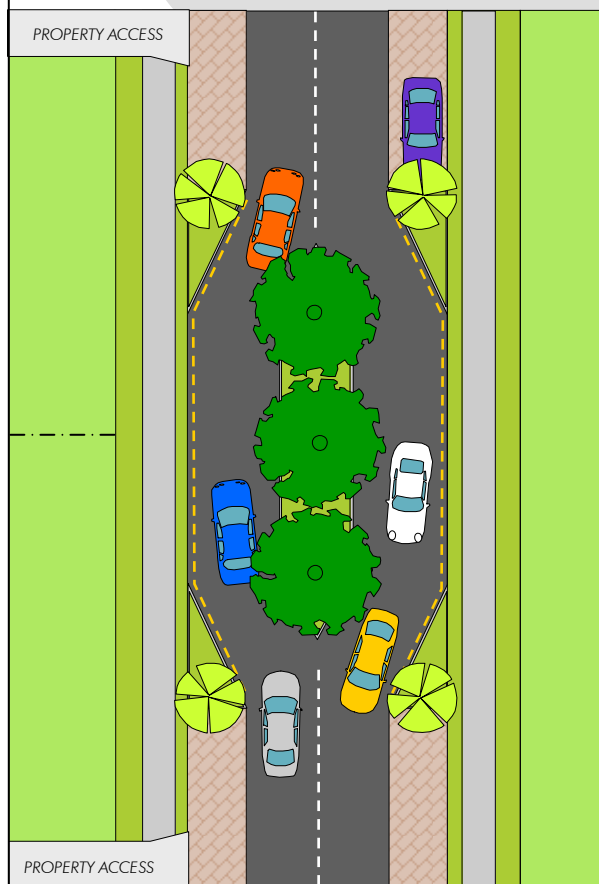
### KEY TREATMENTS INCLUDE:

- **Reduce the need for solid fencing** through zoning those areas as high noise routes and requirement for acoustic glass and insulation in new or altered buildings;
- **Require buildings to create clear and direct frontage** with the road to make the environment safer and more interesting to pedestrians;
- **Locate a barrier** (landscaping and tree-trunks are suitable) **between the carriageway and the footpath** to ensure a good buffer between traffic and pedestrians;
- Where multiple lanes exist, consider **demarcating the left-most lane as a slower**

**speed** (40 km/h) **lane** to assist with on-street parking, property access and pedestrian safety;

- **Pedestrian crossing areas and intersections can benefit from being materially demarcated** to help slow traffic without otherwise slowing the movement of traffic;
- **Manage the placement of street furniture** so that there is minimal conflict - for example seating located adjacent to sloping intersections can result in loud bus and truck braking or acceleration (and fumes) being aimed directly at seated pedestrians;
- **Consider demarcating footpaths** that lead to local shops or parks in a different material or colour to help direct pedestrians;
- On arterials or collectors where tall (12m+) light poles are used **provide lower level pedestrian lighting** oriented to the footpath as well;
- **Provide 'gateways' or transitions** between different speed limit areas or roading types, so that a particular 'feel' accompanies each road type;
- Where appropriate, **consider reducing speed limits** to 30-40km/h (e.g. in 'black-spots' or around schools).
- In arterial situations with very high traffic volumes, dedicated **residential slip lanes can allow good residential frontage and surveillance**, without the need for solid fencing to maintain residential privacy or amenity.

## RESIDENTIAL - KEY TRAFFIC ROUTES: COLLECTORS.



Major collectors and vehicular routes are also commonly (due to their higher order in the movement hierarchy) the ones along which schools and other facilities are located. Where this is the case, common 'spot gateways' as illustrated above can be used. These can help give drivers a common prompt that they are approaching a high-pedestrian environment and can be integrated with formalised crossing points. Speed reductions (30-40km/h) can also be used where appropriate.

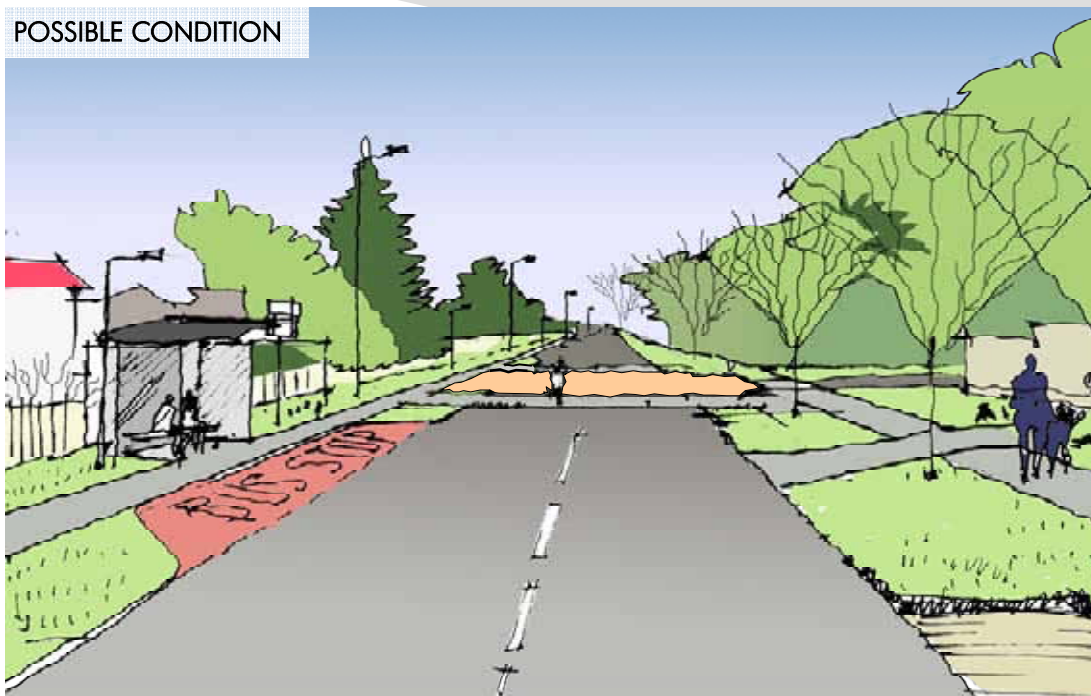
### EXISTING CONDITION



This street-scape features a marked bus stop with no pedestrian connection, an open carriageway and a footpath that directly abuts the carriageway on one side of the street.

Where no lane markings are present, often undesirable manoeuvres result as the centre line and other road markings provide significant psychological separation from on-coming traffic.

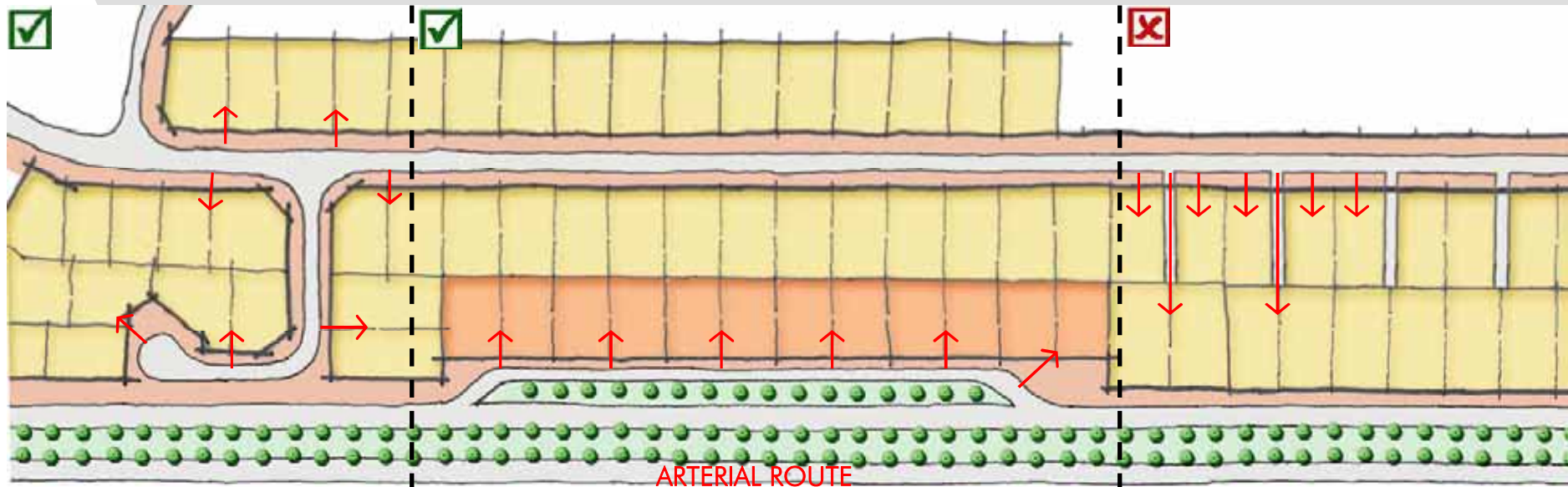
### POSSIBLE CONDITION



This road could adequately retain its traffic function by narrowing the carriageway to provide footpaths on both sides as well as marked and formed on-street parking bays. The proximity of the bus stop to the intersection may warrant the use of neck-downs on the intersection corners to reduce vehicle turning speeds, as well as a tabled intersection given that pedestrian attention could become distracted here by buses and traffic from multiple directions.



