

# PEDESTRIAN PLANNING AND DESIGN GUIDE

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This document is a summary guide to better practice. While every effort has been made to ensure the information and advice is sound, Land Transport New Zealand accepts no responsibility for any consequences arising from the use of information contained in it. Those using the guide should make their own enquiry and satisfy themselves. To this end extensive references are included.

Each situation is unique. When applying this general guidance, people using this guide should ensure they are professionally competent to apply their own skills and judgments to the particular situation, and if uncertain to seek competent advice.

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Jennifer Laing of Opus, literature review

Shane Turner of Beca, project team leader

Andy Carr of Beca, then Traffic Design Group prepared the consultation draft

Aaron Roozenberg and Judith Goodwin of Beca, revised the draft

Susan Cambridge of Francis and Cambridge, content editor

Fergus Tate of Opus then MWH Wellington, performed the analysis for crossing selection criteria

Rodney Tolley, expert peer review

Heather Carew, style edit

Tim Hughes, Land Transport NZ, Christchurch, final edit

Megan Fowler of ViaStrada, final edits assistance

Mervyn Rhind, Christchurch City Council, technical drawing

## STEERING GROUP

<b>Anna Percy</b> , AUCKLAND REGIONAL COUNCIL THEN ARTA	<b>Joe Hewitt</b> , GREATER WELLINGTON REGIONAL COUNCIL
<b>Bob Alkema</b> , LAND TRANSPORT NZ	<b>Julie Chambers</b> , SAFEKIDS
<b>Bill Wrightson</b> , DISABLED PERSONS ASSEMBLY	<b>Lyndon Hammond</b> , LAND TRANSPORT NZ
<b>Bruce Conaghan</b> , MANUKAU CITY COUNCIL	<b>Michael Thomson</b> , CHRISTCHURCH CITY COUNCIL
<b>Celia Wade-Brown</b> , LIVING STREETS AOTEAROA	<b>Reena Kokotailo</b> , MINISTRY OF TRANSPORT
<b>Clair Sharland</b> , AUCKLAND CITY COUNCIL	<b>Richard Lindsay</b> , SPORT AND RECREATION NZ
<b>Helen McCracken</b> , SAFEKIDS	<b>Steve Spence</b> , WELLINGTON CITY COUNCIL
<b>Ian Clark</b> , TRANSIT NZ	<b>Tim Hughes</b> (project manager), LAND TRANSPORT NZ
<b>Jane Mudford</b> , LAND TRANSPORT NZ	<b>Victoria Lawson</b> , CHRISTCHURCH CITY COUNCIL

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# GLOSSARY

## **15<sup>th</sup> percentile speed**

The speed at which, or below which, 15 percent of travellers are moving.

## **85<sup>th</sup> percentile speed**

The speed at which, or below which, 85 percent of travellers are moving.

## **Arterial road**

A main road through an area that carries traffic from one area or suburb to another.

## **At-grade**

Where two or more routes meet at the same vertical level.

## **Barrier**

A physical barrier to prevent vehicles that leave the roadway from entering pedestrian areas.

## **Benchmarking**

Comparing the performance of an organisation, system or network with that of others, using a set of measures (indicators) that are common to each.

## **Blended crossing**

A crossing of the kerb where the roadway and the footpath are at the same level.

## **Clear zone**

An area alongside a roadway, free of potential hazards that are not frangible or breakaway.

## **Cognitively impaired pedestrian**

A pedestrian whose ability to negotiate the walking environment is hampered by a learning difficulty, such as difficulty in reading signs.

## **Collector road**

A non-arterial road that links local roads to the arterial road network, as well as serving neighbouring property.

## **Community walking plan**

A walking strategic plan for improving the walking environment specific to a defined community area, that identifies the area's issues, difficulties and proposed remedial actions.

## **Crossfall**

The slope of the footpath perpendicular to the direction of travel.

## **Crossing point**

Any point on the road network that has been designed to assist pedestrians to cross the roadway.

## **Crossing sight distance**

The distance over which pedestrians must see approaching traffic to be able to judge a safe gap.

