



WAIKATO
URBAN DESIGN GUIDELINES

RESIDENTIAL SUBDIVISION

2018

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1. PURPOSE OF THE WAIKATO DISTRICT RESIDENTIAL SUBDIVISION GUIDELINES

These guidelines provide direction for the community, landowners, developers and Council on how to achieve residential subdivision (including rural-residential subdivision) that responds to and promotes Council and community aspirations for sustainable growth.

Through the development of the Waikato District Plan, Waikato District Council has identified a variety of potential issues facing the district as it grows, including those relating to residential subdivision and development. Based on best practice design principles, the guidelines seek to build on the Council's objectives and policies within the Waikato District Plan, and form a tool to implement those policies. In this regard, the guidelines are intended to assist in the planning process by providing landowners and developers with a clear understanding of the design outcomes sought for residential subdivision throughout the district.

Waikato District Council's Commitment to Good Urban Design Outcomes

The NZ Urban Design Protocol is a voluntary agreement between signatories, of which the Waikato District Council (5 October 2011) is one. It commits the signatories to specific urban design initiatives intended to raise the quality of urban design within their town or city. While non-statutory, the Urban Design Protocol provides a mandate for the consideration of high quality urban design.

The Protocol identifies seven essential design qualities for signatories to consider as part of the day to day planning and design of their urban environments.

1. **Context** – seeing that buildings, places and spaces are part of the whole town or city;
2. **Character** – reflecting and enhancing the distinctive character, heritage and identity of our urban environment;
3. **Choice** – ensuring diversity and choice for people;
4. **Connections** – enhancing how different networks link together for people;
5. **Creativity** – encouraging innovative and imaginative solutions;
6. **Custodianship** – ensuring design is environmentally sustainable, safe and healthy; and
7. **Collaboration** – communicating and sharing knowledge across sectors, professions and with communities.

These qualities are considered appropriate guiding principles for residential subdivision within the Waikato District and have informed the preparation of these guidelines. In particular, each of outcomes and the supporting guidelines set out in this document can be linked back to one or more of the above qualities and, in doing so, seeks to enhance the overall quality of the District's urban areas as they continue to grow in the future.



2. HOW TO USE THE GUIDELINES

These guidelines are set out under key topic headings and structured to provide clear guidance in relation to the outcomes sought and design guidelines for achieving those outcomes. The outcomes sought explain the end result that Council is seeking to achieve, in response to the objectives and the policies of the plan; while the design guidelines outline recommended design approaches to achieve the outcomes sought. Each set of guidelines is supported by precedent images and diagrams to further assist in understanding how the outcome can be achieved.

Supporting Design Statements

As part of a subdivision application, a design statement shall be submitted to Council, in accordance with the information requirements outlined in Chapter 19 of the District Plan. This statement shall:

- Outline the design justification of the proposal
- For larger scale subdivision (10 lots or more), a site and contextual analysis
- An assessment against the outcomes sought and design guidelines within this document
- Include supporting plans and cross sections, as required to illustrate how the proposal responds to the applicable outcomes sought and design guidelines.

Proposed development should be consistent with any relevant district plan provisions (objectives, policies and rules), including any relevant structure plan that may apply to the area being developed.

Every application will be different and not all the outcomes sought and design guidelines will be relevant to the assessment of the proposed subdivision application. Each subdivision will be assessed on its merits taking into account its context and specific attributes.

A degree of flexibility in relation to how the proposals respond to the guidelines is reasonable and to be expected. What is important is that the outcomes sought are clearly achieved and that this able to be demonstrated in the proposal.

Subdivision Size

It is recognised that larger subdivisions will likely require more detailed assessment, including their relationship with the wider context. Accordingly, the applicability of the guidelines in this document have been broken down into the following categories (applicable to both residential and rural-residential subdivision):

Small (S) scale subdivision: Any subdivision of between 2 and 5 lots.

Medium (M) scale subdivision: Any subdivision of between 6 and 9 lots; and/or any subdivision including a public street.

Large (L) scale subdivision: Any subdivision of 10 lots or more; and/or any subdivision including a public street; and/or any subdivision including public open space.

Other Relevant Supporting Information

Waikato District council will develop master plans for towns. Master plans will enable the community to take a holistic and visionary look at each town that has been marked as a growth node. Master plans will take a multi-disciplinary approach where consideration will be given to existing developments, and how they will be transformed to meet long-term growth needs and the needs of each community. These design guidelines will inform the master planning approach; furthermore, each master plan will refine and provide distinct detail on outcomes sought for each town to complement the outcomes sought in these design guidelines.

The following references also provide further useful information relating to various aspects of subdivision design:

Crime Prevention through Environmental Design (CPTED)

National Guidelines for Crime Prevention through Environmental Design in New Zealand, November 2005 (<http://www.mfe.govt.nz/publications/towns-and-cities/national-guidelines-crime-prevention-through-environmental-design-new>).

