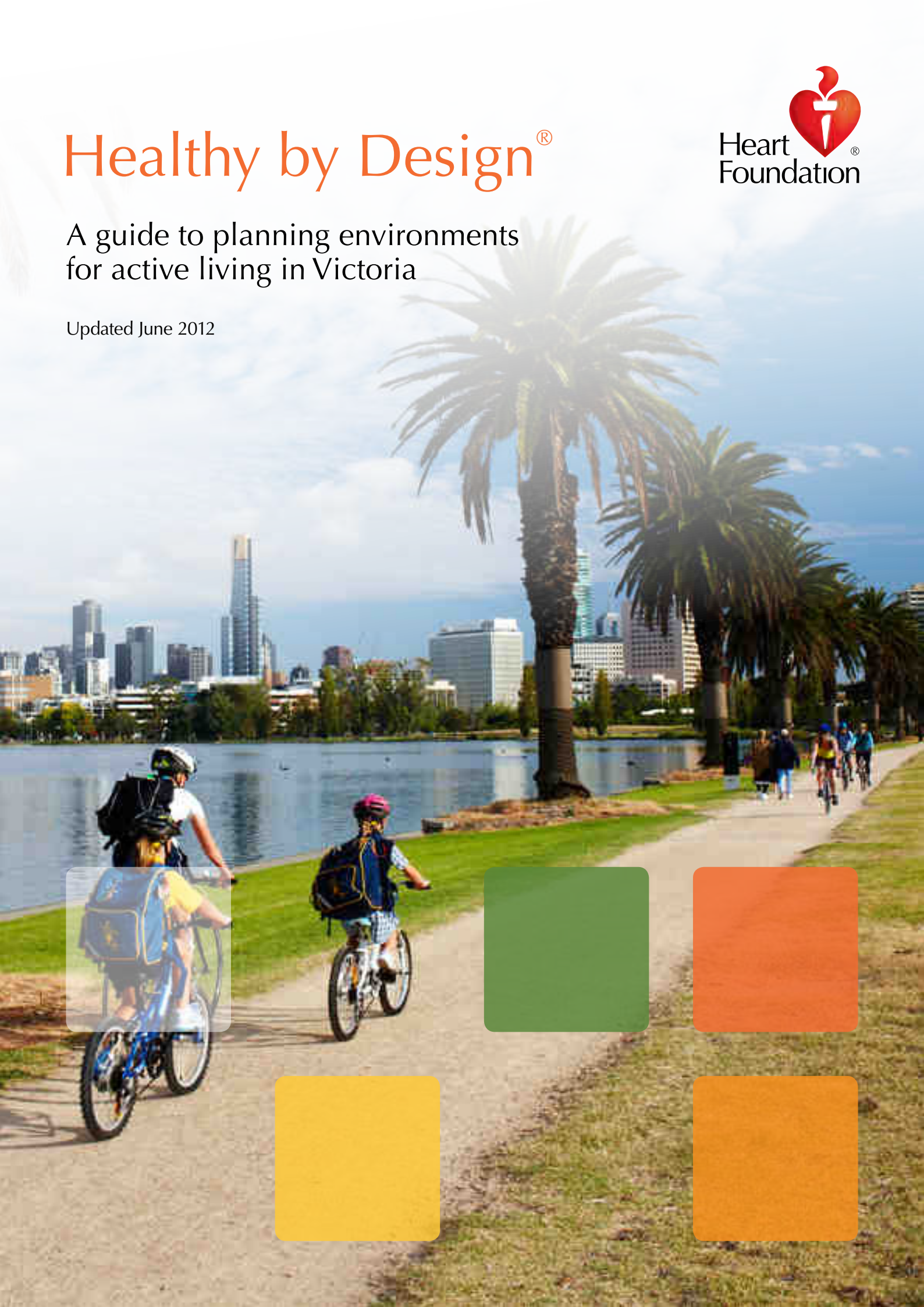
Healthy by Design®

A guide to planning environments for active living in Victoria

Updated June 2012



In line with the Heart Foundation's ethos of promoting healthy lifestyles, this resource is designed to make it easier for planners to incorporate healthier design considerations into daily planning decisions.

Winner of the 'Planning for Health and Wellbeing Award' and the 'President's Award' presented at the Planning Institute Australia

- Victoria Division, Awards for Planning Excellence 2004.

"The *Healthy by Design* resource is excellently designed and illustrated, and covers all of the aspects that will enable planners and subdivision engineers to plan healthy and cost effective communities. It is a world class contribution to health and wellbeing outcomes, is innovative, is a major contribution to integrated planning and will enhance sustainable outcomes".

- Citation, Awards for Planning Excellence 2004

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How to use this resource

Healthy by Design is a resource of the Heart Foundation Active Living program. It includes design considerations, evidence, tools and case studies to support those professionals who have responsibility for the design, development and maintenance of the public realm. These professionals include, but are not limited to:

- local government planners
- private planners
- planning consultants
- developers
- urban designers
- engineers
- landscape architects
- land surveyors
- health planners.

