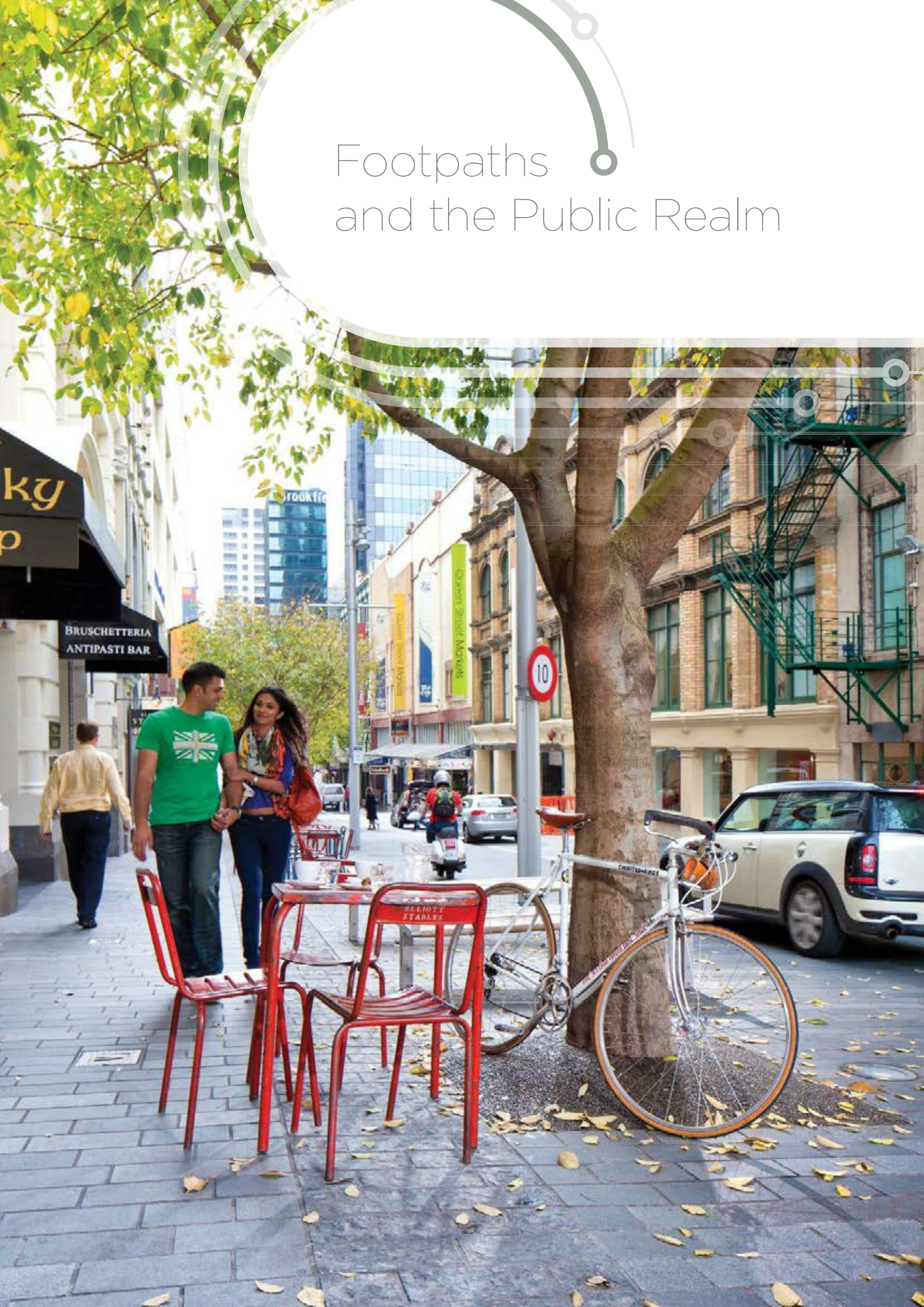
Footpaths and the Public Realm



In this chapter

06

01 Introduction

BACKGROUND

The overall visual quality of public open space in Auckland is greatly influenced by the character of its roads and streets. These spaces can and should convey an area's values, locational context within the region, its history and future aspirations. Attractive pedestrian routes and streetscape amenities will also help to underpin Auckland's aspiration to be the world's most liveable city – a desirable place for living, work and investment.

PURPOSE

This chapter provides design standards for pedestrian and amenity design that can be incorporated into roads and streets to achieve the desired outcomes. These standards define the key attributes and design considerations for each of the streetscape elements. This will enable designers to respond to each locational context, without compromising general safety and other key considerations.

The chapter includes:

- Road and Street Zones for design
- Footpaths and pedestrian facilities (including crossings)
- Trees and planting
- Street Furniture (fixed and moveable items).

ROADS AND STREETS FRAMEWORK

This independent document sets out the process for planning a transport network. It provides guidance on the basic types of street and the functions and features to be expected in each street, together with modal priorities. It also describes the process for resolving conflicts for priorities.

ROADS AND STREETS DESIGN GUIDE

The AT Urban Streets and Roads Design Guide sets out principles for design of the various street types.

CYCLING INFRASTRUCTURE

Also see the Engineering Design Code - Cycling Infrastucture for facilities outside the roadway that are to be integrated with the design of the roadside realm covered by this chapter.

ADJACENT LAND USE

The treatment of roads and streets should respond to the existing or planned activities and functions of adjacent land. This approach requires consideration and creative integration of diverse elements such as functional efficiency, aesthetic quality, management protocols, spatial form, social and cultural dynamics, as well as lifecycle durability.

STREET CHARACTER

Streetscape amenity elements such as landscaping, benches, litter bins and lighting should support and visually complement the street character. Landscaping can sometimes be the principal character element.

SURPRISE & DELIGHT

Auckland Transport recognises the important role that surprise and delight plays in memorable street design. Designers and applicants are encouraged to approach this aspect as creatively as possible, while still addressing essential aspects of functionality and safety.

FUNCTIONAL REQUIREMENTS

The design of a street will depend on functional requirements, amount of cross-sectional area available for pedestrians, vehicle use and budget constraints. Street space should be allocated to respond to site-specific requirements of each street including underground ducting needed for Auckland Transport's network. Street furniture, vegetation, lighting, structures and signage should be designed and located to prevent physical and visual clutter, while catering for functional requirements

LEGIBILITY

Streets should be designed to be legible (self-explaining), safe and comfortable for all users, minimising the need for signage, bollards, guardrails, and other elements that clutter the streetscape environment. A consistent and easily understood approach to streetscape design is a key organising strategy that integrates the various design elements to create usable, safe and attractive streetscapes on the ground.

CULTURE AND HERITAGE

Design themes and expression must follow Te Aranga principles, particularly in areas with a compelling connection with Mana Whenua. Similarly, in designated heritage areas, streetscape amenity features will be required to complement rather than contrast with the overriding themes and characteristics of the area.

URBAN AND RURAL ROADWAY DESIGN

The geometry and design of the carriageway, including its total width and number of lanes, as well as the widths of individual lanes, medians (where present), provision for pedestrian crossings, as well as the geometry and design of the carriageway at intersections, has a large bearing on the overall streetscape amenity and its use, look and feel for pedestrians. Design teams need to consider this when establishing overall street geometry for new streets or considering the re-allocation of space in existing streets.

NEW SUBDIVISIONS

Footpaths must be provided on both sides of the road for new subdivisions in brown and greenfield areas.

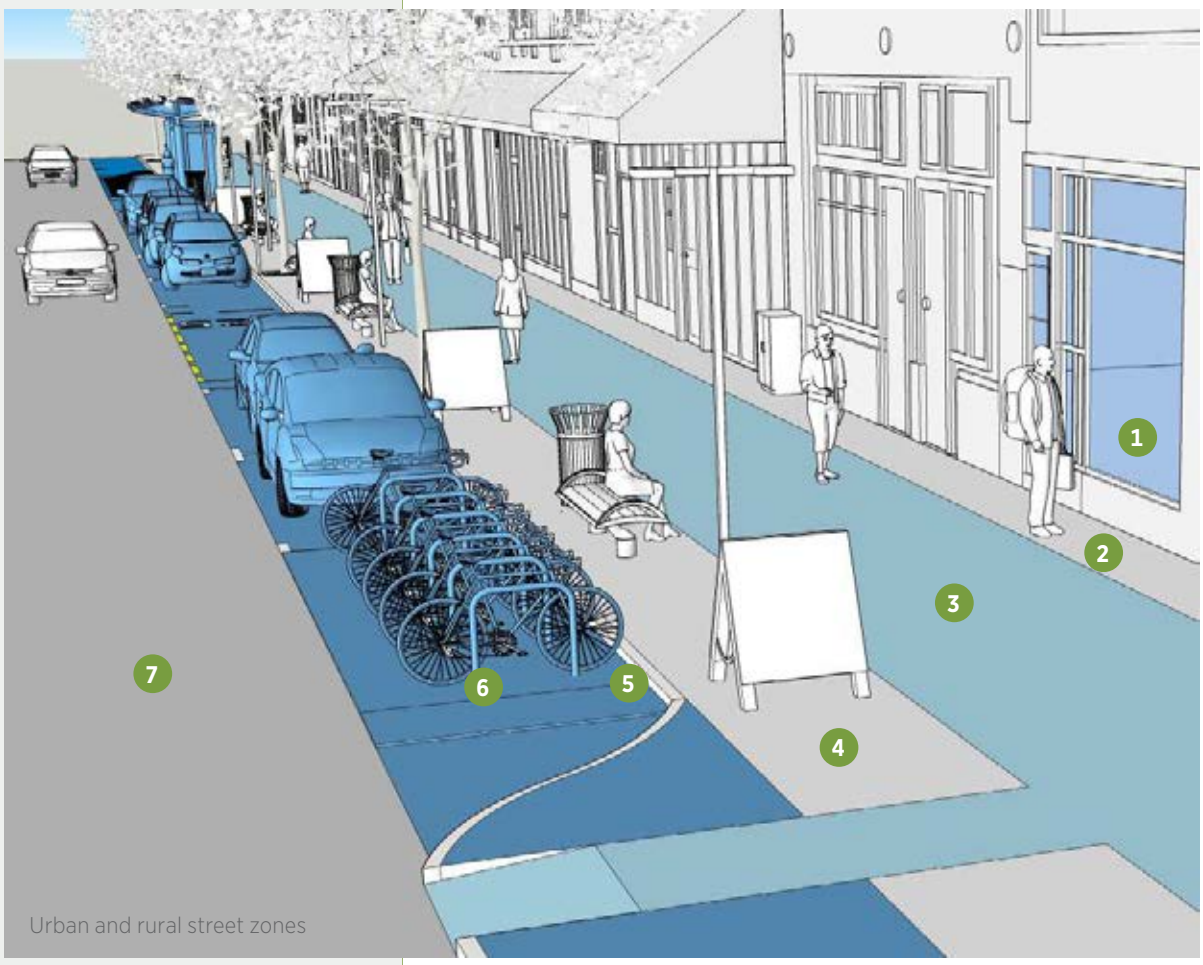
In some environments such as park edge roads, boundary roads between rural and urban land etc. it may warrant only a single footpath on one side for which a departure can be submitted to approve this approach.

02 Road and street zones

PURPOSE

The street neighbourhood is divided into different zones, each with its own function and design requirements.

2.1 Urban street zones



Urban and rural street zones

ADJACENT LANDS 1

The adjacent lands often contain active land uses, including places to eat and drink and ground-floor retail. The adjacent lands host the types of active land use that draws people to the street, and also serves as the point of origin for many pedestrians using the footpath.

FRONTAGE 2

The frontage zone is the space next to the building edge in centres. It can be an extension of the active land uses found along a street. The frontage zone should not be used for temporary signage, ground floor retail displays, café seating, and similar uses, as a building forecourt area can provide these, unless a clear safe edge is provided for visually-impaired users. The frontage zone is where the uses found along a street interact with the street.

Where buildings are set back from the street edge, the frontage zone may be landscaped.

THROUGH ROUTE 3

The pedestrian clear path (also referred to as pedestrian through zone) provides a movement zone for pedestrians that is clear of any obstacles, facilitating through access for people walking along a street, regardless of age and abilities.

STREET FURNITURE 4

This is a designated area for a variety of street furniture: signs, light and signal poles, street trees, public transport stops, temporary signage, ground floor retail displays, café seating, litter bins, stormwater management and additional underground infrastructure needed as consequence of the design.

KERB 5

The kerb divides carriageway from the roadside area. Allow for the width of kerb and drainage channel when planning components to determine the width of a street.

ANCILLARY 6

The ancillary zone sits between the furnishing zone and the carriageway, and offers opportunities to provide temporary pedestrian uses such as kerb build-outs, patios and parklets. Other uses include cycle and car parking, loading zones, taxi stands, pick-up/drop-off zones and public transport stops.

It can alternate with a wider street furniture zone along a street.

CARRIAGEWAY 7

The carriageway provides space for vehicles to travel through the street. In off-peak hours, this space may be partially used for parking and loading. On occasion, access to vehicles might be restricted to provide space for events and festivals.

2.2 Suburban street zones

Suburban street zones

DIFFERENCE FROM URBAN STREET ZONES

The same zones are present as in urban streets, but their character and use differ.

ADJACENT LANDS - LAND USE 1

The adjacent lands contain predominantly detached, single household dwellings. The residences serve as the point of origin for pedestrians and cyclists (who may be travelling to a public transport stop) as well as people travelling by private car. Small scale local retail, schools and community facilities such as playgrounds serve as local destinations within easy distance on foot or on a bicycle.

ADJACENT LANDS - BUILDING SETBACKS 1

Building setbacks form the front yards of residential properties. The distance that buildings are set back and the design of front yards strongly influence the spatial character of the street and determine the interface between public and private space. Minimum building setbacks are set out in the Auckland Unitary Plan.

FRONTAGE 2

The frontage zone is the space between the property boundary and the footpath. It is used for soft landscaping such as lawns or low planting and can accommodate underground utilities. In spatially constrained existing street corridors, the frontage zone can be omitted. If this is done, the Through Route must be able to provide a safe interface with Adjacent Lands including driveways, fencing and utility connections.

THROUGH ROUTE 3

The pedestrian through route provides a path for pedestrian movement that is clear of obstacles, facilitating through access for people walking along a street, regardless of age and abilities. It must be wide enough to allow two wheelchair users or people pushing prams to pass one another.

BERM (STREET FURNITURE) 4

The berm is the designated area for soft landscaping such as lawns or low planting and water sensitive design infrastructure. It can be used to provide space for signs, light poles, street trees, public transport stops, domestic waste bins for collection and underground infrastructure. In spatially constrained existing street corridors, the berm can be omitted if soft landscaping is included in the Ancillary Zone.

KERB 5

The kerb divides carriageway from the roadside area. Allow for the width of kerb and drainage channel when planning components to determine the width of a street.

ANCILLARY 6

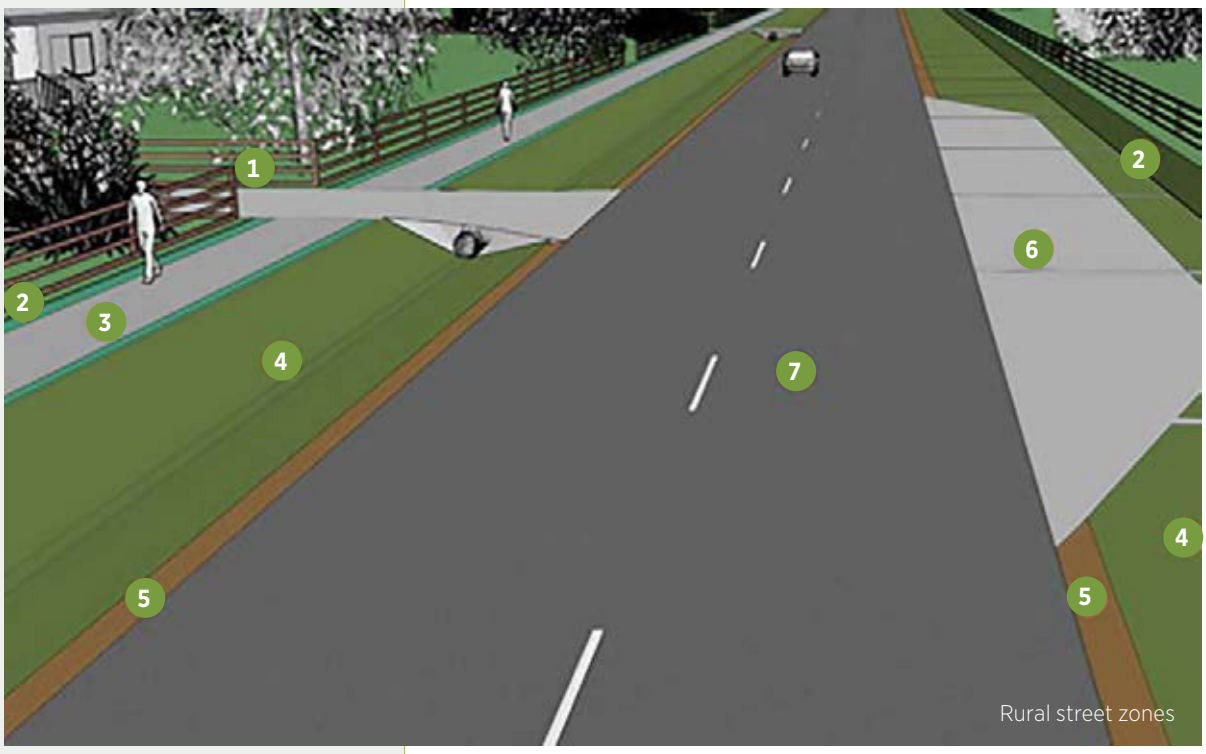
The ancillary zone is located in-between the berm and the travelled way. It offers opportunities to provide kerb build-outs to accommodate street trees, other soft landscaping, public transport stops and waste bin collection areas. Kerb build-outs can be used as one component of traffic calming measures to narrow the effective width of the travelled way. Between kerb build-outs, raised, paved bays can be used to accommodate bicycle and parallel car parking.

CARRIAGEWAY 7

The carriageway or travelled way provides space for travelling along the street for motor vehicles and people on bicycles. A travelled way kept to the minimum width to allow vehicles frequently using the street to pass one another and the absence of centrelines encourage low speeds.

Parking may be permitted at the kerbside where traffic volume is low and it will not obstruct safe movement or access to private driveways.

2.3 Rural street zones



Rural street zones

DIFFERENCE FROM URBAN STREET ZONES

The same zones are present as in urban streets, but their character and use differ.

ADJACENT LANDS 1

These may be bush, agricultural land, coast or riverside. Land uses may include countryside living and scattered recreational, commercial or agricultural activities.

FRONTAGE AND RURAL LAND DRAINAGE ZONE 2

This is the area that path users do not normally enter when passing. It may contain shop window frontage, retaining walls or berm slopes, utility cabinets and plinths, vegetation overhangs. It may include a land drain, where significant run-off from land cannot be contained in a table drain or swale in the street furniture and rural road drainage zone.

THROUGH ROUTE 3

This is the width that must be kept clear of obstructions to allow path users to pass.

STREET FURNITURE & RURAL ROAD DRAINAGE ZONE 4

This provides a location for safety barriers, signal poles, lighting columns, and any rural signs. It can also be used for soft landscaping, when blending the road in to the surrounding rural landscape. Roadside table drains or swales may be included in this zone. It may be part of a Clear Zone for high speed roads.

ROAD EDGE 5

Replaces what would be the kerb in urban settings. It may have kerb, or sealed or unsealed shoulder.

ANCILLARY 6

The ancillary zone sits in-between the street furniture zone and the carriageway. Rural uses may include rest bays, passing places, waiting bays opposite vehicle accesses, school bus stops and parking bays.

CARRIAGEWAY 7

In addition to the traffic lanes, a partially-sealed shoulder should generally be included. A fully-sealed shoulder may provide for rural cycle route use.

2.4 Street zone design

CONTEXT OF STREET ZONES

The use of street zones also varies according to street typology, but generally falls into three types:

- Urban footpath spatial arrangements are used on streets where the hard surface of the footpath generally runs the full width between the property boundary and the kerb face. In most instances, buildings on urban streets either front directly on or have only small setbacks from the property line.
- Suburban footpath spatial arrangements are used on streets where the footpath is lined by grass berms on one or both sides, i.e. on the kerbside or along the property frontage, or both. This treatment is also typical of suburban, industrial and some commercial areas.
- Rural roads typically do not have kerbs or footpaths, except near commercial retail development and, occasionally, bus stops.

THROUGH ROUTE PRIORITY

In most cases, the through route must be given the highest priority. The through route must always be kept clear of obstacles, except for periods for maintenance. Ensure that no permanent or removable street furniture, signage or other elements intrude into the through route. Establish a legible or discernible edge on the frontage side of the through route. However, some flexibility is required. For instance, in many situations it will be best to keep the frontage zone entirely clear as a part of or an extension of the through route. This is particularly helpful for people with vision impairments, as they can then use the building edge as a guide, and should always be the case in main street or high street pedestrian flow areas.

