

# Walking

## Introduction

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Walking is the mode of travel that most of us use daily and as a result the most common travel mode in New Zealand. Over a billion trips are made on foot every year in New Zealand.

Walking can be a mode in its own right or can be one element of a trip. People walk from their cars to their workplace, from home to the bus stop, to a café for lunch, to shop and people walk purely for the pleasure of it. In many ways, walking is the glue that holds together the transport system, connecting all the different modes and places within it. With this in mind, the walking network needs to cater for a vast range of activities and possible destinations. As well as an important element for ‘linking’ places, walking is a major determinant of the success of a ‘place’.

When considering the walking network, it is also important to understand the different types of user and their expectations. A lone female, for example, may well have different perceptions of safety than a lone male. A wheelchair user will have a very different perspective on facilities than those not in a wheelchair.

There are often barriers within our communities and transport networks that prevent people from walking. Different users will be more or less susceptible to these barriers so that those barriers may not simply change individual travel behaviours but also impact on communities and the economy. A busy road has been shown to reduce the connections of people living on either side of it, in effect severing the community. Good facilities and planning can help to break down some of these barriers. A direct and safe crossing point, for example, can reduce some of these negative impacts.

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## Objectives

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### **Integrate land use and transport networks to shape demand**

In an integrated, sustainable, multi-modal transportation system, walking plays an integral role, with a high percentage of regular journeys on foot. Crucial to this is a joined-up approach to land use and transport planning that provides a high level of accessibility to and from destinations.

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### **Incentivise and shape safe and efficient travel choices**

Walking is one of the safest modes of transport and certainly the one with the lowest emissions. However, the benefits of walking cannot be realised in isolation. Transport planning needs to consider the needs of people on foot upfront, in particular how to provide people with appropriate levels of safety and mobility. Encouraging more people to walk more often makes a meaningful contribution to making best use of existing network capacity and managing congestion.

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## Benefits

### Environment

Walking produces practically zero emissions and uses no fossil fuels. To understand the contribution walking makes, consider the fact that two-thirds of trips in New Zealand under 2km in length are done by car. Often these short trips involve cold starts, making them among the least environmentally efficient use of motor vehicle trips. Encouraging more people to walk these shorter trips rather than driving would help to reduce harmful vehicle emissions.

### Economy

Streets in urban areas that cater for and encourage walking are also the streets that are the most commercially successful. Encouraging people to spend time in areas by providing pleasant aesthetics and ambience, good seating, good lighting and a mix of services (e.g. cafés mixed with other retail) will result in increased popularity and, in time, commercial and economic success.



The Chancery development (pictured above) in central Auckland is a good example of how a well-designed commercial area with a mix of activities and building styles adds to the quality of the environment, as well as being commercially and economically successful.

Tourism also benefits from quality walking environments. To supplement New Zealand's many natural activities and attractions, high-quality walking environments can entice tourists to spend time and thereby support the economy. The Queenstown case study in this Walking topic shows how this has been put into practice, with amazing natural attractions supported by a pedestrian-focused central area.

### Congestion management

Providing people with more attractive walking choices can significantly reduce congestion. For example, it has been estimated that 40 percent of peak traffic in Auckland is education-related. Many children live within easy walking distance of their school, and more would walk if the routes to school were safer and more convenient.

## Benefits continued

### Safety and personal security

Improving walking environments:

- reduces road fatalities among pedestrians
- benefits public transport users.

As walking increases, there is an improved level of safety, due to the effect of higher numbers of pedestrians, greater provision for walking facilities, improved crossing times, etc and a greater awareness of pedestrians by people in motor vehicles.

In the longer term, walking-friendly environments increase the safety and attractiveness of urban areas.

Community safety can also benefit from good planning for pedestrians. Streets are safer with people in them. Walkers provide ‘eyes on the street’ or natural surveillance, making communities safer and improving people’s perceptions of safety.



City to Sea Bridge, Wellington

### Efficient transport spending

If more journeys are made on foot, it helps to slow the need for further investment in transport infrastructure for motor vehicles.

### Accessibility

Good walking infrastructure enables individuals who do not have access to a car to reach basic community activities and services such as work, education, health care, welfare and shopping. Walking is also the mode used at the beginning and end of trips by all other modes.