This resource aims to make it easier for planners to incorporate design considerations that positively impact on the health and well being of all Victorians, into daily planning decisions.

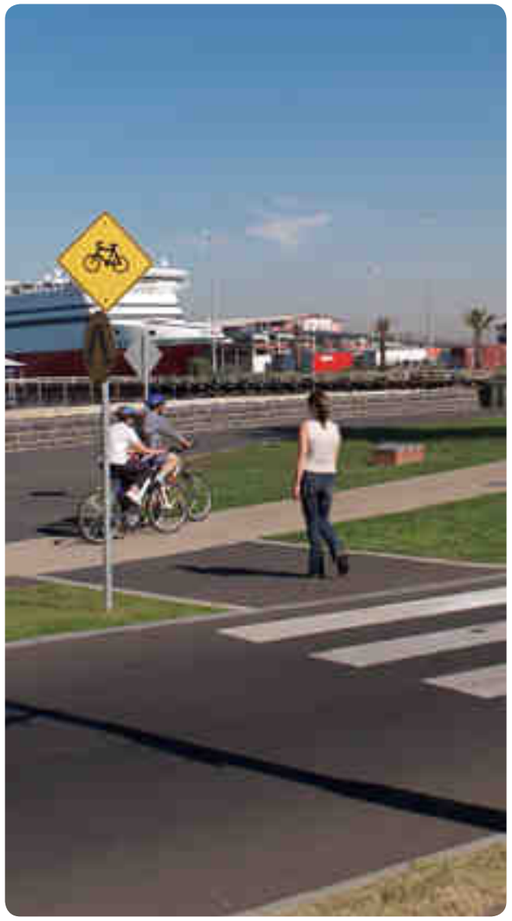
Healthy by Design may be used as a tool for:

- preparing plans (such as open space master plans)
- designing proposed developments
- developing design guidelines or checklists
- developing innovative built environment projects
- assessing development proposals
- influencing strategic directions
- embedding health into Municipal Strategic Statements
- influencing planning scheme provisions
- ongoing development and enhancement of open spaces
- sharing public health knowledge with the development or consultation community.

For further reading, we also include a list of useful healthy planning and design resources (refer to Appendix A).

What is *Healthy by Design?*

Healthy by Design has been developed in response to local government requests for practical guidance in designing walkable, and ultimately more liveable, communities.



'Healthy urban planning' is about planning for people. It puts the needs of people and communities at the heart of the urban planning process and encourages decision-making based on human health and well being (Barton, Tsourou 2000).

The information in this resource has wide application and relevance. Healthy planning is best applied at all levels of development, ranging from the re-design of local neighbourhood parks and streets through to the development of new neighbourhoods and town centres.

Our design considerations facilitate healthy planning and healthy places for people to live, work and visit.

This is encouraged by providing:

- well planned networks of walking and cycling routes
- streets with direct, safe and convenient access
- local destinations within walking distance from homes
- accessible open spaces for recreation and leisure
- conveniently located public transport stops
- local neighbourhoods fostering community spirit.

The concepts outlined in this document are not new. Rather, they encourage a more traditional approach to urban outcomes aligned with that of the 'New Urbanism' urban design movement: addressing quality of life and standards of living by creating better places to live.

Our design considerations are derived from an initial study that formed the basis of the Heart Foundation's Supportive Environments for Physical Activity project (Wright et al. 1999). A range of supporting research underpins our recommendations (refer to Appendix B). This research highlights a variety of design elements found to influence how often people walk and cycle in their local neighbourhood.

We hope you find this resource useful and value your feedback. Please direct comments or feedback to activeliving.vic@heartfoundation.org.au

The role of local government in healthy planning

Healthy by Design supported the Neighbourhood Principles in *Melbourne 2030*. This strategy emphasised fostering healthy lifestyles through walkable neighbourhoods, where it is easy and attractive to walk or cycle to facilities and services.

Many of the design considerations in *Healthy by Design* build on the Victoria Planning Provisions (VPP). Until healthy planning and design considerations are further embedded into the VPP, the challenge for local governments is to integrate healthy planning into their core business.

Local governments play an important role in addressing health issues in the design of the public realm and by developing strategies to support walking and cycling. These strategies can be included in the Municipal Strategic Statement (MSS) and the Local Planning Policy Framework.

Several local governments have already taken steps in this direction. Banyule City Council has included references to health and safety in its MSS and has prepared a Local Planning Policy on Safer Design. This policy commits to creating an attractive, usable, well-maintained environment where people feel safer to live, work and travel. It also provides settings that discourage crime and inappropriate behaviour.

In light of future mobility needs and universal access, Campaspe Shire Council now requires building of footpaths on both sides of streets in residential subdivisions. This requirement is written into Campaspe's Engineering Design Manual, which stipulates Council's requirements for subdivision works. The Council also plans to formally adopt a revised version of the Manual.