FRONTAGE ZONE

In many situations it will be best to keep the frontage zone entirely clear as a part of or an extension of the through route. This is particularly required for people with vision impairments, as they can then use the building edge as a guide, and should always be the case in main street or high street pedestrian flow areas. In other instances, the frontage zone can be designed to accommodate street furniture, as long as these are designed in a consistent and orderly manner, making it safe and convenient for people with vision and mobility impairments. (For instance, this issue can be addressed with special edge-tapers or obstruction warnings.)

Street lighting columns and sign poles may be placed within the frontage zone.

Utility service connections should be placed in the frontage zone. These are Preferred to be buried or in underground chambers with flush covers if the frontage zone is paved, subject to each utility owner's specific requirements.

Where the frontage zone is landscaped, and the rear edge of the paved footpath provides a safe edge to the Through Route, a variety of features may be paced in the frontage zone.

BICYCLING INFRASTRUCTURE

Where a cycle lane or path is between the traffic lanes and the footpath, the street furniture zone may be reduced to the minimum required to provide for any street furniture or landscaping needs.

UNAVOIDABLE OBSTACLES

In some situations, the location of certain structures on the footpath and adjacent to the building edge may be unavoidable, e.g. Street Cabinets or lighting control boxes. The visually or physically impaired must be warned of through route tapers or other means.

DIMENSIONS

Appropriate widths for each spatial zone vary based on conditions such as pedestrian volumes, adjacent land uses, presence of driveways, etc. Dimensions include the width of the kerb itself.

03 Footpaths & pedestrian facilities

DEFINITION

Footpaths are those parts of a road or street intended for pedestrian use. They generally run parallel to the carriageway and may be separated by kerbs and road margins.

- In urban areas, they should be provided on both sides of the road over its full length and be constructed of concrete, asphalt or natural stone
- In rural areas, footpaths may be located on one side of the road and should be constructed out of low maintenance and rurally sympathetic materials such as metal or hoggin, or asphalt where expected use is high.

Pedestrian access ways (also known as walkways) are public road reserve links that do not include vehicle roadway. They generally link between roads and streets. Walkways that link recreational reserve to public roads and footpaths within private access ways that have public access easements are not usually public road assets, but made be designed according to the principles in this section.

Pedestrian access ways will generally be required to accommodate bicycles.

RECREATIONAL TRACKS

The footpath standards in this chapter do not apply to recreational tracks for pedestrians or cyclists. See the Local Path Design Guide.

WIDTH

Urban and rural footpaths should be wide enough for use by all user groups, including people:

- On foot, some with visual impairments using a cane or walking with a guide dog,
- In wheelchairs or on mobility scooters,
- Using Small wheel devices,
- Pushing a pram.

CONTINUOUS PATH

There must be a functional through-route on a footpath, a continuous path of travel for all users – not obstructed by lighting poles, power boxes, sign posts, utility covers and other street furniture. This route must be safe, direct and legible (easy to understand).

HERITAGE ZONES

Approval exceptions may be made for heritage zones.

SHARED PATHS

Some through routes can also be shared paths used by pedestrians and cyclists. Care is needed with design of these. See the Engineering Design Code - Cycling infrastructure.

STANDARDS

This code takes precedence over any other standard unless agreed by a Departure from Standard application, however the following standards can be used to support the outcomes sought in this code:

- NZTA Pedestrian Planning and Design Guide
- RTS 14 Guidelines for facilities for blind and vision-impaired pedestrians
- Auckland Transport Guidelines for the Selection of Pedestrian Facilities
- Austroads Guide to Road Design – Part 4; Intersections and Crossings
- Austroads Guide to Road Design – Part 6A; Pedestrian and Cyclist Paths
- AS/NZS 4586:2004 Slip resistance classification of new pedestrian surface materials
- AS/NZS 3661.1:1993 & AS/NZS 3661.2:1994 Slip resistance of pedestrian surfaces

* In all cases, later editions may supersede the ones cited.

3.1 Urban footpaths

USAGE

In the urban environment, footpaths are expected to be constructed on both sides of the road in line with the minimum standards, unless a departure has been agreed. Where the road forms the boundary between rural and urban zones, the rural zone side will only require a footpath environment where bus stops are located.

STREET ZONES

There are four distinct urban street zones to consider when designing footpaths:

- Frontage zone (against the property boundary).
- Through route (for pedestrian movement)
- Street furniture zone (may alternate with Ancillary zone)
- Kerb

MINIMUM ZONE WIDTHS

The table below shows the minimum footpath zone widths.

TABLE 1 MINIMUM URBAN FOOTPATH ZONE DIMENSIONS

Location	Maximum pedestrian flow	Zone				Total
		Kerb	Street Furniture/ front berm	Through route	Frontage/ back berm	
Main Street, Mixed use & Centres	80p/min	0.15m	2.5m	2.4m +	1m (paved)	6.05m+
Alongside parks, schools and other major pedestrian generators						
Outside and around public transport hubs						
Out-of-centre arterial	60p/min	0.15m	2.2m	1.8m	1m	5.15m+
Neighbourhood Collector						
Local roads in residential areas	50p/min	0.15m	2.2m	1.8m	1m	5.15m

INCREASED WIDTHS

These widths should be increased under certain conditions.

- Where parking bays (ancillary zone) alternate with planting and other features in the street furniture zone, its width should vary to maintain a straight edge to the through route. Width may be determined by Ancillary zone use.
- Where it is expected that large numbers of users may wait to cross, provide additional street furniture zone clear of the through route.
- Consider increasing street furniture/front berm zone width where vehicle speed exceeds 50 km/h.
- The through route must accommodate all types of users and the flow expected along the route. Width should be increased when flow exceeds values shown in the table.
- The frontage zone may be increased where significant uses such as social gathering and waiting at public buildings are expected, and have not been accommodated in forecourt space.
- Increase street furniture zone or frontage zone above minimum widths as necessary to accommodate street trees and other furniture, and where significant uses such as outdoor hospitality seating, social gathering and waiting at public buildings are expected.
- Increase the Frontage Zone to 1.0m where private parking forecourts are less than 6.0m. Unitary Plan Rules or Resource Consents may permit garage door setbacks of 5.0m, which is insufficient for parking entirely clear of the road boundary. The back edge of the footpath must be at least 6.0m from any permitted garage door (or not more than 3.5 m if reduced setback is permitted, with no parking in front of a door or gate).

REDUCED WIDTHS

The width of the various zones may only be reduced where existing site constraints do not allow widening to be achieved.

Kerbs should be realigned where possible to maintain width.

Obstructions such as poles should be relocated where practicable.

The safety of departures should be assessed, especially where traffic lanes are adjacent to the kerb line.

However, all new and improved developments should avoid reduced widths.

The following priorities apply.

- Street furniture zone and frontage zone should be reduced before the through route. Safety effects must be considered, and measures provided to avoid obstruction of the through route such as by waste collection bins.
- Where through route width must be reduced to between 1.5 m and 1.8 m, passing places at least 2 m long and 1.8 m wide must be provided within sight of each other and not more than 50 m apart.
- Where an existing constraint that cannot be removed such as a signal pole, transformer or vehicle crossing to a steep driveway obstructs the through route, at least 1m clear width is needed at the obstruction, extending no more than 6 m between passing places.
- At any pedestrian and vehicle crossings where it is unavoidable that ramps reduce the footpath width, a minimum width of 0.9 m through route (1.0 m next to any vertical feature) with crossfall less than 3% must be provided, with 1.5 m preferred. Where possible, the footpath either side may be ramped down at 8% grade to reduce the depth of crossing ramp to achieve 1.5 m through width.

BICYCLING INFRASTRUCTURE

Where a cycle lane or path is between Through Route and traffic lane, the Street Furniture Zone may be reduced to the minimum required for any street furniture (signs, waste bins etc.).

OTHER GUIDES

Kerb details are in the Urban and Rural Roadway Design chapter.

3.2 Rural footpaths

USAGE

Footpaths in the rural zone need to be considered differently from the urban zone. The two main uses are recreation connectivity, e.g. connecting off-road footpaths where they interact with the road corridor, or local destination connectivity, e.g. bus stops, rural village centres, etc. Rural footpaths differ from urban footpaths generally in the type of material, less rigid compliance for gradients and width.

CONNECTIONS BETWEEN OFF-ROAD PATHS

These should be kept as short as possible, and link in a sympathetic material that reflects the surrounding environment. Consider the boundary with the road edge to ensure that any loose surface materials are not tracked on to the road. Also consider their relation to roadside and land drainage.

BUS STOPS

At bus stops, consider how the bus stop location connects to the surrounding residential areas. Near the bus stop, a hard wearing, durable surface material should be selected that allows access to waiting buses, and should extend far enough to allow for a pedestrian refuge if required or other safe crossing location.

SCHOOLS

A footpath must be constructed that runs the complete length of the school frontage in accordance with Table 2.

RURAL VILLAGE CENTRES

It is ideal that rural village centres have at least one footpath that runs the full length of the village centre on the most convenient side, e.g. caters for the majority of anticipated users, and should be constructed of a hard surface to the edge of the village centre, after which it could transition to a soft surface (e.g. metal) for the appropriate distance to maximise catchment and walkability to the centre.

Footpaths should be provided on both sides of the road if the road environment does not allow safe crossing from a footpath to any properties on the side opposite.

STREET ZONES

There are four distinct street zones to consider when designing rural footpaths:

- Road edge (kerbs, sealed or unsealed shoulders etc.)
- Street furniture and rural road drainage zone
- Through route (for pedestrian movement)
- Frontage and rural land drainage zone (against the property boundary

ROAD EDGE

Where a kerb is to be provided for drainage control, the kerb area would nominally be 0.15 m wide. This area is not to be considered part of the footpath width. Where a sealed or unsealed shoulder forms the road edge, this area is not to be considered as part of the footpath width.

STREET FURNITURE & RURAL ROAD DRAINAGE ZONE

Along with any potential kerbs, the street furniture and rural road drainage zone forms the buffer between footpath users and vehicle traffic. It provides a location for signal poles, lighting columns, underground utilities, and any rural signs. It can also be used for soft landscaping, when blending the road in to the surrounding rural landscape. It can also provide for moveable items such as waste bins for collection and permitted advertising, temporary traffic management signs, and places to gather and wait outside the through route, such as at bus stops and crossings. Angled parking bays must include vehicle overhang, from kerb or wheel stop. Roadside table drains or swales may be included in this zone. It may be part of a clear zone for high-speed roads.

THROUGH ROUTE

This is the width that must be kept clear of obstructions to allow path users to pass.

FRONTAGE AND RURAL LAND DRAINAGE ZONE

The frontage and rural land drainage zone is the area that path users do not normally enter when passing. It may contain shop window frontage, retaining walls or berm slopes, utility cabinets and plinths, vegetation overhangs. It may be reduced to 0.15 m where a footpath is paved to fences or walls on the road boundary. It may include a land drain, where significant run-off from land cannot be contained in a table drain or swale in the street furniture and rural road drainage zone. Consider path user safety if the depth and flow of the land drain may be hazardous.

MINIMUM ZONE WIDTHS

The table below shows the minimum footpath zone dimensions based on the NZTA Pedestrian Planning and Design Guide.

TABLE 2 MINIMUM RURAL FOOTPATH ZONE DIMENSIONS

Location	Maximum pedestrian flow	Zone				Total
		Kerb	Street Furniture	Through route	Frontage	
Alongside parks, schools and other major pedestrian generators	80p/min	0.15m	1.2m	2.4m +	1.0m	4.75m
High speed roads (> 60 km/h)	60p/min	0.15m	1.2m	1.8m	1m	4.15m+
Low speed roads (<60 km/h)	50p/min	0.15m	0.9m	1.8m	1m	3.85m

INCREASED WIDTHS

These widths can be increased under certain conditions.

- Street furniture zone may be widened where ancillary uses (parking bays, turning bays, school bus stops) occur.
- The through route should attempt to accommodate all types of users and the flow expected along the route.
- The frontage zone should be increased where land drainage is included, and where bus shelters are required.

REDUCED WIDTHS

The width of the various zones may only be reduced where existing site constraints do not allow widening. Obstructions such as poles should be relocated where practicable. The safety of departures should be assessed, especially where traffic lanes are next to the footpath without any form of buffer. However, all new and improved developments should comply with these widths.

The following priorities apply.

- Street furniture zone and frontage zone should be reduced before through route. However, safety effects must be considered, and measures provided to avoid obstruction of the through route such as by waste bins set out for collection.
- Where through route width must be reduced to between 1.5 and 1.8 m, passing places at least 2 m long and 1.8 m wide must be provided within sight of each other and not more than 100 m apart.
- Where an existing constraint that cannot be removed such as a signal pole, transformer or vehicle crossing to a steep driveway obstructs the through route, keep a minimum of 1 m clear width at the obstruction, extending no more than 6 m between passing places.
- At any pedestrian and vehicle crossings where it is unavoidable that ramps reduce the footpath width, a minimum width of 0.9 m through route (1.0 m next to any vertical feature) with crossfall less than 3% must be provided, with 1.5 m preferred. Where possible, the footpath either side may be ramped down at 8% grade to reduce the depth of crossing ramp to achieve 1.5 m through width.
- Where maximum pedestrian flow is very low, the through route width may be reduced from 1.8 m to 1.5 m. Passing places may be provided by firm and level flush grassed berm. Footpaths for off-road path connection should not be reduced to match the width of the off-road path, which may be a recreational walkway, as the risks in a road environment are greater.

OTHER GUIDES

Kerb details are in the Urban and Rural Roadway Design chapter.

3.3 Pedestrian access ways

DESCRIPTION

Safe pedestrian access ways are core elements of a well-designed neighbourhood. A pedestrian access way is generally required where it would provide a significantly shorter walking route between roads or from a road to a reserve, shopping centre, community facility or to public transport facilities such as bus routes, train stations, etc.

Pedestrian access way

DESIGN REQUIREMENTS

All new and/or existing connections should follow the guidelines listed below to ensure that all of our neighbourhoods have good access to safe, convenient walking and cycling connections to provide a variety of travel options other than motor vehicles.

TYPICAL LOCATIONS

Usually, pedestrian and cycle routes are an integral part of a road. By contrast, pedestrian and cyclist access ways provide links where there is no road. They should be considered at:

- Cul-de-sac heads to provide a link to an adjacent road.
- Parks and reserves where part of that reserve has no road frontage.
- Schools and other community facilities where part of that facility has no road frontage.
- Any other location where the trip by road would be considerably longer than the most direct route.

Where a road connection would not be entirely necessary for vehicle traffic, a pedestrian and cycle connection should still be required to provide access for these modes. A pedestrian and cycle only connection may be approved where Auckland Transport concludes that providing a road is not reasonable or cannot practically be constructed.

GUIDELINES FOR NEW PEDESTRIAN ACCESS WAYS

Pedestrian access ways must be designed and constructed to be safe, attractive and convenient. The guidelines for quality pedestrian access routes includes important characteristics such as:

- hard surfaces
- landscaped and vegetated areas
- street furniture
- proper lighting
- good sightlines (both through and along)
- opportunities for informal surveillance
- full accessibility to all users.

CRIME PREVENTION

All pedestrian access ways need to be assessed against the principles of crime prevention through environmental design (CPTED). The outcome of this review must be provided to Auckland Transport for comment.

LANDSCAPING

Pedestrian access ways should include landscaping. Trees may be used, but not bushes and other elements that would create a visual barrier.

LIGHTING

Lighting of pedestrian and cycle access ways must meet AS/NZS 1158 as per the Street Lighting chapter in this manual. Lighting must provide only necessary illumination for security and safety. Pedestrian access ways must have lights at each end and at no more than 50m intervals along their length. Lighting must be located to minimise shining on residential windows or into drivers, pedestrians or cyclists. In some cases, it may be appropriate not to light a pedestrian access way to discourage its use in darkness. Where CCTV is used to improve safety, lighting systems must take into account the needs of the CCTV system.

PREVENT MOTOR VEHICLE ACCESS

The pedestrian access way must be designed to prevent its use by vehicles, though emergency access should be considered. They must be designed to limit the speed of cyclists and other users to ensure a safe but convenient link. Avoid barriers that force cyclists to dismount.

INTEGRATED WITH NETWORK

The pedestrian access ways should be integrated with the local pedestrian and cycle movement network and, where possible, be orientated to reinforce the visual link between local landmarks and local attractions to assist pedestrians and other users.

LENGTH

The length of a pedestrian access way should be the shortest route between two streets and should not exceed 70 m unless additional walkways or streets interconnect along its length.

WIDTH

The recommended width is 8 m where pedestrian access ways connect one minor road to another. The intent is to provide an 8 m pedestrian access way reserve, of which a maximum 4 m width would be paved and the rest planted in grass and/or trees. Where a width of 8 m is exceeded, the area concerned should be regarded as a Local Purpose Reserve vesting in Auckland Council's Parks Department. Where the pedestrian access way is located at a cul-de-sac head that almost abuts a major road, parkland neighbouring development, or area with future development potential, the pedestrian access way must be equal to the road reserve width of the minor road.

GRADIENT

All pedestrian access ways should have a straight horizontal alignment and a vertical gradient as described in Table 3. The access way should be visible from end to end from an eye height of 1.5 m.

FENCING

Pedestrian access ways should have fencing on both sides to a height of up to 1.8 m for security. Above 1.2 m, this must consist of diamond mesh, pool or galvanised steel fencing to allow full visibility and prevent graffiti.

SIGHT LINES

To increase security for those lots abutting the pedestrian access way and the safety of pedestrians using the route, uninterrupted sight lines must be ensured for its entire length.

RETAINING WALLS

Where retaining walls are necessary between access way and higher adjoining property, these should preferably be stepped not more than 1 m high each rise, with a landscape strip of at least 0.5 m on each step.

IMPROVING EXISTING PEDESTRIAN ACCESS WAYS

Existing pedestrian access ways that cannot be widened could still be improved by:

- Clearly defining the ownership and use of pedestrian access ways, e.g. by quickly removing graffiti, quickly repairing damage and upgrading walking surfaces.
- Improving pedestrian safety, though improved lighting, safety mirrors, clearing shrubs and overhanging vegetation and CCTV.
- Setting rules and defining activities by installing signs.
- Protecting adjacent properties against damage and illegal access, e.g. installing density matting and/or climbing plants on blank walls to reduce graffiti and removing physical objects that would aid illegal access.
- Controlling access, e.g. with bollards or using gates to deny access at vulnerable times.
- Applying additional security measures for pedestrian access ways with significant crime problems, e.g. police or security patrols.
- Other design elements that meet CPTED principles.

3.4 Footpath gradients

LONGITUDINAL GRADIENT

The longitudinal gradient of a footpath should be the same as the adjacent road. Where the longitudinal gradient of the road is greater than the recommended limit for pedestrians, footpaths can be grade separated.

The maximum longitudinal grade accepted by Auckland Transport for new footpaths is 8%. This is to ensure that all new footpaths can be accessed by users with mobility impairments.

Any footpaths above this gradient up to the legal limit of 12.5% must be assessed through the departure from standard process.

Where a departure from standard is being proposed it is important that safe, efficient and direct network access exists so not to disadvantage mobility impaired users. This assessment must be described in the departure forms including how access can be achieved to locations and destinations that should be accessible to all such as bus stops, pedestrian crossings for example.

TABLE 3 FOOTPATH GRADIENTS

Gradient	Maximum length
3% or less	Continuous grade. No limit
3% - 5%	120 m
5%	45 m
Stairs	Handrail must be provided in compliance with NZS 4121 Clause 3.7.3.2.
10%	9 m by departure from standard only
10% - 12.5%	3 m by departure from standard only

REST AREAS

An area at least 1.2 m long with longitudinal grade not more than 2% must be provided at the top and bottom of each length of footpath with gradient greater than 3%. These may be provided at intersections and mid-block crossing locations, and at other intermediate locations as needed. Table 3 describes the maximum footpath length at a certain gradient before a rest platform must be constructed. The rest area can be either in line with the footpath or off to one side.

LOCAL LIMITING GRADE

Where topography, especially of existing street network, has sections of steep road for which no alternative footpath access is available, footpaths may be steeper than the gradients shown, but not more than the limiting gradient on the network, and for no longer than the length of that limiting grade. This should be considered over a small local area only, as access to neighbours, community facilities and bus stops should be maintained wherever possible.

PRAMS & WHEELCHAIRS

The recommended gradient for wheelchair or pram ramps/kerb crossings is 5%.

CROSSFALL GRADIENT

Crossfalls must be between 1% and 3%, with 2% preferred, angled towards the road or a drainage device such as a swale or vegetated strip.

FOOTPATH EDGES

Footpath edges should be level with adjoining surfaces to avoid trip hazards. Where plinths or steps are next to a footpath, they should be at least 150 mm high. Where there is a drop such as at the top of a retaining wall or edge of a rain garden, the edge should be protected. Up to 1m, this may be a raised kerb at least 75 mm high, or a vegetated or contrasting hard surface 0.6 m wide outside the through route. A drop of more than 1 m must be protected by a method in accordance with the Building Code.

A drainage channel may be used for surface water management where necessary.