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## Benefits continued

### Liveability

Enabling and encouraging individuals to walk can improve an area's liveability. People engage more intimately when travelling on foot than when travelling by motor vehicle. Walking therefore has an important role in the development of vibrant, well-connected and friendly communities.

Designing streets for people and communities – not just cars – is a key first step. Research has shown that residents living on either side of a road are less likely to interact or even know each other if that road is busy and difficult to cross.



Public spaces along the Wellington waterfront

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### Health

Currently, nearly half of all New Zealanders are insufficiently active to benefit their health. Overall, physical inactivity is estimated to contribute to the deaths of 2600 people each year (9 percent of all deaths) and cost about \$1.3 million in 2010.

New Zealand health guidelines are for a minimum of 30 minutes of exercise, five times a week. Walking to and from work can provide this daily minimum.

Therefore, encouraging walking as a transport mode and ensuring our transport systems support walking will support government strategies for health and active living. Improved productivity is a knock-on benefit of improved activity in our communities.

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## Benefits continued

### Choice

Walking is an important mode for those with fewer transport options. For households without access to a motor vehicle or for those within car-owning households but with limited access to vehicles, walking offers a viable means of travel.

Walking is the only mode of transport that can provide young people free and independent access to their communities. In centres and communities with no or little public transport, walking (and cycling) may provide the only alternative to car use. Walking networks also provide important access for those with disabilities or limited mobility.

It is worth noting that 10 percent of New Zealand households do not own a motor vehicle and that more than 20 percent of New Zealanders are under the legal driving age of 15.



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## Strategic interventions for walking

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### **Managing Land use and urban form**

The location, scale, density, design and mix of development, coupled with the general urban form of an area, are major determinants of the demand and likely mix of travel modes. For example, developments that have no local facilities and that are far from regional centres offer little alternative to travelling in a private vehicle. It is therefore important that, in planning a pedestrian network, land-use plans and developments are factored in. Equally, land-use planning needs to consider the impact of new developments on the transport system.

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### **Developments**

In seeking to encourage more people to choose walking over other modes, developments should attempt to:

- be compact – distance is a great barrier to walking
  - provide mixed land use – with key facilities such as shops, schools, doctors' surgeries located centrally, within a 2km radius to encourage increases in walking
  - provide direct and continuous links – direct routes for common trip origins and destinations will encourage greater uptake of walking
  - be safe – removal of tripping hazards, good lighting and direct lines of sight improve safety
  - provide quality design that is attractive and include amenities like benches, shade and public toilets to improve comfort
  - restrict private vehicle access.
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## Strategic interventions for walking contd

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### Integration

#### Integration with other modes

Planning across the modes should be joined up. For example, planning and enabling increased vehicle traffic volumes along residential streets or well-used pedestrian routes isn't conducive to encouraging individuals to walk. Thus, if a well-used walking route is being affected by increasing vehicle volumes, the outcomes should be discussed. Alternative routes could be considered, for both modes, but with real consideration of the desired outcomes for the entire network. Without an integrated approach to planning and understanding the overall objectives set out in the strategic case for a proposed investment, certain actions can and will impact on other modes. For instance, at the operational level, contractors sometimes give little consideration to pedestrians during road works (e.g. signs blocking footpaths, no detour offered, inappropriate surfaces).

Time should be given by the team or individual looking after walking to maintaining these links across an organisation. Although the benefits and outcomes of this will often be long term in nature, without it the good work being done in one area can be cancelled out by poor or inconsiderate planning and work elsewhere.



Pedestrian areas mixing with other transport options, Amsterdam.

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## Strategic interventions for walking contd

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### Integration

#### Integration with other services

Many government agencies and private businesses provide services to the public that require individuals to travel to central locations. To reduce the need for or distance of travel and encourage walking, some organisations provide mobile services (e.g. library, health centres, fitness classes, fruit and vegetable markets and craft sessions), especially for rural communities, thus allowing them to access the services on foot.

These separate services can be combined, maybe using a multi-function space in a community hall or school. An example of local service provision is the Heartlands project, a government-funded interagency initiative, established in 2001, to provide people in provincial and rural New Zealand with access to government services.