## RESIDENTIAL - KEY TRAFFIC ROUTES: ARTERIALS



ABOVE: An alternative to the slip road which achieves a positive outcome. The cul-de-sac allows street surveillance and avoids residential sites backing on to the arterial.

ABOVE: An ideal situation where by the slip road can be constructed to allow the safe and efficient movement of vehicles into the residential environ without generating any detrimental effects on the arterial itself. The concept appropriately minimises vehicle crossings.

ABOVE: An undesirable option where by poor frontage to the arterial is provided typical of many residential settlement patterns. Vehicle crossings provided individually to each lot.



(ABOVE) - In areas with heavy through traffic where the road behaves akin to a highway, the creation of dedicated **residential slip lanes** can be a solution that still allows good residential frontage and surveillance, without the need for solid fencing to maintain residential privacy or amenity.

## RESIDENTIAL - LOCAL STREETS

These streets are almost wholly residential in nature, although can often also have reserves, some local shops, alternative entrances to schools, and so on. They carry predominantly local traffic and serve a limited strategic movement role.

These streets are the most suitable to large-scale design interventions to maximise local amenity due to the lack of competing user demands (e.g. through traffic or employment use).

They include residential cul-de-sacs, right of ways, slip roads and lanes and many other roads where daily volumes are up to around 4,000 vehicles per day.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Making pedestrian environments as safe and attractive as possible, whilst dealing with existing roads where land use interfaces have not made the most of the streetscape potential;
- Creating pedestrian environments residents feel safe using, including allowing children to use the road environment;
- Land uses need to integrate by connecting and fronting the street to make these conditions successful. In particular, garages must not dominate the streetscape as this can detract from the wider pedestrian amenity;
- Having adequate strategic foresight to ensure that roads are constructed to meet future demand.

- Landscaping and the private-sector interface or contribution to this is a key element in terms of street trees;
- Some smaller residential roads, may require the use of a berm to accommodate parked cars on the street via a mountable kerb, affecting the place-

### KEY TREATMENTS INCLUDE:

- **Reduce the need for solid fencing** through requirements for acoustic glass and insulation in new or altered buildings. Ensure private outdoor living spaces are not located in front of a unit but to the side or rear;
- **Require buildings to establish clear and direct frontage (1)** with the road to help make the environment safer and more interesting to pedestrians;
- Encourage residents to **erect suitably low-level front walls or fences (2)** (less than 1.0m in height), or to beautify their berm or front garden where very visible from the street. Consider possible incentives where good outcomes result;
- Use techniques to make the carriageway appear as narrow as possible (differentiate on-street parking, install berm and place landscaping regularly in the parking lane etc.) and integrate with techniques to make roads require slower vehicle speeds (such as chicanes, avoiding long road 'straights'), to **make these environments as pedestrian friendly as possible (3)**;

- **Invest heavily in landscaping and street furniture (4)**. Consider distinct 'themes' in the use of lighting poles and road signs;
- In narrower carriageways, consider the use of 'no parking' lines and the placement of street trees / landscaping to **minimise any 'blind spots'** or visibility conflict areas, especially around corners;
- Where possible **widen footpaths / cycle lanes** on those roads with the highest pedestrian flows, and consider highlighting them with different materials;
- **Manipulate the location of the carriageway** within the road reserve to create regular 'pockets' of interest that can turn long pedestrian trips into a series of short, easy to reach destinations. Where possible these should be integrated with local amenity areas. Avoid excessive stretches of straight roads (5);
- **Provide regular carriageway surface treatments** at intersections to help reinforce the slowed-nature of these streets;
- Design these streets so that speeds are appropriate for the environment. Design curves, corners, and lengths so that speeds are suitable. **Consider speed management** such as reducing the speed limit to 30 or 40km/h on short roads and cul-de-sacs;
- **Encourage design covenants** within new developable areas that promote and reinforce the

desire for land uses to interact positively with the street environment. Not only will this achieve consistency of design creating a character and feel to a place, it will also enable safer and more frequently used pedestrian environments;

- **Street lighting** using good quality fittings to provide good levels of lighting.
- Ensure provision is made for on-street parking within the carriageway, **avoid mountable kerbs and outcomes where vehicles mount the footpath (6)**. These allow vehicles to drive over and park on the road berm which can, particularly in winter, lead to mud on the road and unsightly vehicle tracks on the berm. Additionally it can lead to disruption of the pedestrian and cycle networks;
- **Carefully select and manage tree species** as poor selection can lead to significant conflicts with residents. Deciduous trees provide shade in summer and light in winter, however also contribute to drainage problems due to significant leaf fall. Some tree species become unsuitable as they mature, as they gain excessive size and can create nuisance; (such as shading of living courts or disruption of underground network utilities due to large root networks)
- Where excessive street width is present, **tighten intersection corners and differentiate the carriageway surface** to slow vehicles at intersections;

- **Integrate pedestrian crossing opportunities with traffic calming measures** to reduce the distances and times certain age groups (the elderly and children) spend on the actual street;

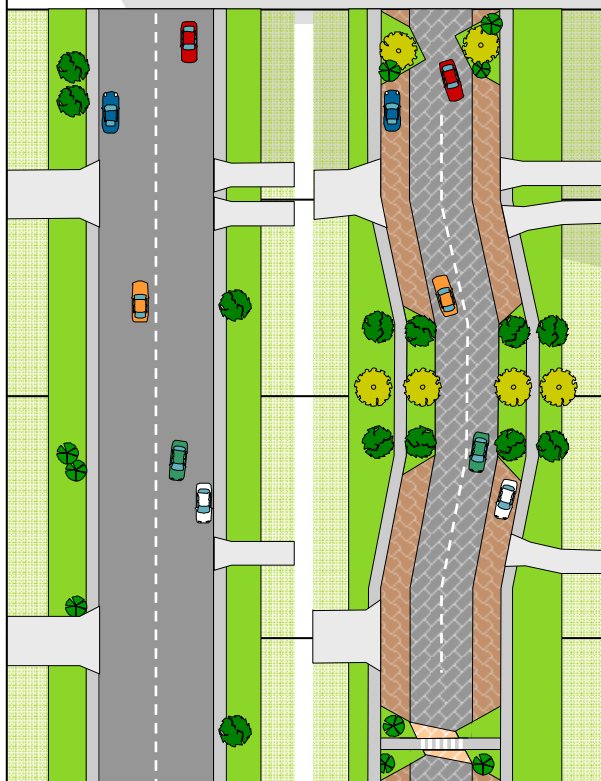
- **Combine vehicle crossings for adjoining sites** where it is appropriate and possible to do so, seeking to minimise crossing widths, numbers and street access points. This will allow greater on street parking provision as well as provide pedestrian safety benefits by minimising potential conflicts between the two user groups;

- **Garages should be set behind the front face of the dwelling (7)** in order to ensure the dwelling itself is the most prominent building on site. Orientating garage doors away from the road (parallel to side boundaries) is an alternative where this cannot be achieved. However this will only deliver minimum benefits as a 'dead internal space' that lacks passive street surveillance will result.





## RESIDENTIAL - LOCAL STREETS



**TYPICAL** condition: uniform linear carriageway that gives no environmental prompting to drivers that the street is anything different to a residential collector or even lower order arterial. This commonly provides far more vehicular capacity than will ever be operationally required and in the process due to the excess impermeable surface contributes to stormwater infrastructure costs (both economic and environmental) and coastal discharge.

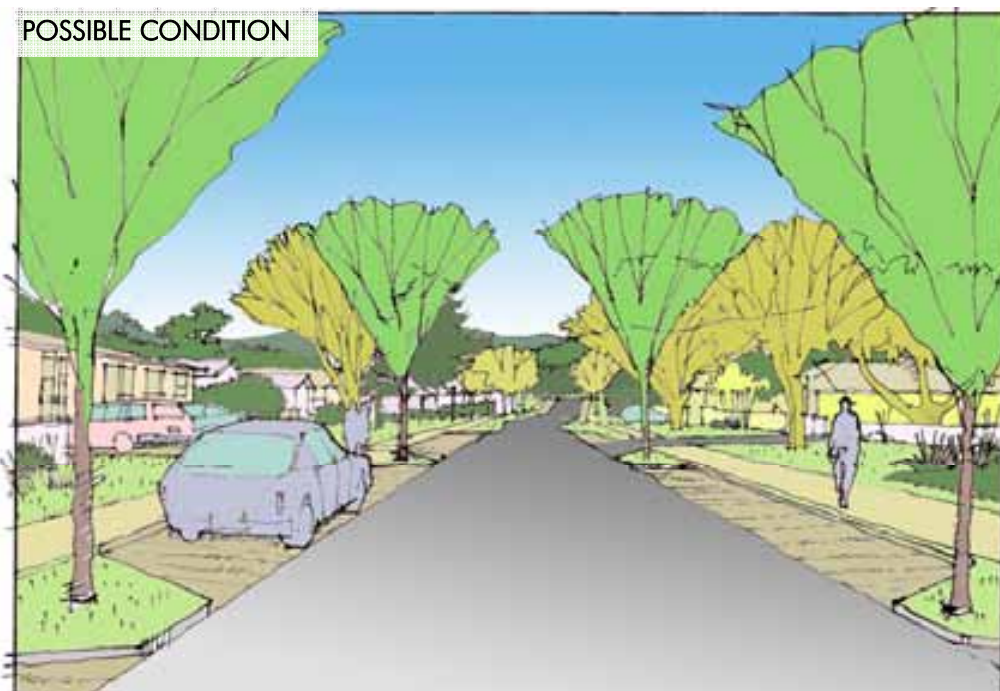
**CALMED** condition: a focus on narrowed curvilinear carriageway within the road reserve. 'Neckdowns' force vehicles to slow down, with the design of the road then giving no opportunity for easy acceleration. More permeable surfaces are possible, as are swales or rain gardens within areas of widened berm where the road reserve may not otherwise have had adequate width.