LOW-HEIGHT RETAINING WALLS

Generally, footpaths should be aligned to minimise the need for retaining walls. However, when this is impractical, low-height retaining walls should be designed and constructed as per Plan FP010.

3.5 Ramps and steps

USE AND LOCATION

Footpaths should follow and provide a safe, direct accessible route. Where a significant level difference exists along a route, the gradient required for an accessible route may require a ramp designed according to NZS 4121 Design for Access and Mobility: Buildings and Associated Facilities.

An alternative, shorter route may be practicable using steps, which will be more direct for able footpath users.

RAMPS BUILDING CODE

Stairs are to comply with Compliance Document for New Zealand Building Code: Clause D1 – Access Routes (Preferred design as AS1)

TREADS

Treads are to be minimum of 310 mm. This may be combined with a tread projection not more than 25 mm.

RISERS

Risers should be between 100 mm and 180 mm, with 120-150 mm Preferred.

PITCH

Pitch should be between 32° (1V:1.6H) and 23° (1V:2.35H), with 23° Preferred where cycle wheeling ramps may be used.

FLIGHTS

Height of flight not to exceed 2.5 m between landings.

Minimum of three steps each flight, except single, low steps may be introduced where footpath grade would exceed 12.5%.

WIDTH

Preferred minimum width 1.2 m between handrails. Add extra width where frequent two-way movement is expected. Where width exceeds 2.4 m, additional handrails should be provided with one side not less than 1.2 m wide.

UNIVERSAL DESIGN

Features including nosings and TGSI at top, bottom and landings must be provided in accord with RTS14.

Handrails should be provided on at least two sides of steps, for use on either hand.

LANDINGS

Landings must be provided at the top and bottom and between each flight of steps. Landings shall be at least the width of the steps and 1.5 m long, or 1.8 m long where wheeling ramps are provided. They must be clear of the Through Route past the top and bottom (which may be reduced in width locally if necessary).

NETWORK UTILITIES

Auckland Transport's and Network Utility duct's and pipes shall be a minimum of 600mm deep or buried outside the depth of construction below formation, which ever is greater.

Network Utilities placed below the footpath or roadside berm must be at a depth below formation that takes in to account the back fill depth around the pipe

3.6 Footpath surfaces and construction

3.6.1 General

LEVEL

Berms next to newly constructed or repaired footpaths must be formed with compacted soil and grassed, level with the top surface of the footpath.

COMPACTION

GAP 40 granular basecourse bedding must be placed and compacted. Under vehicle crossings, compaction must achieve a minimum Clegg Impact Value of 12 for concrete crossings, and 27 for asphalt crossings.

Vibratory compaction is to be avoided above buried services. The top layer of soil must be only lightly compacted to allow for grass seeding.

TREES

Nearby trees and roots must be protected during footpath construction and repair. Design of footpath surfaces over root zones will generally require arborist advice.

3.6.2 Pedestrian surfaces

SLIP RESISTANCE

The objective is to provide public pedestrian surfaces with the appropriate slip resistance in all weather conditions.

All new materials proposed for pedestrian surfaces must comply with both the NZ Building Code and AS/NZS 4586. The minimum acceptable coefficient of friction (wet) to maintain slip resistance for Auckland Transport pedestrian assets is 0.40. This is consistent with the existing acceptable coefficient of friction as determined by AS/NZS 3661.1:1993 of 0.40.

SELECTION OF MATERIAL

Surface selection, including utility covers, should consider whole of life costs, including the cost of regular maintenance interventions, and replacement for damage.

An approved surfaces register is being developed to assist designers when specifying products.

ACCEPTABLE MATERIALS

Table 4 below lists surface materials which generally have an acceptable coefficient of (wet) friction that meets the existing standards. Unless stated that testing is required (due to the gradient) to ensure compliance in the wet, pedestrian surface materials may be selected from this table.

TABLE 4 AUCKLAND TRANSPORT – ACCEPTABLE PEDESTRIAN SURFACE MATERIALS

Pedestrian Surface	Level Surface[1]		Sloping surface[2] or stairs[3]		Typical values for coefficient of friction (wet)
	Acceptable dry slip resistance	Acceptable wet slip resistance	Acceptable dry slip resistance	Acceptable wet slip resistance	CoF
Timber					
Uncoated profiled[4]	Yes	Yes	Yes	Test	0.35 – 0.60
Coated and sand/grit impregnated[5]	Yes	Yes	Yes	Yes	0.55 – 0.90
Portland cement concrete					
Broomed (class 5 or 6) or wood float finish	Yes	Yes	Yes	Yes	0.65 – 0.85
Coated and sand/grit impregnated [5]	Yes	Yes	Yes	Yes	0.55 – 0.90
Exposed aggregate finish					
- rounded aggregate	Yes	Test	Yes	Test	0.40.- 0.70
- crushed aggregate	Yes	Yes	Yes	Yes	0.60 – 0.90
Porous concrete					
	Yes	Yes	Yes	Yes	0.65 – 0.68
Asphaltic concrete					
	Yes	Yes	Yes	Yes	0.60 – 1.00
Marble & granite					
Flamed finish	Yes	Yes	Yes	Yes	0.50 – 0.80
Split slate					
	Yes	Test	Yes	Test	0.40 – 0.55
Sandstone					
	Yes	Yes	Yes	Test	0.55 – 0.65
Ceramic tiles					
Unglazed – grit finish	Yes	Test [10]	Yes	Test [10]	0.35 – 0.65
Glazed – grit finish	Yes	Test [10]	Yes	Test [10]	0.45 – 0.60
Clay pavers					
Wire cut	Yes	Yes	Yes	Test	0.50 – 0.70
Concrete pavers					
Dry press concrete	Yes	Yes	Yes	Test	0.45 – 0.70
Interlocking concrete block paving[11]	Yes	Yes	Yes	Test	0.45 – 0.70
Moulded surface (e.g. simulated slate or concrete cobbles)	Yes	Test	Yes	Test	0.35 – 0.75
Permeable pavers					
	Yes	Yes	Yes	Yes	0.45- 0.70
Safety/ visual impaired					
Anti-slip tapes[14]	Yes	Yes	Yes	Test	0.40 – 0.85
Type B tactile studs					
	Yes	Yes	Yes	Yes	0.84 – 0.87
Type B tactile pavers					
Unsealed	Yes	Yes	Yes	Test	0.68 – 0.80
Sealed	Yes	Yes	Yes	Yes	0.80 – 0.88
Type C directional ground surface pavers					
Unsealed	Yes	Yes	Yes	Test	0.68 – 0.80
Sealed	Yes	Yes	Yes	Yes	0.80 – 0.88

Source: NZ Building Code D1/AS1 2011. Also see notes below Table 5.

EXISTING SURFACES AND ALTERNATIVE MATERIALS

Where existing surfaces are to be incorporated within a project, or where other surface materials are proposed, and they are not listed in Table 4 above, the values in Table 5 may be used. Any materials not listed are to be tested, and test results included in design reports.

TABLE 5 SLIP RESISTANCE COEFFICIENTS FOR PEDESTRIAN SURFACES

Pedestrian Surface	Level Surface(1)		Sloping surface(2) or stairs(3)		Typical values for coefficient of friction (wet)
	Acceptable dry slip resistance	Acceptable wet slip resistance	Acceptable dry slip resistance	Acceptable wet slip resistance	CoF
Timber					
Uncoated smooth	Yes	No	No	No	0.20 – 0.35
Uncoated profiled4	Yes	No	No	No	0.15 – 0.20
• along profile					
Coated (paint, polyurethane, etc.)	Yes	No	No	No	0.10 – 0.30
Portland cement concrete					
Smooth trowelled finish Class U3 6	Yes	No	Yes	No	0.30 – 0.45
Coated (paint, polyurethane, etc)	Yes	No	No	No	0.20.- 0.30
Marble & granite					
Polished surface7	Yes	No	No	No	0.10 – 0.20
Honed finish8	Yes	Test	Yes	Test	0.10 – 0.60
Fully sandblasted surface(9)	Yes	Test	Yes	Test	0.30 – 0.50
Patterned sandblasted	Yes	Test	Yes	Test [9]	0.15 – 0.45
Terrazzo					
Polished	Yes	Test	No	No	0.15 – 0.45
Honed	Yes	Test	Yes	Test	0.20 – 0.60
Ceramictiles					
Unglazed					
• smooth finish	Yes	Test	Yes	Test	0.10 – 0.60
• profiled	Yes	Test [9]	Yes	Test [9]	0.10 – 0.65
Glazed					
• smooth or polished finish [7]	Yes	No	No	No	0.10 – 0.20
• profiled	Yes	Test [9]	Yes	Test [9]	0.10 – 0.45
Clay pavers					
Smooth texture	Yes	Test	Yes	Test	0.30 – 0.65
Compressed fibre-cement sheet					
Uncoated	Yes	Yes	Yes	Test	0.45 – 0.65
Coated (paint, polyurethane etc)	Yes	No	No	No	0.10 – 0.30
Coated and sand impregnated	Yes	Yes	Yes	Yes	0.55 – 0.90
Rubber tiles/ sheeting					
Smooth	Yes	Test	Yes	Test	0.20 – 0.60
Profiled	Yes	Test [9]	Yes	Test [9]	0.35 – 0.60
Vinyl & linoleum					
Smooth or with imprinted pattern	Yes	Test	Yes	No	0.25 – 0.50
Profiled (studs or ribs)	Yes	Test [9]	Yes	Test [9]	0.30 – 0.70
Grit/flaked finish	Yes	Test	Yes	Test	0.30 – 0.70

Source: NZ Building Code D1/AS1 2011

Notes to Tables 4 & 5:

1. Level surfaces including surfaces with slopes no steeper than 1:50.

2. Sloping surfaces with slopes greater than 1:50 but less than 1:10 for wet conditions, or less than 1:8 for dry conditions.

3. Acceptability as shown is based on stair treads without slip resistant nosings. When testing stair treads without nosings acceptability for slip resistance from AS/NZS 3661.1 should be based on a slope of 1:10. With slip resistant nosings at least 50mm wide, acceptability criteria for stair treads is based on the requirements for level surfaces.

4. Profile at right angles to direction of pedestrian traffic. Algae growth on uncoated timber walkways significantly reduces slip resistance when wet and requires regular removal, e.g. by high pressure water blasting.

5. The sand/grit, which is sprinkled over the complete surface of the final paint coating, should be a hard, angular material such as silica sand or calcined bauxite. The particle size should not be less than 0.2mm so that it is not submerged by the coating and not greater than about 2-3mm, so that it remains tightly bound to the surface. If over painted, testing is required to establish acceptability of slip resistance.

6. Concrete surface finishes complying with AS/ NZS 3114.

7. Glazed or polished surfaces are unsuitable in either wet or dry conditions for sloping surfaces or for stairs, even though test measurements may indicate adequacy, because of the effect of foot placement. Note also that when tested in the dry, very smooth surfaces can give anomalous high readings arising from slip-suction effects between the test slider and the test surface.

8. The coefficient of friction can vary significantly with the extent of surface preparation.

9. It is noted in AS/NZS 3661.1 that the slip resistance tests prescribed in that standard may not be suitable for heavily profiled (or patterned) surfaces. The standard references other tests which may be more suitable for such surfaces.

10. When the grit finish has a “feel” rougher than 80 grit sandpaper, the surface may be deemed to have acceptable wet slip resistance, for either level or sloping surfaces or for stair treads, without testing.

11. Interlocking concrete block paving to AS/NZS 3116.

12. To meet durability requirements of NZBC B2, the surface should have at least a five year life under normal maintenance.

13. Anti-slip tapes will normally require regular replacement to remain effective. To ensure foot contact, tapes should be placed at right angles to the line of travel and be spaced at no more than 150mm centres.

TESTING OF MATERIALS

Laboratory testing of proposed surfaces which vary from the list of approved surfaces will be required. Where required above, test results are to be submitted to ensure compliance with the minimum coefficient

New product testing is to utilise the methodology detailed in Appendix A of AS/NZS 4586:2004 Slip Resistance classification of new pedestrian surface materials. Reporting is to be in the format detailed in the standard. Existing surfaces are to be are to be tested using the British Pendulum (BP) Tester.

3.6.3 Concrete footpaths

DESIGN REQUIREMENTS

- Footpaths in residential areas must be at least 100mm thick and with 20mPa concrete from a registered manufacturer.
- Fibre reinforced concrete to AT accepted specification is preferred.
- Footpaths in cul-de-sac heads and non-residential areas must be at least 150mm thick.
- Footpaths must be laid on a 100mm layer of compacted GAP 40 granular basecourse.
- AT Vehicle Crossing specification is required within road reserve. Non-standard private concrete is not allowed within road reserve.
- Concrete footpaths must be dosed with black oxide at the rate of 4%. Any other rate of dosing must be agreed via a departure from standard application.
- Ducting required for signals and other technology devices must be installed before the concrete is laid. Access points for the ducting may be installed after the concrete is laid.

FINISH

Exposed aggregate finish shall be used in high profile areas: town centres, shared spaces, Near public transport interchanges, Near schools and universities, Near commercial centres, Near recreational areas (parks and beaches), Near community centres, health care centres, aged care facilities. Broom finish shall be used in all other areas.

CURE PERIOD

All concrete must be membrane or water cured for five days before use. The footpath must be protected from vehicle wheel loads for 28 days.

CONTROL JOINTS

- Transverse control joints must be placed at maximum intervals of 3m.
- Any saw-cut joints must reach one third of the thickness of the footpath. Saw cuts must be made no later than two days after the concrete has been cast.
- There must be no lips/steps greater than 5mm at slab joints.

VERTICAL ALIGNMENT

To prevent vertical misalignment, movement by roots or heaving of ground, longitudinal contraction/expansion joints must be fitted with shear dowels.

CHAMBER LIDS

Chamber lids must be levelled to suit the cross-fall. They should be flush with the surrounding surface area, with a step of no more than 5mm.

STITCHING

To prevent cracking at re-entrant corners, manhole chambers, light poles, etc., the slab must include diagonal 16mm diameter stitching bars at each corner. Bars must be 900mm long, fitted centrally into the slab depth. If using fibre reinforced concrete, these bars can be omitted.

MESH

All new concrete footpaths must have one layer of centrally placed 665mesh installed if they are within:

- 1.5m of any service cover or manhole located in the footpath
- 3m of any vehicle crossing.

The mesh can be omitted if using fibre reinforced concrete.

LOCAL AND NEIGHBOURHOOD CENTRES

For high-quality concrete footpaths in local and neighbourhood centres, concrete slabs should be structurally designed to keep crack widths to a maximum of 0.2 mm.

SHRINKAGE

Light poles, manholes, foundations, or large structures embedded in the slab also prevent free shrinkage, causing cracks. The addition of rebar can control cracking to reasonable widths, but this may require careful analysis of the tensile stresses involved.

3.6.4 Asphaltic concrete footpaths

THICKNESS AND COMPACTION

- Use NZTA Mix 10 constructed with a compacted depth of 20mm. The mix must be laid on a 150mm layer of compacted GAP 40 granular basecourse.
- In cul-de-sac heads and non-residential areas under the footpaths, the compacted GAP 40 granular basecourse layer must be at least 200mm thick.
- The basecourse layer depth must be increased for weak subgrade (CBR < 3).

EDGING

Edging must be a minimum of 100mm by 25mm H4 treated timber edge boards. These are to be staked at a maximum spacing of 500mm with 30x30mm H4 pegs with a minimum length of 225mm.

Alternatively, concrete edging may be used.

3.6.5 Main streets, mixed-use streets and centres

THICKNESS AND COMPACTION

This should be at least 150mm thick laid on 100mm layer of GAP 40 compacted granular basecourse.

CONTROL JOINTS & MESH

As in Section 2.7.3 above.

TYPE

Exposed aggregate finishes are expected in these important locations, and can be considered up to the boundary of the centre.

3.6.6 Interlocking pavers

THICKNESS AND COMPACTION

- A minimum thickness of 60mm is needed for interlocking concrete pavers, constructed on 30mm of compacted bedding sand. The bedding sand must be laid on a 150mm layer of GAP 40 compacted granular basecourse.
- In non-residential areas, the GAP 40 compacted granular basecourse layer must be at least 200mm thick.
- The basecourse layer depth must be increased for weak subgrade (CBR < 3).

VEHICLE AREAS

This section applies specifically to pedestrian traffic. Any paved areas that could be subject to vehicle traffic or loading of vehicles must be specifically designed. See the Pavement Design chapter.

3.6.7 Hoggin

THICKNESS AND COMPACTION

- A thickness of between 35-50mm of self-binding gravel, constructed on a 150mm layer of GAP 65 compacted granular basecourse.
- The basecourse layer depth must be increased for weak subgrade (CBR < 3).

WEED CONTROL

Weeds are able to grow easily through a hoggin surface, so the subgrade needs to be adequately prepared. Weed control could be achieved through weed spraying of the base course before construction and the use of weed mats or other membranes below the basecourse.

DRAINAGE

Hoggin is susceptible to surface water scour. Do not use where gradient exceeds 8%, or where surface water cannot be shed from the surface to adjoining berm. On sloping ground, where run-off may accumulate against the higher side of the path, regular cut-off channels or culverts should be provided across the path.

The surface should be compacted to a single crossfall or cambered profile.

3.6.8 Metal

THICKNESS AND COMPACTION

- A thickness of 50mm of PAP6 compacted granular surface, constructed on a 150mm layer of GAP 40 compacted granular basecourse.
- The basecourse layer depth must be increased for weak subgrade (CBR < 3).

WEED CONTROL

Weeds are able to grow easily through a metal surface and as such the subgrade needs to be adequately prepared. Weed control could be achieved through weed spraying of the base course prior to construction and the use of weed mats or other membranes below the basecourse.

DRAINAGE

Granular metal surface is susceptible to surface water scour. Do not use where gradient exceeds 8%.

Surface water should be shed from the surface to an adjoining drainage channel.

The surface should be compacted to a single crossfall or cambered profile.

3.7 Pedestrian facilities

3.7.1 Kerb crossings

DESCRIPTION

A kerb crossing (or pram ramp) can be any form of dropped kerb or at-grade arrangement to allow wheeled equipment such as prams, wheelchairs or mobility scooters to move safely from a footpath to cross a carriageway.

LOCATION

Kerb crossings must be provided at each kerb line at all intersections as well as other locations, to suit the logical and safe movement of pedestrians. Kerb crossings should generally be placed as close to desire line as possible to achieve:

- Minimum crossing distance.
- Appropriate sight distances, unrestricted by buildings, walls, hedges or other obstructions, especially on free left turns and where there is a large-radius kerb line.
- Point of conflict to be where vehicles are slowing to turn.

GRADIENT

The recommended gradient for kerb crossings is 5%, with a Preferred maximum grade of 8.33%. In exceptionally tight situations, a maximum grade of 12.5% may be used with the approval of the Auckland Transport Chief Engineer.

Note that gradients are true gradient and not measured relative to gradient of adjoining surfaces.

KERB RAMP AND BUILD-OUT

A minimum through route width of 1.5 m must be allowed behind the kerb ramp. Kerb build-outs can be considered where this 1.5 m width cannot otherwise be achieved. Further reduction to 1.2 m can be considered where there is no alternative, or to 0.9 m where there is a horizontal clearance of at least 0.3 m behind the edge of footpath.

Note that kerb build-outs cause pinch points for cyclists in the carriageway, so other measures have to be considered too.

FLUSH

All kerb and pedestrian crossings at the edge of ramps must be finished flush with channels and other interfaces, with no lip. Tactile ground surface indicators (TGSIs) must be installed as required below.

Where width of footpath is constrained, and the height of the kerb requires it, the level of the footpath around and behind the ramp may be reduced to achieve acceptable ramp gradient. Such ramps must comply with maximum footpath gradients.

DRAINAGE

Care should be taken to avoid ponding, and deposition of silt at crossings.

Where the back of footpath is low, surface water overland flow should be checked to avoid flooding of the footpath or unplanned discharge from the road reserve.

OTHER GUIDES

Design and construction of kerb crossings must be in accordance with the NZTA Pedestrian Planning and Design Guide, Section 15 and Table 15.2.

SEE PLAN

See Plan FP009 for kerb crossing details.

3.7.2 Tactile ground surface indicators (TGSIs) and visual aids

DESCRIPTION

Tactile ground surface indicators (TGSIs) are products consisting of a series of raised studs or bars.

PURPOSE

TGSIs are used to:

- Mark public access facilities such as intersection kerb crossings (pram ramps), pedestrian crossings, stairs, lifts, ramps and escalators.
- Alert pedestrians to platform edges at train stations, bus and tram stop areas, and ferry wharves.
- Warn pedestrians who are blind or vision impaired of hazards and provide them with navigation aid. Blind pedestrians can feel the textural changes through their feet or with a cane. Pedestrians with limited vision use the colour contrast between the TGSIs and ground surface to detect the modules visually.

COLOUR

Auckland Transport has adopted "safety yellow" as the standard colour for all TGSIs.

FRICTION

TGSIs on slopes/ramps must have an average coefficient of friction of no less than 0.6.