## **Cut-through**

A section of a traffic island or raised median where the height has been reduced to the level of the roadway to make an area where pedestrians can wait before crossing another part of the roadway.

## **Desire line**

A straight line between the origin and the destination of a potential pedestrian trip.

## **Downstream**

The direction along a roadway towards which the vehicle flow under consideration is moving.

## **Driveway**

A passageway across the footpath for motor vehicles, which enables drivers to access private property adjacent to the road.

## **Electric wheelchair**

A wheelchair powered by an electric motor that is used by a mobility impaired person.

## **Fingerpost sign**

A thin, directional sign showing the name of, and pointing the way to walk to, a major trip destination.

## **Footpath**

The part of road or other public place built and laid out for pedestrian use.

## **Frangible**

Designed to break away or deform when struck by a motor vehicle, in order to minimise injuries to occupants.

## **Frontage zone**

The part of the footpath that pedestrians tend not to enter, next to adjoining land or on the opposite side to the roadway.

## **GIS**

'Geographic Information System' – a computerised system used for storing, retrieving, manipulating, analysing and producing geographic data, which is referenced by map co-ordinates.

## **Grade separation**

The separation of pedestrians from other road users by a difference in heights, usually by use of an overpass or an underpass.

## **Gradient**

The slope parallel to the direction of travel.

## **Home zone**

See Shared zone.

## **Indicator**

Data collected to measure progress toward a particular goal or objective.

## **Information board**

An upright panel that lists key destinations, with directions showing the way to walk to each one.

## **Kea crossing**

A school pedestrian crossing point that is not marked as a pedestrian zebra crossing, at which a school patrol operates.

## **Kerb**

A raised border of rigid material formed between the roadway and the footpath.

## **Kerb crossing**

A place designed to facilitate convenient pedestrian access between the footpath and roadway, at a kerb ramp or, if at the same level, at a blended kerb crossing.

## **Kerb extension**

A localised widening of the footpath at an intersection or mid-block, which extends the footpath into and across parking lanes to the edge of the traffic lane.

## **Kerb ramp**

A localised area where part of the footpath is lowered to the same level as the roadway next to it to facilitate convenient entry to the roadway.

## **Kerb zone**

The part of the footpath next to the roadway.

## **Landing**

A flat area at the top or bottom of a ramp.

## **Latent demand**

The amount of walking that would happen if conditions were improved, but which is not happening currently.

## **Living streets**

A way to design and allocate road space to give priority to living and community interaction.

## **Living Streets Aotearoa**

An organisation that promotes walking as a healthy, environmentally friendly and universal way of transport and recreation.

## **Local authority**

A regional or territorial authority responsible for local government.

## **Local road**

A road or street used mainly for access to neighbouring properties with little through traffic.

## **Mall**

See Pedestrian precinct.

## **Manual wheelchair**

A chair on wheels used by a mobility impaired person, and propelled by the muscular energy of the user or pushed by another person.

## **Median**

A continuous painted or raised strip along the centre of the roadway.

## **Mid-block pedestrian signals**

Traffic signals that are not at intersections, that stop traffic to permit pedestrians to cross the roadway.

## **Mobility impaired pedestrian**

A pedestrian whose ability to walk is hampered by a temporary or permanent loss of ability. It includes those using mobility aids, those carrying difficult parcels or accompanying small children, and those with temporary conditions such as a broken limb.

## **Mobility scooter**

A powered vehicle designed for use in the pedestrian environment by a person with a physical or neurological impairment.

## **Mountable kerb**

A kerb designed to define the edge of a roadway but which may be mounted or driven across, if the need arises, with little risk of damage to a vehicle.

## **Natural surveillance**

The observation of people and their surrounds by others carrying out their normal activities.

## **New Zealand Transport Strategy (NZTS)**

Document containing the government's position on transport.

## **Older pedestrian**

A pedestrian who may be physically or cognitively less able than others due to aging.

## **Overhead clearance**

The height above the footpath within which there should be no obstructions for pedestrians.

## **Passing place**

A short section of widened footpath to allow one group of pedestrians to pass another easily.

## **Pedestrian**

Any person on foot or who is using a powered wheelchair or mobility scooter or a wheeled means of conveyance propelled by human power, other than a cycle.