Local coordinators arranged appointments with visiting representatives from a range of agencies, including ACC, Housing New Zealand, the Ministry of Business, Innovation and Employment, and the Department of Internal Affairs, as well as free access to government websites, and toll-free access to government phone lines. (See [www.heartlandservices.govt.nz](http://www.heartlandservices.govt.nz)). Providing these services locally meant people had a shorter journey – they were able to walk or at least drive much shorter distances.



Martin Place Sydney, Integrates a CBD Pedestrian space  
with underground rail transportation.

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## Strategic interventions for walking contd

### Living streets and quality streets

The concept of living streets promotes the idea that streets should be designed, where appropriate, for living and community interaction. In essence, they are part of the public realm. While cars are not excluded, streets are designed in such a way that drivers are aware they are a guest in an area where pedestrian and other users have primacy.

### Link and Place

The living streets concept is more than just traffic calming, as it seeks to create environments that are, by their very nature, more conducive to sharing the corridor space. The terminology ‘Link’ and ‘Place’ is often used to explain the underlying concept. A ‘Link’ is a street designed for users to pass through it as quickly and conveniently as possible. Whereas for ‘Place’, the street is a destination in its own right, where people are encouraged to spend time. Most streets perform both functions to varying degrees, so creating the appropriate balance through planning and design is critical.

Living streets is less about specific engineering interventions and more about a philosophy that gives priority to people rather than cars. For instance, a key element of this approach is public participation, as it ensures that ownership and understanding of the project resides with the local community. Embedding these principles into standard planning procedures will help create more liveable areas.



New Road, Brighton, UK (source: Wikipedia)

### References

Christchurch City Council Streets (2003?) *Living streets: creating a better balance*. Christchurch: Christchurch City Council.

Jones, P, N Boujenko and S Marshall (2007) *Link & place: a guide to street planning and design*. London: Local Transport Today.

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## Strategic interventions for walking contd

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### Shared zones, shared space or woonerf

A shared zone is a street that has been designed to give priority to residents and pedestrians while significantly reducing the dominance of motorised vehicles. In the United Kingdom, shared zones in residential areas are called ‘home zones’ and in the Netherlands they are referred to as a ‘woonerf’.

The concept involves the removal of the traditional devices used to separate motor vehicles and pedestrians such as kerbs, lines, signs, guard rails and signals. Emphasising the lack of separation and the re-prioritisation of modes is believed to result in improved road safety by encouraging users to negotiate their way through shared areas at safe speeds and with due consideration for the other users of the space.

Shared zones are most suitable for streets and compact areas with either an existing low demand for through traffic or a planned reduction in through traffic.



Street, Auckland (source: web)

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### References

Department for Transport (UK), and Communities and Local Government (UK) (2010) *Manual for Streets 2*. London: Thomas Telford.

<https://www.gov.uk/government/publications/manual-for-streets-2/> (accessed 5 March 2014).

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## Strategic interventions for walking contd

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**Traffic calming** Traffic calming of areas can enhance the pedestrian experience. Slower moving and less frequent traffic reduces noise, reduces emissions, creates additional crossing opportunities and reduces hazards.

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**Pedestrian precincts, pedestrian malls or car-free zones** Pedestrian-only areas are created by restricting traffic access or closing roads to traffic. The term pedestrianisation has also been used to describe the process.

Pedestrian precincts are most beneficial where there is heavy pedestrian activity, retail or mixed development and a high number of conflicts between pedestrians and vehicles. Planning and community involvement needs to be comprehensive to ensure community buy-in for the project.

Some retail premises are wary of such proposals as they feel passing trade of vehicles is a key source of business. Detailed surveys of current shopping habits (questionnaires handed out by shops themselves) can often reduce such concerns when the spending patterns of shoppers by mode are analysed. An increasing number of case studies is showing that an increase in walking and cycling activity along a road is good for adjacent businesses.

The pedestrian area centred on Stroget in central Copenhagen is one of the largest and oldest examples of pedestrianisation. Stroget is a series of interconnected avenues that create a predominantly car-free zone and pedestrian-only areas. There are streets carrying traffic that cross the pedestrian area and most of the car-free area allows delivery trucks to service the businesses located there during the early morning.