MEASURING FRICTION

As the BPN test method stipulated in AS/NZS 4586 was not designed for profiled surfaces, dual testing using this method as well as the horizontal dynamometer pull meter (ASTM C1028-07) must be used to determine the average coefficient of friction value of the two test methods.

GUIDE AND PLANS

All new, modified or upgraded kerb crossings must be as per RTS 14 Guidelines for Facilities for Blind and Vision-impaired Pedestrians and NZS/AS 1428.4. Also see Plan FP009.

TYPES OF TGSI

There are two types of TGSI.

- **Directional** Type C TGSIs ("leading tactiles") consist of a series of raised bars installed to the walking surface, oriented in line with the prescribed direction of travel. They often lead to a pad of warning TGSIs. Directional TGSIs give directional orientation in open spaces and designate the continuous accessible route to be taken to avoid hazards or gain access to a crossing point, public transport or public facility. They are most commonly laid across the continuous Through Route to orient users towards a crossing point.
- **Warning** Type B TGSI ("hazard" or "decision" tactiles) are installed to the walking surface in a raised grid pattern of domes or studs. Warning TGSIs are intended to function much like a stop sign. They are used to warn blind and vision-impaired pedestrians of a nearby hazard in their line of travel, showing that they should stop to determine the nature of the hazard before proceeding further.

PAVERS, MATS AND SINGLE INDICATORS

TGSIs come in the form of pavers (300 x 300mm tiles/slabs), mats glued to the ground, or single indicators (studs requiring individual pre-drilled holes for gluing). Only concrete pavers are approved for use by Auckland Transport.

PAVER INSTALLATION

- Sealed yellow pigmented 300mm x 300mm x 60mm concrete tile warning Type B tactile pavers should be used as the preferred option in external settings, because of their proven better slip resistance in wet conditions.
- At least two parallel tiles should be used to provide a continuous tactile surface of 600mm in the stepping direction.
- The tiles must have a 100mm concrete slab under them. In special situations where no vehicle traffic (including service or delivery vehicles) is expected, a 40mm thick paver may be considered, but only with the approval of the Auckland Transport engineer.
- A one-coat sealer with a UV stabiliser is recommended for maintenance and durability.

DIRECTIONAL TGSI INSTALLATION

Directional TGSIs must be installed as per RTS 14 Section 4.5.2.

3.8 Pedestrian crossings

DEFINITION

Pedestrian crossings are facilities provided to help pedestrians cross carriageways. They can be either controlled, giving pedestrians preference, or uncontrolled, where vehicles have preference.

LOCATION

Controlled pedestrian crossings should not be located:

- Within 80 m of another controlled crossing, except on different legs of intersections
- Between 20 m and 100 m from an intersection, unless signal controlled as an offset phase of a signal intersection.

KERB BUILD-OUTS

At intersection or mid-block crossing points, kerb build-outs/extensions reduce the crossing distance for pedestrians and increase the visibility for both pedestrians and drivers. By widening the footpath, they allow a gentler crossfall to the kerb, which is particularly beneficial to the mobility impaired. They also provide space to wait clear of the through route. Build-outs on Neighbourhood, Mixed-Use and Main Street Collector types shall have a maximum clear distance of 6.4 m kerb to kerb.

OPTION SELECTION

The need for a crossing, and the type of crossing to be used must be assessed in accordance with the current Auckland Transport Pedestrian Level of Service requirement.

STANDARDS

Design and construction of pedestrian crossings must be in accordance with:

- Urban Streets and Roads Design Guide
- NZTA Pedestrian Planning and Design Guide, Section 15 and Section 6.5. (The latter has specific guidelines for selecting the appropriate pedestrian crossing facilities.)
- Austroads Guide to Road Design, Part 4 – Intersections and Crossings – General.

MARKINGS

All pavement markings and signs including delineation (e.g. marker posts) on the approaches and at the crossing itself, must be as per the Land Transport Rule: Traffic Control Devices 2004.

3.8.1 Controlled pedestrian crossings

SIGNALISED PEDESTRIAN CROSSINGS

Pedestrian signals are required where a footpath route crosses multiple traffic lanes in one direction and vehicle speeds exceed 30 km/h. They may include a raised table to aid compliance.

ZEBRA CROSSINGS

Zebra crossings are marked by white painted strips on a red, black or dark grey surface across the road and flashing amber beacons or reflective discs mounted on black and white poles. A white limit line must be marked if practicable, to show motorists where to stop. White diamonds are painted on the road before the crossing as advanced warning.

Zebra crossings should be installed on raised tables.

Zebra crossings may incorporate school crossing patrol facilities at sites approved by Auckland Transport.

Zebra crossings should not be located where the speed limit exceeds 50km/h, except with specific approval from the NZTA.

OTHER GUIDES

See the chapter on Traffic Calming Devices in this manual for additional details.

SEE PLAN

See Plan FP011 for layout details and Plan FP012 for layout details of a pedestrian crossing with a centre island.

KEA SCHOOL CROSSINGS

Kea school crossings provide a safe place for children to cross the road and generally only operate before and after school. Pedestrians and traffic are always under the control of a school patrol while the kea crossing is operating.

INSTALLATION

Kea crossings must be installed as per the NZTA Pedestrian Planning and Design Guide, Chapter 17 Crossings, Section 17.8 Crossing Assistance for School Children.

3.8.2 Uncontrolled pedestrian crossings

DESCRIPTION

Uncontrolled pedestrian crossings may use raised platforms. Platforms on their own do not confer give-way priority unless they are also marked as zebra crossings.

Their design depends on:

- The number of crossing pedestrians
- The number of vehicles
- Street function
- Street width
- Landscape/streetscape factors
- Types of vehicles, vehicle speed
- Roadway surface slope and drainage.

RAMPS

Platform type pedestrian crossings must be flush with footpath or include platform/footpath ramping transitions for the smooth passage of prams, wheelchairs and mobility scooters. See Kerb Crossings in section 3.7.1 above for details.

DISTINGUISH CROSSING

It is vital that pedestrians do not mistake the platform as a continuation of the footpath. Crossings can be distinguished by:

- Surfacing materials with different texture and contrast;
- A white concrete beam between the edge of the platform and the footpath;
- Bollards or other street furniture.

TGSI

Tactile warning indicator paving must always be provided along the footpath near the boundary with the platform.

SIGNAGE

Drivers must be made aware of a pedestrian platform in good time, so they can reduce their speed. Warning sign PW-39 should be installed except where local area traffic management design does not require this. Markings are required on the approach ramps, as a driver may not see the top of the platform clearly. Do not use signs indicating pedestrians should give way to traffic, or motorists have right of way.

OTHER GUIDES

See the Traffic Calming Devices chapter and the related plans for additional details.

3.9 Pedestrian refuge islands

DESCRIPTION

Pedestrian refuge islands provide a place where pedestrians can stop part-way across a wide two-way or multi-lane road.

DIMENSIONS

Pedestrian islands should have an island depth of 1.8m or more (minimum depth of 1.4m) and a minimum passage width of 2.0m.

CONSTRUCTION

Pedestrian islands must be built as kerbed islands 150–180mm above the road surface and contrast with the road.

On routes used by over-dimensional vehicles, the island kerb height should be restricted to 100mm and mountable kerb profile used. Removable street furniture should be provided.

GUIDANCE ON ISLANDS

See also the Urban and rural roadway design chapter for in-situ and pre-cast concrete island details and kerb profiles.

PLANTS

If they are large enough, low plants (growing to no more than 0.6m high) that do not obscure children or signage may be planted. See the section on Landscaping in this chapter for acceptable plant heights and types.

LAYOUTS

The three pedestrian island layouts commonly used are straight, diagonal and chicane.

- Straight is preferred for a stand-alone pedestrian island.
- Diagonal may be appropriate in some road environments, where pram ramps on opposite sides of a street cannot be aligned at right angles. This layout should not be used where a straight layout can.
- Chicane design requires a wider island. This design should incorporate safety fencing, which can itself present a safety hazard under vehicle impact. Also, the fencing increases maintenance demands. It provides waiting space for more users, and is required for two-stage signal controlled crossings.

KERB CROSSINGS

Where there are pedestrian islands, kerb crossings must be provided to adjacent footpaths.

04 Trees and Planting

INTRODUCTION

This section should be read in conjunction with the Auckland Code of Practice for Land Development and Subdivision, Chapter 7: Landscaping. (ACoP L)

Landscaping and Planting Guidance is an interim guide.

Landscaping and Planting Standards supplements the ACoP L

4.1 Landscape and planting guidance

URBAN STREETS AND ROADS DESIGN GUIDE

Further guidance will be provided in USRDG in a future revision, in place of this section.

DESCRIPTION

The introduction of trees, shrubs and ground covers into the streetscape environment enhances overall visual amenity. Additionally, well landscaped streets offer social and physical benefits, e.g. improve air quality, calm traffic, enhance property values, provide storm water attenuation, aid overall mental health and reduce crime.

Mature tree canopy provides an essential ecological service. Transport corridor planting will often be needed as wildlife corridors between larger habitat areas.

Landscape in the context of streetscape amenities involves the selection, installation and ongoing maintenance of trees, shrubs and ground covers to enhance the amenity of roads and streets.

REASONS TO USE VEGETATION

Plants can contribute to streetscapes in various ways.

- Add visual interest, seasonal colour and texture.
- Soften the visual character.
- Enhance historic or heritage atmosphere.
- Spatially define or contain spaces within road and street corridors.
- Provide privacy.
- Provide shade in summer (and sun in cooler seasons if deciduous tree species are used).
- Enhance environmental tolerance to pollution and exposure.
- Intercept storm water.
- Provide articulate pollution filtration.
- Provide cooling through evapotranspiration.
- Provide ecological aerial corridors.

Smart landscaping can contribute to the appeal of streetscapes

WHERE TO USE

Planting is primarily applied in the street furniture zone. Use in the frontage zone needs to consider underground services. These are locations for passive and active social interaction. Planting design requires careful consideration of CPTED principles, sight lines and impact on wildlife.

Planting along the street may be supported by larger planting areas near intersections, accessway connections, stormwater management features and links to areas of bush.

GENERAL DESIGN CONSIDERATIONS

The type of plants selected and their containment design should be directly responsive to context and the character of street. Consider free movement zones without obstacles, drainage from planted beds into below grade systems or onto adjacent paving areas and irrigation during dry periods.

SUB-SURFACE DESIGN

Design below surface level is as important as design above.

The root growth zone must provide for the needs of plants from establishment to maturity (moisture, air, nutrition, soil structure).

Root deflectors/barriers are needed to protect vulnerable infrastructure.

Space is also needed for underground services and customer connections, and for stormwater management devices, and foundations of roads, lighting columns and other structures.

4.1.1 Trees, shrubs and ground covers

DESCRIPTION

A variety of plants in the streetscape

In choosing the plants, consider the impact of the selected species on the overall streetscape amenity, the local design context, sub-regional connectivity with wildlife habitat and routes, long-term maintenance cost and serviceability (for example waste collection). Plants can either offer deciduous or year round foliage, while flowering plants can offer splashes of colour in certain seasons.

Plants are considered in these categories :

- Trees (3m+)
- Shrubs (0.5-3m)
- Ground covers (0.1-0.5m)
- Seasonal flowers (0.00-0.10m)

LOCATION

Trees may be spaced along streets at regular intervals.

Also, they may be planted in groups, with companion ground cover or shrubs, to create landmark points within the street network. Companion planting must be selected to be compatible with the healthy growth of the tree, with regard to soil, nutrition, water demand and disease risk.

They may accompany stormwater management devices.

DESIGN CONSIDERATIONS

The key design considerations are:

- Benefits for shade, air quality and stormwater management.
- Height and sight line clearance for vehicles and pedestrians.
- Strengthening established plant ecology.
- Available space for healthy growth/root expansion.
- Impact on existing overhead and underground utilities and available space for future planting.
- Impacts of utility line maintenance destroying tree canopies.
- Potential impact of tree canopy on servicing ability eg waste collections
- Seasonal effects of leaf, pollen, seed and fruit fall.
- Need for pruning to maintain clearances.
- Whole of life maintenance needs and costs.
- Affects on the CCTV monitoring of an area.

VISIBILITY

Shrubs should be limited to the frontage zone, and not placed in the street furniture zone where they will impair visibility for all users.

CPTED issues should be considered before deciding to use shrubs.

Trees with low-spreading habit, including immature specimens, should be avoided or checked for effect on sight lines.

4.1.2 Ground level planting

DESCRIPTION

Ground level planting is used primarily to enhance the experience and overall level of streetscape amenity for pedestrians, cyclists and drivers. It can provide valuable ecological habitat and movement routes for fauna, especially continuous tree canopies with physical connections to reserves or open space.

Ground level planting can be applied to all plant types, depending on context. Trees are best used where there is adequate room for the canopy to expand fully. For ground covers, larger areas are typically required to create the best visual effect.

INTEGRATED STORMWATER MANAGEMENT

Planting can include use in swales, bioretention swales and raingardens.

Ground level planting

DESIGN CONSIDERATIONS

In terms of design:

- Consider gradient of ground surface. This may be steep for reinforced slopes, embankments, cuttings or side slopes of drainage channels. There may be a slight slope to maintain natural surface drainage, or horizontal where subsurface drainage is provided.
- Consider visibility over and through plants.
- Prune lower branches of trees to ensure critical sight lines are maintained for pedestrians, cyclists and motorists.
- Shrubs must also be carefully selected to avoid visual obstruction and high maintenance. They should be limited to the frontage zone, and not placed in the street furniture zone where they will impair visibility for all users.
- CPTED issues should be considered before deciding to use shrubs.
- Trees with low-spreading habit, including immature specimens, should be avoided or checked for effect on sight lines.
- Generally, keep all areas between 0.9m and 1.75m above ground level free of visual obstructions.
- Provide apron or other feature to prevent spreading vegetation from encroaching beyond the kerbline. Set-back of 0.6 m generally recommended.
- Consider access to the kerbside for parking, crossing the street, and stands for waste bin collection.

4.1.3 Grassed areas

DESCRIPTION

Grassed areas may be in the street furniture zone or the frontage zone.

They may provide separation between types of users, especially where turning vehicles may overhang the space, or high speed traffic is present.

They allow easy excavation and reinstatement for underground services.

It is generally expected that they will be maintained by frontage residents in urban residential streets.

They provide space where waste bins can be set out for collection.

DESIGN CONSIDERATIONS

The key design considerations are:

- Reduced impervious area for stormwater management.
- Rural grassed berms will only be cut for fire safety, visibility and weed suppression. Grass species and other permitted plants should be selected to support minimum maintenance.
- Grassed slopes should not exceed 20% (1:5) gradient for safety when mowing.
- A minimum of 750 mm at top of slopes or 500 mm at toe of slopes must be level (2%- 8% grade) for safety and maintenance, adjacent to paths.
- Large areas under public management may be mown by driven machines. Grass seed mix should be selected for infrequent mowing.
- Safe manoeuvring of machines to access for mowing should be considered, including mountable crossing kerbs where needed, but avoiding attracting unwanted vehicle access for parking.
- Residential street grassed areas to be mown by residents must be located so that they can be safely accessed without traffic management.
- Reinforced grass paving may be used for occasional vehicle access, and for communal waste bin collection stands.

4.1.3 Covered tree pits

DESCRIPTION

Covered tree pits reduce the area of pavement occupied by tree where space is at a premium. They may include a below grade chamber with soil, drainage, and feeding tube, as well as decorative up-lighting. Pervious grates or covers visually define the base of the tree and allow surface drainage, tree fertilizer and air to reach tree roots. Covered pits are used exclusively within paved areas.

Tree grate

Structural cells support the surface paving while avoiding compaction of soil, and may include an air gap above the soil level.

They may incorporate stormwater management.

DESIGN CONSIDERATIONS

In terms of design:

- The tree grate or pit cover should respond directly to local character.
- Tree grates are not always suitable for wide branching trees.
- Narrow, long tree pits can distort or stunt tree growing conditions.

- Ensure that the approved soil specification is used to discourage weeds.
- Grates or covers should be ‘heelsafe’ and avoid trip hazards.

4.1.4 Raised and flush planted median islands

DESCRIPTION

Raised and flush planted median islands provide important visual definition for vehicle lane edges, offer significant opportunities for visual amenity and visually break up the street environment into smaller components. They are typically defined by concrete kerbed edges and are either surfaced in hard or soft landscaping, or combinations of both.

Raised and flush planted medians

DESIGN CONSIDERATIONS

In terms of design:

- Sight distance considerations must include the height of objects placed in the median where users can turn or cross the street.
- Plantings must be low shrubs and/or ground covers not exceeding 0.5 m in height or trees limbed up to offer clear sight lines from street pavement level to 2.0 m.
- Shrubs may be used only in long medians with sufficient width for their habit to keep out of clearance envelopes, and terminating clear of sight lines for any users
- Ability to keep clearance envelope
- Infrequent maintenance needs, and safe access with minimal traffic management requirements are required.

4.1.5 Raised planters

DESCRIPTION

Raised planters complement adjacent land use activities such as retail, public buildings and heritage precincts. They enhance pedestrian experience and overall level of streetscape amenity, provide vertical contrast to the mainly horizontal character of pedestrian space, give low height plants additional visual impact and scale and can introduce planting where limited space prohibits trees and larger shrubs.

They can aid separation and guidance of different users.

Raised planters

Moveable planters can be used for interim and intermittent management of users.

Above ground fixed and moveable planters for small trees, low shrubs, ground covers and floral displays can be made from masonry, timber or metal based planters, constructed in place or prefabricated off-site, as well as decorative planting containers made of clay, masonry, timber or metal.

Planting can require frequent maintenance including irrigation, so raised planters should be avoided where fixed beds with natural irrigation can be provided. Hardy plants should be used, unless specific funded plant care agreements are in place.

DESIGN CONSIDERATIONS

In terms of design:

- Raised planters are generally not considered where little pedestrian activity is expected.
- Keep planter height to a maximum of 1m, to avoid visual obstructions and risks to personal safety.
- Visibility over and through planters is important. Generally, keep all areas between 0.9m and 1.75m (eye height for children and adults) free of visual obstructions wider than 300mm.
- Soils can be subject to drying out, and measures to deal with this must be specified (wetting agents, installed irrigation, care regime).

4.1.6 Vertical planting structures

DESCRIPTION

Vertical planting structures provide vegetation-based canopy or green walls to compensate for lack of shrubs and trees. They include pergolas, trellis structures, and wire-based wall supports for climbing plants. These structures are typically used in urban settings where there is limited space between buildings and the road for trees, shrubs, ground covers and floral plantings.

Example of vertical planting structures

Most vertical planting structures will be in private ownership, but may extend into public access easements, access walkways or in special circumstances into public street pedestrian areas.

Vertical planting structures are typically constructed of timber, metal or masonry based materials such as brick.

DESIGN CONSIDERATIONS

In terms of design:

- Structural engineering design and building consent needed
- Asset owner funded agreement needed
- Pergolas can be used effectively to unify spaces by providing spatial containment and a continuous design element.
- Wall-based plantings must not block essential sight lines for users.
- Consider seasonal sunlight needs, foliage variation and flowering important for overhead structures.
- Select suitable plants which require minimum maintenance and that do not extend excessively into the pedestrian, cyclist or vehicle through route.
- Ensure a reliable source of water.
- Bear maintenance costs of plants and structure in mind.

4.1.7 Parklets

DESCRIPTION

Parklets offer areas of relaxation or social interaction, especially in areas of high pedestrian or cycling activity. In town centres, they can reduce the overall width of pedestrian crossings.

They are located in the Ancillary zone of the street.

Examples of parklets

A small park-like area is often established temporarily to test the feasibility of the concept for a more permanent installation later, which would be redefined as part of the street furniture zone.

It is usually constructed of material that is easy to assemble, such as timber, metal and moveable elements such as large ceramic or concrete planters.

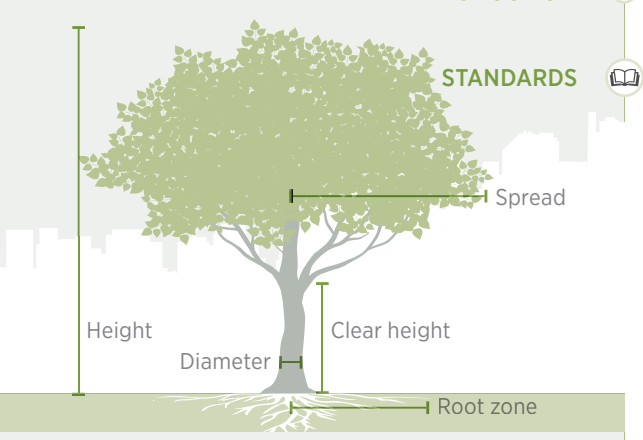
DESIGN CONSIDERATIONS

- Ensure pedestrian safety, while also maintaining a clearly defined route for vehicles.
- Ensure that vehicle overhangs and turning path requirements are fully accommodated.
- Materials should be in keeping with the local context and needs of the user.
- Ensure appropriate growing conditions for plant survival.
- Ensure visibility is not impaired, especially where pedestrians may enter the road.