**Pedestrian advisory group**

A defined group of people interested in walking who are consulted as a matter of course about relevant issues.

**Pedestrian crossing point**

Provision at a particular place to assist pedestrians to cross the roadway.

**Pedestrian fence**

A fence that channels pedestrian movement. It offers no protection from vehicles that leave the roadway, but provides physical separation from a hazard.

**Pedestrian island**

A raised area within the roadway that provides a place for pedestrians to wait before crossing the next part of the road.

**Pedestrian on small wheels**

A pedestrian on a device with small wheels propelled by human power, such as a skateboard, inline-skates or a kick-scooter.

**Pedestrian permeability**

The extent to which pedestrians can walk by direct routes to their desired destinations.

**Pedestrian platform**

A raised area of roadway that slows traffic and assists pedestrians to cross the road.

**Pedestrian precinct**

An area set aside for pedestrians only. Some vehicles may be permitted under specified conditions, such as for deliveries, or cyclists exercising care.

**Personalised journey planning plan**

A plan developed on a one-to-one basis, according to the individual's specific travel needs, to encourage them to use public transport, walking and cycling.

**Personal security**

Feeling safe from the risk of injury, attack or accident.

**Pram crossing**

See Kerb ramp.

**RCA**

See Road controlling authority.

**Rest area**

A flat area, part-way through a ramp or steps, at which pedestrians can recover from their exertions.

**Road**

See Road corridor

**Road controlling authority**

Organisations that are legally responsible for roads, including every city and district council, unitary authorities and Transit New Zealand.

**Road corridor**

The whole of the road corridor from one frontage to the other including footpaths. Legally roads include beaches and places to which the public have access whether as of right or not.

**Roadway**

The part of the road used or reasonably usable by vehicular traffic in general.

**Safe routes to school**

A programme that aims to improve safety and remove barriers to walking (and cycling) to and from school.

**Safety audit**

The process of checking a proposed design or existing road to identify features that may result in unsafe conditions.

**School patrol**

Older children or occasionally adults that use swing signs to stop traffic and permit children to cross free of traffic conflict at pedestrian zebra crossings or kea crossings.

**School speed zone**

Specially signed temporary speed limits covering the school zone for the time before and after school.

**School traffic wardens**

Older children or occasionally adults who choose the times at which it is safe for children to cross the road.

**School travel plan**

A programme that aims to encourage children to walk and cycle to school and reduce the effects of traffic near the school.

**School zone**

Area in the vicinity of a school where crossing assistance, safety measures and parking provision should be considered.

**Segregated shared-use path**

A route shared by pedestrians and cyclists where both groups use separate, designated areas of the path.

**Sensory-impaired pedestrian**

A pedestrian whose ability to walk is hampered by the partial or full loss of a sense, mainly sight or hearing. It may include those who are colour blind.

**Severance**

Separation of people from facilities and services they wish to use within their community due to obstacles to access such as busy roads.

**Shared zone**

A residential street that has been designed to slow traffic and signed to give priority to pedestrians. The shared zone sign means that traffic is required to give way to pedestrians but pedestrians must not unreasonably impede traffic.

**Shoulder**

The part of the road corridor outside the traffic lanes.

**Sight distance**

The distance, measured along the roadway, between a pedestrian about to enter the roadway and an approaching driver, or between two drivers, or between a driver and an object on the roadway.

**Street audit**

An audit using a checklist to assess a street's safety, convenience or usability.

**Street furniture**

Equipment within the footpath such as signal poles, lighting columns, signs, parking meters, seats, landscaping etc.

**Street furniture zone**

The part of the footpath between the through route and kerb zone primarily used for street furniture.

**Tactile paving**

A specially profiled footpath surface that can be felt underfoot. It is provided to warn or direct vision impaired people.

**Through route**

The central part of the footpath designed as the place where pedestrians have a continuous and accessible path of travel.

**Traffic calming**

Changes to the road environment to reduce driver speeds.

**Traffic reduction**

Changes to the road environment to reduce the number of vehicles travelling through an area.