Universal Access Design

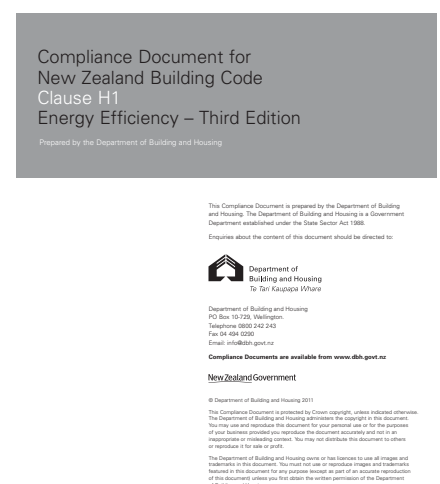
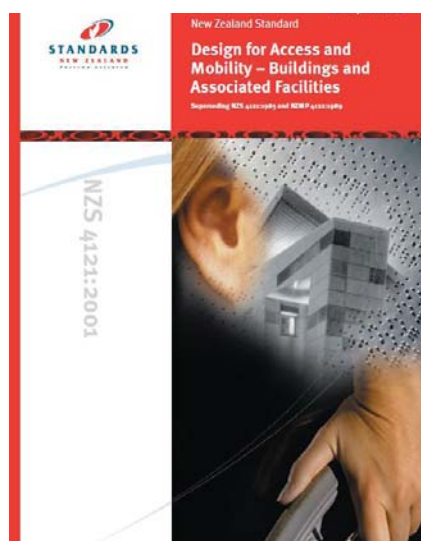
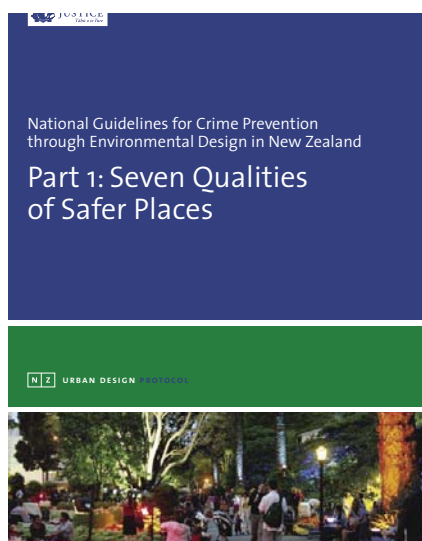
New Zealand Standard: Design for Access and Mobility – Buildings and Associated Facilities (<https://www.standards.govt.nz/assets/Publication-files/NZS4121-2001.pdf>).

Energy Efficiency

Compliance Document for New Zealand Building Code: Energy Efficiency (<https://www.building.govt.nz/assets/Uploads/building-code-compliance/h1-energy-efficiency/asvm/H1-energy-efficiency-3rd-edition-amendment-2.pdf>).

Street Trees

Waikato District Council's District Tree Policy addresses issues relating to the recognition, strategic planning, management and long-term continuity of the tree resource within Waikato District, and provides policy in relation planting, maintenance, removal, subdivision and development, and planting within the road corridor.



3. SITE AND CONTEXTUAL ANALYSIS

For large scale subdivision (10 lots or more), a site and contextual analysis is required to be submitted by the applicant as part of the overall design statement, to assist in understanding how the proposal responds to the specific site characteristics and overall site context.

As a minimum, this shall include one or more A3 maps or aerials, along with supporting plans and notes, to adequately illustrate the elements outlined within Section 3.2 (Outcomes Sought), as commensurate with the scale and significance of the proposal.

3.1 Overview

Careful site and context analysis can directly benefit future residents through better quality outcomes which promote sustainability, functionality and amenity.

3.2 Outcomes Sought

A site and contextual analysis that assists to:

- Illustrate how the proposed subdivision responds to:
 - Surrounding land uses, including residential, commercial and open space
 - Surrounding connections, including walking, cycling and vehicular networks
 - Any site specific elements that contribute to local sense of place and identity, e.g. native vegetation stands, significant trees, cultural sites, notable views
 - Underlying natural and cultural character elements that can be integrated into the proposed subdivision design, e.g. drainage patterns, topography and vegetation, sites of significance to Maori
 - Areas that are susceptible to natural hazards.
- Provides a level of detail that corresponds with the scale and significance of the potential effects that the subdivision and any associated or subsequent development may have on the environment. In rural and/or larger subdivisions, the response to land forms and natural features will have more weight than in urban contexts and/or smaller subdivisions.
- Identifies the constraints and opportunities within and surrounding the site context, including a minimum 800m radius from the site boundaries.
- Identifies and, where relevant, provides detail of how the proposed subdivision maximises the potential positive outcomes over the site, and avoids, remedies or mitigates adverse effects.

3.3 Guidelines for site and contextual analysis

Landform and vegetation

- Provide a topographical plan of the site, identifying any features such as hills, valleys, natural features, wetlands, springs and streams to be protected and retained.
- Identify prominent ridges and hill tops where development may be overly visible from surrounding areas.
- Identify those areas most suitable for dwellings and ancillary buildings – accessible and not too steep.
- Identify prominent views, including those to coastlines or other waterbodies, prominent land marks and natural areas. These may include existing vistas down existing streets, or views from elevated areas of the site.
- Identify areas not suitable for development including areas more prone to erosion or flooding.
- Where applicable, identify the most suitable locations to locate stormwater management areas, including existing and possible stormwater paths and any downstream capacity issues (note: this will be a high-level schematic only – a high level summary from an engineer and not a detailed assessment).
- Identify significant vegetation within the site and adjoining area, including native vegetation and significant trees – and outline how these will be retained or integrated into the development.