4.2 Landscape and planting standards

INTRODUCTION

STANDARDS



PLANTING FOR STORMWATER MANAGEMENT

CLEARANCE ENVELOPES

This section provides supplementary guidance for planting in road reserves.

Landscape and planting in road reserves should comply with the Auckland Code of Practice for Land Development and Subdivision Chapter 7: Landscaping (ACoP L), with the supplementary AT standards provided below.

Auckland Council has published numerous policies, technical publications and guidance documents that are relevant to green infrastructure and landscaping. This chapter shall be used in conjunction with the guidance documents listed in ACoP L.

Landscaping works shall be carried out in accordance with any other current guidelines published by Auckland Council.

Where planting is required to perform a stormwater management function, or can usefully contribute to this, it shall comply with Stormwater Management Devices in the Auckland Region (GD01), Auckland Design Manual, in particular, Section C1- Plants and Soils.

4.2.1 Clearances

Position street trees so height clearances of 4.5 metres (measured from the carriageway surface at the kerb-line) can be maintained above traffic lanes when the trees are mature.

Position street trees so height clearances of 3.0 metres (measured from the carriageway surface at the kerb-line) can be maintained above parking bays or local street parking shoulders when the trees are mature.

Position street trees so height clearances of 2.5 metres (measured from the footpath and cycle way surface) can be maintained.

Set trees back no less than 0.6m from the front of kerb.

Over-dimensional routes require height clearances of 6.5m and width clearances of 11.5 metres. Trees may need to be set back so that the canopy remains clear of the width of this envelope.

The edge of raised planters constructed in sealed berms should be positioned no closer than 0.6 metres from the outer face of the kerbing to provide adequate clearances for opening car doors, vehicle overhangs of exiting vehicles etc.

Mature spread should have minimum clearance of 2 m from buildings and 1 m from canopies and verandas.

Clearance envelopes are shown in GD series of Standard Drawings.

For vegetation, an additional clearance is included for seasonal growth between visits for trimming, and for the effects of wind and the weight of rain on flexible limbs.

UTILITIES

Underground and overhead utility services may be impacted by roots and canopy of vegetation. The following clearance is required for trees, noting that some species or situations may require greater distances to be agreed with Auckland Council:

- Protection of utilities from root damage is required for trees within 1 m of underground utilities. This includes Auckland Transport's networks such as CCTV, traffic signals, etc.
- Minimum 2 m from manholes, drainage catchment and underground services surface openings
- Minimum 3 m away from low voltage power poles and 5 m from high voltage poles, transformers and transformer poles
- Minimum 4 m away from high-pressure gas pipelines. Permits are required for excavation and tree planting in those areas. Low-pressure gas providers also require clearance distances from pipelines are maintained when excavating nearby.
- Minimum 2 m away from Watercare Services' pipelines over 300 mm in diameter.

New services need to provide these distances from retained semi-mature and mature trees.

SIGHT LINES

Clear sight lines are required to be kept in the immediate vicinity of:

- Traffic lights, signs and delineators
- Intersections
- Bus stops, schools
- Pedestrian crossings
- CCTV cameras

Within these sight line envelopes ground cover is to be below 0.6 m, trees should be limbed up to at least 1.75 m above ground or to a height that avoids obstructing signs, and shrubs and other foliage are to be avoided between these heights.

4.2.2 Tree species selection

ACoP L requirements:

GENERAL

Trees shall be selected based on intended design at maturity including height, girth, crown spread, volume and canopy. Selection shall also include an assessment of maintenance needs and health and safety aspects associated with maintenance.

Additional considerations include potential as a food source for native species, colour palette, rare specimens, screening and privacy.

Setbacks shall consider shading, privacy and screening, direct damage (such as root intrusion), future pressure for removal and seasonal nuisance (such as leaf drop).

Species selection shall conform to any specific conditions within the Auckland Unitary Plan, such as historic heritage and special character areas (Chapter D). All species selection shall be undertaken by a suitably qualified and experienced person. A statement of intent shall be provided to Auckland Council which identifies the different functions the vegetation should provide.

While there are many planting lists and planting strategy plans available (e.g. from legacy district councils), these should not be considered mandatory in the species selection process. Developers should seek advice from Auckland Council when selecting suitable and appropriate plant species.

No plants shall be used that are in any categories of the Auckland Regional Pest Management Strategy or listed on the National Pest Plant Accord. The Auckland Council biosecurity team provides advice on weed control techniques in the plant-search database.

FUNCTIONAL

- The growth of the vegetation over time – size, shape, root depth/volume etc. Consider an appropriate form where adjacent to foot and cycle paths, public open spaces and underneath power lines (not contributing to trip hazards, hazards from overhanging vegetation, allowing for passive surveillance of open spaces, allowing for safe maintenance, etc.)
- The function and resilience of the vegetation within that setting
- Proven robust performer (tolerant of urban conditions– drought, poor soils, pollution, exposure etc.) in that, or similar, location (micro-climate, including potential changes to the micro-climate that result from development)
- Limited potential for structural damage to kerbs, surfaces, underground infrastructure and buildings
- Impact on significant views (e.g. open or columnar form, or deciduous)
- Consideration of root requirements throughout the life of the plant
- Longevity suitable for application
- Maintenance requirements including pruning needs, working at height, etc. In addition to ACoP L, ensure drainage is designed with regard to effects of planting, and planting is designed to enhance road drainage.

ECOLOGICAL

- Provides habitat and food for native birds and animals
- Provides ecosystem connectivity and diversity
- Provides appropriate species richness
- Ecosourced (For further information on ecosourcing refer to Auckland Council's Ecosourcing brochure)
- Accommodates the specific constraints of the site, such as shade, wind, inundation, etc.
- The planting functions as a buffer (e.g. between urban and non-urban spaces)
- Biosecurity: plant stock shall be checked for biosecurity risks.
- Companion planting must be selected to be compatible with the healthy growth of the tree, with regard to soil, nutrition, water demand and disease risk.

CULTURE AND AMENITY

- Aligned with Mana Whenua values, including the preferred use of native species
- Aesthetics including attractive form, foliage, flower or seasonal interest
- Contribution to sense of place, cultural and heritage values
- Opportunity to provide shade.

ECONOMIC

Prior to vesting landscaping assets, a comprehensive Net Present Value analysis shall be submitted to Auckland Council. Guidance for conducting this analysis is provided in Auckland Council Guideline Document, GD01.

Consideration of whole-of-life costs associated with chosen plant species under an assumption of steady state (e.g. functional ecosystem with optimal growth and maintenance), including all costs associated with:

- Design
- Installation
- Establishment
- On-going maintenance
- Partial renewals (e.g. soil or plant replacement)
- Decommissioning.

4.2.3 Trees in built structures

COST PLAN

A whole-of-life cost shall be provided that includes installation, maintenance and decommissioning of the trees within the structures.

SPECIES SELECTION

Tree species for rain gardens shall be those with small, defined root balls and be based on the constraints of the structure including: o The structure's size

- The impact of urban heat
- Water constraints
- The impact of traffic
- Maintenance requirements.
- Soil selection, according to the requirements of Auckland Council Guideline Document GD01 and to be agreed by Auckland Council
- Soil volumes shall be sufficient to provide for the lifetime of the tree with provision for periodic soil removal without damage to the tree.

If this cannot be designed for, then trees shall not be included in the design. Further information is provided in GD01.

4.2.4 Protection of existing vegetation and trees

REQUIREMENTS

Protection of vegetation shall, as a minimum, comply with all the relevant provisions in the Auckland Unitary Plan (i.e. Chapters E15, E16 and E17).

Additional tree protection measures may be deemed required by an Auckland Council arborist for the long-term survival of specific trees that are vested in Council. Any additional tree protection for specific trees shall be agreed and confirmed in the development agreement between the developer and Auckland Council arborist.

ROOT ZONE

The minimum protected root zone is defined in the Auckland Unitary Plan as the circular area of ground around the trunk of the tree, the radius of which is the greatest distance between

the trunk and the outer edge of the canopy. For columnar crown species, the protected root zone is half the height of the tree.

In addition to AC requirements, the root zone for protection may need to be varied to cover the true extent of roots covered by existing surfaces, or confined by root barriers.

4.2.5 Protection of Infrastructure from root invasion

AVOIDANCE

Where practicable, provide horizontal separation from tree root zones to vulnerable infrastructure.

ROOT BARRIERS AND DEFLECTORS

Where roots would naturally invade pipes, service trenches, road or footpath foundations, root barriers or deflectors should be installed over the maximum length of expected risk. These should be as close to the vulnerable infrastructure as possible, to provide the maximum root growth volume. Root barriers or structural walls should be used for this purpose at the perimeter of structural and covered tree cells.

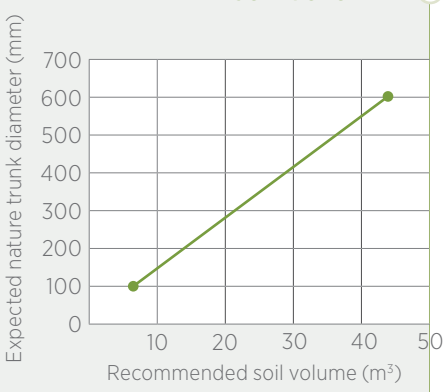
Designs will vary with soil conditions and species, so should be designed by an arborist and submitted for approval by AC arborist.

4.2.6 Soils for planting in road reserve

SOIL VOLUME

This applies to tree planting in areas confined by root barriers, structures and other road infrastructure.

The soil volumes represent those required for mature tree survival. The soil media shall be functionally fit-for-purpose for the tree and may consist of soils sourced from on-site or engineered media. In areas where the tree may receive contaminated runoff (such as street tree pits), a sacrificial layer must be designed for, and a maintenance plan put in place, to remediate those soils with minimal disturbance to the tree.



Trunk diameter at maturity (mm)	Small	Medium	Medium/Large	Large
Minimum soil volume	>8 m^3	>10 m^3	>15 m^3	>15 m^3

SOIL QUALITY

Planting in road reserves is often within compacted made ground. The soil volume required for mature root growth may require aeration and decompaction, or excavation and replacement, to ensure that roots will grow in future years beyond the initial planting pit.

4.2.7 Shrubs, ground cover and revegetation

This section describes the minimum standards for the following planting typologies:

- Shrubs and ground cover for amenity
- Shrubs for function (e.g. rain gardens and swales)
- Shrubs for biodiversity and revegetation.

PLANTING HEIGHT

Amenity: Minimum 50 mm and ideally, 200 mm (or greater). Maximum growth to 600 mm within sight lines for safety and CPTED.

Raingardens and swales: Refer to GD01.

Revegetation: Minimum 500 mm.

PLANT SELECTION

Amenity: Species chosen should cover the ground quickly, prevent weeds and not overhang beyond edging (including when they are wet) where they create trip hazards.

Raingardens and swales: Plants contain typically large and rhizomous root to form a surface that resists channel erosion, low/no mowing regime (flail mowing is not permitted), tensile strength to retain soils during high flow events, tolerance to climatic extremes (particularly heat) and planned maintenance.

Revegetation: Revegetation grade is typically 2 litre (PB3) size. Manuka and kanuka may be planted in root trainers or peat pots.

Revegetation can be successful with small grade, high density planting (plug and root trainers may be appropriate for some groundcover specimens).

PLANTING POSITION

Amenity: Planting plan to account for height at maturity, shade, sun and water needs.

Raingardens and swales: Use plants in the lowest point of the channel that can be inundated on a periodic basis and will either flatten, or part, under flows and avoid preferential flow paths.

Revegetation: Plants shall be spaced at 1.5 m intervals. Revegetation planting shall extend away from water's edge at least 10 m for urban streams and 20 m for rural streams, to the fullest extent practicable along the reach.

4.2.8 Grassed areas

SEED MIX

Select a proven robust performer, which is suitable for:

- Level of use; level of maintenance
- Soil type and drainage characteristics
- Climate, including proximity to coastal conditions.

Grass choice must minimise maintenance (such as preventing weed growth).

Unless specified otherwise in the planting plan, the area to be re-instated shall be sown from Mediterranean germplasm rye grass (Bushburn is not acceptable).

Tall fescue grasses may be sown in swales or if drainage is poor.

Do not use kikuyu (Pennisetum clandestinum), which can invade raingardens and swales, vegetated areas and construction joints in road infrastructure.

RURAL BERMS

Rural grassed berms will only be cut for fire safety, visibility and weed suppression. Grass species and other permitted plants should be selected to support minimum maintenance, and promote soil stability.

URBAN GRASSED AREAS

Large areas under public management may be mown by driven machines. Grass seed mix should be selected for infrequent mowing. Specific lawn areas for sitting out and play may utilise a hard-wearing lawn mix, where a management plan for maintenance is provided.

Residential street grassed areas to be mown by residents may be sown with seed mix compatible with private lawns, principally in suburban residential local streets.

Reinforced grass paving may be used for occasional vehicle access, and for communal waste bin collection stands.

COASTAL AREAS

It is preferred that berms and verges in coastal areas be grassed with a seed mix that is tolerant of salinity. It is expected that a suitable seed be used that can meet the coastal requirements including sea level changes.

Where a suitable seed mix is not available or appropriate then salt tolerant plants may be used instead.

ALTERNATIVE PLANTING METHODS

Alternative methods such as hydraulic mulch seeding or solid imported turf may be used with permission of AT Chief Engineer. Specification and methodology will be subject to specific approval.

05 Street furniture

INTRODUCTION

This section introduces, defines and explains the range of streetscape components that influence the use, look and feel of the street for all users. Street furniture and structures have a great influence on the amenity and aesthetic appeal of streetscapes. This chapter sets out basic design guidelines to follow for the permanent installation or temporary setup of different types of street furniture and structures.

STREET FURNITURE ZONE

All street furniture should be located in the street furniture zone. As described in section 2.1, the street furniture zone provides space for signs, light and signal poles, street trees, public transport stops, rubbish bins, and any additional underground infrastructure.

FRONTAGE ZONE

Signs, poles, street trees, public transport shelters and underground infrastructure may be placed within the frontage zone, where the rear edge of the Through Route is clearly defined for visually impaired users.

Trees, landscaping and stormwater management devices may be provided where the width of the frontage zone permits, and conflict with underground services is avoided.

DESIGN PRINCIPLES

All street furniture must be designed and located in accordance with universal design criteria. Give special consideration to:

- Safety. Crime prevention through environmental design (CPTED).
- Durability. A quantitative measure that is an estimation of the length of time the material is expected to perform in the proposed environment.

- Cost. A quantitative measure that is an estimation of the length of time the material is expected to perform in the proposed environment.
- Functionality. Is the element/material fit for purpose, exceeding all required technical parameters?
- Maintenance. Ease of cleaning ease and cost of reinstatement (available skills, workmanship and cost. Relates also to Design Life and Whole of life cost above.
- Supply. Security of supply (availability), volume/capacity to provide element/materials as and when required, in a timely fashion.
- Sustainability. Consideration of the environmental cost and contribution to the local and national economy from locally supplied items.
- Look and feel. The appearance of the street furniture must fit the setting. Consider if the material choice contributes towards local distinctiveness, character and sense of place as well as reflect the Auckland brand and identity.

STANDARD STREET FURNITURE TYPES

All street furniture must comply with standard street furniture types where these are provided, selected to address a variety of anticipated situations, while also minimising replacement and general maintenance costs. Deviations or alternative designs to those required in this manual, along with different locational approaches, will be reviewed on a case by case basis.

SCOPE

The chapter has been organised so that it's only necessary to read the section on each type of street furniture or structure.

5.1 Bus shelters

5.2 Cycle racks and lockers

5.3 Seating and tables (fixed)

5.4 Seating and tables (moveable)

5.5 Outdoor dining and play space

5.6 Shade structures (fixed)

5.7 Shade structures (moveable)

5.8 Signage (temporary)

5.9 Banners and flags

5.10 Public art

5.11 Kiosks

5.12 Drinking fountains

5.13 Water features

5.14 Pedestrian lighting

5.15 Wayfinding signage

5.16 Barriers, railings, fences and bollards

5.17 Public toilets (permanent)

5.18 Public toilets (temporary)

5.19 Litter bins (fixed)

5.20 Waste bins (movable)

5.1 Bus shelters

DESCRIPTION

Bus shelters are fixed structures placed at designated bus stops to offer passengers shelter from wind, sun and rain. They can be of different sizes and be made primarily of metal, timber and glass.

Well-designed and placed bus stops and shelters improve the total journey for bus travellers and enhance streetscape amenity.

5.1.1 Placement

PLACEMENT

Bus shelters should be placed at designated bus stop locations and sized as per Auckland Transport's bus stop and route requirements. The locations and critical height clearances of verandas and pedestrian paving gradients should be integrated into any proposed bus shelter design.

The bus shelters must respond to the setting of each location. Prevailing wind directions, pedestrian circulation and adjacent activities may influence how each panel is configured.

Consider the placement of seating and its corresponding viewing orientation relative to the street and adjoining uses. In some situations, it may be better to have passengers with their backs to the roadway rather than facing the roadway.

5.1.2 Design and material specifications

Bus shelters must be of durable and robust construction with flexibility to alter and modify components as required to meet the needs of each location. AT standard designs should be used.

DETAILED GUIDANCE

For detailed guidance on bus shelters, see Engineering Design Code - Cycling infrastructure or Public Transport - Bus infrastructure.

5.2 Cycle racks and lockers

DESCRIPTION

Well located, safe and secure cycle racks, lockers and other mass storage facilities help encourage more people to cycle and make integrated journeys with public transport across Auckland.

Bike racks provide convenient, accessible, legible, safe and attractive bike storage facilities.

Cycle lockers are not considered appropriate for the streetscape environment. They are better placed within the facility they serve.

WHEN TO PROVIDE

Detailed guidance on provision for cyclists can be found in Engineering Design Code - Cycling infrastructure.

5.2.1 Placement

Install bike racks at mode change features (ferry terminals, bus stops etc.), public buildings and attractions. Typically, place bike racks within the street furniture zone, unless an alternative location clearly provides significant advantages. Bike racks should be located to minimise conflicts with other streetscape elements. Generally, racks should be placed perpendicular to the flow of pedestrian traffic.

Clear access to the cycle facilities by cyclists is crucial to their ease of use and so these approaches should be considered when placing other furniture and streetscape elements.

REPAIR FACILITIES

At key locations, standard repair facilities may be installed alongside cycle racks. These should include captive tools, and should have a clear stand space for a cycle to be repaired.

5.2.2 Design and material specifications

Sheffield and Harrogate bike racks are the standard bike racks accepted by Auckland Transport. Sheffield bike racks are the required model unless space constraints clearly demonstrate that the more compact Harrogate model is required. No other styles of bike racks will be considered.

Tapper rails must be provided to the outer stands of a group, and to any stand parallel to the footpath through route, unless other features provide protection such that pedestrians cannot walk towards the stand.

DETAILED GUIDANCE

Detailed guidance on these features can be found in Cycling Infrastructure Design chapter.

5.3 Seating and tables (fixed)

DESCRIPTION

Seating provides resting places for pedestrians, places where people can linger, enjoy the view or interact socially. By encouraging this human activity, and through their design, benches and seating elements can be a key contributor to successful place-making and movement networks, enhancing the overall amenity of the street.

WHEN TO PROVIDE

Seating should be provided at regular spacing along recognised pedestrian routes, especially those used by less-mobile people or where the street has a steep gradient.

Fixed tables may be provided, but only at places along recreational routes where users are likely to bring food. They should be accompanied by litter bins in locations that can be easily serviced.

Key areas where seats should be provided include:

- Key walking routes to schools, work places, transport nodes, shops, community and recreational facilities.
- Public transport routes, stations and interchanges.
- The city centre, metropolitan centres, and town and local centres.
- Streets that border the coast, major parks, or other important recreational routes.

VARIETY

Seating should cater for the extent and lifestyle preferences of future users at the site. Where streets play an important public space role, such as in town centres, a varied selection of seating elements should be provided.

In addition to well-situated, comfortable and accessible primary seating, secondary opportunities for informal seating should be considered. These can include steps, raised planters and other low walls, bollards and building edges. Where seating is in high demand, these secondary opportunities make a valuable contribution, but they should not be a replacement for primary seating.

A balance should be struck between groups of seating to promote interaction and accommodate groups and individual seats in locations that offer relative quiet and respite for individual users.

5.3.1 Placement

SPACING

Benches and seats for rest should ideally be placed every 50 m, particularly in urban areas adjacent to commercial and retail activities (e.g. town centres), and routes to public buildings such as hospitals and libraries.

SITING

In town centres and other streets where the footpath extends to the kerb, seating should generally be located within the street furniture zone adjacent to the kerb, and clear of the through-route.

In suburban streets where footpaths are bounded by grass berms on each side, seats may best be placed in hardstand areas within the grass berm within the property frontage zone, away from fast moving traffic.

Seats should not block access to property or unduly block shop window displays.

Seating should be sited and arranged to reduce visual clutter, co-ordinated with other street furniture elements.