Strogert, Copenhagen

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## Strategic interventions for walking contd

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### Infrastructure to reduce traffic

Traffic reduction engineering is undertaken at the neighbourhood or community level. Its main aim is to reduce the amount of traffic within an area and so improve safety for pedestrians within those areas.

Road engineering techniques that reduce the amount of traffic include:

- changing the priority at intersections by using Stop and Give Way signs
- using a diverter to prevent some through and/or turning movements at intersections
- partially closing the street by using a kerb extension to block one direction of motor vehicle travel into or out of an intersection
- closing the street to all vehicles by installing a physical barrier
- traffic calming to increase journey times and deter through traffic.



Traffic reduction by one-way entry, Christchurch (source: Land Transport NZ (2007) *Pedestrian planning and design guide*. Land Transport NZ: Wellington – [www.nzta.govt.nz/resources/pedestrian-planning-guide/pedestrian-planning-guide-index.html](http://www.nzta.govt.nz/resources/pedestrian-planning-guide/pedestrian-planning-guide-index.html))

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## Strategic interventions for walking contd

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### Footpaths

Footpaths are the standard means of connecting places for those on foot. They come in a variety of widths, lengths and surfaces and do not have to follow the street pattern, although footpaths should be provided along streets needing pedestrian access.

The fundamentals when planning or upgrading footpaths is the same as for general planning for pedestrians, and include the following:

- Does it provide connections to destinations?
- Are paths wide enough and are there places to rest?
- Are routes continuous, unimpeded and not delayed by other users and traffic?
- Is the path safe (road crossings, driveways, etc)?
- Do its users feel safe (natural surveillance)?
- Are facilities suitable for people with mobility and vision impairments?
- Do crossing points follow the desire lines?

Footpaths may run alongside the road or through parks and other open spaces, and include overbridges and subways.

Specific design guidance and further references can be found in the *Pedestrian planning and design guide* (Land Transport NZ 2008).

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### Ramps and steps

Significant gradient changes over relatively short distances present difficulties for all pedestrians, whether this is to access a bridge, underpass or simple local topography.

The New Zealand Building Code (<http://www.dbh.govt.nz/bcl-get-a-copy-of-building-code>) provides minimum standards for ramps (slope, width, landings) and for steps (tread, pitch and risers) to access structures (i.e. bridge or underpass). This guidance should be viewed as minimum requirements and the underlying objectives such as directness, capacity and safety should still drive decisions. In some instances, it may be practical to provide solutions for different users, e.g. ramp access with rest areas for wheel-based users (wheelchairs, pushchairs or scooters) and steps for users who seek more direct routes.

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## Shared-use paths

Shared-use paths can be used to provide off-road routes for pedestrians and cyclists. The choice to create a shared-use path needs careful consideration because, while pedestrians and cyclists share many characteristics, they differ in some ways as well (such as speed of travel).

The benefits to cyclists (safe off-road option, possibly more direct) need to be considered alongside the possible reduction in benefits to pedestrians (increased safety risk with speed differential and higher numbers of users). If planned and constructed well (i.e. sufficient widths for numbers, appropriate signage warning of shared use and steps with cycle wheel ramps), then there can be benefits for both sets of users.



Wellington waterfront

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## Strategic interventions for walking contd

### Crossing facilities

When planning a pedestrian network, it is beneficial to minimise the requirement for pedestrians to cross roads, especially in the vicinity of key destinations (hospitals, CBD, etc). However, the nature of the road network often means that some form of crossing facility is unavoidable. Crossing facilities can occur either at grade (road level) or be grade separated (bridges/underpasses). Both forms have their advantages and disadvantages and, as a starting point in the planning process, it is always worth listing them all.

There are four main reasons for choosing to improve facilities for pedestrians to cross roads:

- Level of service: the crossing opportunities available to pedestrians are below the desired level of service.
- Safety: crash records show that specific pedestrian crashes may be reduced by providing crossing assistance, or that perceptions of poor safety are discouraging walking.
- Specific access provisions: a particular group (e.g. young children, people with vision and mobility impairments) needs the improvements.
- Integration: it is part of integrating and reinforcing a wider traffic management plan for the area.