Land use and connectivity

- Identify public open space including sports fields, playgrounds and other areas of formal and informal open space within the surrounding area.
- Identify the surrounding walking, cycling, vehicular and public transit networks and any potential opportunities for connections.
- Identify any community amenities in the neighbourhood, including neighbourhood shops, community facilities, schools, parks, libraries and other community facilities.
- Identify adjoining land uses that are likely to detract from the amenity of the future residents/users, e.g. industrial land uses.
- Identify known archaeological and/or heritage sites, including their significance.
- Where staging is anticipated, provide an outline of the staging approach, including how individual stages will be integrated with one another over the course of the project.

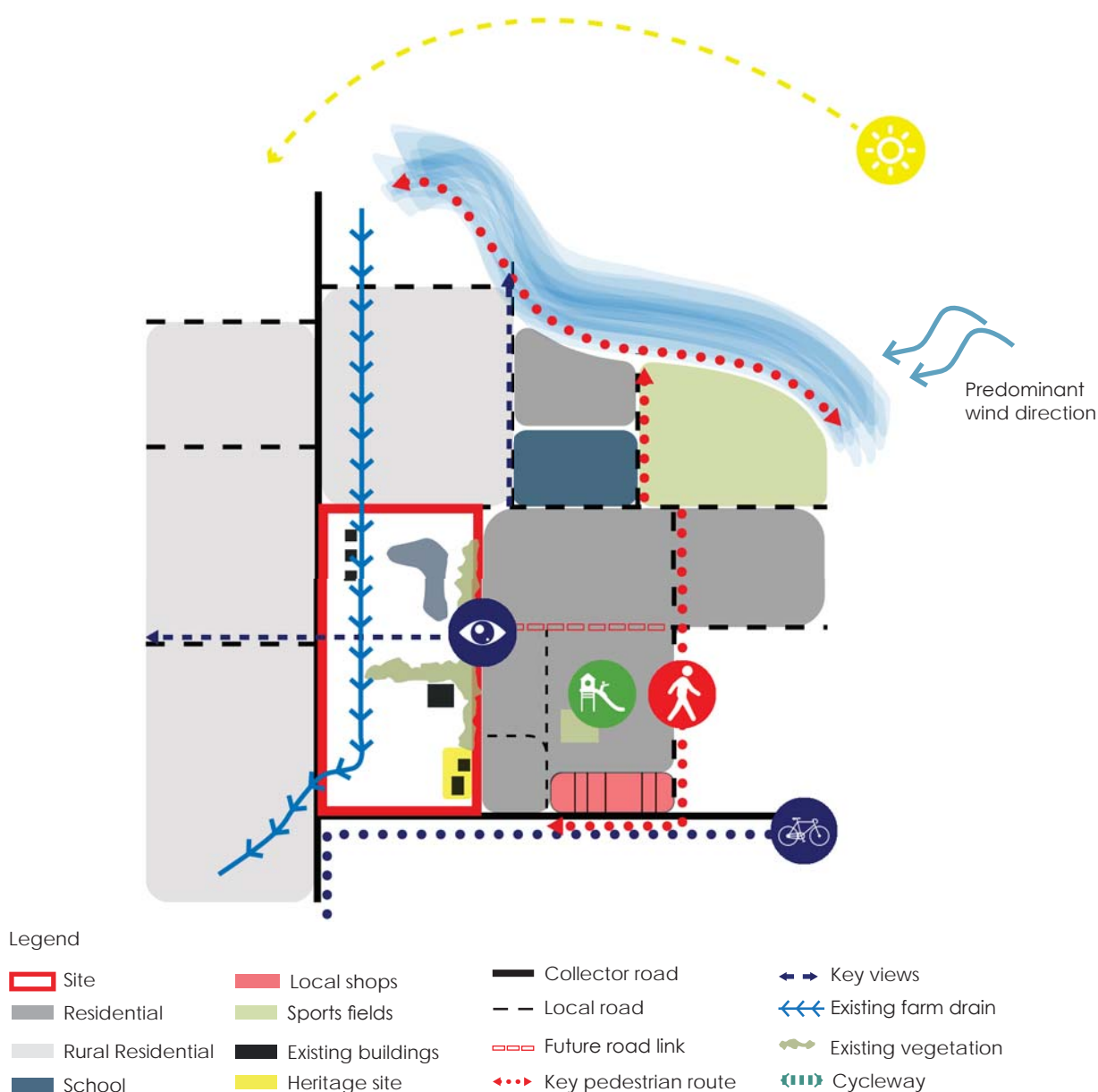


Figure 1. Diagram showing elements that should be considered as part of residential subdivision analysis; the level of analysis will commiserate with the size and location of proposed development.

4. CONNECTIVITY AND MOVEMENT NETWORKS

4.1 Overview

Neighbourhoods that have a clearly defined street hierarchy, promote multi-modal connections and link people to destinations have the potential to reduce travel times, reduce vehicle reliance, and promote positive economic, social and environmental outcomes.

Using streets and other movement networks to create a positive relationship between vehicles, pedestrians, cyclists and other modes of transport also helps to create a safe, inclusive and vibrant environment that encourages people to use the public realm.

4.2 Outcomes Sought

- Subdivision design that promotes walkability and pedestrian safety
- Increased accessibility and connectivity of public spaces, employment areas, services, facilities, and amenities, both within the subdivision and the wider context.
- Walkable, safe communities that are conveniently connected to the surrounding context, providing access to surrounding community amenities.
- Clear orientation and signage aided by a logical layout, street hierarchy, street cross sections and pedestrian network.