## EXISTING CONDITION



This example features an unmarked carriageway wide enough for two traffic lanes and one lane of on-street parking. Parked vehicles require passing traffic to 'weave'. Footpaths directly abut the carriageway providing no pedestrian buffer with established street trees located in the berm.

## POSSIBLE CONDITION



Placing street trees in a demarcated on-street parking bay and otherwise between the footpath and carriageway help to establish a psychological as well as physical barrier between pedestrians and passing traffic.

This street type typically allows the greatest degree of intervention in order to slow traffic and place a greater emphasis on other movement modes. Where the berm width allows, a double line of street trees can create a particularly high quality frame for footpaths and create an environment where adjacent property owners have more motivation to relate and connect to.

## RESIDENTIAL - LOCAL AMENITY AREAS

These are distinct 'spots' along a street where a particular feature, service, or amenity is present. Examples include schools, local shops, parks, lakes, or heritage / archaeological sites or buildings. In some instances, particular landscape vistas or views can also warrant particular recognition.

They have important social links and can benefit from being emphasised within the streetscape to provide identity, pride, or other value. They are also often areas where increased or 'spot' pedestrian activity is associated and hence an element of safety is associated with these areas.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Parking associated with these uses can be problematic depending on their popularity;
- When consolidated parking is provided, it can often undermine the amenity of the use if pooled along a frontage, disconnecting the use from the streetscape; (excluding parks or reserves where this can be a positive)
- Pedestrians can often arrive from multiple directions or sources, including casually crossing the road at random points;
- Active uses can create hazards as passing motorists can be distracted or otherwise surprised, and manoeuvring vehicles can likewise create a safety hazard to unprepared or inattentive drivers;

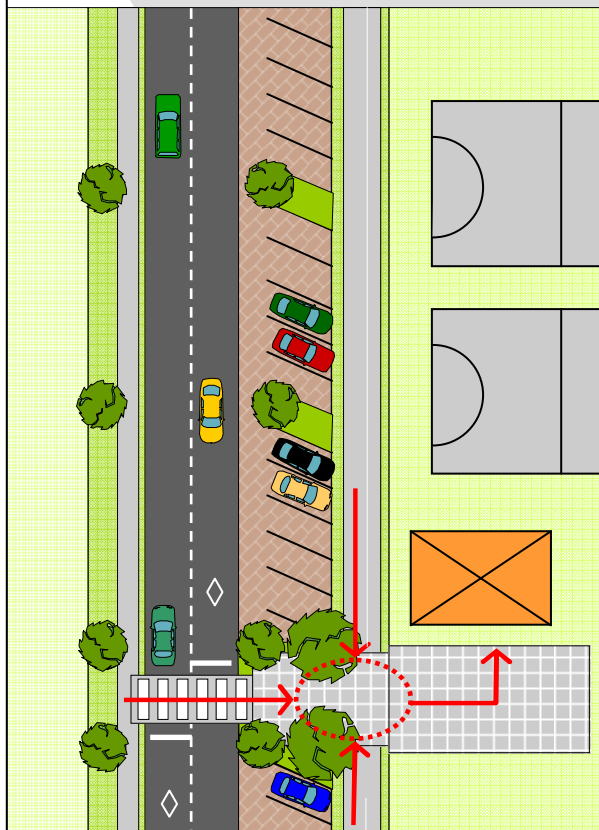
- Can be located on any type of street and needs to address the wider issues of that street type as well;
- Great opportunity to enhance community identity and legibility by incorporating unique features into these areas;
- Design features can be used to communicate the history of an area, raising awareness for visitors and residents.

### KEY TREATMENTS INCLUDE:

- **Provide a variable environment**, through distinctive trees, landscaping, paving, artwork, lighting or signage;
- In areas where there is likely to be lots of children, **provide and use clearly defined crossing areas** and don't use trees or landscaping that make small children hard to spot;
- Narrowing the carriageway and the removal of car parking to **create mini parks and public spaces** for people to use will improve the local amenity;
- **Locate street furniture outside all community facilities** where people may be picked up and dropped off;
- **Choose distinctive street-tree species** that will enhance the visibility and legibility of the area;

- **Incorporate sustainable urban design**, such as grass verges, rain gardens and permeable paving where appropriate to allow for filtration of stormwater;
- **Use appropriate lighting** that is suitable for pedestrian safety and night time use;
- **Ensure main entrances are visible from, and close to the street** with clear signage to help identify facilities;
- **Be generous with the pedestrian amenity**; use wide footpaths and consider incorporating fun paving patterns or mosaics designs into paving;
- Public artwork, including sculptures, carvings, murals, mosaics and other **features contribute to the meanings and distinctive characteristics of a place**, its history and current community;
- In heritage / archaeological areas **incorporate sign boards that tell the stories of the place**;
- Where possible **cluster car parking** and provide good pedestrian crossings, to avoid the edge of the street being dominated by continual car parking areas.

## RESIDENTIAL - LOCAL AMENITY AREAS



On-street parking bays adjacent to local amenity areas can help make them more attractive to users through greater convenience. This is particularly for local shops and services. Integrating their presence into the streetscape through key 'micro' open spaces, gateways, and treatments can help to reinforce their role as community hubs. The use of street furniture (seating and benches) and information panels that explain the history or 'story' of particular features can add a further tier of integration.

Where cycle lanes are warranted because of low traffic volumes, but safe cycling for children is desired, footpaths can be widened and a painted lane for cycling created.

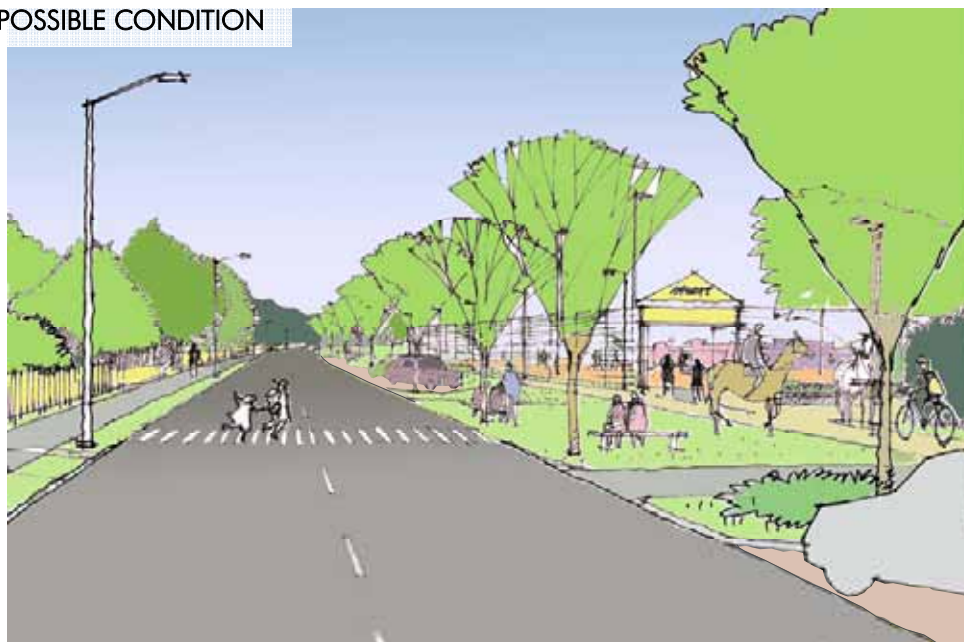
## EXISTING CONDITION



Local amenity areas are community 'hot spots' where greater legibility, safety, and efficiency can result from comprehensive streetscape management.

In this example a prominent sports facility, likely to be used by families and children faces directly towards a wide, straight, and unmarked road with little environmental prompting for drivers to take care. This can present numerous risks for pedestrians, cyclists, and vehicles manoeuvring.

## POSSIBLE CONDITION



Improving the demarcation between pedestrian and vehicle routes incorporating suitable buffers helps make the local amenity area appear more welcoming and safe.

Providing small-scale open spaces and more obvious entrances can help pull land uses out onto the street and enliven it. This also helps to express the perception that the street environment is a community asset rather than a movement corridor.

If horses are to be ridden, narrower traffic lanes and more extensive grassed areas provide safer riding areas and better areas for 'tying' horses up at destinations.



## EDGE ROADS:

**COASTAL** - The Kapiti Coast has a strong affiliation with the coastline. Roads that follow the coastline offer identity and amenity, valued by both locals and visitors.

These streets usually have a proximate connection with the coastline, although in instances can be set back by reserves or some limited land uses. The landward side will generally be fronted by residential land uses.