CLEARANCES

Minimum clearances between seats and other streetscape components include:

- 600mm minimum distance from front face of kerb (700mm on double decker bus routes)
- Placement and spacing of seating should consider dimensions required when occupied and generally allow 750mm space for users in front of the seating element, clear of the through route
- 600mm clearance from tree pits
- 1000mm clearance from other street furniture elements

5.3.2 Orientation

Location and arrangement of seating should be aligned with the geometry of the space – facades, movement routes, other street furniture and trees.

Seating should be located at the edges of space, look onto street activity and offer the user a view (particularly towards other people).

General orientation guidelines include:

- If width permits, generally locate seats perpendicular to the kerb to offer views down the street.
- For ease of use, seating should always be oriented perpendicular to steep gradients
- Seats should not face only onto parked cars.
- Seats at bus stops should be placed to optimise the view of approaching buses and real-time signage.
- Seating should be placed in visible locations where users can be seen and feel safe and preferably not be approached from behind.

5.3.3. Groups of seating

Seating elements can be grouped in pairs of 'L' shapes to create gathering points or nodes of activity along the street. These should be aligned with pedestrian movement patterns and activities and placed on the edge of spaces. The clearance between the front face of seats placed to face each other should be 0.9m minimum and 1.5m maximum. Back-to-back seating provides separate seating oriented away from each other to provide solitude for individual users.

5.3.3 Comfort and microclimate

Seats should be located for user comfort in relation to local microclimate of sun and shade, and shelter from wind and rain.

Sunlit positions are generally preferred in dense built environments whereas in open and exposed locations such as along the coast placement under trees or shade structures may be more appropriate.

Shelter from wind, and avoidance of known wind tunnels from tall buildings, is also important to avoid seats being uncomfortable or little used.

5.3.4 Design and material specifications

Seats, benches and tables are typically made of durable, easily maintained materials such as timber, concrete, metal or man-made materials.

While a certain degree of diversity in seating is appropriate in some locations where bespoke street furniture palettes and area-based design guidelines exist, elsewhere this variety, often within any given stretch of street, contributes to a lack of a

consistent, cohesive and legible streetscape environment. The lack of consistency also creates maintenance and replacement issues throughout the street furniture item's lifecycle.

A limited number of seating designs will be approved by Auckland Transport for general use that meet minimum requirements for accessibility, maintenance and safety. This is currently a work in progress and this manual will be updated to reflect this approved seating range and criteria for use.

Bespoke seating elements may be appropriate in special areas such as town centres. Bespoke seating must be designed to meet the same performance criteria as approved seating types and should be designed to combine comfort, ease of maintenance and resistance to vandalism. Design teams will need to submit proposed bespoke seating elements to Auckland Transport for review and approval.

In addition to the above guidance, the following criteria, adapted from the Auckland CBD Better Streets Guide, should be considered in designing bespoke seating elements or evaluating the suitability of new off-the-shelf products.

- Seating should be ergonomically designed to provide comfort and ease of use, and should provide varying opportunities of use.
- Seating must comply with conventional ergonomic specifications.
- Optimum seating height is generally 450mm.
- Tables must be dimensioned to prevent leg injuries.
- Seating may be considered with or without backrests, but must provide armrests.
- Timber is preferred where people may sit for longer.
- The styles, materials and placement of seats, benches and tables should all respond directly to the local character of the community, its streets and adjoining buildings. E.g., an established heritage area with protected buildings and other features warrants a more heritage style.
- Seats, benches and tables should not visually dominate the streetscape.
- Products that complement and blend rather than stand out are preferable for most situations.
- Seating must be quick draining, avoiding large, flat surfaces.
- Items must be easily maintainable
- Seating should provide adequate clearance underneath for ease of street cleaning, as well as providing useful space for people to put their feet and bags under the bench, as well as a place for guide dogs to rest etc.
- Cleaning and graffiti removal must be possible with ease and minimal effort.
- Large areas of flat surfaces should be avoided to limit the opportunity for graffiti and vandalism.
- Parts must be easily replaceable if damaged or vandalised.
- Metal componentry must be resistant to corrosion e.g. hot dip galvanised.

REMOVAL

Seating that is taken out of service should be removed.

OTHER GUIDES

Also consult:

- Area-Specific Street Furniture Suites e.g. City Centre, Waterfront, Henderson/New Lynn
- Auckland City Council (2010): Great Streets – A Streetscape Design Guide for the CBD
- Auckland Council (2012 under development): Auckland Design Manual
- Land Transport New Zealand (2007): Pedestrian Planning and Design Guide

TABLE 6 PREFERRED PERMANENT BENCHES, SEATS AND TABLES (FIXED)

Preferred locations and orientation	Acceptance criteria
Bench	
Street furniture zone Plazas Park edges Adjacent to public buildings and services Sunny location Under tree canopy not advised, due to bird droppings.	Non-corroding metal frame or base Hardwood slats resistant to sun and rain Easily replaced. Concrete Stone Anchored/attached to concrete footings
Seat	
Street furniture zone Plazas Park edges Adjacent to public buildings and services Sunny location Under tree canopy not advised, due to bird droppings.	Non-corroding metal base or frame Hardwood slats (preferred) resistant to sun and rain. Easily replaced Concrete Stone Galvanised or stainless hardware
Table	
Street furniture zone Plazas Park edges Adjacent to public buildings and services Sunny location Under tree canopy not advised due to bird droppings.	Hardwood slats (Preferred) resistant to sun and rain. Easily replaced Concrete Stone Galvanised or stainless hardware Non-corroding metal frame or base

5.4 Seating and tables (moveable)

DESCRIPTION

Moveable furniture is usually used in a designated public area during periods of high demand, e.g. special events or seasonal attractions. It can be used in designated public locations, such as plazas and other open space areas managed by Auckland Transport.

Moveable furniture in a public space can be privately owned. Private sector operated scenarios typically involve restaurants, cafés and hotels offering al fresco dining and drinking.

Public owned moveable furniture is used for a broader scope of services than private operations, and may include furniture in varying combinations designed for eating and drinking, relaxation, formal or casual social interaction, sightseeing and entertainment. These services are either free or with a small fee charged for a set usage period.

5.4.1 Placement

Moveable furniture can be placed freely, but within a designated area.

Choose areas that offer safety, a suitable micro-climate, visibility and are likely to help activate the local environment.

Ensure a clear through route is maintained with a 1.8m minimum width and at least one legible edge, preferably along the frontage side. Width may need to be greater, if more than 60 pedestrians/ min are expected.

Clearly define the area where this furniture can be used. This can be done with subtle paving design, levels, bollards, wind screens, temporary fencing or railings, walls or landscaping.

5.4.2 Design and material specifications

Seats and tables are usually constructed of lightweight but robust weather resistant materials such as metal, wood and plastics. Design or select furniture that is compatible with the overall context of the local environment using social, cultural and environmental considerations.

For larger areas run by public or quasi-public entities, it is best to have a designated staff person who manages all aspects on a permanent or seasonal basis.

Install security features for longer term usage to minimise storage and labour costs associated with transporting furniture to and from storage. Design to make moving easy, e.g. through durable, lockable wheels.

Temporary or seasonal storage extends life of furniture and reduces theft.

OTHER GUIDES

AC Bylaw

TABLE 7 PREFERRED SEATS, BENCHES AND TABLES: MOVEABLE

Preferred locations and orientation	Acceptance criteria
Bench	
Street furniture zone Plazas Park edges Adjacent to public buildings and services Sunny location Under tree canopy not advised, due to bird droppings.	Lightweight metal such as polished aluminium or equivalent Prefer hardwood slats style resistant to sun and rain and is easily replaced.
Seat	
Street furniture zone Plazas Park edges Adjacent to public buildings and services Sunny location Under tree canopy not advised, due to bird droppings.	Lightweight metal such as polished aluminium or equivalent Prefer hardwood slats style resistant to sun and rain and is easily replaced.
Table	
Street furniture zone Plazas Park edges Adjacent to public buildings and services Sunny location Under tree canopy not advised, due to bird droppings.	Lightweight metal such as polished aluminium or equivalent Prefer hardwood slats style resistant to sun and rain and is easily replaced.

5.5 Outdoor dining and play space

DESCRIPTION

Outdoor dining brings a sense of vitality to the street and plays an important role in activating streets in Auckland's main streets and town centres.

Play space is the provision of free space for social interaction, games areas, play grounds, sports, outdoor chess, informal stage platforms – space that doesn't entail exchange of money – which is important to the place aspect of the city environment. Play space is generally located in public squares, plazas and reserves, but sometimes is included in the street environment.

WHEN TO PROVIDE

The provision and placement of outdoor dining should not reduce pedestrian through-movement or safety and should prevent the privatisation of public space.

The permitting and use of public streets for outdoor dining spaces is governed by the Street Trading and Public Places Bylaw, currently in development and to be administered jointly by Auckland Transport in relation to streets and Auckland Council in relation to open spaces.

In the Fort Street Shared Space, outdoor dining is consistently provided in the street furniture zone maintaining an accessible through-route alongside the building frontage

5.5.1 Placement

Outdoor dining should be particularly encouraged where there is opportunity for greater levels of pedestrian activity or in areas that require revitalisation. The location of outdoor dining should provide for a comfortable, attractive and relaxing environment for patrons, while complementing other street activities.

Placement of outdoor dining needs to maintain adequate clearances to integrate with other street activities, pedestrian access and circulation, and traffic safety. Different city streets demand different clearance requirements due to the width of existing footpaths and the amount of pedestrian traffic. As a minimum, outdoor dining should allow sufficient space on the footpath for two mobility aids or prams to pass each other comfortably.

Where footpath widths allow, kerbside outdoor dining is preferred to maintain the through-route against the building frontage.

Premises should ideally have a clear view of the outdoor dining from the inside to ensure effective monitoring.

Outdoor cafes should not compromise the ability of the general public or service contractors to access street furniture or public infrastructure.

Minimise fencing, planter boxes or other elements that demarcate boundaries and tend to privatise the public place or restrict free pedestrian movement and access. Street frontages should not be obscured by furniture or fittings (including canvas screens, glass screens, planter boxes and freestanding awnings).

Approved street trading zones are to be demarcated by stainless steel studs in the pavement as per the Street Trading Bylaw.

Provision of space dedicated to outdoor dining is most appropriate in:

- City centre and town centre streets with a wide enough footpath to accommodate outdoor dining without interfering with pedestrian access and other street activities.
- Public and private plazas and squares.

It is possible to provide for smaller format outdoor dining in narrower streets subject to minimum clearances.

- 600mm minimum width for outdoor dining zone
- 600mm minimum clearance from the front face of the kerb (800mm on all bus routes)
- 2000mm minimum clearance for pedestrian clear zone, greater in the city centre and other areas of high foot traffic
- 500mm minimum offset from tree pits, bollards and poles
- 1000mm minimum clearance from other street furniture items including public benches, bins, bike racks, payphones, parking meters and bus stop shelters
- Clearance breaks of 2000mm minimum gap between outdoor dining zones of 12m or greater in length.

Design and material specifications

References and further guidance

OTHER GUIDES

For more detailed guidance, see:

- Auckland Transport/Auckland Council Public Places/Street Trading Bylaw
- Melbourne City Council. Outdoor Cafe Guide.

5.6 Shade structures (fixed)

DESCRIPTION

Fixed shade structures provide shade and rain protection on a permanent basis. While the supporting frame structure is often permanent, the sun shade or canopy material is usually flexible and easily replaceable. The permanent elements are typically fixed to frame systems or structures and can be removed for seasonal requirements, maintenance, replacement or the needs of specific events and activities.

Fixed shade structures are typically constructed of woven canvas, plastic or natural materials such as vines/creepers, bamboo and small moveable trees with wide canopies offering shade.

WHEN TO PROVIDE

Licenses, managed via Auckland Council, are required to operate and provide these items on public property. An operating license and/or resource consent may be required for permanent shade structure frame overhanging the public right of way. If so, each situation will be reviewed on its merits. This assessment would incorporate aspects relating to design, public welfare and safety, locational considerations and the management regime to be applied.

5.6.1 Placement

Typically, permanent shade structures are either attached to a building or are free standing in open space areas near the street. A clear distinction must be made between public and private access and ownership. Seasonal needs must also be considered.

Shade structures require careful site planning and design of the vertical support structure(s) and hardware to ensure that they do not adversely impact the functional and amenity aspects of the street.

TABLE 8 PREFERRED SHADE STRUCTURES: FIXED

Preferred locations & orientation	Acceptance criteria
Sun shades	
Street furniture zone Plazas Park edges Adjacent to public buildings & services Sunny location	Non-corroding metal frame or base Hardwood slats resistant to sun and rain Concrete Stone Anchored / attached to concrete footings
Canopies	
Street furniture zone Plazas Park edges Adjacent to public buildings & services Sunny location	Non-corroding metal base or frame Hardwood slats resistant to sun and rain. Concrete Stone Galvanised or stainless hardware
Umbrella	
Street furniture zone Plazas Park edges Adjacent to public buildings & services Sunny location	Hardwood slats resistant to sun and rain. Concrete Stone Galvanised or stainless hardware Non-corroding metal frame or base

5.7 Shade structures (moveable)

DESCRIPTION

Flexible and moveable shade structures can be used to provide shelter from sun and rain in designated locations and placed as required in periods of high demand.

Shade structures be owned and operated by private or public entities. Private sector run situations typically involve restaurants, cafes and hotels offering al fresco dining and drinking. Public sector shade structures may include furniture in varying combinations designed for eating and drinking, relaxation, formal or casual social interaction, attractive viewing locations and entertainment events. These services are either free or with a small fee charged for a set usage period.

5.7.1 Placement

Typically, these structures are either attached to a building or are free standing in open space areas in the street environment. Pedestrian access and circulatory must be addressed first and a clear distinction must be made between public and private access and ownership. Seasonal needs must also be considered. Locate in areas which are safe, of a suitable micro-climate, visible and likely to help activate the local environment.

5.7.2 Design and material specifications

Shade structures are typically constructed of lightweight, robust weather resistant materials such as metal, wood, canvas and plastics.

Design or select structures that are compatible with the overall context of the local environment in terms of physical, social, cultural and environmental considerations.

Clearly define the area where this furniture can be used. This can be done with subtle paving design, levels, bollards, temporary fencing or railings, walls or landscaping.

Design to make moving easy, e.g. use durable, lockable wheels.

Temporary or seasonal (winter) storage will extend the life of furniture and reduce theft.

For larger areas run by public or quasi-public entities, it is best to have a designated staff person who manages all aspects on a permanent or seasonal basis.

TABLE 9 PREFERRED SHADE STRUCTURES: FLEXIBLE

Preferred locations and orientation	Acceptance criteria
Umbrellas	
Street frontage and/or furniture zone Plazas Park edges Adjacent to public buildings & services Sunny location Under tree canopy not advised, due to bird droppings.	Lightweight metal such as polished aluminium or tubular stainless steel Hardwood frame resistant to sun and rain. Bright and reflective coloured fabrics in durable materials.
Shade structures	
Street frontage and/or furniture zone Plazas Park edges Adjacent to public buildings & services Sunny location Under tree canopy not advised, due to bird droppings.	Lightweight metal such as polished aluminium or stainless steel or galvanised metal. Bright and reflective coloured fabrics in durable materials.

5.8 Signage (temporary)

DESCRIPTION

This section primarily relates to sandwich board advertising signs and temporary directional or event signs. These signs require compliance with Auckland Council's bylaw for sandwich signs before they can be placed in the public right of way.

5.8.1 Placement

Temporary signs are best placed in the street furniture zone. The sign should not reduce the through route to the extent that it creates conflicts for passing pedestrians. A minimum clearance of 1 m (rather than the standard 1.8 m) is permitted adjacent to the through route, but only for the distance occupied by the sign. This is to be increased to 1.8 m where footpath through route is 2.4 m.

5.9 Banners and flags

DESCRIPTION

Banners and flags include informational and artistic flag-like elements for public display, printed onto cloth or synthetic lightweight flexible material. They can be removed and placed in different locations. New banners and flags can be attached in response to different events and re-used each year.

IMPORTANCE

Banners and flags can play an important supporting role in place-making, reinforcing a sense of civic identity and promoting regularly changing city events.

WHEN TO PROVIDE

Banners and flags may be provided as part of a streetscape in range of contexts, but are most appropriate in civic spaces, and outside public buildings, community and recreational facilities, and areas that regularly host major events.

5.9.1 Placement

Banners and flags can be attached to their own poles, existing poles such as light poles, structures, or strung across streets.

To avoid the need for providing additional vertical columns banners and flags should be affixed to existing poles or light columns where these are structurally able to take the additional loading, or to existing structures. These options require approval by Auckland Transport.

If the above options are not available, banners and flags should be located on vertical columns located within the street furniture zone. Placement of banners and flags must avoid conflict with trees or building verandas and canopies. Banners may not impede existing through routes of pedestrians and other users.

In terms of the Land Transport Rule: Traffic Control Devices 2004, commonly known as the TCD Rule, banners and flags must not be attached to traffic signal poles.

A bylaw is being created to cover the use of banners and flags. Particular emphasis is being placed on addressing issues of safe sight lines, non-obstruction and suitable strength of the elements and what they are attached to.

5.9.2 Design and material specifications

Banners should be designed to visually enhance the streetscape rather than add to existing visual clutter. Design should complement the existing context in terms of history, culture and environment.

5.10 Public art

DESCRIPTION

Public art can enhance the visual vibrancy of roads and streets, convey important messages about local history, values and complement or improve the appearance of existing built form. It can have informative, provocative, inspirational and entertaining attributes that enhance the character and values of the locality. It can be designed for vehicle and/or pedestrian viewing and have a transport, street or building context.

SCOPE

This section is limited to guidance on the provision and placement of artworks in relation to other streetscape components.

Public art can include:

- The integration of artistic or design features into urban design elements such as buildings, streets, bridges, public transport stations and hubs, plazas, parks, the water's edge, including coastal walkways and stream regeneration sites, and other public places.
- Artistic objects such as sculpture in murals and public places.
- The processes and the results of participation by artists on design teams that develop public places.
- Artists working in and with communities, including:

- The collaboration of arts practitioners with communities to achieve artistic and social outcomes in the public realm
- The process of collective creation of works of art

- Art processes and works of art in the public sphere that may be variously described as sculpture, pou whenua, performance, sound, moving image, light, digital art, painting, kowhaiwhai, photographs, murals, street art, paste-art, graffiti art (excluding territorial tagging) and other two-dimensional art forms, new-genre public art, land art, folk art, integrated art and design features, knitting and crochet bombing, sculptural architecture, relational aesthetics and/or installations and yet-to-be-known art forms and practices in digital media, including tangible and virtual work.

Public art can also be permanent or temporary with a life span of anything from one day to several years.

WHEN TO PROVIDE

Public art by its nature is project-specific and ideally a site-specific response developed as part of a wider project. Public art proposals should be developed in accordance with Auckland Council's Public Art Policy and Auckland Transport's Public Art Guidelines, which is currently under development.

Opportunities for public art should be identified as early on as possible within streetscape and transportation infrastructure projects so that they can be developed as an integral part of the design process. All public art considerations should be discussed with the Auckland Transport Public Art Coordinator at a very early stage.

Project briefs may call for artists as part of design teams or design teams may propose artworks as part of design responses. Artworks can be realised in any number of ways as identified by artists and design teams in response to context and project-specific objectives, constraints and opportunities.

APPROVAL REQUIRED

Public art installations require review and approval by Auckland Transport if they are placed in the public right of way. All public art considerations should be discussed with Auckland Transport's Public Arts Coordinator.

Public art works can take many forms.

5.10.1 Placement

Public art should be located to meet the needs of the viewing audience, e.g., some public art is designed for close-up viewing and tactile interaction, while other pieces are best seen from a distance.

Artworks are most successful when they have been developed as an integral part of the design process for a project. This includes considering the spatial and formal qualities of artwork proposals in relation to other streetscape components, adjacent built form, and pedestrian movement and use of the street and/or public space.

Always minimise conflicts with the established through routes. However, note that for surface art such as ground or wall murals, maximum exposure is typically achieved within or directly adjacent to the through route. The placement of proposals for sculpture or other artworks that may pose physical obstacles within the streetscape need to be considered in the same way as any other streetscape component, including keeping clear of pedestrian movement in the through-route and not presenting a roadside hazard to motorists.

Installations must be fully integrated with their context. Evaluate existing and anticipated vehicle, pedestrian and cyclist movements before finalising placement. Assess any other related projects that are likely to impact the design space under review. This can include future street furniture, bus stops, changes in kerbside parking, new below grade utilities or new activities requiring access.

5.10.2 Design and material specifications

Make sure the installations are easy to maintain, refurbish and repair.

POLICIES

Auckland Council Arts Policy

5.11 Kiosks

DESCRIPTION

Kiosks are structures that provide information about local routes, attractions, services or offer refreshments. They are typically located in a strategic location with high pedestrian traffic, primarily in urban tourist hot spots or centres. They can be operated with or without staff and built in place or fabricated offsite and transported into position.

SCOPE

This guidance does not include mobile street traders, which are subject to the street trading public places bylaw.