4.3 Guidelines for Connectivity and Movement Networks

Connectivity

S	M	L	Guidelines
✓	✓	✓	Where staging is anticipated, outline how individual stages will be integrated with one another over the course of the project to ensure multi-modal connectivity.
✓	✓	✓	Avoid cul-de-sacs. Where cul-de-sacs are unavoidable, minimise their length and consider pedestrian/cyclist linkages to the surrounding movement or open space network (to provide shortcuts and a choice of routes).
✓	✓	✓	Make allowance for connections with existing and future public transport nodes.
	✓	✓	Provide good pedestrian, cycling and vehicular links to existing and proposed community amenities and services, including local shops, community facilities and public open space.
		✓	Design a street layout that is easy for people to orientate themselves within, i.e. a legible, simple, logical and connected layout with a clear street hierarchy
		✓	Adapt the street layout to reflect the underlying topography. An irregular grid pattern may be the most appropriate layout to provide a more naturally integrated appearance and promote spatial variety.
		✓	Increase connectivity and permeability by: <ul style="list-style-type: none"> - Establishing walkable blocks averaging 200m by 80m, based on a formal or informal grid wherever possible - Facilitating the creation of new connections to existing and future development, mid-block spaces, and green linkages, for walking, and particularly where larger block sizes are proposed. (Excludes rural residential development).



Figure 2. Establish walkable blocks, based on a formal or informal grid; where appropriate, provide short mid-block connections / green links, overlooked by adjoining development.

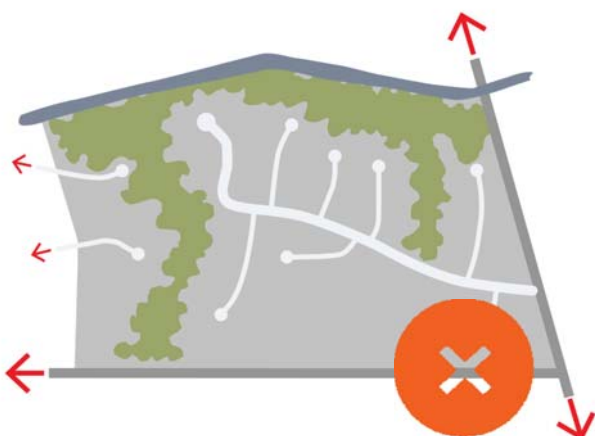


Figure 3. Avoid cul-de-sacs as far as possible.

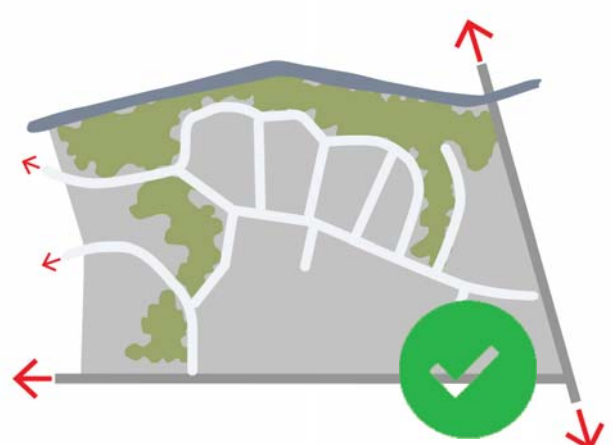
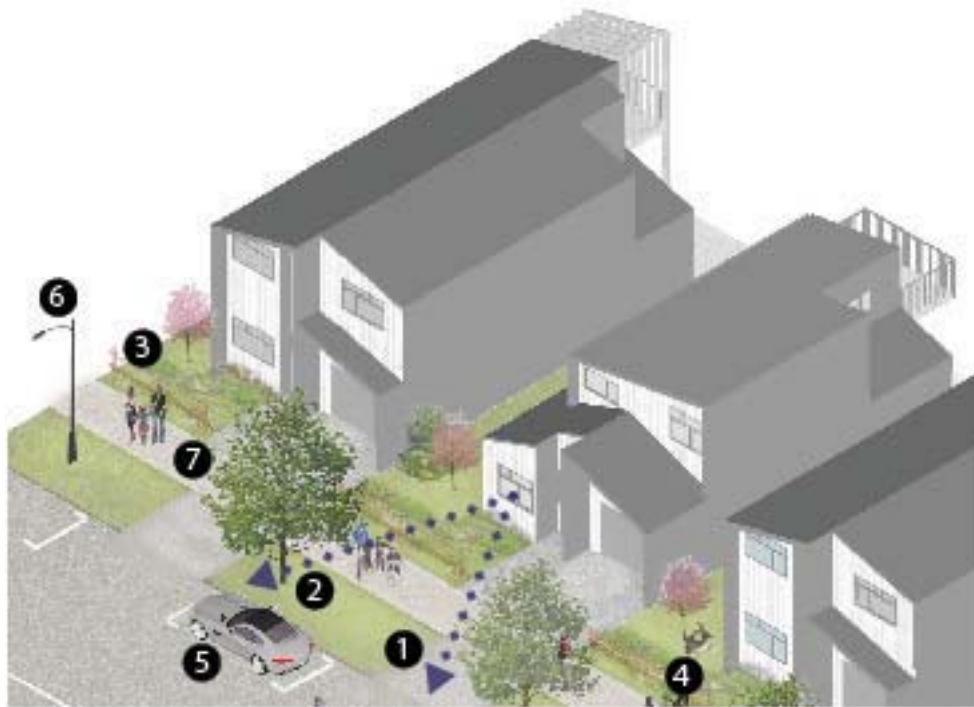


Figure 4. Provide a connected and legible street layout.