The coastal edge has a very distinct character unlike other road types, with a direct connection to the water and in many instances Kapiti Island.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- Far-field coastal views can distract drivers from the road, creating safety issues without frequent near-field streetscape elements to retain their attention on the road;
- Visitors in particular can seek opportunities to stop and enjoy the coastal environment which requires recognition in the provision of both on and off street parking areas, places for interpretation, and recreational rest stops at key landscape vistas;
- Long, straight areas of roadway in conjunction with a lack of continuous land uses (which help to survey and enclose the street) can tempt speeding;
- Street trees and landscaping can often become

distorted in the face of continuous prevailing winds or climate exposure. Inappropriate species and material selections can contribute to this;

- The design and use of public space must be carefully managed as winds and exposure can undermine the amenity and usability of these spaces;
- The coastal environment and 'edge' has cultural and psychological significance for virtually every ethnic group, particularly Maori and those inhabiting the South Pacific;
- District-wide pedestrian and cycle networks should include these areas of higher natural amenity, which may have implications for the type, quality, and scale of streetscape infrastructure provided here (width / quality of footpaths and so on).

### KEY TREATMENTS INCLUDE:

- Use distinctive trees, landscaping, paving, artwork, lighting or signage to help **differentiate this environment from conventional 'urban' streetscapes**;
- In areas where there is likely to be a lot of children, **use defined crossing areas** and avoid trees or landscaping elements that make small children hard to spot. In addition provide driver prompts, either through surface differentiation or road alignment to warn drivers of potential hazards or safety concerns ahead;

- Consider the position of the vehicular carriageway within the road reserve to help **create space for small 'gateway' open spaces** and other elements that can help identify important coastal areas (for instance traditional Waka launching points);
- **Consider the creation of pedestrian recreational areas** that allow both unrestricted views but also opportunities to shelter from stronger winds;
- **Ensure key coastal views are not compromised** by inappropriately located street-lights, landscaping and street trees. Positive visual effects are maintained where extensive coastal plantings are avoided, and this should be encouraged except where plantings for coastal stability is sought.

## EDGE ROADS:

**RIPARIAN / DRAINAGE** - Streams, waterways and drainage edges are relatively common features throughout many urban environments. However historically the relationship between these and adjoining land uses has been overlooked or ignored. Riparian / drainage edges operate differently to other aquatic environments, notably the coastal environment, particularly in terms of environmental factors such as differing water salinity and exposure levels to wind and sunlight.

Developments which 'stay away' from these areas do not always ensure better environmental outcomes. Ensuring ecologically friendly developments in close proximity to the riparian / drainage edge will preserve, improve and integrate existing stream networks into the urban framework.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- The design of the street layout begins at the subdivision stage. Riparian / drainage edges should be incorporated into street network and are generally void of development;
- Physical factors affect the design of the street layout in proximity to riparian / drainage edges. These include the size of the catchment area, topography, ground conditions and potential surface and underground obstructions;
- Riparian edges generally lack any noticeable built intensity, meaning drivers usually pass these areas without noticing they exist or the inherent qualities that they possess;

- Flooding concerns exist where insufficient capacity or design has been undertaken, particularly during extreme weather conditions, sometimes closing streets due to excess surface water;
- Land uses that back onto riparian edges often become overgrown and unsightly and potentially become dumping grounds for waste.

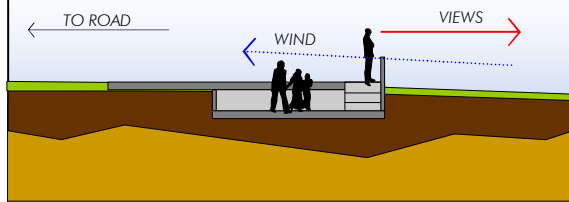
### KEY TREATMENTS INCLUDE:

- **The street layout should follow the natural watercourse** as closely as possible. This will allow a positive relationship with the riparian / drainage edge to be provided improving overall amenity as the ability for land uses to back onto these areas is reduced;
- **Create a variable width, naturally vegetated buffer system** along all perennial streams that also encompasses critical environmental features such as the 100-year flood plain, steep slopes and freshwater wetlands;
- **Provide additional space for maintenance requirements** however these should be kept to a minimum during new roading construction;
- **Drainage areas should be sufficiently large enough to prevent flooding** onto the roading network. It is preferable to build the road up as opposed to lowering the waterway or flood plain;

- Where possible **leave natural riparian / drainage edges in their natural state** with the only modifications being enhancement;
- **Plant edges with suitable vegetation**, selected specific to the environment and with the ability to control erosion;
- **Residential land typically integrates better with the riparian / drainage edge** than commercial and industrial land due to the greater amenity commonly associated with these areas;
- The opportunity exists to **provide public amenities and open space within these areas**, cycle-ways and footpaths are appropriate where as buildings themselves are not;
- **Avoid piping and channelling streams** when constructing new streets and where possible construct environmentally sensitive and aesthetically pleasing vehicular, pedestrian and cycle bridges;
- **Avoid conflict between street provision and adjacent land uses** by planting and providing additional buffer areas to minimise effects of noise and vehicle fumes for example.

## EDGE ROADS

### COASTAL

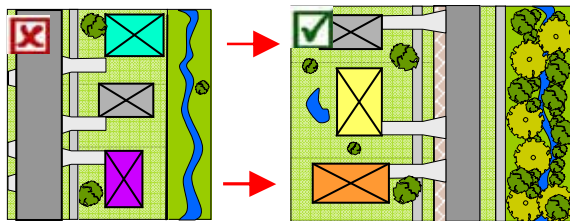


Providing recreational facilities to allow views and cultural / archaeological interpretation can be combined with sheltered areas to allow benches and relaxation out of coastal winds. This can create a more appealing place for passers-by to stop and use.



Timber is a material strongly associated with the coast and is effective in helping to emphasise coastal proximity. Timber 'boardwalks' instead of concrete footpaths on the seaward side of a street can help subtly reinforce this proximity as well as adding interest and variation for users.

### RIPARIAN / DRAINAGE



The road location is paramount to achieving increased residential amenity. To the left the carriageway is well separated from the stream, resulting in the adjoining land use backing onto a useable area of open space which is lost opportunity in terms of providing an increase in onsite amenity.

By fronting residential areas towards the stream as shown to the right, increased levels of natural surveillance and a more usable riparian / drainage edge are provided. Incorporating footpaths and cycle lanes within this area is encouraged in order to allow mixed mode usage. Fronting residential use towards the stream reduces the visual impacts of monotonous rear yard fencing.

## EXISTING COASTAL EDGE CONDITION



Coastal edges are often important for tourist routes and local identity. Where beaches provide water access they take on greater recreational importance, often needing greater provision of car parking and pedestrian amenities.

Land uses often front these streets, facing the coast to take advantage of coastal views and maximise property values.

## POSSIBLE COASTAL EDGE CONDITION



Softening the 'land use' side of these streets is beneficial but is dependant upon suitable plant species being available to withstand wind or sea-spray conditions.

On the seaward side, attention to providing recreational infrastructure using materials sympathetic to the coast is of greatest benefit.

General street lighting should locate on the 'land use' side of the road, however dedicated low scale pedestrian or amenity lighting is suitable on the seaward side.

## POSSIBLE RIPARIAN EDGE CONDITION



Unlike the coastal edge where limiting planting is preferred, riparian margins should be heavily planted, in some cases resulting in the entire waterway being obscured by vegetation. Not only will riparian planting provide erosion control along stream banks, it also provides important ecological corridors and wildlife habitats.

## LANES / SHARED RIGHT OF WAYS / ACCESSWAYS

Shared right of ways and accessways complete the urban streetscape network by allowing vehicles and pedestrians to enter and exit those more inaccessible land use sites. Typically these service 'rear' lots, but operationally do little to reduce wider current trends of dependence on private vehicles. They often fail to incorporate suitable provisions for pedestrians or cyclists

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- A lack of parking and manoeuvring difficulties on rear lots mean typically people are forced to park on the street and walk down the right of way, often without having a designated footpath. This potentially leads to pedestrian / vehicle conflict and can result in safety issues;
- Typically, right of ways are used either solely for pedestrians or solely for vehicles. Providing a mix between the two leads to safer, sustainable and more accessible land uses within the urban environment;
- Right of ways are often vested in common private ownership and maintenance can become an issue;
- The design of a coherent right of way which promotes accessible travel should be provided for every new project in the public realm. If suitable standards are implemented, over time public right of ways will achieve consistency and equal access for all users;

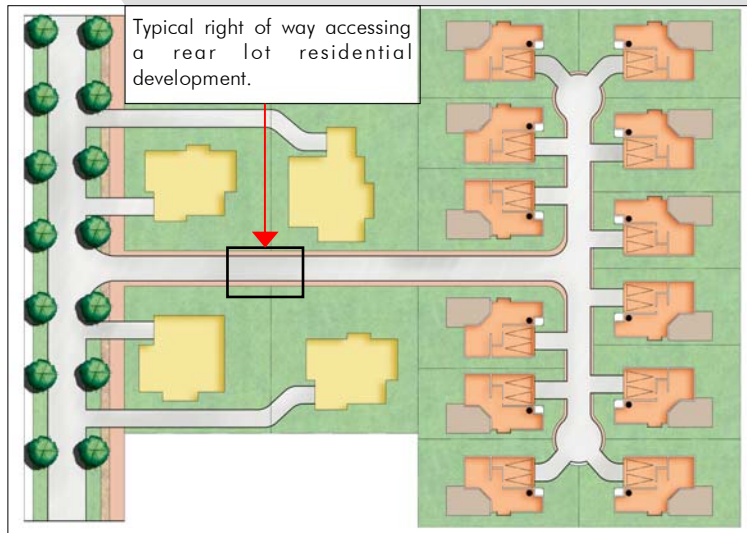
- Lanes can be highly effective tools to help reduce impermeable surfaces and ecological footprint

### KEY TREATMENTS INCLUDE:

- Where possible, **provide pedestrian accessways in addition to vehicular access.** These should be separated by small plantings or through the use of surface differentiation for safety purposes;
- **Ensure all pedestrian accessways are well signposted and maintained,** to encourage frequent use and remove the likelihood of vandalism;
- **Promote equal access** to lanes and right of ways and reduce the dominance vehicles currently have over this domain;
- **Reduce overall site imperviousness** by promoting alternative surfaces and shared driveways that connect two or more lots together;
- Where sufficient land is available **comprehensively landscape and manipulate the right of way alignment** particularly when the right of way serves only a handful of residential sites to improve the sense of open space along the right of way.