WHEN TO PROVIDE

Unlike cities in other parts of the world, kiosks are not yet a regular feature of Auckland's streets. Streets in Auckland's historic town centres are often narrower than other cities internationally and it is often not appropriate to introduce kiosks into constrained and sensitive pedestrian environs. They are generally more appropriate supporting activity in larger public squares and plazas than in streets. Currently, Auckland Transport

kiosks exist in city centres at Britomart Transport Centre and limited other locations (e.g. High Street outside Freyberg Place).

As such, the use of kiosks is likely to be developed in response to an identified need or desired additional activation of a specific locality. Therefore the provision and placement of kiosks should be guided by project-specific objectives, constraints and opportunities as identified through the design process.

Best practice design for street kiosks designed and provided as an integral part of the streetscape design, with leases to independent operators. Lease arrangements are predicated on securing and supporting the right type of activities to support street life.

APPROVALS

Privately owned structures or features have to be reviewed and approved by Auckland Transport. Kiosks may be subject to relevant Auckland Council resource and building consents and Auckland Transport approvals for street trading.

5.11.1 Placement

Locate kiosks in highly visible locations that do not create visibility issues for vehicles and pedestrians, or crime prevention through environmental design (CPTED) concerns. Allow adequate space around the kiosk, especially at the front desk area, and ensure standing room areas for kiosk patrons do not impede the adjacent through route. This will require an understanding of user numbers and peak demand impacts.

Kiosks can be bulky and large, and often have backs and fronts that should be taken into account when siting them in relation to adjacent property, pedestrian movement routes and other streetscape elements.

Consider where and how people are likely to gather at the kiosk and impact on pedestrian movement and the use of the street for other activities. Kiosks should be placed such that they do not block scenic views.

5.11.2 Design and material specifications

Kiosks can make a significant contribution to the look and feel of a place. They can complement the existing or planned streetscape character and surrounding development. Designers should determine whether an existing design specification or palette exists.

Kiosks should be designed to the following guidelines:

- When more than one kiosk is installed on a street, all kiosks should be of the same, or complementary design and scale.
- Kiosks can be artistic and expressive. They should reflect an area's special character through their design and can be integrated with public art.
- Building design should maximise active and well articulated frontages to add visual interest and contribute to the vibrancy of the street.

5.12 Drinking fountains

DESCRIPTION

Drinking fountains are a public amenity of value in high pedestrian activity areas including around public transport stations, well populated civic spaces and major recreational routes such as coastal and park edge streets. Recent drinking fountain designs have added functionality on the same pole, such as water bottle refilling stations and dog drinking facilities at a lower level, that may provide a more useful and valued offer in recreational settings.

WHEN TO PROVIDE

Drinking fountains should generally be provided only on streets within high activity areas of a recreational nature, and well-used public squares and plazas, areas of heavy pedestrian traffic, strategic locations on popular bike and exercise routes, public buildings and attractions and sports facilities, rather than on primarily commercial streets.

An approved style drinking fountain

5.12.1 Placement

Drinking fountains should be located in the street furniture zone, and co-located with seating to promote visibility and use. The location should relate to anticipated users such as cyclists, recreational walkers/joggers and children.

Allow sufficient clearance (1000mm) for use without obstructing pedestrian movement within the clear route, and 1000mm clearance from other street furniture items.

5.12.2 Design and material specifications

All drinking fountains should be accessible to all users, particularly children and people in wheelchairs.

Drinking fountains should be selected to form part of a family of street furniture to be used consistently within a given locality. Modifications in design/materials that reflect unique local character should be explored subject to collaboration with Auckland Transport or Auckland Council.

Fountains should be of a robust and simple design that is easy and intuitive to use. They will need water supply and drainage must be provided either into the storm water system via a small catchment drain or directly into the road system via natural drainage or a rain garden.

Construction should use durable, high-quality materials, such as galvanized or stainless steel. Material and paint selection should be graffiti resistant.

Auckland Transport is currently collating a range of standard drinking fountains with criteria for use across Auckland.

5.13 Water features

DESCRIPTION

Water features provide a focal point in a streetscape environment or can be an amenity feature creating both auditory and visual interest. They help to humanise public space and appeal to a broad range of people as they attract interaction. Water features can take a range of forms, be located at ground level or above ground, or down vertical surfaces such as walls and steps or overhead structures. It can use water, water spray or fine mist and can be participatory or just for viewing.

SAFETY

Raised water features must also be designed and located to prevent injury by those with visual disability. Also consider safety of children at the water feature.

5.13.1 Placement

Water features are generally designed for pedestrian environments, but occasionally for all road and street users. Understand existing and anticipated movements of the viewing audience.

Appropriate location can depend on the form of the water feature. However, the following general considerations apply:

- Water feature edges must be clearly defined and located away from through routes.
- Water features must be located in areas that get lots of sun for greater effect and potentially lower maintenance costs.
- Assess other related projects likely to impact the design space under review. This can include future street furniture, bus stops, changes in kerbside parking, new below grade utilities, etc. or new activities requiring access. It is critical to identify and fully address potential deflected water/spray from high wind speed conditions.

5.13.2 Design and material specifications

Use robust and durable materials with reliable detailing. Water features are typically constructed of masonry, ceramics, metal and timber materials or combinations thereof.

Ensure edges of water flows down vertical surfaces are properly designed. Connect overflow and other drainage to the storm water system.

The feature must be easy to maintain, refurbish and repair. Select materials which are resilient to water and that do not stain easily or are costly to clean.

PUBLIC ART

Water features are often public art. See that section of this chapter.

5.14 Pedestrian lighting

DESCRIPTION

Lighting plays an important role in providing for the safety and security of all street users at night. The placement and appearance of lighting fixtures can have a big impact on the use and enjoyment of the street.

WHEN TO PROVIDE

Lighting is installed to create safer passage for pedestrians and cyclists or to provide permanent or seasonal decorative effects, all of which enhance overall streetscape amenity at night or improve severely shaded areas for those with compromised eyesight. Lighting can help facilitate passive surveillance of streets and other spaces and also help people find their way along routes and through spaces after dark.

5.14.1 Placement

Pedestrian lighting over and above normal street lighting is mostly needed in high-use pedestrian areas and paths. Generally locate all pedestrian lighting poles within the kerb or street furniture zone. Non-pole fixtures will typically be either up-lighting or down-lighting from fixtures attached to buildings and other solid elements.

Up-lighting will require specific design to avoid safety issues.

5.14.2 Design and material specifications

Pedestrian scale lighting fixtures and poles are typically constructed of metal and timber. They can also be attached to existing structures such as buildings and overhead features.

Lighting associated with verandas are typically owned and operated by the owner of the veranda(s), and are of varied types and qualities which often results in a variety of lighting effects.

The level and type of lighting and its distribution characteristics should enhance existing or proposed street lighting and any established and approved lighting design palette.

Ensure the overall effect across the street and pedestrian environment is safe, attractive and economical.

White light can offer additional personal security benefits over yellow light by helping the eye pick up detail.

The context of the location should be considered when selecting light fixtures e.g., lighting design for a heritage district will differ markedly from the needs of a new modern retail precinct or a transport hub.

OTHER GUIDES

- Street Lighting chapter for full details of street lighting including lighting levels, performance standards and lighting types.
- New Zealand Transport Agency – Pedestrian Planning and Design Guide Section17-1/3

5.15 Wayfinding signage

DESCRIPTION

Wayfinding signs include direction signs, way marks, information boards and interactive screens for residents and visitors. Pedestrian signage on streets is usually supplied to help people locate local facilities and amenities. It is important to make information as simple and easily understood as possible for all users.

PURPOSE

This section addresses general best practice principles for provision, placement and design of streetscape signage for pedestrians and cyclists rather than motorists.

SCOPE

This includes directional and wayfinding signage, information panels and interpretative signage. For Traffic signage refer to ATCOP Chapter 8 sections 8.1 and 8.2. [update reference]

UPDATE

Auckland Transport is currently working on a separate wayfinding policy and guideline. ATCOP will be updated with this information when this has been completed.

WHEN TO PROVIDE

On most streets, the typical street sign is all that is needed to orient pedestrians. However, in town centres, main streets, public spaces and other key walking routes, additional directional signage is often helpful. This is especially true on streets that handle greater numbers of visitors (such as the city centre) or in tourist-oriented areas (e.g. Tamaki Drive, Devonport and Waiheke Island). Less travelled areas may still include some basic informational signs or neighbourhood markers.

Different wayfinding signs

Good practice: Example of vertical wayfinding signage used consistently throughout the city centre and waterfront, with clear directional information for a range of destinations within the vicinity

5.15.1 Placement

Information and interactive screens should generally be located either in the frontage zone on building frontages or the kerb zone as free standing signs or connected to existing structures such as lighting poles.

Study the overall precinct strategy for informational signs before designing them. Additionally, a detailed study of each proposed signage site should be undertaken to understand the best location for the sign. This exercise requires an understanding of who the intended viewers will be, where the points of viewing will occur, and what additional activities and needs should also be considered to avoid conflicts.

Allow sufficient space at the sign for at least one to three people.

Always locate signs outside of existing or planned through routes.

All types of streetscape signage should be placed in accordance with the general guidelines stated in Section 2 (e.g. consistent location in the street furniture zone, or co-ordination and co-location with other streetscape elements). In addition, they should:

- be located in the street furniture zone and as near to intersection corners as is practicable (but outside of the corner clear zone)
- share existing poles where possible consistent with the signage design, or be designed as an integral streetscape element
- maintain minimum clearances of 600mm from the front face of the kerb (800mm on all bus routes)

MINIMISE CLUTTER

Co-ordinate pedestrian signage with other signage and streetscape elements. This can be achieved by placing signs on multi-function Poles or existing lighting columns that are structurally designed to accommodate this, frontages of buildings, or at a low level on walls, raised planters or pedestrian railings. Note, however, that in terms of the TCD Rule, it is not permissible to add signage plates to certain traffic control devices or their supporting structures or poles, so this aspect must be checked before affixing additional signs to such devices. Dedicated posts for mounting directional or wayfinding pedestrian signage should only be used where there is no alternative.

In areas of very high pedestrian activity, such as major retail streets or outside major rail stations, a balance should be struck between the need to provide information and the need to keep such busy pedestrian areas free of clutter.

VIEWING DISTANCES

Signs should always be located out of the clear zone so that safe sight lines are provided and should be consistently aligned with other street furniture elements. Information and interpretation panels should be located in such a way that pedestrians will not walk into the sign face or its edges.

Signs should be placed such that sign faces can be read within the normal field of vision of users.

- Signs intended for viewing close up should be mounted on walls or other structures 0.9m to 1.5m above the ground.
- Pole signage should be 2.5m above the ground, with information tailored to be read at some distance away
- Information panels should be located with the signage face perpendicular to the kerb, with a minimum offset of 600mm from the kerb face (800mm on all bus routes).
- Wall mounted information boards with timetables and maps should be centred approximately 1400mm from the footpath surface and should be placed such that pedestrians will not walk in to the sign face or its edges.

5.15.2 Design and material specifications

Construction should use durable, high-quality materials, such as galvanized or stainless steel and glass. Materials, colours and finishes should be consistent with and complementary to other street furniture elements Material and paint selection should be graffiti resistant and minimise any glare.

Information panels should be sized to meet optimal information requirements, but must not obstruct pedestrian movement or visually dominate the streetscape. Generally vertical columns are more readily accommodated into the streetscape than horizontal panels.

LEGIBILITY

Ease of reading is the key functional requirement which is a combination of placement and design. Signs should be located such that they are easy to spot from far away, but designed to be read close up by pedestrians with a high level of detailing and craftsmanship.

The size and spacing of lettering used on information boards should be related to the distance from which the sign will usually be read.

The use of standard pictograms to increase legibility of signage and understanding for people may be used in addition to approved text in accordance with NZS 8603:2005 Design and application of outdoor recreation symbols. Other symbols can provide additional simplicity and greater clarity, but should not be used unless it is known that the readers will understand them.

The needs of people with vision impairments are particularly important. Some boards also have an audio facility for people with hearing impairments and language barriers.

Signs must have clear branding and appearance for identification.

Printed and screen information displays should be oriented with regard to sun and artificial lighting.

Where time is needed to absorb information, provide space clear of the through route for users to stop.

Modifications in design/materials that reflect unique local character may be explored, subject to collaboration with relevant Auckland Council or Auckland Transport departments.

OTHER GUIDE

Also see:

- The Footpaths and Pedestrian Facilities chapter in this manual.
- Land Transport New Zealand (2007): Pedestrian Planning and Design Guide. Appendix 3: Signface Design Details
- Direction signage of this manual

5.16 Barriers, railings, fences and bollards

DESCRIPTION

Barriers, railings, fences and bollards are used to guide or restrict movement. The characteristics and guidelines for each type vary, as outlined below.

BARRIERS

Barriers (also known as pedestrian guardrails) are primarily installed to guide, channel and protect pedestrians and cyclists from vehicle movements or other hazards such as extreme level and gradient changes, railways and water courses. They may also be used in connection with outdoor dining areas and recreational activities.

Their purposes can be divided as follows:

- To protect against falls. Guidance for this is provided in the New Zealand Building Code.
- To provide separation between users, for example preventing pedestrians from entering unsafe locations in the carriageway or a cycleway.

RAILWAY CROSSINGS

Pedestrian railings for level railway track crossing points must comply with Cycle Trail Design Guide Section 5.5, prepared for Ministry of Economic Development, August 2011 (2nd Edition).

VEHICLE RESTRAINT

Fences or barriers to prevent a vehicle from leaving the carriageway are covered in the Urban and Rural Roadway Design chapter.

Barriers are primarily made of metal, timber, glass, masonry based materials or combinations of these. Barriers can also be created using design components and elements such as plants, water features, walls, bollards, screens or changes in elevation

Pedestrian barriers can introduce the feeling of severance along sections of the network. In addition, they may reinforce the feeling that these sections of the network support high-speed traffic and therefore discourage pedestrian access. This can detract from their primary safety-related function.

If they are in a public right of way, barriers are administered by Auckland Transport. They may require compliance with resource consent or license provisions.

Pedestrian and cycle barriers are generally to be avoided. Alternative design interventions such as low hedges, walls and paving variations are strongly encouraged.

Sight rails do not form part of any approved roadside safety barrier system (and must not be used as such).

RAILINGS

Railings may serve several purposes:

- Hand rails to meet the pedestrian safety and accessibility requirements of the Building Code in relation to steep gradients or steep falls. (Where people could fall 1m or more, barriers must be installed. See above).
- Hand rails to assist movement and/or used to guide pedestrians to more desirable routes or crossing points or entry/exit points, e.g. cycle hold rails.
- Tapper rails to direct visually impaired people travelling with the assistance of a cane to detect a route, object or edge.
- Railings to contain people for safety reasons, e.g. to control approach speeds of cyclists before an at-grade rail crossing, railings to contain pedestrians on a pedestrian refuge island.

Railings are not classified as a road restraint device. The spacing of both posts and rails is usually of a composition to deter people movement through the railing, but is not sufficient to provide fall prevention.

FENCES

Fences may serve several purposes:

- Safety fences to restrict access to unsafe locations. (Also see Barriers above.)
- As required to meet the requirements of the Fencing Act, for example on reinstating a boundary fence that has been affected by works in the road reserve.
- For amenity purposes for visual screening.

BOLLARDS

Bollards are primarily a safety element to separate pedestrians or streetscape elements from vehicles. Their use should be restricted, to avoid clutter and unnecessary obstacles to pedestrians and cyclists.

Bollards can be used to define pedestrian only spaces and to prevent vehicle access, either temporarily or permanently. They can be fixed and permanent or manually or electronically controlled. Bollards are typically vertical round or square section poles up to 1.2m in height. They are usually constructed of metal, timber, masonry materials or combinations of these. Bollards create dangerous obstacles for the visually impaired and should be used only as a last resort where no other design option is acceptable. Alternative elements may also provide a similar function to bollards when suitably designed and located. Examples include paving variations (including tactile pavers), planters, benches and seats, fencing and grade changes.

Bollards should only ever be used as a last resort.

5.16.1 Placement

Generally, barriers, railings, fences and bollards are not recommended for areas of high pedestrian or cyclist traffic. They should be located in the kerb zone, but with a sufficient setback to accommodate vehicle overhang, and may not interfere with vehicle, cyclist or pedestrian sight distance. Ensure pedestrian and vehicle safety. The provision of barriers, railings or fences should take into account the principles of crime prevention through environmental design (CPTED).

Bollards should be placed at the edge of defined spaces, e.g. between outdoor dining and through routes or between areas where vehicles may and may not go. Evaluate existing and anticipated pedestrian access and circulatory movements before finalising the placement of bollards.

Assess other related projects likely to impact the design space under review. This includes future street furniture, bus stops, changes in kerbside parking, new below grade utilities, etc., or new activities requiring access.

5.16.2 Design and material specifications

Barriers, railings, fences and bollards should be designed so as not to constitute a hazard for road users. Horizontal rails that could spear or snag vehicles, non-frangible or large posts, and materials that could yield hazardous debris (e.g. splintered wood fragments) must not be used.

CATERING FOR THE VISUALLY IMPAIRED

All barriers, railings and fences adjacent to a footpath must provide a feature 150mm off the ground that long-cane users can detect.

These items must be designed, constructed and maintained in accordance with the following general requirements:

- Where a pedestrian facility is at a height above ground of 1m or greater, then a barrier or fence ("barrier" in NZBC terminology) must be installed in compliance with Clause F4, NZBC. For pedestrians the fence height must be at least 1100mm.
- Where cyclists may use a path on a bridge and the bridge height above ground is greater than 2m, a bridge barrier ("barrier" in NZTA Bridge Manual terminology) must be installed in compliance with Section B of the NZTA Bridge Manual. The barrier height must be at least 1400mm.
- The construction of the railing must be frangible and must not create hazards (e.g. spearing risk, flying debris such as splintered timber) when a vehicle crashes into it.
- Guardrails should deter climbing, and gaps between elements should be less than 100mm.
- The construction or placement of guardrail should not obscure visibility to children waiting to cross a road.
- Any timber materials must be treated to H4.
- For ease of replacement, the structure must comprise a series of relatively short sections (max. 2.5m).

Sight Rails–Posts and rails must be rough sawn. Posts must be 100mm x 100mm x 1.2m, and rails must be 200mm x 25mm, and no longer than the length between adjacent posts.

The style of barriers, railings, fencing and bollards selected must be closely aligned with the urban design and landscape requirements of the surrounding area. It should also be of a type that will minimise the risk of graffiti damage.

The style, materials and placement within the designated zone should respond to local character of community, street and adjoining buildings and any existing streetscape design.

Bollards must be easy to maintain, refurbish and replace if damaged.

Barriers are generally to be avoided. Alternative design interventions such as low hedges, walls and paving variations are strongly encouraged. If no alternative option is available, the following design considerations are essential:

Consider the visual character of street and immediate surroundings.

Visually permeable fencing types may help maintain good levels of visibility and reduce the opportunity for graffiti vandalism.

The colour choice can mitigate the visual effects of the structure itself. E.g., a matt black colour railing can help the fence blend into the landscape backdrop.

Multi-purpose barriers are preferred, as they tend to be more visually compatible with their local context than highly functional barriers such as concrete Jersey barriers. An attractive concrete or stone raised planter, appropriately positioned within the street furniture zone clear of the through route, can function as a multi-purpose barrier.

If it is a temporary structure, it must be sufficiently robust and fit for purpose.

OTHER GUIDES

Fences must comply with the following:

- Clause F4 Safety from Falling – New Zealand Building Code (NZBC).
- NZTA Bridge Manual – Section B: Bridge Side Protection (in particular Clause B6.3 Pedestrian and Cycle Barrier).
- All such handrails must comply with Clause D1 Handrails on Stairs – New Zealand Building Code (NZBC) and ATCOP Chapter 16 – Structures (in particular handrails/parapets on bridges and other structures).
- Pedestrian Railings are covered in ATCOP Chapter 12 – Footpaths and Pedestrian Facilities.
- Cycle Railings are covered in ATCOP Chapter 13 – Cycling Infrastructure Design.
- All sight rails must be designed and installed in accordance with NZTA RTS5.

TABLE 10 PREFERRED BOLLARD DESIGNS

Preferred locations & orientation	Acceptance criteria
Bollard	
Street furniture zone. Non-critical edges to through routes.	Not conflicting with universal design criteria

5.17 Public toilets (permanent)

DESCRIPTION

Permanent public toilets provide attractive and easily maintained amenity for areas of heavy pedestrian traffic. The following guidance focuses on the provision and placement of stand-alone public toilets within the streetscape.

SCOPE

This section does not provide detailed design criteria as public toilet units in the street are generally installed and operated by independent parties under service contracts to Auckland Transport.

WHEN TO PROVIDE

While public toilets are an important amenity they should generally be provided within public buildings and community facilities, well populated civic spaces such as squares and plazas as well as parks and open spaces. They should only be introduced into the more constrained and sensitive environs of a streetscape as a last resort.

Placement, design and facilities provided must be approved by Auckland Council who will manage them.