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Streets and other Movement Networks

S	M	L	Guidelines
✓	✓	✓	Design pedestrian access ways in a manner consistent with 'Crime Prevention through Environmental Design' (CPTED) principles, facilitating passive surveillance and adequate lighting as far as possible. In particular, limit fences to 1.2m in height along pedestrian walkways and open spaces, maintaining clear sight lines between the public realm and adjoining land uses.
✓	✓	✓	Include universal access design principles at all stages of development. Universal design enables a wider variety of residents and visitors to use and enjoy the public realm, and improves the overall design quality and functionality (refer to relevant New Zealand standards for universal access).
✓	✓	✓	Where rear lots are unavoidable, plan lots to have shared/combined vehicle access, whereby the design will: <ul style="list-style-type: none"> - Maximise safety for pedestrians, by providing dedicated pedestrian access (demarcated through materials, colours and/or texture) and good sight lines for vehicles - Minimise fence heights and/or maximise transparency of boundary treatment - Minimise disruptions to the street amenity by minimising vehicle crossing widths - Minimise the need for vehicular backing manoeuvres (e.g. by providing safe turning areas within the site).
✓	✓	✓	Facilitate continuity of footpath design (i.e. levels, materials, surface finishes, colours etc.) over vehicle crossings to clearly give preference to pedestrians.
✓	✓	✓	- Ensure adequate eye-to-eye visibility is maintained for road users and pedestrians at intersections and driveways by ensuring that fences, vegetation and other visual barriers are minimised.
✓	✓	✓	Provide adequate lighting level in publically accessible spaces (refer to the AS/NZS 1158 lighting standards), including private lanes, for the visibility and safety of residents.
	✓	✓	Design safe, functional roads, which incorporate appropriate carriageway widths, landscaped berms and street trees, car parking, lighting and adequate footpaths and cycleways. Road layout should be consistent with Council infrastructure and district plan requirements, which also responding to the urban design principles outlined in Figure 5.
	✓	✓	Take into account the need for services and for accessing those when designing the street. Services are preferably positioned under the public street landscaped strip.
		✓	Restrict the use of roundabouts by exploring other intersection designs – as roundabouts can be more difficult for pedestrians and cyclists when crossing roads.



1. Views onto street maintained
2. Planted berm – street trees evenly distributed and with high canopy (2m clearance)
3. Narrow planted strip for services/ low shrubs/ grasses
4. Low hedges, walls or fences to street frontage
5. On street parking available on local roads
6. Street lighting (separated from tree canopy)
7. Generous footpath for pedestrian movement

Figure 5. Key elements of residential streetscape – providing a safe and attractive place for all street users

5. NEIGHBOURHOOD CHARACTER

5.1 Overview

Neighbourhoods should be designed to be distinctive and memorable, as well functional and safe. Each subdivision design has the potential to respond to the site and surrounding character elements. Large subdivisions have the potential to create neighbourhoods exhibiting a unique identity that is appropriate for its context and legible as a community.

5.2 Outcomes sought

- Residential subdivision contributes to establishing positive character outcomes through a design that is contextually appropriate and promotes local characteristics to create a strong community identity.

5.3 Guidelines for Neighbourhood Character

S	M	L	Guidelines
✓	✓	✓	Recognise and celebrate cultural and natural heritage elements by integrating them into the subdivision layout (such as may include within open space) and making reference to these elements in the detailed design. This may include: <ul style="list-style-type: none"> -Existing vegetation, e.g. native bush, riparian areas or significant tree - Natural features such as hillocks, wetlands, springs or streams - Archaeological sites - Sites of significance to Maori - Heritage sites.
	✓	✓	Provide variety within the structuring elements of the subdivision including, where applicable, block size and shape, a hierarchy of vehicle and pedestrian movement networks, landscape treatment and the size, shape and use of open spaces.
	✓	✓	Celebrate prominent landmarks and landforms as visual references.

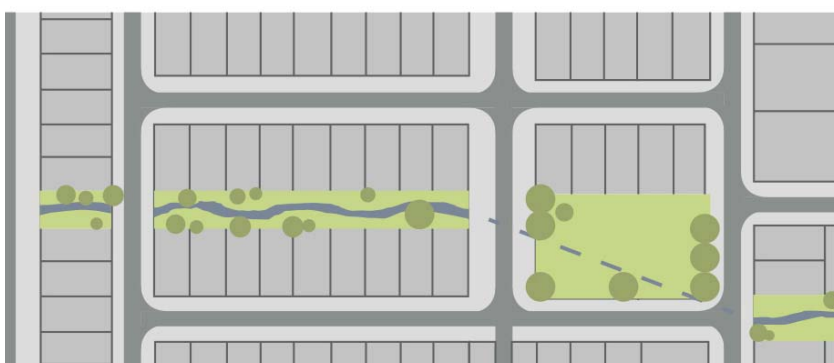
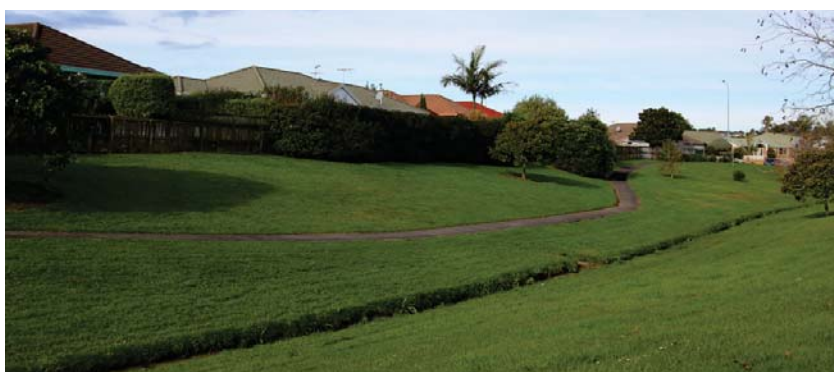