## LANES / SHARED RIGHT OF WAYS / ACCESSWAYS

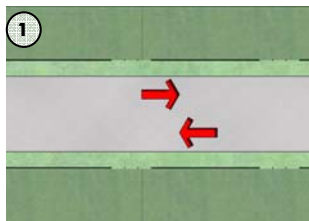


ABOVE: Surface differentiation clearly identifies the pedestrian section of this right of way ensuring pedestrians are not competing with vehicles for a share of space. The narrow right of way width assists in slowing vehicles within the environment enhancing pedestrian safety.

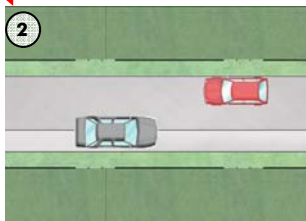


ABOVE: Within quieter residential environments the use of landscaped right of ways with variable alignment can be used to great effect, particularly as it creates a common area typically void of high boundary fences that creates the perception of larger lot sizes and better quality living environments.

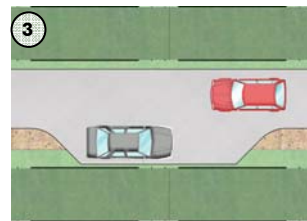
### UNDESIRABLE OUTCOMES



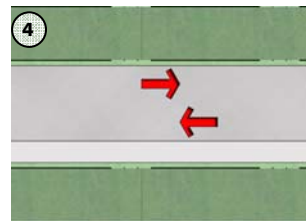
The above illustrates a typical right of way frequently used to service rear lots. The right of way which provides exclusive vehicle access with no designated pedestrian provision.



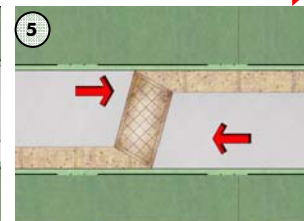
The right of way has been modified slightly through the use of surface differentiation resulting in a parallel footpath being provided. The right of way appears to have been narrowed to allow for the footpath however vehicles can still, due to a lack of kerbing, drive over this to facilitate passing. The right of way now incorporates shared movement between pedestrians and vehicles.



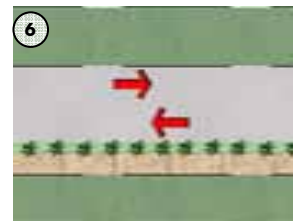
Kerbing has been placed along the edge of the pedestrian footpath, which is clearly demarcated from the right of way. Vehicles can no longer manoeuvre over this in order to pass. To compensate designated passing bays are provided at appropriate intervals, based on expected vehicle volumes. This situation still results in certain areas of shared use.



The right of way provides a single pedestrian strip along its entirety with kerbing to separate vehicles from pedestrians. The right of way has been widened to allow vehicles to pass without undue difficulty.



The use of a designated pedestrian crossing, surface differentiation and manipulation of the right of way alignment will slow vehicles considerably. Potential safety and conflict areas are significantly reduced however the two user groups continue to share a common route.



This example provides the greatest safety benefits to both user groups. Complete separation has been achieved with a landscaping buffer strip added to provide additional amenity, eliminate pedestrian / vehicle conflict and allow the vehicular right of way to operate without pedestrian distraction and interference.

### DESIRABLE OUTCOMES

## STORMWATER - LOW IMPACT ENVIRONMENTAL DESIGN

Managing stormwater is an expensive issue, both in dollar terms and in terms of negative effects on the environment. How it is managed can have a significant long term effect on the ecology of streams and coastal areas, and the negative impacts of this are being witnessed throughout much of New Zealand's urban areas.

Over recent years a significant amount of research funding has gone into investigating new ways of managing stormwater, in new and existing urban areas, to preserve and hopefully improve what remains of the stream and coastal ecologies.

### IMPORTANT ISSUES AND ELEMENTS INCLUDE:

- There are two parts to managing stormwater, one relates to managing the effects of increased water run-off volumes, the other to removing pollutants;
- Traditional techniques of piped outfalls directly into streams and coastal areas often have no means of slowing increased water flows during storm events (thus causing erosion), or removing pollutants that kill vegetation and aquatic life;
- Aging infrastructure and insufficient capacity to handle increased run-off from new developments, can lead to flooding and increased erosion in receiving waters;
- In some cases, old combined sewage and

stormwater systems result in even more pollutants and can make outfall areas unsafe for swimming or human contact;

- The Kapiti Coast Best Practice Subdivision document illustrates how stormwater management can be integrated into the design of new areas. Significant ecological advantages can be achieved with the use of lakes, wetlands and green areas for flood plains, designed and developed to treat stormwater in an ecological manner that can also provide open space amenity for residents;
- In existing urban areas and some new development areas the use of ponds or swales etc, is not possible or appropriate and 'at source' methods need to be employed;
- The sealed carriageways of many existing streets are much wider than is necessary for their traffic volumes and car parking requirements;
- Landscaping and methods such as swales can be detrimental to the functioning of a street if not appropriate to the character and use of the street or not designed and located appropriately;
- In using filtration methods, such as rain gardens, care needs to be taken in ensuring correct soil porosity ensure effectiveness.

### KEY TREATMENTS INCLUDE:

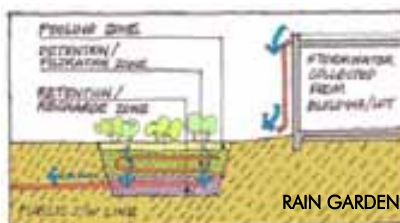
- **Reduce the amount of impervious surfaces**, but not to the extent that the pedestrian environment suffers;

- **Use paved strips for long driveways** instead of 2-3m wide concrete drives;
- **Retrofit existing streets to reduce stormwater impacts**, namely by increasing the amount of 'green' landscaping and minimising both carriageway widths and car parking;
- **Encourage permeable surfaces for car parking**. There are various new products currently being developed and tested;
- **Incorporate swales** into grassed central medians and verges where possible in relation to the use of the street;
- **Design landscaping features to also function as stormwater treatment elements**, such as rain gardens, ensuring the right mix and depth of soil is used;
- In areas where curb and channel systems don't currently exist, and there are no flooding problems, **don't change unproblematic areas**. Curbs and channels provide no stormwater treatment benefit. They help turn roads into a pathway for pollutants from tyres, brake-pad wear, lawns, and bare ground;
- Where green landscaping features aren't appropriate (this may be the case in town centres), underground technologies such as **sand filters and storage tanks can be effective**.

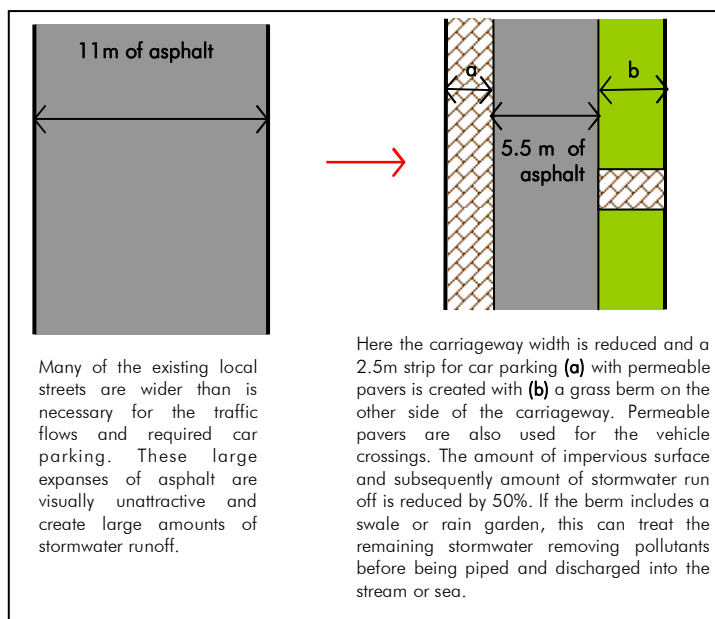
## STORMWATER - LOW IMPACT ENVIRONMENTAL DESIGN



These examples from the Kapiti Coast's Subdivision Best Practice Guide illustrate the basic principles of how a Rain Garden and Swale function. The size of the swale or rain garden, the amount of retention area required, and the size and necessity of the piped outlet all depend on the extent of surface area being treated and the existing soil type.