The need for healthy planning

Planners play an essential role in planning, designing and regulating the environments in which we live. Well-planned neighbourhoods can increase the number of people who walk or cycle to shops, schools, parks, services, facilities and public transport. This supports healthier lifestyles for local residents, a more socially vibrant local neighbourhood and brings with it associated economic and environmental benefits.

Australia is a car dependent society. Policies and planning to accommodate car use consumes our built environment. A high level of car travel has serious consequences for personal health and community well being. “Australians may be ‘building in’ car dependency into our children, making our problems much worse in the future” (Australian Greenhouse Office, quoted in Cregan 2003).

The need for healthy urban planning is becoming increasingly important. In Australia, the annual, direct healthcare costs attributable to physical inactivity are about $1.5 billion (Econtech, 2007). A lack of physical activity is responsible for one in ten premature deaths in Australia (Lee et al, 2012). Engaging in regular physical activity reduces the risk of diseases such as cardiovascular disease, type II diabetes, osteoporosis, colon cancer, obesity and injury. In addition, physical activity has been shown to alleviate depression and anxiety and increase social interaction and integration (Bauman et al. 2002).

Overweight and obesity is, in part, a consequence of physical inactivity. In 2011-12, 63.4% of adult Australians are overweight or obese, and its prevalence is on the increase (ABS, 2012). The obesity epidemic is common at all ages, in all parts of Australia and throughout all population groups (Australian Government Department of Health and Ageing 2003).

For health benefits, the National Physical Activity Guidelines for Australians recommend that people of all ages accumulate at least 30 minutes of moderate intensity physical activity on most, preferably all, days of the week (AIHW 2001). Despite this recommendation, about 67% of Australian adults are insufficiently active for health gain (ABS, 2012).

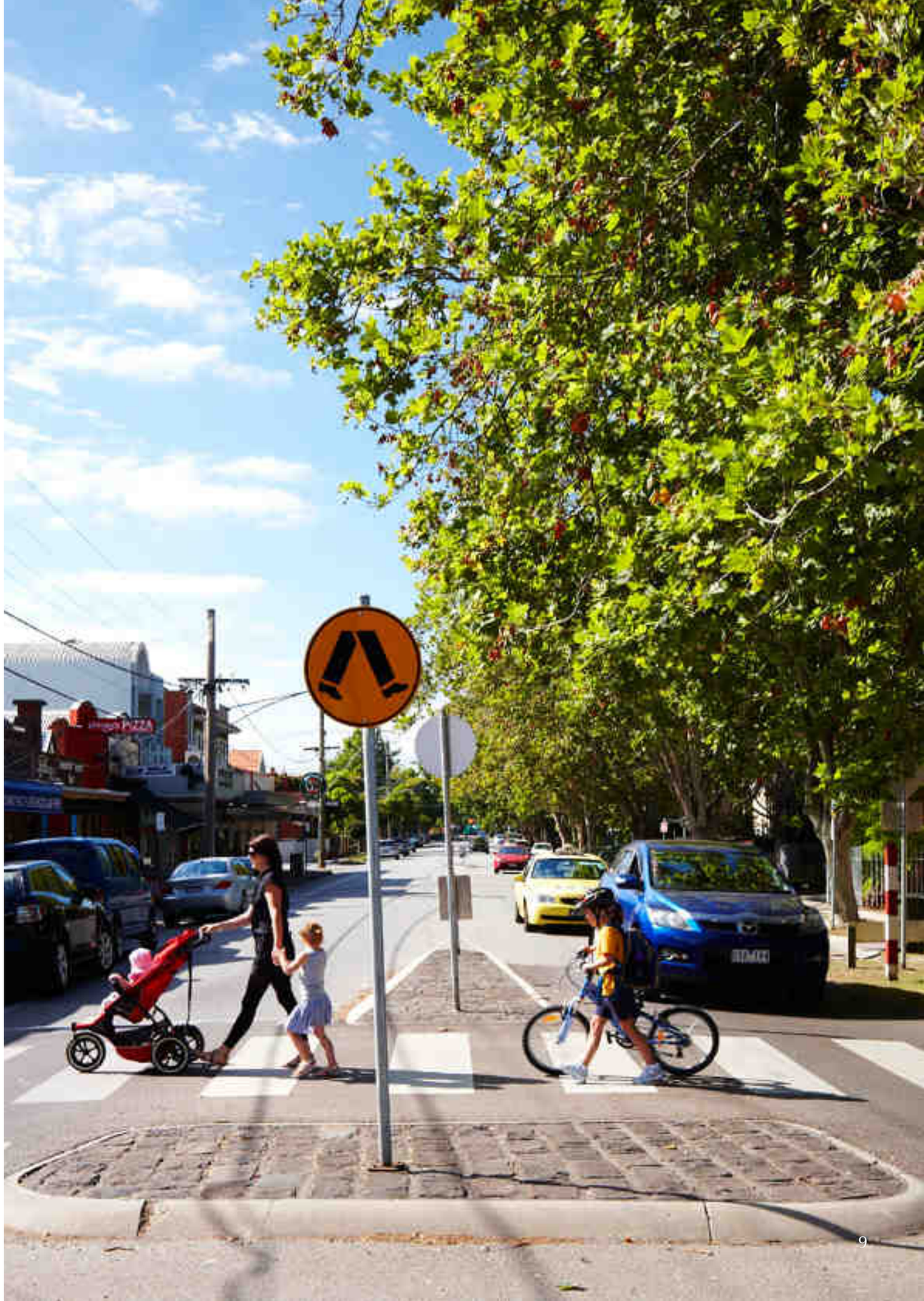
When ‘health’ is integrated into planning, the choice for people to be active becomes more convenient, easy, safe and enjoyable. Providing convenient, easy-to-access built environments that encourage people to be ‘out and about’ on a daily basis will contribute to a more active and vibrant society.