Consider the following questions (in this order) regarding how to best provide crossing facilities for pedestrians:

- What is the road environment (or road category) and the land-use context (local destinations such as schools, hospitals, etc), and who uses it?
  - Is the timing of the crossing sufficient for the elderly and mobility impaired?
  - What are the appropriate physical aids to crossing?
  - Is the control of the crossing point appropriate?
  - How will the facility design fit into the environment?
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## Case study – Queenstown

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### Introduction

Queenstown could perhaps claim to be the tourist capital of New Zealand. It is interesting therefore that such great emphasis in the town has been put on pedestrian movement. The central area maximises its exchange space and creates an environment that encourages people to spend time (and money). Much of the central area is pedestrian only or well-designed shared-use. The philosophies of living streets and quality streets are evident and the car certainly doesn't dominate the streets, which are lined with a mix of land uses. Although many of the streets are shared-use, the strength of the overall design makes vehicles and drivers seem out of place.

Some of the supporting measures and approaches that have ensured a pedestrian focus are outlined below. This case study focuses on the idea of Place (as opposed to Link) in planning for pedestrians.



One of the streets in central Queenstown. The concentration of facilities supported by wide footpaths, attractive surroundings and slow-moving vehicles all contribute to the pleasant pedestrian environment.

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## Case study – Queenstown continued

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### Mixed use

The first supporting element is the land-use planning. The central area has accommodation mixed with other attractions and facilities, ensuring those who do stay centrally only need to walk. The concentrated core area complemented by the pedestrian focus also attracts individuals from further afield to the town.

**Retail:** There is a strong retail focus in the central area, which attracts individuals to the central area and assists the economy.

**Restaurants, cafes, bars:** There are numerous venues that provide opportunities to rest, eat and drink in the central area, encouraging people to spend more time there. Some establishments provide outdoor seating, which creates more interesting spaces for individuals to enjoy and watch. The night-time economy is vibrant, and some establishments look out onto the pedestrian space while others provide outdoor seating, which helps create a degree of natural surveillance. This increases the feeling of personal safety while in the area.

**Accommodation (apartments, hotels, hostels, etc):** The tourist nature of the area means there are hotels and other short-term accommodation available in the central area. These are supplemented by apartments for permanent and longer-term residents in the central area and immediate surroundings. This helps create a vibrant local economy, further natural surveillance and a reduced need to travel by vehicle.

**Other activities:** Other activities that support the retail area, cafes and bars are also located centrally. These include:

- botanic gardens
- waterfront
- plaza and parks
- playgrounds.



The Queenstown waterfront

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## Case study – Queenstown continued

### Approaches

The approach taken in Queenstown has been to mix almost all the approaches listed above.

#### Pedestrian precinct

The central core contains some pedestrian-only areas, as shown in the image below. With outdoor seating, balconies, suitable lighting and busy evening venues, the fundamentals of safety, security, legibility, convenience and connectedness are covered here.



Queenstown Mall, a pedestrian precinct

#### Living streets

The approach taken in the central core area was to create a people environment. Cars can travel along most of the streets in the central area but are made to feel 'out of place' and encouraged to drive slowly by the overall design. Much of the speed reduction has been accomplished by passive traffic calming: limited segregation of pedestrians, narrow traffic lanes, limited road markings and unrestricted crossing points for people.

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## Case study – Queenstown continued

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### Share the main street

Beyond the central core, a less pedestrian-orientated focus has been followed (termed a transition zone in 'share the main street' literature). The image below shows how pedestrians are catered for with crossings and central refuges located amongst parking and through traffic. The different ambience and aesthetics in this transition zone perhaps reduce the appeal for pedestrians. The types of land use and shops will, in time, reflect this transition zone, providing services for short-stay motorists. Transition sections are needed in urban areas, as an entire town or city cannot be solely about 'place'. People and freight operators still need to access the jobs and services, so effective 'links' are needed between the 'places'. It is imperative that the right balance is achieved in these linking streets, as they still provide access to modes other than the private car.



Queenstown transition zone – share the main street (source: T Hughes)

### Summary

The success of Queenstown as a tourist destination and the extreme sports capital of the world is largely due to its geographical location, amongst the Southern Alps and beside Lake Wakapitpu. However, the town centre provides a welcome location to shop, relax and enjoy activities that are perhaps a little less extreme. The central core provides an activity in its own right, with a mix of shops, cafes and other activities. The design, planning and features all support a central core area that encourages walking as the main mode and in doing so actively enhances its success and prosperity.