The construction of these need to be site-specifically designed to suit the street character and the required stormwater treatment. There is an increasing amount of research being undertaken on these and other new methods of treating stormwater, including impervious treatments for road surfaces.



### EXISTING CONDITION



This example shows a street that has a large expanse of asphalt. Being a busy road it will also collect a lot of heavy metal pollutants in its stormwater runoff which once collected are piped, untreated, to the receiving aquatic environment and dumped.

### POSSIBLE CONDITION



Combining low impact environmental design considerably reduces the amount of stormwater runoff leaving the area via pipes and prevents many heavy metal pollutants from entering the aquatic receiving environment.

- (1) Traffic lanes no wider than what is required for the traffic volumes.
- (2) Extended grassed berms reduce the amount of impermeable surface but still allow for future additions of a traffic or bus lane (or more parking) as required.
- (3) A permeable (or semi-permeable) paving surface is used for car parking areas, cycle lanes and footpaths.
- (4) A swale is created along the length of the wide berm to remove pollutants from stormwater before the remaining water is piped.
- (5) A cesspit is inserted into driveways that bridge the swale. Stormwater is collected here then flows into the swale.
- (6) Street trees can be designed into water treatment pits or larger rain gardens. The garden needs to be slightly lower than the car parking / road surface. Raised or split curbs can enable the water to flow into these areas. Properly constructed tree pits are used to contain the roots of trees and keep excess water out so it doesn't adversely effect the trees.



# APPENDIX 1 - STREETSCAPE ELEMENTS

## 1 - PRIVATE OUTDOOR LIVING SPACES

These are critical in providing basic on-site amenity for developments. They are relevant to the streetscape as:

- The appropriate layout of buildings and open spaces on a site will ensure both good street frontage and ample sunlight access;
- Private outdoor living spaces located at the rear or side of a house (depending on site orientation) are best as this allows the house to visually connect with the street. Outdoor living spaces located to the rear of the house remove the need for large solid fencing or walls along the front boundary, typically used to generate privacy;
- Land uses with strong visual connections to the street environment contribute to passive surveillance, making both the streetscape and land use itself safer places to be in;
- Land uses that directly connect to the street can reduce potential areas of public / private conflict, such as having visitors traversing (towards the front, 'public' door) through a 'private' area where children may be playing;
- Smaller, visually permeable front fences along street edges provide good frontage and should be promoted;



This example does not efficiently orient or connect to the street. Solid fencing is required to maintain privacy for residents, and the lack of any entrance or glazing connection to the street from the building precludes any legibility or passive surveillance between the public and private realms.



Here ample private space is available, located to the rear of a unit away from the street (it can directly abut a unit when facing north or be set back to avoid shadows from a unit when facing south). This allows the use of fences and vegetation to enhance private amenity without undermining the quality of the streetscape.

## 2 - LAND USES

Land uses directly interface with the street and are relevant to the streetscape as:

- Those uses that directly front and face a street with their main entrances clearly visible and accessible, often provide 'eyes on the street' via windows from a living space (lounge, dining, kitchen, family rooms) resulting in visual amenity, and safety benefits for both the land use and the street;
- Garages and carports that are set back behind the main face of land uses improve the amenity of streets and help avoid the low quality 'garage-scape' effect, where numerous blank garage doors dominate a streetscape;
- Convenient access between land uses and the streetscape encourages greater use of the street. Smaller trips defined by people seeing something interesting and engaging a short distance ahead (such as active land use edges supported by varied architecture), encourages them to continue;
- Garages should be located to the south of a site (except where the site itself faces south, in which case it should be set back behind the main face of a dwelling). This ensures usable outdoor living spaces for occupants.



This example illustrates a poor 'garage-scape' where garaging dominates and weakens the street. The garage doors are blank, repetitive, and unengaging, offering no amenity to street users. This outcome also offers no opportunity for passive surveillance between the uses and is clearly expressing a vehicle dominance.



Here an effective and consistent connection to the street is achieved. Garages have been suppressed by being set back behind the main dwelling face of each unit. Large areas of glazing face the street without impediment, meaning that people are able to passively observe the street. This also generates numerous safety benefits as would-be intruders are unable to exploit seclusion or easily avoid being seen in the vicinity of entrances.



### 3 - GREEN INFRASTRUCTURE

Green Infrastructure technology relates primarily to stormwater and impermeable surface management, as well as providing ecological corridors and bird / wildlife habitat. They are relevant to the streetscape as:

- Techniques such as swales, ponds, and rain-gardens are viable and appropriate within the streetscape as there are difficulties in comprehensively achieving and establishing these on a 'lot by lot' basis;
- When maintained and integrated with land use access, local amenity is enhanced;
- The use of semi-permeable pavers and other permeable surface can contrast with concrete and asphalt, creating greater visual interest within the streetscape;
- Wide-spread low impact technology can significantly reduce the quantity and improve the quality of water and materials discharging to the coast.



A contemporary swale incorporated into the streetscape. This technique is based on 'slowing' the movement of water so that as much as possible of the laden sediments and overall volume can be dealt with 'on-site'. Such tools can add visual interest and pedestrian amenity to the street. Making it visible can also help create an education benefit to the community to improve awareness of urban water issues.



The more conventional approach of piping all waters based on 'accelerating' the movement of water to large treatment plants or the coast, usually by hiding it to the rear of properties. This requires significant investment in infrastructure, is environmentally damaging, and is often poorly integrated with the urban form (as in this example where properties back onto a large culverted stream). Higher property values can result from investing in waterways as logical 'fronts' rather than 'backs' (refer to the Kapiti Coast District Council Subdivision Guideline).

### 4 - PEDESTRIAN PATHS, FURNITURE, LIGHTING & STREET QUALITY

This refers to the quality and variety of elements within the street environment. They are relevant to the streetscape as:

- Appropriately located elements (light poles, utility boxes etc.) maintain the utility or viability of footpaths;
- High quality treatments have appeal to pedestrians or cyclists and will be used, possibly by 'borderline' pedestrians - those people who may only be enticed away from vehicular use by the presence of a high-amenity alternative, rather than those with other motives (such as for fitness etc.) for walking or cycling;
- Helps synergise with adjacent land uses to improve the overall character and value of an area. Good streetscape character is a necessary pre-requisite for achieving community pride and identity, which in turn helps foster feelings of ownership and belonging or connection to a place;
- Footpaths must also be suitable for the disabled, those using mobility scooters, the elderly, and those with sensory or perception difficulties. This can require an even grade and surface, and particular attention at intersections;
- Street furniture (benches etc.) should be located at logical meeting points or areas where natural 'focal points' or junctions of pedestrian movement occur.



This example features the use of patterned paving stones along a main pedestrian route. People using this treatment perceive (due to the quality of the footpath and obvious investment in it) that the pedestrian realm has a higher priority or importance than vehicles.



This illustrates a lack of coordination or interest from different service providers. Despite ample room being available within the berm, the power pole has been installed directly in the centre of the footpath. This means that users with physical, perceptual, or other difficulties may have difficulty using this route.

## 5 - STREET TREES AND LANDSCAPING

Street trees perform a variety of essential services, from the softening and framing of land uses and road surfaces, to the maintenance of large-scale ecological corridors and habitat for birds. They are relevant to the streetscape as:

- The road reserve can become one of the few opportunities for the maintenance of bird and small fauna habitat (e.g. geckos) to survive. In more intensive residential subdivisions, there is limited opportunity for long-term, large-scale vegetation to establish;
- Street trees can help visually integrate and unify a range of diverse architectural forms within the streetscape, maintaining a particular character or 'feel';
- They can provide regular areas of shade for pedestrians in summer, and if deciduous trees, allow sunlight in winter periods;
- Daylight effects and 'dappling' of sunlight through a tree's foliage can add a further element to the character of the street and adjacent land uses;
- In environments with above ground electricity and telephone lines, trees and landscaping can significantly soften the monotony of plain poles along a street.

**Refer to Appendix 2 for further details.**



A lack of street trees along this route makes the streetscape look barren and uninviting. The repetition of power poles detracts further, giving the street a mechanical, 'concrete' feel that has little appeal to pedestrians.



The consistent use of street trees and a cycle lane here transforms the street into a high-amenity area offering visual interest, shade, colour, and a balance of organic 'life' into an otherwise concrete-dominated environment.

## 6 - CYCLE LANES

Sustainable transport solutions need to include provision for cyclists within the streetscape. The number of people choosing to cycle for recreation, commuting and fitness is expected to increase and is to be encouraged. Increased cycle usage gives rise to the need for improved cycle linkages and provision within the road corridor. The provision can take several forms:

- Cycle lanes painted on the road for high frequency routes, typically between 1.2m - 1.5m in width;
- 'Shared' with vehicular travel lanes or bus lanes if the lane is widened to around 4.3m;
- 'Shared' with pedestrian footpaths if the width is at least 2.5m (low frequency routes) or 3.0m;
- Separate 'off road' paths through parks or wide berms planted with trees where space permits;
- Wide shoulders for cyclists painted with white lines to guide vehicles away from the road edge, allowing for car doors opening where there is on-street parking;
- The focus is on creating a low-speed traffic environment where cyclists are noticed and given clear status as a viable road user.