Figure 6. Avoid facing backs of development on to existing streams and development.

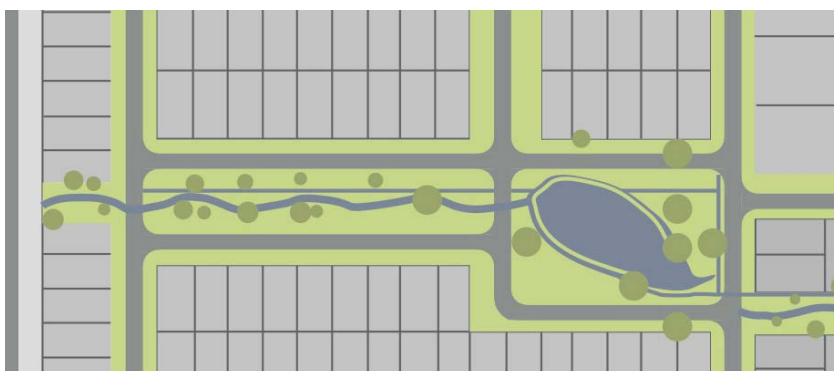


Figure 7. Integrate streams and vegetation into development, with dwellings and streets overlooking these areas, to assist in passive surveillance and activation.

6. RESIDENTIAL BLOCK AND STREET LAYOUT

6.1 Overview

Well-designed block and streets layouts that respond to the underlying topography and surrounding context assist to maximise connectivity as well as enhancing safety, amenity and local character.

6.2 Outcomes sought

- Lots oriented to maximize solar access.
- Lots oriented so that dwellings will address streets and public places.
- Distributed density, with a mix of useable lot types, sizes, uses and activities.
- A resilient design that can easily to adapt to existing and future services and facilities.

6.3 Guidelines for Residential Block and Street Layout

S	M	L	Guidelines
✓	✓	✓	Minimise the need for extensive earthworks, and manage the cut and fill on site.
✓	✓	✓	For south-facing lots, provide opportunity for north-facing backyards for outdoor living. These sites can be narrower and deeper than north facing sites. North facing sites shall be wider and shallower to have their outdoor living on the eastern or western side, and allow for sunlight into the house (refer Figure 8). (Excludes rural residential development).
✓	✓	✓	Design a block layout that enables house fronts to face other house fronts across a public street, and backyards to face other backyards. This is the best site layout to achieve an outcome where dwellings address the street without sacrificing the privacy of the residents. (Excludes rural residential development).
	✓	✓	Consider how rubbish is removed by providing manoeuvring space to enable rubbish trucks to access bin collection areas.
		✓	Align roads north/south and lots east/west where possible. (Excludes rural residential development).
		✓	Consider the placement of larger and smaller lots in relation to other features – i.e. open spaces, neighbourhood centres. Locate the smallest lots close to open spaces and other amenities such as views and outlook. (Excludes rural residential development).

Coastal environments and water bodies

Coastal environments comprise of open spaces that need special considerations to preserve their public character, amenity and minimize the consequences of eventual natural hazards.

S	M	L	Guidelines
✓	✓	✓	Provide building platform locations such that dwellings and ancillary buildings are located away from the coastal edge or water bodies, to preserve public visual amenity / views.
		✓	Separate the coastal areas and, wherever possible, water bodies (e.g. rivers, streams and wetland areas) from private lots through provision of a public road / walkway, to emphasize a public interface and provide passive surveillance.
		✓	Maximize views and accessibility to coastal areas and water bodies through a permeable movement network and connected public open spaces.

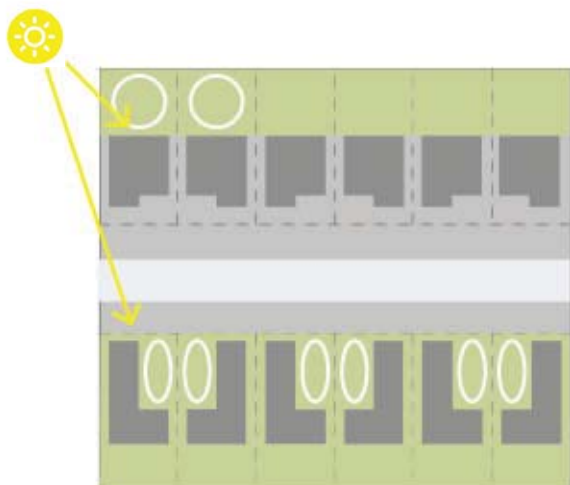


Figure 8. Provide opportunity for north facing private open space for streets orientated east-west.