Design considerations

The design considerations in this resource support and inform healthy planning decisions. Local governments may also need to consider existing requirements in relation to several of the design considerations detailed in this resource.

The following sections suggest optimal design approaches that encourage active living in the areas of:

- walking & cycling routes
- streets
- local destinations
- open space
- public transport
- supporting infrastructure
- fostering community spirit.



Walking and cycling routes

A well-planned network of walking and cycling routes allows people to travel safely and with ease, whether on foot, bike or other wheeled vehicles. The best walking and cycling routes include a well-connected network of footpaths, shared paths for pedestrians and cyclists, off road cycle paths, on road cycle lanes and paths for recreation and leisure.

Design objective

To provide an accessible integrated network of walking and cycling routes for safe and convenient travel to local destinations and points of interest.

Design considerations

Make connections

- Plan walking and cycling routes that provide variety, offering both direct and leisurely paths.
- Provide route continuity through local streets, linking footpaths with shared paths and providing access through road closures and cul-de-sacs.
- Design walking and cycling routes to lead to local destinations and popular focal points such as shops, food stores, schools, parks and public transport stops.
- Achieve clear and safe connections through signage, landscaping, lighting and edge treatments.

Create safe places for people to walk and cycle

- Create places for people to walk where they can be seen by cyclists, other pedestrians, motorists and nearby residents. Avoid tunnels and underpasses that limit visibility.
- Design footpaths to be overlooked by dwellings and other buildings.
- Ensure clear sightlines along walking and cycling routes using appropriate landscaping, low walls or permeable fencing, mirrors and effective lighting. Avoid blank walls or high and solid fencing.
- Maintain clear sightlines along walking and cycling routes using low vegetation (up to 700 mm). Trim tree foliage up to an overhead clearance of 2400 mm above ground level (refer AS1428.1).

Create stimulating and attractive routes

- Design walking and cycling routes to and around local landmarks and points of interest.
- Use art to encourage interest and repeated use of the route.
- Complement walking and cycling routes with trees for aesthetics and shade.
- Maintain walking and cycling routes to a high standard to ensure continuous, accessible paths of travel.
- Maximise shade over paths and nearby rest stops, ensuring shade structures do not obstruct access.

For further information on shade provision, refer to The Cancer Council Victoria's 'Shade for Everyone'. Contact SunSmart on 03 9635 5148 or visit www.sunsmart.com.au

Design safe, accessible footpaths

- Enable comfortable passage for people in wheelchairs, people with prams, learner cyclists and people walking comfortably side by side with footpaths that are:
  - A minimum of 1.5 metres wide along collector or lower order streets.
  - A minimum of 2.5 metres wide along arterial roads and approach routes to predictable destinations such as schools, parks and shopping precincts. (Three metre paths or wider are preferred to allow for greater contingency).
- Provide protection from passing cars for people on paths with a minimum outer nature strip provision of 0.5 metres. Choose 'barrier' not 'rollover' kerb design.
- Provide footpaths, ideally, on both sides of all streets.
- Provide walking routes along predictable paths of travel, including approaches to schools, parks and shopping precincts.
- Ensure a durable, non-slip surface and even paving designed and constructed for minimum maintenance.
- Provide continuous footpaths, uninterrupted by variations in surface material.
- Ensure the design, location and number of crossovers maintain pedestrian priority.
- Keep paths clear, accessible and free of obstructions such as vegetation and tree debris. Develop a maintenance regime to ensure vegetation does not overhang walking and cycling paths and restrict access for users.
- Prohibit parked cars in driveways that block footpath access.
- Ensure gradients from footpaths to streets are minimal, safe and comfortable for people with limited mobility and those using wheelchairs, prams and trolleys.
- Align gradients and ramps with desired paths of travel for pedestrians and cyclists.
- Ensure a smooth transition from ramps to roads for people using wheelchairs or prams. Ramps should be at least as wide as the footpath or marked crossing point to eliminate squeeze points at transition areas.

Paths, ramps and walkways should comply with AS1428.1, 1428.4 and 4586. For further information on kerb ramp design, refer to VicRoads specifications and the Local Government.