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# Case study – Oakland, California. Pedestrian Master Planning

## Introduction

In the 1990s, Oakland ranked amongst the most dangerous cities in California for pedestrian injuries and fatalities.

In late 2002, the City of Oakland adopted a Pedestrian Master Plan to not only turn this statistic around, but also to ensure public spaces, including streets and off-street paths, would offer a level of convenience, safety and attractiveness to people that encourages and rewards the decision to walk.



A safe accessible street network for all ages and abilities is central to creating a liveable community. Well- designed streets help build communities, prevent crime and provide opportunities for physical activity.

The plan sets out a network of pedestrian facilities and distinguishes sections of roadway and intersections in need of safety enhancements to better serve pedestrians.

## Data analysis

The Master Plan made use of an innovative data analysis tool, known as the Space Syntax Model. This was used to estimate pedestrian volumes throughout the city based on land use, population and other network characteristics. These estimates were combined with crash data, traffic data and community input to identify and prioritise areas with both safety problems and high pedestrian demand.

## The plan

Based on the data analysis, planners designated a pedestrian network for Oakland based on the routes that would:

- serve schools, bus stops and routes, libraries, senior citizens' centres, recreation centres, commercial districts and other areas of high pedestrian activity;
- serve and improve conditions in areas with high pedestrian crash numbers or rates;
- connect previously unconnected neighbourhoods;
- overcome barriers such as freeways, railroads and difficult topography; and
- take advantage of natural features such as shorelines, ridges and creeks.

In addition to the data analysis and route designation, project staff conducted more than 70 neighbourhood meetings to gather community input. Analysts found that

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many of the locations identified as unsafe by residents, matched the locations identified through crash data analysis.

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**Priorities**

Following the release of the Master Plan, two neighbourhoods stood out as the highest priorities for additional planning and improvements. Chinatown, in downtown Oakland, had the highest concentration of pedestrian-motor vehicle crashes in the city. Development of the Master Plan brought about a partnership between the Oakland Chinatown Chamber of Commerce, the Oakland Pedestrian Safety Project and Asian Health Services which resulted in a \$2.2 million grant as well as many educational and infrastructural improvements.

Similarly, the mainly Latino Fruitvale District also stood out for pedestrian-motor vehicle crashes.

The Master Plan also enabled staff to prioritise schools, particularly those on arterial streets and those with large immigrant populations, where walking rates tended to be highest.

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**Lessons learned**

- It is useful to focus exclusively on pedestrians. While many plans combine pedestrian and cycle planning and non-motorised modes may have common characteristics and needs, they are not the same and require distinct analysis methods and different types of infrastructure.
  - Provide linkages. In many situations, planning and developing extensive new pedestrian corridors can be much more costly and less effective than providing good connections between well-used pedestrian facilities such as bus stops and nearby walkways.
  - Keep safety to the fore. Creating safe, accessible walking routes will create a virtuous cycle: higher volumes of pedestrians create safer streets both in terms of crime (more eyes on the street) and in terms of road safety as drivers become more aware of pedestrians.
  - The Master Plan is a great initiative to improve urban walking environments, but it is always more effective to plan for the needs of walkers at the outset rather than having retrofit a town or city that has been allowed to develop and grow without due consideration of walking environments.
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For further information, see:

<http://www2.oaklandnet.com/Government/o/PWA/o/EC/s/BicycleandPedestrianProgram/OAK024599>

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## Case study – Nottingham, Pedestrian Links

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### Introduction

The Nottingham urban area (population 730,000) is a regional centre in the UK. This case study focuses on Maid Marion Way and the linkages across it.

Maid Marion Way is a link within the central ring road of the city. Historically, there was a focus on vehicle capacity, with pedestrians separated and sent underground to get across the road.

This case study focuses on the idea of a pedestrian link and illustrates an increased priority for pedestrians, despite high vehicle flows. The improved link removed a significant barrier to reaching the city from surrounding local communities and to reaching Nottingham castle from the city centre. This case study is more than just a change to an at-grade crossing. It is a statement about pedestrian priority in a previously car-dominated environment.

The case study uses material within a report by the Commission for Architecture and Built Environment (CABE), UK.