Figure 9. Provide east or west facing open space for streets orientated north-south

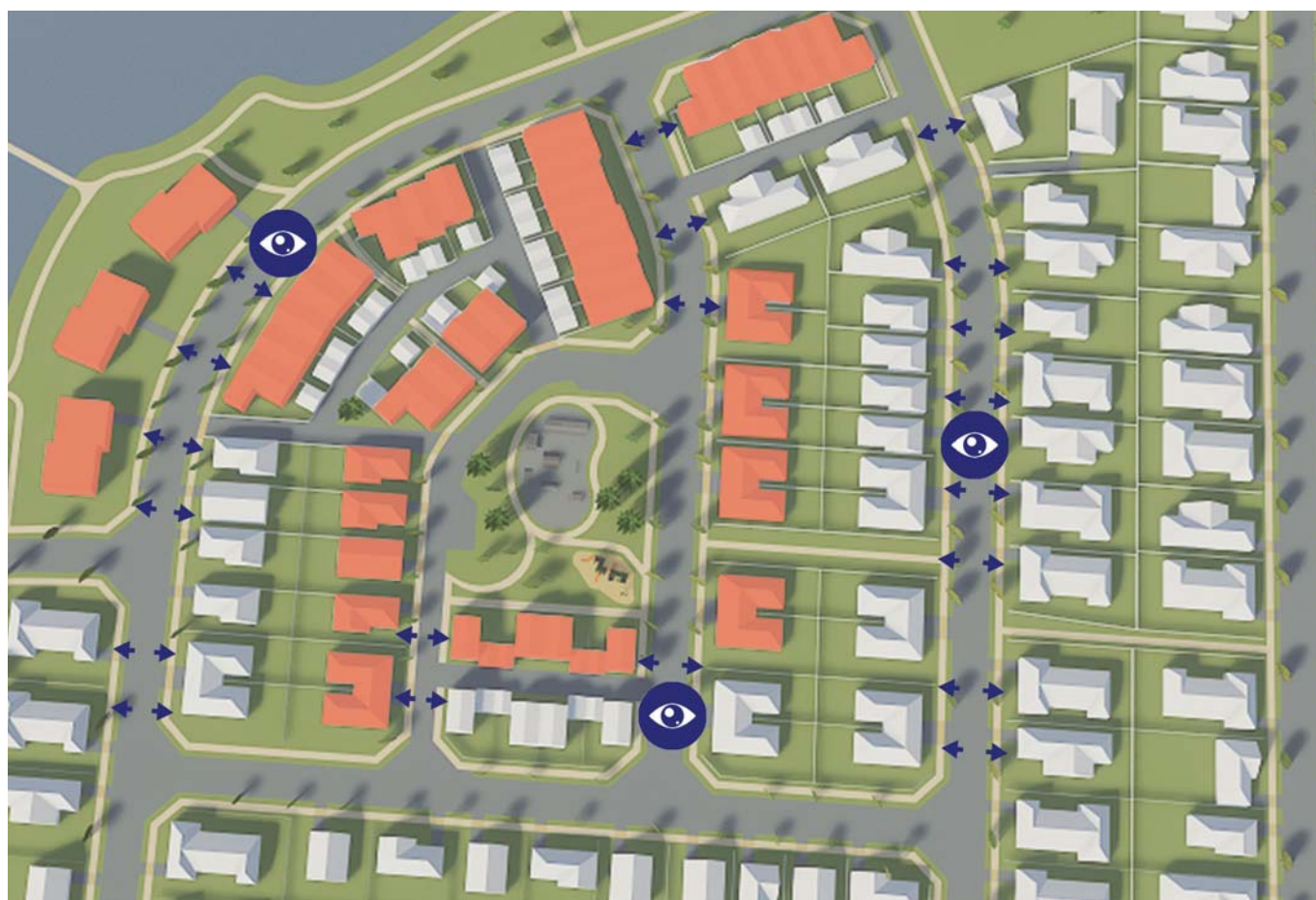




Figure 10. Establish a block layout that enables house fronts on each side of the street to face one another, and place higher density housing adjacent to other features, e.g. public open space

 Over looked
 Higher density housing over looking park

7. OPEN SPACE AND LANDSCAPE TREATMENT

7.1 Overview

Public open space, including public reserves and streets, are important elements of a residential neighbourhood. When appropriately located, sized and designed, public open spaces provide opportunities for recreation and social interaction within a safe and attractive environment.

7.2 Outcomes sought

- Public open space is conveniently distributed, located and sized, according to the context, nature and size of the subdivision and its future residents – including balancing outdoor living space needs where higher densities are proposed.
- To provide inclusive, accessible, conveniently located and well-designed public open spaces that provide for a range of different activities and users.

7.3 Guidelines for opens space and landscape treatment

The following guidelines are relevant for subdivision where a public open space is being created and/or development is occurring adjacent to existing public open space. Where public open space is proposed, it is recommended that applicants liaise with Council's Asset Management Team in relation to open space provision and design.