Shared path design

A shared path is a designated, signed area for pedestrians, cyclists, people in wheelchairs and other wheeled vehicles. Users travel at different speeds along shared paths, so a range of design elements must be considered. Shared off road paths are particularly important for learner cyclists and children who ride their bikes to school.

Designated 'shared zones' need wider paths to accommodate safe travel at different speeds. Shared paths include local access paths and arterial shared paths. Local access paths provide access to local facilities and destinations, such as parks, playgrounds, schools and shops. These paths do not necessarily connect across municipalities and can be designed for lower speeds and lower volumes of people. Design local access paths at 2.5 to 3.0 metres wide.

Arterial shared paths link multiple regional destinations and also link to local access paths. Arterial shared paths cater for a better level of service, larger volumes of people and more continuous travel. Design arterial shared paths at 2.5 to 3.5 metres wide.

When designing shared paths:

- Ensure a durable, non-slip surface and even paving, designed and constructed for minimal maintenance.
- Keep paths clear, accessible and free of obstructions such as vegetation and tree debris.
- Maintain a foliage set back of at least one metre from the edge of shared paths.
- Ensure gentle gradients and turns.
- Mark centre lines to delineate two-way traffic and encourage users to keep left.

In high use areas, it may be more appropriate to create separate walking and cycling paths.

For further information on shared path design, refer to:

- *Bicycle Network Victoria has a number of resources which can be found at 'Good Design Guides'. Available from www.bicyclenetwork.com.au.*
- *VicRoads Cycle Notes No.3: Shared Bicycle/Pedestrian Path Design. Visit www.vicroads.vic.gov.au.*
- *Austroads Guide to Road Design 6A: Pedestrians and Cyclists*

Streets

A legible street network with attractive frontages encourages people to be out and about. Having more people on streets contributes to more active and lively communities where people meet and interact. Grid street design integrates people with surrounding streets and supports convenient foot or bike travel. Design streets to provide both direct and leisurely paths to neighbourhood destinations and safe and easy access across streets.

Design objective

To design legible street networks that provide direct, safe and convenient pedestrian and cycle access. To position pedestrian crossings along streets and roads with heavy traffic volumes.

Design considerations

Slow traffic for safe streets

- Reduce and calm vehicle traffic to facilitate safe pedestrian and cyclist movement along residential and collector streets.
- Slow vehicle speed to 50 km/h for collector streets and 60 km/h for trunk collector streets. Where possible, advocate for 30km/h in peak pedestrian areas such as surrounding local shopping precincts, schools and community facilities.
- Where possible, use alternatives to roundabouts that provide a safer walking and cycling environment. Visit www.bv.com.au for further information.
- Design roundabouts to slow vehicles and provide pedestrian visibility and safe movement. Incorporate marked pedestrian crossing points as part of any roundabout provision.

Provide safe places to cross streets

- Provide pedestrian operated lights in streets with traffic volumes of 5,000 vehicles per day or more, or where traffic volumes during peak periods are an actual or perceived threat to pedestrian access and safety, particularly for children or older adults.
- Provide clearly marked zebra crossings in streets with lower traffic volumes to control speed and ensure convenient pedestrian movement.
- Ensure the standard provision of light-controlled pedestrian crossings along streets adjacent to shopping precincts, schools, childcare facilities, retirement villages, parks, convenience stores or other predictable pedestrian destinations. Locate crossings as close to the direct line of travel for pedestrians and cyclists as possible to minimise diversions.
- Align crossing signals with the average walking speed of an older adult.
- Install audible crossing signals, ensuring a safer crossing point for the visually impaired.
- Implement a maximum waiting time of one minute at pedestrian lights for convenience and to encourage pedestrians to cross streets safely and avoid crossing before the green signal. Alternatively, increase the frequency of pedestrian crossing phases in peak pedestrian periods (such as when children are walking to/from school).
- Maintain clear sightlines for people travelling on or across streets on foot or bike, particularly at intersections, roundabouts and pedestrian crossings.
- Use tactile tiles to mark the edges of pedestrian crossings.

Support on road cyclists

- Provide on road bicycle lanes along streets with traffic speeds over 50 km/h for the safety, comfort and mobility of cyclists.
- Maintain safe, unobstructed paths of travel.

VicRoads suggests bicycle lanes on roads should ideally be a minimum of:

- 1.5 metres wide in a 60 km/h zone
- 2 metres wide in an 80 km/h zone
- 2.5 metres wide in a 100 km/h zone

Where space allows, increase lane width for the safety and comfort of users.

Where possible, introduce physical separation between bicycles and vehicles.