Good practice: Public toilet located within the Street Furniture Zone keeping clear of the accessible through-route in the Fort Street Shared Space, City Centre

Permanent public toilets

5.17.1 Placement

Locate toilets in highly visible locations that do not obscure sight lines for vehicles, cyclists and pedestrians. Allow adequate space for entering and leaving the toilets and so that standing room areas for patrons do not impede the through route. This will require an accurate estimate of user numbers and peak demand impacts.

Toilets can only be installed where the available space does not adversely impact pedestrian and cyclist clear zones or vehicle safety.

Public toilets should only be located where there are high levels of pedestrian activity and passive surveillance from adjacent uses to avoid unsafe and antisocial behaviour. If the public toilet is to operate during night hours, the location must be well illuminated.

Sensitivities around adjacent land uses must be considered. Public toilets should not be located on a pavement fronting a restaurant, cafe or any other eating establishment. As far as possible, units should be placed out of the line of vision of any eating establishment.

Public toilets should not be located in front of a building entry and the entry to the restroom should be oriented away from the closest building entry as far as possible.

Public toilets should be placed so they do not block scenic views.

CLEARANCES

Minimum spacing and clearances must be maintained.

- Freestanding public toilets are not permitted on pavements less than 3.5m wide, or on any pavement on which their placement would obstruct the minimum through-route allowing for a minimum 900mm clearance between opening doors and the clear zone to allow ease of use outside of the clear zone.
- Where possible units should be placed such that cubicle entrances do not open directly onto the main clear zone for pedestrian movement.
- Public toilets in streets should be located in the street furniture zone, a minimum of 600mm from the outside edge of the kerb (800mm on all bus routes).
- Public toilets should be placed a minimum of 1000mm from existing or other street furniture elements such as street trees, benches and lighting poles.

5.17.2 Design and material specifications

Modifications in design/materials to reflect unique local character may be explored, subject to collaboration with Auckland Council or Auckland Transport.

Maintenance of public toilets is the responsibility of and is managed by the Auckland Council Property Department.

5.18 Public toilets (temporary)

DESCRIPTION

Temporary toilets are typically installed during periods of high demand or when existing permanent facilities are under repair or renewal. The self-contained units are transported to the subject site by truck.

APPROVAL

Temporary toilets require review and approval if attached to publicly owned structures or features.

5.18.1 Placement

The positioning of temporary toilets is controlled by Auckland Council. The location(s) must be carefully considered to allow for adequate circulatory space to maintain main through routes. Sanitary requirements and building code specifications must be followed strictly.

Provision for access for establishment and removal must be ensured.

5.18.2 Design and material specifications

INSTALLATION

Single or grouped units must be placed on a firm, level standing.

Where possible, units should be secured to prevent tipping due to wind or mischief.

CONSTRUCTION

Proprietary designs must be appropriate for the site, the expected users, and the duration of their placement.

5.19 Litter bins (fixed)

DESCRIPTION

Fixed litter and recycling bins for rubbish generated largely by pedestrians intercepts unwanted rubbish from streets, improves the visual quality of public spaces and reduces maintenance costs. They have an important functional role supporting pedestrian and business activity in streets.

WHEN TO PROVIDE

The provision of bins is entirely functional, but can have a considerable impact on the appearance of the street or location. They are generally required in town centres, at public transport stations and stops, in recreation spaces and in other areas with high pedestrian activity levels. Bins that are redundant should be replaced by new bins or otherwise taken out of service and removed.

Fixed litter bins

Care should be taken not to over-provide bins in any given area, such that they clutter the footpath and detract from the amenity of the area. Some particularly isolated locations work better without bins.

Early discussion with Auckland Council Waste Solutions over the siting of waste bins is necessary to avoid management or collection issues once in service.

5.19.1 Placement

The provision of bins, in particular recycling bins, must take into account the street cleaning regime in any given locality as they must be emptied and maintained on a regular basis.

Bins should be located within the street furniture zone. They should generally be placed at intersections, in proximity to seating areas and in visible locations.

Ensure that bins are of appropriate location and height so that they don't create obstacles for the visually impaired, and are able to easily be used by children or people in wheelchairs.

At intersections, bins should be located as near to the corner as is practicable to where pedestrians wait to cross, but out of the corner clear zone.

Along shopping and town centre streets with high foot traffic and areas where people congregate, bins should be provided at regular intervals, ideally every 50 m.

At seating areas, bins should be placed within direct line of sight, but a 3 m separation distance between bins and seats maintained so as not to detract from the seating area. Bins must not be sited between seats and their primary orientation towards street activity or a view.

Bins should generally be co-located with other street furniture elements in a co-ordinated manner to avoid clutter.

Evaluate existing and anticipated pedestrian access and circulatory movements before finalising the placement rubbish bins. Care should be taken to avoid placing bins where they would reduce the through route to below the minimum width.

Assess other related projects likely to impact the design space under review. This includes future street furniture, bus stops, changes in kerbside parking, new below grade utilities, etc.

CLEARANCES

Minimum clearances between stand-alone bins and other streetscape components include:

- 600 mm minimum distance from the front face of kerb (800 mm on all bus routes)
- 1000 mm clearance from other street furniture elements.

5.19.2 Design and material specifications

Bins should be robust, functional and of a simple design. They are typically constructed from timber, metal or plastic or combinations of these materials.

Ease of access for emptying is a key consideration. The capacity of the bin needs to take account of the intensity of use to avoid spillage of contents onto surrounding footways. Ashtrays should not be provided although unobtrusive cigarette stubbers may be used.

The ideal height placement of litter into bins is 1100 mm to allow for use by children and wheelchair users.

Bins should be chosen from an agreed range approved for general use with attached criteria for use by Auckland Transport. Auckland Transport is currently collating a range of standard bins with criteria for use across Auckland. There will be a restricted range of bin designs with set criteria for their use in particular locations across the region. A definitive list is being developed.

Bins should be selected to form part of a family of street furniture to be used consistently within a given locality.

Bins should be selected to respect special areas and features, and this may mean departures from the approved range in rare instances. Any proposed departures from the limited range are subject to an exception report for the approval of Auckland Transport. Bespoke bin design is not considered an appropriate response to context. Bins are not a vehicle for expressions of local identity and character and any proposed alternative bin design should avoid unnecessary embellishments.

Construction should use durable, high-quality materials, such as galvanized or stainless steel. Materials, colours and finishes should be consistent with other street furniture. Material and paint selection should be graffiti and vandal resistant.

Litter bins must be easy to maintain, refurbish and repair.

5.20 Waste bins (movable)

DESCRIPTION

Privately owned wheeled waste and recycling waste collection bins are usually stored on private property, but are placed in the public space for collection. A special area may have to be designed for this purpose.

Typical movable rubbish bins

5.20.1 Placement

In commercial areas or locations where multiple bins are located at the kerb side, it may be necessary to create a bin pick-up area which is close to the kerb and does not conflict with pedestrian through routes. Using a small portion of the existing parking lane is one option.

Multi-family and commercial development often generates large numbers of wheelie bins on collection day. New developments must designate appropriately sized areas where bins can be placed for collection. These may be within a private access lane or walkway, and must have a safe space for the collection vehicle to wait (usually on the carriageway) and a safe paved path for handling the bins.

Where bike lanes run between the street kerb and vehicle lanes, this affects bin placements. The arm reach of mechanical waste trucks is limited, therefore bins will need to located closer to the inside vehicle lane. Typically there is limited space available for temporary storage, vehicle overhang needs must be addressed, and the possibility of bins falling onto the vehicle through lanes or bike lanes must be addressed

5.20.2 Design of stand areas

SIZE

Stand areas for single dwelling units should accommodate the largest standard bins for each collection cycle.

For stands shared by multiple dwellings, space should be provided for each bin, grouped by collection type, and with space to handle and replace each in turn.

SURFACE

The surface must be paved, or a firm grassed berm. This may need to be reinforced grass, if many bins are grouped together.

The surface should be formed to a gradient not more than 5%.

KERBSIDE WASTE COLLECTION REQUIREMENTS

The Auckland Design Manual has additional requirements for kerbside waste collection, refer to 2.1 of R7 Design for Waste (http://www.aucklanddesignmanual.co.nz/regulations/design-for-the-rules)

06 Utilities and services

DESCRIPTION

Utilities and services include those elements that are underground, overhead or alongside the street, and cabinets, plinths, poles and access covers.

6.1 Grates

DESCRIPTION

Grates for drainage channels and for ventilation may have a functional need to be located in the footpath, but are generally found in the berm or carriageway.

LOCATION

The placement and detailed design of grates, as well as quality materials and construction, is important to the safety and appearance of the walkable surface within the street.

Where possible they should be outside the Through Route.

SPECIFICATION

Grates must be of Grade suitable for likely access, considering the likelihood of vehicle access for maintenance or errant parking.

Grates within or immediately adjoining through route shall be Heelguard types.

OTHER GUIDES

See the Road Drainage chapter for technical guidance on footpath drainage.

6.2 Automatic teller machines

DESCRIPTION

Automatic teller machines (ATMs) are typically located in association with bank or areas of high pedestrian and retail activity where there is sufficient space in the pedestrian footpath for users and passing pedestrian traffic. They are often recessed into buildings, under covered areas within buildings or kiosks. They can also be freestanding or associated with non-banking activities such as sports, tourism attractions or government services. They adopt the standard colours and design of the parent bank.

LOCATION

Locate ATMs in highly visible locations and address all CPTED concerns. The best locations are at facing the prevailing pedestrian through route in a recessed space within a building footprint. Assess projected pedestrian traffic and ATM user needs (e.g. space for wheelchairs), to avoid conflicts with existing or planned through routes or clear zones.

Allow adequate space around the ATM to ensure that users do not impede the through route. This requires an understanding of user numbers and peak demand impacts.

6.3 Power poles

DESCRIPTION

Power poles are the property of the utility provider, but must be placed as indicated below. This section also applies to overhead telecommunications services.

Power supply is essential and network supply is generally accommodated along road reserves. Currently provision is primarily via overhead powerlines held up by power poles at regular intervals. New works are expected to be provided via safely installed underground powerlines/conduits. See the underground service requirements later in this section.

LOCATION

Power poles should be placed within the street furniture zone parallel to the kerb. Placement of power poles must comply with the minimum setback requirement of 700mm from the kerb face to the near side of the pole as indicated in the Street Lighting chapter in this manual. Poles should, however, not be placed in the footpath in a manner that they impose upon the minimum allowable through route or footpath width or cause an obstruction to pedestrians. Avoid unnecessary obstruction to pedestrians, particularly to pedestrians waiting to cross at busy or constrained intersections in the city centre and other centres.

When designing footpaths in streets with existing power poles, the through route should be located clear of the poles. Only if road reserve constraints prevents this, any pole causing the through route to narrow locally should be protected by the form of the footpath edge and by a white paint to 1.8 m above ground level.

MATERIALS AND FINISHING

There is opportunity for the development of a more aesthetically pleasing standard pole that meets functional needs that could replace existing poles and be installed along streets where undergrounding is not possible/feasible. Use of shared underground infrastructure should be considered.

OTHER GUIDES

See the chapters on Street Lighting

6.4 Underground services

DESCRIPTION

This advice does not address provision of utilities, but covers placement and design considerations only in relation to other elements within the streetscape.

OVERHEAD CABLES AND SERVICE CONNECTIONS

In addition to underground services, overhead wires can have a big impact on the ability to achieve street trees of scale as well as adding visual clutter to street environments. Wherever possible, the undergrounding of power and telecommunication lines within the footpath will benefit existing or proposed street trees, as well as creating an uncluttered visual environment.

LOCATION

The most appropriate location for underground utilities is under the frontage zone or footpath to avoid conflicts with street trees

within grass berms. This is often not the case in existing streets across Auckland and this has led to conflicts with existing street trees. Design teams should consider the possibility of co-locating utilities in common trenches in the design and delivery of new streets and upgrade projects. Detailed placement should be aligned and co-ordinated with the geometry, detailed design and construction of pavements to ensure close physical integration and minimise visual intrusion within the finished works. Design must consider placement of communication network, water and power needed to support a proposed design. For example, ducting from one side of a road to another to join technology assets to the Auckland Transport network.

Above-ground service pillars should be located so that they are not a trip hazard, or are exposed to damage by vehicles accessing properties.

OTHER GUIDES

See Auckland Council Code of Practice for Land Development Chapter 8–Network Utilities

6.5 Utility cabinets

DESCRIPTION

Poorly located utility cabinets can create obstructions in the footpath and add clutter to the streetscape. It is therefore important when design teams undertake a streetscape review that the obstruction and visual intrusion of any existing cabinets and the potential to relocate them to less obtrusive locations is considered. The installation of new utility cabinets should follow the guidance on placement and consider materials and finishes as below.

Figure 4 **Poor practice** Poorly located signal control box that blocks the corner where pedestrians wait to cross the intersection. Fanshawe Street, City Centre.

Figure 5 **Poor practice** Poorly aligned and co-ordinated placement and cluttering of utility cabinets within the footpath detracts from pedestrian amenity

Figure 6 **Good practice** Utility box located back against an inactive part of the building frontage. The box is in stainless steel to match the street furniture palette used elsewhere. Queen Street, City Centre.

Figure 7 **Good practice** Narrow cabinet flush to building line, and clear of door and corner of building, within frontage zone

DESIGN CONSIDERATIONS

This guidance sets out good practice in relation to the placement of utility cabinets in relation to other streetscape elements, their impact on pedestrian movement and their visual impact within the streetscape. It may be appropriate to propose screen planting to mitigate the visual impact of unsightly antennae or other utility equipment. Any such planting should take into consideration sightlines for pedestrians and motorists and avoid any potential safety issues. Mitigation planting where proposed should form part of the relevant Auckland Transport approvals.

LOCATION

Street Cabinets are required for managing some assets, for example CCTV, lighting, signals, electrical transformers . This can create clutter and obstruct pedestrian movement and sightlines, if not placed with care. Other utility cabinets including lighting control boxes, electricity transformers, telecommunication cabinets and antennae have more variable location requirement by operators, who are usually independent parties.

Design teams should consider the best placement of street cabinets to minimise their physical and visual impact on the streetscape. Where practical they should be placed at the back of the street in the property frontage section. Where this is not possible they should be placed in the street furniture zone.

It is important that minimum clearance requirements from kerbs for roadside hazards do not result in the placement of utility cabinets within the through route which must be kept clear of all obstacles.

Avoid unnecessary obstruction to pedestrians, particularly to pedestrians waiting to cross at busy or constrained intersections in the city centre and other centres. Cabinets should also not mask pedestrians from approaching vehicles or obstruct access to and use of other street furniture items.

Where control boxes are to be placed against buildings or property boundaries, they should not obstruct private property including doorways, access ways or shop windows, or cause a hazard to pedestrians.

MATERIALS AND FINISHING

Control boxes are large and bulky items that can have a big visual impact on the streetscape, especially when placed kerbside on narrower footpaths. Materials and finishes, particularly the colours of existing control boxes in Auckland vary (e.g. pale green ones) and do not always assist with the integration of these items with the look and feel of other street furniture.
As a consequence they often stand out and detract from the streetscape amenity. The materials, colours and finishes of cabinets should be consistent with the rest of the street furniture palette in the locality e.g. in the city centre stainless steel units are now being used.

6.6 Parking meters

DESCRIPTION

Parking meters are part of the pedestrian streetscape wherever there is paid on-street parking. The provision of parking meters is entirely functional, but can detract from the appearance of the street or use of the footpaths by pedestrians, particularly narrow streets–especially if care is not taken in their placement.

DESIGN CONSIDERATIONS

Provision of parking meters is overseen by Auckland Transport's Parking and Enforcement Department.

LOCATION

Parking and Enforcement is developing a guideline for the placement of equipment, which will be inserted as an update to this manual once it has been completed. Generally, parking meters should be placed within 50m of their related parking bays.

OTHER GUIDES

Also see the chapter on Parking.

6.7 Post boxes

DESCRIPTION

Post boxes are not the responsibility of Auckland Transport and are designed, installed, serviced and maintained by postal service providers. Authorisation is, however, required by Auckland Transport as to their siting within the street; as such this guidance focuses on location criteria. Post boxes are the responsibility of New Zealand Post or other private operators.

DESIGN CONSIDERATIONS

Consider the ease of emptying the box at any given location.

LOCATION

Post boxes should be placed consistently within the street furniture zone. Where one or more post boxes are proposed to be added to street locations already serviced by post boxes serviced by other providers, care should be taken to avoid obstruction of pedestrian movement or street clutter. Edge of unit should be 600mm from the front face of the kerb (800mm on all bus routes), at least 750mm from the through route and 1000mm from other furniture. Rectangular designs should be placed lengthways parallel to the kerb to minimise intrusion into the footpath. Units should be positioned so that mailing slots and cabinet doors face inwards to the footpath for ease and safety of access.

6.8 Telephone boxes

DESCRIPTION

Telephone boxes are not the responsibility of Auckland Transport and are designed, installed, and maintained by telecommunication providers. Authorisation is, however, required from Auckland Transport in terms of their location, installation and appearance; as such this guidance focuses on their placement within the streetscape. Telephone boxes are the responsibility of the telecommunication provider. Telecommunication operators have to seek approval from Auckland Transport for the siting and appearance of any new telephone boxes.

DESIGN CONSIDERATIONS

While telecommunication operators have their own designs and branding, they should be encouraged to co-ordinate the box with other street furniture and to respect the surrounding area.

UNIVERSAL DESIGN

Designers should ensure that there is space around telephone boxes (1850 x 2100mm) for wheelchair access.

LOCATION

Single telephones or clusters should be at least 50m apart along the length of a section of street. Telephone boxes should be placed consistently within the street furniture zone. Telephone boxes should not be installed on footpaths less than 3.5m wide. Edge of unit should be 600mm from the front face of the kerb (700mm on double decker bus routes) and at least 750mm from the through-route. Telephone boxes should be placed so that doors do not open directly into the path of pedestrians within the through-route.

6.9 Service covers

DESCRIPTION

Service inspection covers are often located in the footpath to meet a functional need. Care must be taken to ensure their placement is integrated with the design of footpath surfaces and that their installation does not pose an obstacle or trip hazard for pedestrians.

Utility companies own the majority of these that appear on the public street. A small proportion are owned by Auckland Transport and relate to traffic signalling, CCTV, variable message signs, communications, street lighting and other uses.

Installation and maintenance of service covers is generally the responsibility of the service owner. However, where Auckland Transport installs inset covers, Auckland Transport will assume maintenance responsibility for the cover from that day forward. Provision of all service covers is to be in accordance with The Code of Practice for Working in the Road.

The utility company mainly predetermines the size and location of their access points to suit their purposes. If not coordinated with the layout of footpaths at the detailed design and construction stage they often detract from the quality and appearance of footpath surfaces.

DESIGN CONSIDERATIONS

The use of deep frames for utility access can achieve greater consistency of footpath surface materials. The use of inset covers helps to hide the presence of service inspection covers. The cost of these covers and their future maintenance will need to be borne by Auckland Transport. Inset covers will therefore only be justified to allow for tactile paving or in areas of high quality paving such as natural stone where there is a particular case for consistency.

In the city centre, paved infill service chamber covers are to be used in all paved footpaths to conceal the presence of inspection covers, with the exception of water hydrants, water and gas isolation valves and meter boxes. (See the technical guidance for service chamber covers in [whose?] CBD Great Streets Guide.)

FUNCTIONAL REQUIREMENTS

Attention given to the detailing around covers can have a considerable effect on the safety and appearance of the footpath and needs to be carefully described on construction drawings and details.

Care must be taken to ensure the installation of service covers does not pose an obstacle or tripping hazard.

Special care is needed in the detailing of rigid footpath surfaces that contain inspection covers where changes in level occur, particularly where dropped kerbs are required. Rigid access covers cannot be made to fall in two directions (unlike flexible surfaces) and therefore careful consideration must be given to where rigid surfaces are folded.

LOCATION

Manholes and other service access covers and grates should ideally be located within the frontage or street furniture zone outside of the through-route.

Access to chambers must not be impeded by the location of street furniture. Design teams should ensure that the footpath surface neatly abuts the edge of the cover frame to avoid the need for unsightly mortar infill. Where the structure of the frame is such that this cannot be achieved with rigid surfacing materials, the below ground masonry should be lowered and replaced with a deep frame to give increased depth. This allows close laying of the footpath material, and the retention of the shallow infill cover.

Paved infill service chamber covers are to be orientated where possible to align the edge of the cover with that of the paving bond to ensure a neat appearance and avoidance of small cut paving elements or mortar joints.

Design teams should seek to align the orientation of the edges of a cover with the alignment of footpath geometry, including kerb lines, cut lines in concrete footpaths and the bond employed on paved footpath surfaces.

MATERIALS AND FINISHING

Service covers are to be branded and painted as follows:

- Fire hydrant: FH and painted yellow
- Water valve: V and painted white
- Water meter: METER, unpainted

Service covers that are not inset should be metallic surface boxes or similar approved items.

OTHER GUIDES

See also:

- Code of Practice for Working in the Road (Auckland Utility Operators Group 2003)
- Great Streets A Streetscape Design Guide for the CBD Individual Streetscape Element Technical Guidance – 14.3 N3 Service Chamber Covers – Paved Infill and N4 Service Covers.