Public Open Space

S	M	L	Guidelines
		✓	Provide public open spaces with edges that are activated or overlooked by adjacent streets and dwellings. This will improve the perceived safety and encourage use of these open spaces. Generally, at least 50% of the edges shall be surrounded by streets to ensure a sense of public ownership and overlooking.
		✓	Connect new and existing public open space to the wider green and public open space network with walkways / cycleways and consider the provision of cycle rack facilities.
		✓	Design the entrance to public spaces to be easily identified, including signage/way finding to increase the legibility and safe use.
		✓	Provide public open spaces that enable a variety of recreational and social activities to occur within them, while also taking into consideration surrounding activities that may be sensitive to noise.
		✓	Incorporate existing landscape features, significant vegetation, and sites of cultural significance into public open spaces
		✓	Provide adequate lighting level in publically accessible spaces, for the visibility and safety of all Refer to the AS/NZS 1158 lighting standards.
		✓	Utilise materials for pavement, street furniture and lights that are difficult to vandalize (anti-graffiti) and easy to maintain.
		✓	Avoid "dark areas" (areas that are not overlooked, not well lit, or hidden from view) and blank walls. This combination is likely to attract graffiti and other undesirable activities. Instead, introduce appropriate landscape treatment, lighting, and ensure neighbouring land uses provide windows that overlook and activate these spaces.



Figure 11. Provide public open spaces with edges that are activated or overlooked by adjacent streets and dwellings.

- Pedestrian Paths
- Over looked
- Original trees
- Playground
- Skate Park



Figure 12. Precedent Image: Local park edged by a road and overlooked by dwellings.



Figure 13. Precedent Image: Park offering a variety of activities for recreation, rest and play.

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Street trees and planting

S	M	L	Guidelines
	✓	✓	Having regard to Council's District Tree Policy, plant landscape areas with species that are low maintenance and hardy. Species selection shall generally provide an emphasis on native or indigenous plants that are appropriate to the site and landscape character of the area.
	✓	✓	Select appropriate street trees to enable sunlight penetration on streets and within adjoining public open spaces during winter months.
	✓	✓	Generally provide street trees at 10 metre centres, or at an equivalent rate of one tree per residential property, located to avoid interference with services, light poles, driveways and parking bays.
	✓	✓	Use different types of street trees and vegetation to highlight the street hierarchy and key destinations such as public open spaces.
	✓	✓	Ensure that landscaping preserves important views and vistas.
	✓	✓	Provide adequate grass berms or tree-pits to allow trees to grow to maturity and minimise maintenance requirements for pavement.
	✓	✓	Ensure plant species are well suited to local conditions. Where possible, use local native trees to enhance biodiversity.
	✓	✓	Ensure the trees have an appropriate height and canopy for the: location, width of street, and ongoing maintenance. Use larger trees on wider streets to create the impression of an avenue.
	✓	✓	Avoid low shrubs or low canopy trees that block sightlines of pedestrians and vehicles.

- 10m spacing between trees
- Sightlines from car/pedestrian and visual connection beneath tree canopy
- Highlight light poles separation from tree canopy



Figure 14. Avoid low shrubs or low canopy trees that block sightlines of pedestrians and vehicles; Generally provide street trees at 10 metre centres, or at an equivalent rate of one tree per residential property, located to avoid interference with services, light poles, driveways and parking bays.



Figure 15. Precedent Image: Street trees and generous berms reinforce the underlying street hierarchy and add to local amenity and character.



Figure 16. Precedent Image: Street planting considers sunlight penetration to streets and dwellings; rain gardens provide for low impact stormwater design solutions.

8. LOW IMPACT URBAN DESIGN

8.1 Overview

Stormwater run-off within a catchment must be carefully managed to prevent flooding, erosion and pollution. Managed in an appropriate manner, stormwater can contribute to amenity and ecology outcomes, adding social and cultural value to a community.

8.2 Outcomes sought

Stormwater infrastructure shall be designed to manage stormwater in a sustainable manner:

- Reducing negative impacts on the environment
- Reducing maintenance costs
- Reducing stormwater discharged to reticulated networks
- Preserving and enhancing riparian margins and preventing unnatural erosion.

8.3 Guidelines

S	M	L	Guidelines
✓	✓	✓	Where natural drainage systems exist on site (e.g. streams, wetlands): <ul style="list-style-type: none"> - Integrate natural drainage systems with wider ecological networks, and enhance their ecological value where possible - Preserve and enhance natural waterways and riparian edges through a suitable planting and protection strategy.
	✓	✓	For sites with significant wetland areas, provide for a comprehensive planting plan that facilitates low maintenance and hardy species selection.
	✓	✓	In dialogue with Council stormwater engineers, incorporate sustainable drainage strategies into the design. Sustainable drainage strategies include: <ul style="list-style-type: none"> - Minimising impermeable surfaces - Providing soak pits within residential areas and adjacent to streets, where appropriate. - Providing swales, rain gardens and retention ponds, where appropriate. - Providing local retention ponds and soakage areas in close vicinity of higher density sites (e.g. 400m² or less), connected by underground pipe or swale infrastructure.



Figure 17. Precedent Image: Swales along the street edge contribute to movement networks, low impact stormwater design and amenity.



Figure 18. Precedent Image: Swales along the street edge contribute to movement networks, low impact stormwater design and amenity.



Figure 19. Precedent Image: Stormwater ponds within residential developments, with housing overlooking, contribute to movement networks, low impact stormwater design and amenity.



Figure 20. Precedent Image: Stormwater ponds within residential developments, with housing overlooking, contribute to movement networks, low impact stormwater design and amenity.