For further information on bicycle lane design, refer to:

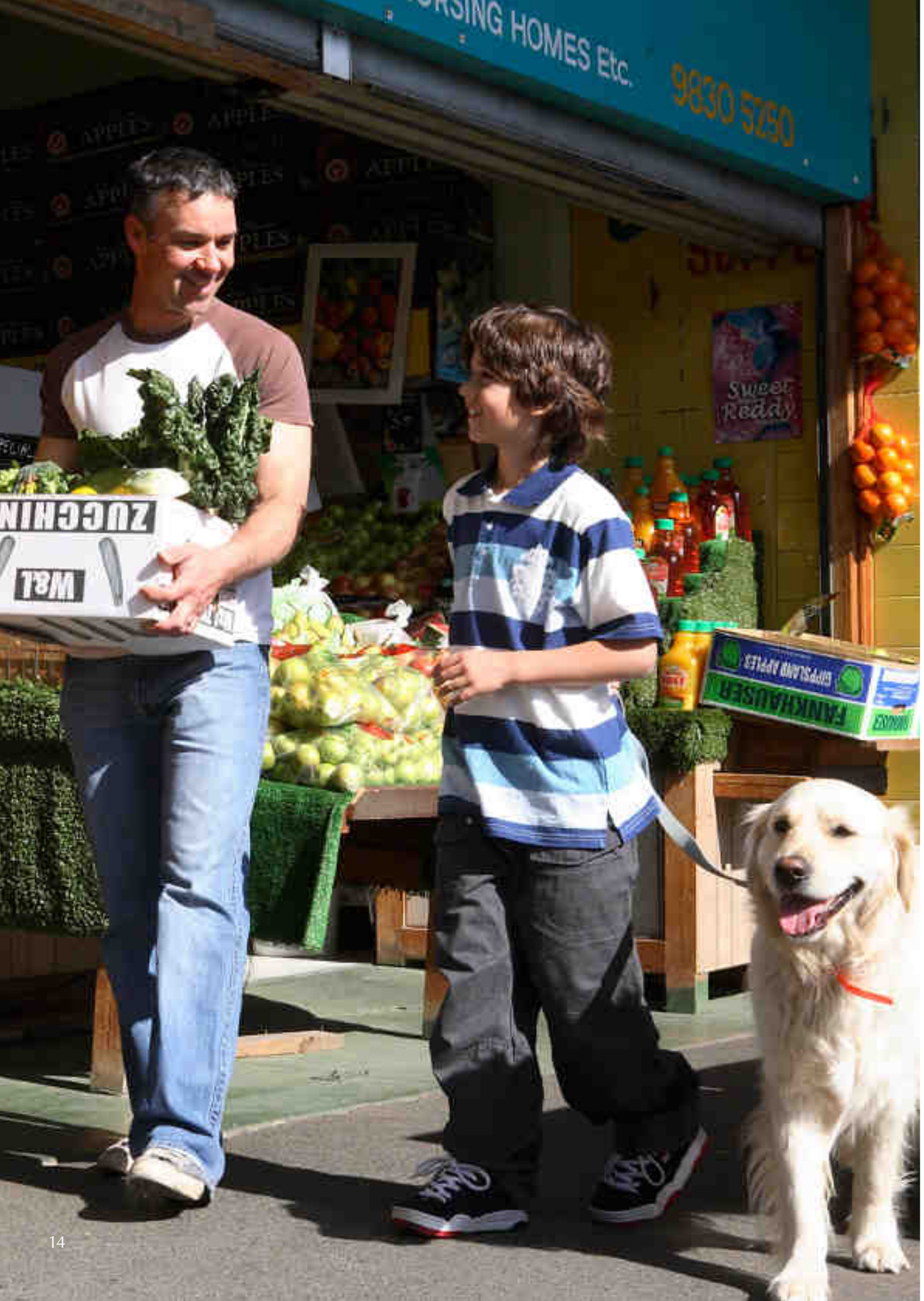
- *Bicycle Network Victoria has a number of resources which can be found at 'Good Design Guides'. Available from www.bicyclenetwork.com.au.*
- *VicRoads Cycle Notes No.7: On-Road Arterial Bicycle Routes.*
- *VicRoads Cycle Notes No.9: Creating On-Road Space for Cyclists. Visit www.vicroads.vic.gov.au.*
- *Austroads Guide to Road Design 6A: Pedestrians and Cyclists*
- *Australian standard 1742.9 Manual of Uniform Traffic Control Devices, Part 9, Bicycle Facilities.*

Keep routes clear, direct and legible

- Plan street layouts that easily assist people on foot and bike to find their way and travel the shortest route, if desired. A grid street layout provides legible travel routes, being well integrated with surrounding streets. Ensure cul-de-sacs are well signed with foot and cycle access through to adjoining streets.
- Link street networks to local destinations and activity centres via the most direct and convenient routes.

Create attractive and welcoming streets

- Design attractive, interesting and welcoming street frontages. Plan porches, verandahs and shop fronts along streets rather than high solid walls, security shutters, garages and dense hedges.
- Use buildings to frame public places and form a distinct street frontage.
- Provide broad canopy trees to provide shade and a pleasant environment for people on the street. Trim tree foliage up to an overhead clearance of 2400 mm above ground level (refer AS1428.1).
- Design streetscapes to enable natural surveillance of people walking, cycling and gathering at points of interest. Streets that encourage walking naturally put more 'eyes on the street', enhancing safe environments.