Shared footpaths / cycleways can help emphasise important routes by creating a 'bolster' route than a single 1.5m wide strip for each mode otherwise might. It can also add additional amenity for pedestrians when cyclists are not using it (e.g. early morning or lunch time stroll).



Prominently located facilities supporting cycle use at destinations are a necessary accompaniment to greater use of cycle lanes along routes.

## 7 - CARRIAGEWAY

The carriageway has, since around the 1920's become, the most important element of the road reserve, sometimes to the exclusion of everything other than basic services. It has the following impacts on the streetscape:

- Large carriageway widths are typically a barrier to lateral pedestrian movements. Unnecessary width should be avoided, as it encourages faster speeds and lower attention from drivers. It also places (at the district wide level) considerable maintenance burdens on the District's ratepayers and the Council;
- Appropriate materials used in the carriageway can reduce considerably noise nuisance to adjoining land uses, cyclists and pedestrians. 'High-tech' surfaces that reduce vehicle noise considerably are becoming more common, including the use of recycled vehicle tyres that offer an additional environmental benefit;
- The differentiation of carriageway, on-street parking, cycle lanes and manoeuvring space through colour and material variation can help calm traffic and provide numerous safety benefits.



This carriageway is long, wide, and straight meaning that drivers will be able to travel at higher speeds along it without feeling that they are driving faster than may be appropriate given the land use context (family-residential). The suppression of any elements within the street can induce drivers to easily switch to 'auto-pilot' given the lack of stimulus to keep them alert.



Here the use of different textures and colours is used to make the road seem narrower, requiring greater attention from drivers and offering them regular stimulus to maintain attention and reduce speed. Care does need to be taken with the installation and maintenance of changes in surface textures. This applies particularly when considering cyclists and pedestrians in major, highly used routes.

## 8 - ON-ROAD PARKING SPACES AND BUS STOPS

The location of on-street parking spaces and bus stops has implications for the movement and flow of traffic, and the appeal and viability of land uses. They are relevant to the streetscape as:

- On-street parking spaces that 'cluster' around key uses such as parks and local shops, offer greater benefits than those dispersed across a road network;
- On-street parking spaces can act as 'buffers' for pedestrians along busy roads, making the footpath environment safer and more pleasant;
- Consideration of cyclist safety needs where necessary reduces parking / cyclist conflicts;
- On-street parking bays provide street landscaping opportunities which can soften the appearance of parked cars and help make the carriageway appear narrower (reducing vehicle speeds);
- Bus stops are most effective with good quality shelters which are carefully placed so as not to undermine adjacent land uses;
- Parallel and angled parking spaces require less length and can therefore be accommodated on narrower roads with existing parking constraints.



Here a bus stop has been installed over a footpath with no allowance made for passing by. Consequently the footpath becomes too narrow to safely or comfortably pass by - especially if pedestrians are coming from both directions - and people must step out onto the carriageway to pass.



This example provides angle parking adjoining a reserve. The approach reflects a 'reality-check' between the supply of parking and the actual likely places on the street where land uses will create demand for them.



## 9 - PEDESTRIAN AMENITIES

Specific characteristics or facilities intensify and emphasise the pedestrian appeal of certain specific locations. These are relevant to the streetscape as:

- The use of the public domain to help enhance private interests is common. Canopies provide an all-weather condition for window-shoppers to be 'caught', and enticed into a store. More recently, the use of footpaths to provide outdoor dining space for cafes and restaurants has become common, leading in some instances to an undue obstruction of passing foot-traffic;
- Specific elements and pieces of public art compliment the streetscape and help express high-amenity values to users;
- Appropriately marked and formed pedestrian crossings and refuges between traffic lanes are important in order to facilitate lateral pedestrian movement especially for the elderly and children;
- Footpath widths vary between different environments (typified by zoning changes) based on expected usage and purpose.



The use of interpretation or information panels helps improve the ability of pedestrians to move through and understand an environment. They can add another layer of quality to a streetscape especially if integrated with landmarks, heritage buildings/stories, or public art.



This example features a pedestrian canopy, bench, and other elements that allows shelter, comfort, and amenity for pedestrians. This can also help local businesses by widening the environmental conditions that can viably support shoppers. On rainy days, people can easily get out of a vehicle straight under cover.

## 10 - LANDMARKS AND LOCAL IDENTITY

This helps provide interpretive assistance to streetscape users, identifying key junctions, features, or destinations. These are relevant to the streetscape as:

- Additional height and key building features at main intersections can help users identify destinations from several hundred metres away;
- If comprehensively provided along a road corridor, emphasis points and features can create a 'trail' of destinations that pedestrians, upon reaching one point, have the next one revealed conceptually much like a string of landmarks;
- An effective tool is the use of very large-scale trees (compared to the main type of street tree) to demarcate the presence of local parks and reserves. It also helps ensure adequate bird habitat can be maintained within main urban areas;
- Landmarks can also help reinforce the identity of a particular place or neighbourhood, becoming important in anchoring local character.
- Local art provides a sense of identity and belonging.



Prominent treatments of key corners and landmarks can make the wider environment much easier for pedestrians to navigate, as well as making walking a more attractive experience.



The use of public art to help define and emphasise areas helps express the importance of particular locations to users.



## 11 - ADVERTISING & SIGNAGE

Advertising is essential for businesses to capture passing trade. Prosperous businesses are needed for a district to experience positive growth. They are relevant to the streetscape as:

- Advertising, (such as posters, sandwich boards and signs) should be provided for in a manner consistent with current District Plan provisions in order to enhance the visual character of the street, prevent visual 'clutter' and eliminate physical impediments for pedestrians, particular those with mobility difficulties;
- Managed signage can provide for ample marketing without dominating the streetscape along a business 'ribbon' or 'strip'. As passing vehicles are intended as the main source of custom, businesses can start competing with each other leading to larger and larger signs;
- The use of window displays are an important method of marketing for businesses and are very effective if targeted solely at pedestrians without targeting vehicles as this often requires the painting out of large areas of windows, reducing them to blank surfaces;
- Directional and road safety signage is critical and should be unobstructed by unnecessary street clutter.



This example shows how excessive signage dominates and undermines a streetscape. The signs, due to their size, are clearly oriented at passing vehicles and accordingly dominate the pedestrian environment.



This example shows a directory sign that gives all businesses equal advertising advantage if repeated along a streetscape. It does not dominate the streetscape or detract from pedestrian experience along the footpath.

## 12 - TRAVEL PATTERNS AND BUSINESS PROSPERITY

Business prosperity is often heavily based on the travel patterns or the 'movement economy' of customers, resulting from the greater mobility made possible by the high use of vehicles. A viable business catchment is often dependent on mobile labour and consumers as the more people (by car or by foot) passing your front door, the more potential customers. They are relevant to the streetscape as:

- Some uses (such as Large-format retailing) that almost exclusively rely on the use of private vehicles, will often not 'naturally' contribute to good streetscapes because they don't need any connection to the street to prosper. Council involvement in the layout of buildings and parking spaces for this land use can be necessary to ensure a good streetscape is achievable;
- The increasing viability of 'working from home' and home-based small businesses can help to avoid 'dormitory suburbs' that are empty all day. However with this comes the propensity for change, including increased signage and the demand for more mixed use environments within easy walking distance;
- The conversion of houses (usually along prominent traffic routes) into small offices can be resisted by communities but can equally be one of the most effective methods of the preservation and restoration of 'character' houses in established suburbs.



In this example car parking has been provided at the front, to maximise convenience for drivers. This pushes the building well back away from the street, giving pedestrians no opportunity to conveniently access the uses.



This example is of a small business that has set up in an old house, necessitating a high-quality refurbishment to convey a prosperous image to customers. This can greatly add to the visual quality of a streetscape.

### 13 - LOADING, SERVICING, AND WASTE

These are essential for all land uses, although are clearly more of an issue (due to quantity and scale) for business uses. These are relevant to the streetscape as:

- Wastes stored away from property frontages prevent visual and often odour nuisance on the public realm. This assists in maintaining the amenity and character within an area;
- Loading spaces which are appropriately formed, displayed and located (either on or off street) can maintain footpath and pedestrian amenity, particularly for those dining within the streetscape (e.g. café outdoor seating);
- The use of service lanes can greatly help the 'public' qualities along a front street, and when designed correctly prevent both de-facto fronts for uses and alternatively unsafe rat-runs for through traffic occurring;
- Reliance on servicing or delivery times (such as outside business hours) can be less effective than properly designed and provided storage and collection areas, as service vehicles can be held up, late, or cancelled. Ensuring delivery vehicles arrive during considerate hours will ensure adjacent residential uses are not undermined by noise.



This finer grained example provides a recessed loading area suitable for a van or small truck. A good frontage is still achieved.



This land use is too large for convenient servicing from the street, meaning that the road gets blocked off during loading periods. On-site loading should have been provided as most servicing requires a vehicle larger than a van or small truck.