**Trail signs**

Markings (often metal studs, coloured tiles or painted markings) set directly onto the footpath that pedestrians follow to reach their destinations.

**Travel plan**

A package of measures tailored to particular sites, such as schools or businesses, to promote active and environmentally friendly travel choices and reduce reliance on the private motor car.

**Trip destination**

The place a journey ends.

**Trip origin**

The place a journey starts.

**Unsegregated shared-use path**

A path shared by pedestrians and cyclists where both groups share the same space.

**Upstream**

The direction along a roadway from which the vehicle flow under consideration has come.

**Urban form**

The overall design and structure of settlements.

**Vision impaired pedestrian**

A pedestrian whose vision is reduced and cannot be adequately corrected by spectacles or contact lenses, and who may use tactile, visually contrasting and audible cues when walking.

**Vulnerable pedestrian**

Pedestrians at greater risk than others of being involved in a crash, or more susceptible to serious injury. It includes older people, impaired people and children.

**Walkability**

The extent to which the built environment is walking friendly.

**Walking**

The act of self-propelling along a route, whether on foot or on small wheels, or with aids.

**Walking advocate**

An individual, or group of individuals, who encourage, support and enable pedestrian activity.

**Walking strategic plan**

A document setting out a strategy to promote walking and provide a walkable environment, including a programme of actions to achieve this.

**Woonerf**

Original Dutch name for a shared zone.

**Workplace travel plan**

A travel plan tailored to a particular business, workplace or group of workplaces sharing a common location, influencing travel choices of staff and visitors.

**Young pedestrian**

A pedestrian whose physical and cognitive development means their abilities have not reached those of normal adults.

**Zebra crossing**

A pedestrian crossing point with longitudinal markings, where traffic is required to give way to pedestrians on the crossing. Legally they are called pedestrian crossings.



## INTRODUCTION

- Purpose of this guide
- Background
- Methodology
- Guide and process outline



# INTRODUCTION

Walking is an essential mode of transportation – everyone is a pedestrian at some stage of each journey.

This guide aims to promote a consistent approach to the planning and design of pedestrian facilities throughout New Zealand.

This section includes an overview of the content of the whole document.





# 1 INTRODUCTION

## INTRODUCTION TO THE *PEDESTRIAN PLANNING AND DESIGN GUIDE*

The purpose of this guide

The role of walking

The guide at a glance

## 1.1 Purpose of this guide

This guide sets out ways to improve New Zealand's walking environment. It outlines a process for deciding on the type of provision that should be made for pedestrians and provides design advice and standards.

The guide promotes a consistent 'world's best practice' approach to planning, designing, operating and maintaining walking infrastructure and networks. It supports the *New Zealand Transport Strategy* (NZTS) and the priorities for action in *Getting there – on foot, by cycle* (the national walking and cycling strategy). In doing so, it encourages walking as a viable mode of transport for short trips in and around our communities, and recognises the important role walking also plays in many car and public transport journeys. It is also a useful tool for those with an active interest in walking, such as community leaders, local councillors and advocacy groups. As New Zealand research into walking trips increases, the guide will be updated and augmented.

Walking mostly takes place within a transport system that must work for a range of road users. This requires effectively integrating walking needs for safety and convenience into the provision for walking along and across roads. Pedestrians also use routes outside road corridors as part of a continuous network. This guide applies to all pedestrian infrastructure, whether it is alongside or across roads, through parks and recreational areas, or on private land where public presence might reasonably be expected. It also applies to new developments, facility changes and existing environments.



Photo 1.1 – Walking environment, Auckland

A broader overview of providing for walking can be found in *Easy steps* published by Queensland Transport <sup>(175)</sup>

## 1.2 Background

Walking is such a basic human activity that it has often been overlooked when planning for transport [46] and has been viewed as a second-class form of travel [103, 122]. Overall, the use of walking for transport in New Zealand is declining. Taking into account population growth, between 1990 and 1998 journeys made solely on foot in New Zealand reduced by around 400,000 per day [112].

Even so, walking remains a key element of a balanced transportation system. Overall, it is still the second most popular form of travel in New Zealand. Nearly one in five of all household trips is made on foot [112]. For the 10 percent of households that have no car, for those in households without car access for much of the day, and for those who cannot, or choose not to drive, walking is an especially vital mode of transport [112].