Local destinations

Destinations such as food stores, schools, chemists, neighbourhood centres, senior citizens centres and cafés provide local focal points for people to walk or cycle to within their neighbourhood. Local destinations support mixed use, walkable neighbourhoods and reduce dependence on the car for local short journeys. These destinations also naturally attract a range of people of all ages into the community.

Design objective

To provide local destinations to support lively, walkable and rideable neighbourhoods.

Design considerations

Support mixed use, walkable neighbourhoods

- Locate food stores, shops and local facilities (such as post boxes and public telephones) within close walking distance to dwellings and businesses. The concept of 'close walking distance' will vary according to people's different fitness levels but usually ranges between 400 to 800 metres.
- Create neighbourhood clusters through the use of corner stores and cafés. This encourages people to socialise and contributes to the local economy and community life. To make these facilities viable for business owners and convenient for local residents, co-locate with, or within 200 metres of, community centres, schools, parks and public transport.

A widely used benchmark is for mixed development neighbourhoods to cover a 400-metre radius. This equates to about a five-minute walk. (English Partnerships 2000)

Provide a community 'heart'

- Design buildings to facilitate a variety of uses within a neighbourhood, providing opportunities for activity at different periods of the day and night. For example, schools may be used after hours as community facilities and public libraries for educational and training sessions.
- Locate community buildings so they can contribute to a sense of place and provide a community 'heart'.

Support pedestrian access to local destinations

- Provide safe pedestrian access to local destinations (refer 'Streets').
- Clearly mark pedestrian access through car parks.

Provide amenities for comfort and convenience

- Provide suitable shade shelters in public destinations such as open squares and over play equipment, BBQs and picnic seats.
- Provide drinking fountains at local destinations.
- Provide secure bicycle parking facilities at trip end cycling destinations such as local train stations, supermarkets, parks or sporting ovals.
- Assess the need for public toilet provision at local destinations.

For further information on the provision of bicycle parking facilities, see also:

- *Austroads Guide to Design 6A: Pedestrians and Cyclists.*
- *Australian Standard AS2890.3, Bicycle Parking Facilities.*
- *'The Bicycle Parking Handbook', Bicycle Victoria, 2004. Available from www.bicyclenetwork.com.au.*
- *The City of Melbourne has produced a 'Public Toilet Plan 2008 – 2013' outlining the design, placement and maintenance of public toilets in the City of Melbourne. Available from www.melbourne.vic.gov.au.*

Open space

Easily accessible parks and public open spaces provide places for people to walk and cycle to, in and around. Parks and open spaces provide active recreation, play and social opportunities for children and youth and offer pleasant places for older adults to walk to and gather. Parks and open spaces have the potential to attract a wide range of residents and visitors to an area.

Design objective

To provide a range of public open spaces within walking distance from dwellings. To clearly define walking and cycling routes that pass through open spaces and incorporate these routes into the broader walking and cycling network.

Design considerations

Provide open spaces within safe, comfortable walking distances

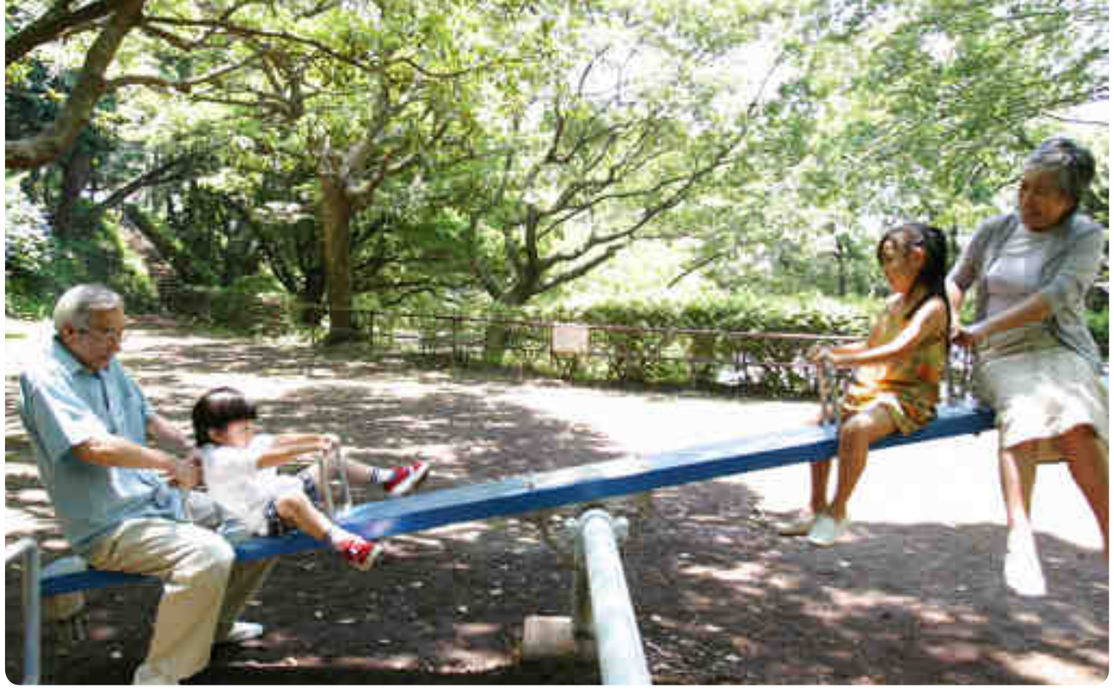
- Locate public open spaces within a maximum of 500 metres walking distance from dwellings. This will ensure equitable distribution of open space in an area and allow easy access for most people.
- Provide large local parks (1 hectare minimum) within 500 metres safe walking distance from all dwellings, and small local parks within 150 to 300 metres safe walking distance of all dwellings (as per ResCode).