### 14 - OFF-ROAD PARKING

This is often necessary for both residential and business uses and is relevant to the streetscape as:

- Adequate provision of off-street parking can prevent the overload of a streetscape and the undermining of business viability (due to customers driving away in frustration due to parking difficulties);
- On-street parking for businesses is commonly located along a frontage between a building and the street, indicating to drivers that there is a parking space for them. This however can alienate pedestrian access from the street (often no actual connection from the door to the footpath is provided), and undermines the ability of the land use to connect with the street;
- Integrated/ shared loading and parking facilities for adjacent shops;
- Provision for residential overflow parking should be incorporated into streetscape design to prevent informal parking on grass berms, visually detracting from the streetscape, damaging street trees or landscaping, and leaving muddy tread marks (in winter);
- Car parking areas that have been designed to avoid large areas of asphalt, and are visually broken by the use of trees and landscaping create positive settings.
- Provision of cycle racks and bike storage facilities help encourage cycle use by workers and customers, reducing the dependency on and the provision of off-road parking.



This example provides on-site car parking at the front, which is then used by the company's vehicles. Customers and staff must mount the berm and park illegally, partially obstructing the footpath.



This building provides a good parking solution, with only a single aisle of visitor parking to the front. More parking spaces have been provided in recessed areas and to the sides and rear.

## 15 - SERVICES AND INFRASTRUCTURE

These help to provide growth and development opportunities whilst servicing existing developments within town centres. Services and infrastructure are commonly located along existing transport routes and include telecommunication lines, power lines, wastewater, water supply, stormwater pipes and gas supply. These are relevant to the streetscape as:

- Services and infrastructure below ground significantly improves amenity levels associated with the streetscape, more so in residential environments;
- Upgrading and general maintenance of underground services is a costly exercise, particularly where pipes need to be re-laid or replaced. Additionally digging up the road to gain access to underground services can lead to disruption in the transport network and unsightly reinstatements;
- New road developments and future upgrades of existing roads should seek where possible to underground existing services and infrastructure and locate these where future access will cause minimum disruption to the wider environment.



Environments that incorporate underground services with suitable capacity at the time of subdivision avoid the visual clutter associated with power lines as well as providing a high quality road network that does not need to be frequently modified as infrastructural demands increase further a field which put pressure on the existing services.



This residential environment depicts a carriageway that has been dug out to upgrade existing services found below. Above ground power lines detract from the overall amenity associated with the area.

## 16 - TRAFFIC CALMING MEASURES

Within all roading environments there is the possibility of establishing suitable traffic calming measures, intended to slow traffic, improve safety and provide variation within often bland roading environments. Historically roads have been widened and straightened to accommodate more and faster vehicle traffic. These changes facilitate driving but often degrade conditions for walking, cycling, and for nearby residents. To counter this traffic calming measures are becoming increasingly common particularly within residential areas. These are relevant to the streetscape as:

- Traffic calming measures often incorporate landscaping, providing a valuable opportunity for increased amenity within sometimes bland environments;
- Traffic calming tends to provide the greatest benefits to pedestrians, cyclists and local residents, while imposing the greatest restrictions on motorists who drive fast;
- A variety of traffic calming measures are available, these should be implemented on a 'case by case' basis dependant on the characteristics of the street and desired outcomes sought;
- Reducing traffic speeds and volumes can reduce the number and severity of vehicle crashes, particularly those involving pedestrians and cyclists;
- Traffic calming can have cumulative impacts with other traffic management techniques within environments that support walking, cycling & public transport.



Within residential environments alternatives to traditional speed bumps are preferred, among them raised platforms which incorporate a number of positive design principles, including surface differentiation, and pedestrians safety.



An over-reliance on speed bumps to deliver traffic calming can significantly detract from the functioning and purpose of the road on which they are located.

Photo Source: [www.ciggyfree.com](http://www.ciggyfree.com)

## APPENDIX 2 - TREE SELECTION GUIDE

### SPECIES SELECTION FOR SPECIFIC SETTLEMENTS:

Due to the nature of the dominant settlements within the Kapiti District (often having both coastal and inland characteristics), tree species selections are critical in order to maintain and enhance existing street character, provide consistency of green networks and ensure the appropriate species with the greatest chance of survival are planted. The following are suggested signature trees that have been identified for the major retail and recreational destination streets within the Kapiti District. Other trees may be suitable.

#### Otaki -

Totara, Rewarewa, Tawa, Kahikatea, Puketea, Ngaio, Kohekohe

#### Waikanae -

Kowhai, Kohekohe, Totara, Kareka, Nikau, Southern Rata, Kahikatea

#### Paraparaumu / Raumati -

Titoki, Kahikatea, Karaka, Kanuka, Nikau, Kohekohe, Southern Rata

#### Paekakariki -

Ti Kouka (Cabbage Tree), Kanuka, Manuka

### 'URBANFORESTRY' AND CARBON SINKS:

The development of 'urbanforestry' initiatives within the Kapiti District should be promoted as in time more and more emphasis is expected to be placed on climate change and emissions. "Urbanforestry" refers to the network of street trees and plantings typically found on Council controlled land, such as the road berm and parks and reserves. Although a relatively new concept, where possible 'urbanforestry' should be promoted as a mechanism to offset development effects generated by current and future growth and to act as a carbon sink both on public and private land. Enforcing this concept will not only show the Council is committed to and taking a lead in sustainable principles it will also ensure increased amenity values within urban environments typically associated with street trees and

landscaping. Future developments that require the clearing of existing vegetation for example can be mitigated by requiring landscaping plans or financial contributions in order for the Council to establish urbanforestry on behalf of developers. The Council should keep a clear and accurate record of the number of street trees planted within its own land in order to offset effects of its own developments in order 'prove' sustainability. This will ensure development effects are not detracting from the sustainable purposes sought by the Council and holistically combat both climate change and emission levels.

### PRODUCTIVE TREES

The Council is encouraging the use of productive trees in appropriate places within streetscapes. Productive trees provide a contrast to other street trees and provide a valuable food source to residents. Productive trees should be interspersed with other street trees to provide an interesting and varied streetscape.



## SUITABLE STREET TREES - NATIVE SPECIES:

**Kohekohe** - *Dysoxylum spectabile*  
**Manuka** - *Leptospermum scoparium*  
**Kanuka** - *Kunzea ericoides*  
**Nikau** - *Palmae Rhopalostylis*  
**Karaka** - *Corynocarpus laevigatus*  
**Rewarewa** - *Knightsia excelsa*  
**Totara** - *Podocarpus Totara*  
**Kowhai** - *Sophora microphylla*  
**Ti Kouka (Cabbage Tree)** - *Cordyline australis*  
**Ngaio** - *Myoporum laetum*  
**Kahikatea** - *Podocarpus dacrydioides*  
**Rimu** - *Dacrydium cupressinum*  
**Ribbonwood** - *Plagianthus regius*  
**Pohutukawa (compact variety)** - *metrosiderous*  
**Titoki** - *electryon excelsus*  
**Horoeke (Lancewood)** - *pseudopanax lessonii*  
**Porokaiwhiri** - *hedycorya arborea*

## SUITABLE STREET TREES - EXOTIC SPECIES:

**Willow Myrtle** - *Agonis flexuosa*  
**Silk Tree** - *Albizia julibrissin*  
**Paperbark Birch** - *Betula papyrifera*  
**Chilian Fire Bush** - *Ceris Siliquastrum*  
**Manna Ash** - *Fraxinus ornus*  
**Ash** - *Fraxinus sp*  
**Silk Tassel Bush** - *Garrya Elliptica*  
**Honey Locust** - *Gleditsia triacanthos*  
**Magnolia** - *Magnolia sp*  
**Michelia** - *Michelia doltsopa*  
**Mountain Ash / Rowan** - *Sorbus sp*  
**Chinese Elm** - *Ulmus parvifolia*  
**English Elm** - *Ulmus procera*  
**Alder** - *Almus glutinous*

## PRODUCTIVE TREES:

**Macadamia** - *Macadamia*  
**Fruiting Crab Apple** - *Malus*  
**Walnut** - *Juglans*  
**Cherry Plum** - *Prunus cerasifera*  
**Olive** - *Olea*

## LOW PLANTING FOR STREETSCAPES WHERE ADJACENT LAND USES, VISIBILITY & CPTED ARE NOT RELEVANT:

**Griselinia** - *Griselinia littoralis*  
**Coprosma** - *Coprosma tenuicaulis*, *Coprosma rigida*, *Coprosma propinqua*, *Coprosma robusta*, *Coprosma repens*  
**Olearia** - *Olearia lacunosa*  
**Whiteywood** - *Melicytus ramiflorus*  
**Ake Ake** - *Dodonaea*  
**Tarata (Lemonwood)** - *Pittosporum Eugenioides*  
**Hoheria** - *Populnea*

## NATIVE PLANTS FOR STORMWATER, RAIN GARDENS & RIPARIAN EDGES:

### Rushes

**Twig Rush** - *Cladium mariscoides*  
**Baumea** - *Baumea rubiginosa*  
**Jointed Rush** - *Juncus articulatus*  
**Wiwi** - *Juncus gregiflorus*  
**Giant Rush** - *Juncus ingens*  
**Knobby Club Rush** - *Isolepis nodosa*

### Sedges

**Purei** - *Carex dissita*  
**Pukio** - *Carex secta*

### Flaxes

**Harakeke (New Zealand Flax)** - *Phormium tenax*  
**Mountain Flax** - *Phormium cookianum*

## SUITABLE STREET PLANTS:

### Low Plants / Shrubs

**Swamp Kiokio** - *blechnum novaezelandiae*  
**Swamp Coprosma / Huki huki** - *Coprosma sp*

Note: these are lists of suggested trees and shrubs that are suitable. Other trees and shrubs may be appropriate.