Photo 1.2 – Pedestrians, Christchurch

Walking is also included in most trips made by other modes. Whatever the main means of travel, walking is usually the first and last mode used, providing an important link between land use and motorised travel [118]. It is also healthy, inexpensive and very environmentally friendly. Although much of the guide focuses on walking for transport, people walk for pleasure on all types of infrastructure. The attractiveness and quality of our streets and public spaces is, therefore, key to getting more people to walk [59].

The approaches to providing for pedestrians and the interventions adopted will depend on the circumstances at each location. With this in mind, the guide does not prescribe a single approach or intervention, but presents a variety, along with their advantages, disadvantages and limitations, and the circumstances when each would be most appropriate. It recognises that financial, technical and political factors may affect what can be achieved at any particular location or time.

## 1.3 Methodology

The project to develop this guide was managed by Land Transport New Zealand (Land Transport NZ) as one of the *Road Safety to 2010* strategy projects. Consultants were employed to develop the drafts and a stakeholder steering group guided its development and gave feedback on the drafts.

The content was guided by a review of international literature on providing and planning for pedestrian facilities and networks. A draft was released for public submissions and, after the final draft was received from the consultants, an international peer review was conducted. Land Transport NZ then undertook some final edits.

## 1.4 Guide and process outline

Figure 1.1 provides an outline of the sections in this guide.

<b>CONTEXT</b>	<p>Planning and policy context (Ch.2) <i>What is the environment for planning for pedestrians?</i></p>	<b>APPENDICES</b>	
<b>PRINCIPLES</b>	<p>Pedestrian characteristics, preferences and activity (Ch.3) <i>How do pedestrians differ, and who walks, where and why?</i></p>		<p><b>Appendix 1</b> <i>Characteristics of pedestrians</i></p>
	<p>Community walkability (Ch.4) <i>What makes walking attractive within communities?</i></p>		
	<p>Approaches to providing for pedestrians (Ch.5) <i>What are the underlying ways to accommodate walking?</i></p>		
	<p>Pedestrian network components (Ch.6) <i>What type of facility can be used to provide for pedestrians?</i></p>		
<b>PROCESS</b>	<p>Planning for pedestrians (Ch.7) <i>Which planning approach should be used?</i></p>		<p><b>Appendix 2</b> <i>Issues to address in district plans</i></p>
<p>Community involvement in scheme development (Ch.9) <i>Does the walking environment meet the needs of pedestrians?</i></p>	<p>Pedestrian planning process (Ch.8) <i>How do we implement the plan?</i></p>		
	<p>Assessing demand for walking (Ch.10) <i>How many pedestrians want to walk and where?</i></p>		
	<p>Measuring walkability (Ch.11) <i>How is walkability assessed?</i></p>		
	<p>Prioritising schemes (Ch.12) <i>Which walking schemes should be done first?</i></p>		
	<p>Implementation (Ch.13) <i>How should the walking schemes be implemented?</i></p>		
<b>DESIGN</b>	<p>Footpaths (Ch.14) <i>How do pedestrians move around?</i></p>		
	<p>Crossings (Ch.15) <i>How do pedestrians cross major obstructions?</i></p>		
	<p>Measures to guide pedestrians (Ch.16) <i>How are pedestrians guided to their desired destination?</i></p>		<p><b>Appendix 3</b> <i>Signface design details</i></p>
	<p>Lighting the pedestrian network (Ch.17) <i>How is the pedestrian network illuminated?</i></p>		
	<p>Maintaining the pedestrian network (Ch.18) <i>How are pedestrian facilities kept in good order?</i></p>		
<b>POST-DESIGN</b>	<p>Monitoring pedestrian activity (Ch.19) <i>Do walking schemes achieve their objectives?</i></p>		<p><b>Appendix 4</b> <i>References</i></p>
	<p>Making best use of facilities (Ch.20) <i>How can people be encouraged to walk?</i></p>		<p><b>Appendix 5</b> <i>Index</i></p>

Figure 1.1 – Guide outline and process