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## Case study – Nottingham, Pedestrian Links continued

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### Summary

Previously, a roundabout completely dominated the intersection, with a sunken plaza providing a route for pedestrians. The plaza had sloping concrete walls surrounding a small kiosk connected by four subways, which emerged through narrow stairways on each of the four corners of the space, diminishing the available pavement area to narrow fragments close to the buildings. The imposing design removed natural surveillance and was in effect a barrier for many possible users.



The intersection before improvement works with underpass visible

The approach was to remove the subway and plaza and put the pedestrians at-grade and back on their desire lines. Traffic signals replaced the roundabout, which provided more space for generous new pavement areas, which were matched into wider pedestrian improvements to the area.

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## Case study – Nottingham, Pedestrian Links continued

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### Success and comment

The changes resulted in a 56 percent increase in weekday pedestrian movements and a 29 percent increase amongst Saturday shoppers. A street identified as one of the least loved in the country has been transformed into a legible and functional space and its barrier effect largely overcome.

The project has also transformed an area and overcome the legacy of 1960s segregated urban planning.

This project demonstrates what can be achieved through bringing together the skills and imagination of several professions to rebalance the multiple functions of streets and public spaces.

The scheme contributes much towards a growing understanding of the potential for transforming soulless traffic corridors into lively city streets.



## Complementary measures

<b>Parking management</b>	A comprehensive transport strategy needs to consider parking management. The availability and cost of parking is a major determinant on people's mode choice. The management of parking at a regional, city or town level is therefore a key tool in encouraging individuals to consider walking as an alternative to the car.
<b>Land-use planning</b>	The location, scale, density, design and mix of land use are major determinants of the demand and likely mix of travel modes. Walking is realistic as a travel mode for distances under about 3km and so land-use planning that seeks to encourage walking should have access to key facilities within this distance.
<b>Public transport</b>	The links between walking and public transport are strong, as public transport journeys usually begin and end with walking. Therefore, any strategy that encourages public transport will generally also result in increased walking trips.
<b>Travel plans</b>	School, work and personal travel plans are all mechanisms that can encourage walking as a mode. For more information, see the Travel Plan topic.

## What other policies will this address?

<b>Health</b>	People who choose to walk more will be benefiting their own health. In addition, there will be benefits to the health system, as a fitter, healthier population will have less need for health care.
<b>Environment</b>	Moving more people on foot can help areas trying to reduce pollutants usually emitted by vehicles.
<b>Economy</b>	Areas that can attract pedestrians and encourage them to spend time there will benefit that locale economically.
<b>Safety</b>	<p>Improving walking environments:</p> <ul style="list-style-type: none"> <li>• reduces road fatalities among pedestrians</li> <li>• can result in safer environments for motor vehicle use as well.</li> </ul> <p>In the longer term, it is possible that reduced motor vehicle traffic, resulting from shifts to walking, may help improve safety on our roads.</p> <p>Community safety can also benefit from good planning for pedestrians. Streets are safer with people in them. Walkers provide 'eyes on the street' or natural surveillance, making communities safer and improving people's perceptions of safety.</p> <p>Speed limits are another valuable tool to give effect to a people-friendly environment. It is now generally accepted that 50km/h is too high for urban centres, especially where there is walking and cycling activity. 30km/h and 40km/h limits are increasingly being adopted in New Zealand. The UK has the 'twenty's plenty' initiative, aimed at reducing many urban residential speed limits to 20mph(32km/h).</p>

## Further reading

Austrroads (2006) *Pedestrian-Cyclist Conflict Minimisation on Shared Paths and Footpaths*, Austrroads Research Report, ref: AP-R287/06. Sydney, NSW: Austrroads.

[www.austrroads.com.au/abc/index.php?type=sep&id=20](http://www.austrroads.com.au/abc/index.php?type=sep&id=20); specific strategies addressing the issues are also provided in the 'Information notes' available at [www.austrroads.com.au/abc/index.php?type=main&id=7](http://www.austrroads.com.au/abc/index.php?type=main&id=7) (accessed 10 December 2009)

Austrroads (1998) *Cities for tomorrow: integrating land use, transport and the environment*, vol 1 AP-57/98 'Better Practice Guide', vol 2 AP-58/98 'Resource Document'. Haymarket, NSW: Austrroads

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