Connect to the broader walking and cycling network

- Connect walking and cycling routes within open spaces with the broader network (refer 'Walking and cycling routes' section for path design).
- Ensure that feature parks and parks located on busy roads can be accessed via pedestrian crossings leading to or near park entrances (refer 'Streets' section for further information on pedestrian crossings).

Encourage active recreation

- Provide a range of facilities to create active recreation opportunities for children and youth. For example, children's play equipment, basketball rings and playground markings to encourage activities like hopscotch.
- Provide exercise and training equipment along walking paths to encourage more vigorous activity.
- Feature park attractions such as community gardens. These provide a sense of community spirit and local ownership, particularly in areas of higher density housing.
- Design a variety of paths that allow recreational walking around parks or direct passage through parks.



Create pleasing places to be

- Landscape open spaces and other public places (e.g. squares and malls) to provide pleasant places for people to sit, meet and talk.
- Plant tall trunk, broad leaf, broad canopy trees to provide useful shade for park users and an aesthetically pleasing environment (refer also 'Walking and cycling routes' section). Avoid planting trees that require frequent watering and pruning. Consider drought resistant plants.
- Select appropriate species and locate trees to maximise access to shade throughout the day, winter and summer. Ideally, choose low maintenance varieties.
- Provide natural shade or structured shelter within activity centres and open spaces to promote sitting, meeting and talking and to provide protection from weather extremes.
- Maintain open spaces to a high standard to ensure pedestrian spaces are clean and usable.

For further information on shade provision refer to The Cancer Council Victoria's 'Shade Policy Framework', 'Shade for everyone: a practical guide for shade development' and related design information. Available from www.sunsmart.com.au.

Municipal Shade Policies are also useful reference documents.

Parks and open spaces have the potential to attract a wide range of residents and visitors to an area.

Promote safety and amenity

- Align the edges of parks with streets to facilitate natural surveillance from nearby housing, businesses or people passing by.
- Avoid solid fencing or walls along park perimeters.
- Plan multiple entry and exit points.
- Locate clustered activities (e.g. cafés and restaurants) within or on the edge of parks or open space.
- Provide lighting as appropriate and in accordance with lighting guidelines on page 21.

Provide for comfort and convenience

- Provide drinking fountains in parks and open spaces.
- Provide secure trip end bicycle parking facilities for people riding to parks and open spaces (refer to 'Local destinations' section).
- Assess the need for public toilet provision at local destinations (refer to 'Local destinations' section).

Public transport

Public transport services connect people with places. Using public transport is cheaper than driving a car, reduces congestion on our roads and enables people to fit a little more activity into their daily life by walking or cycling to stations or stops. To encourage increased public transport use, services need to be accessible, frequent, reliable, inexpensive and safe!

Design objective

To establish and promote clear and direct walking and cycling routes to public transport stops and appealing and convenient facilities for users.

Design considerations

Make public transport an easy option

- Plan clearly signed, well-lit and direct routes for people walking and cycling to public transport stops.
- Locate public transport stops within a comfortable walking distance for most people (between 400 to 500 metres). Accessible public transport stops will encourage more people to use services on a regular basis.
- Use railings and gentle gradients in the approach to public transport stops, addressing access requirements for older adults and people with limited mobility.
- Ensure clear crossing points adjacent to public transport stops. Consider pedestrian desire lines for convenient crossing.

Provide safe, visible stops

- Locate public transport stops in active locations, clearly visible from surrounding development such as shops and houses. Avoid isolated locations.
- Ensure stops are adequately lit for night use.

Provide facilities for comfort and convenience

- Display clearly legible service information.
- Provide adequate seating.
- Provide useful shelters for protection from heat, cold winds and rain.
- Consider the provision of drinking fountains at public transport stops.
- Install adequate cycle facilities for bike storage at public transport stops (refer to ‘Local destinations’ section).

Supporting infrastructure

Seating

- Provide seats at frequent intervals for people to rest.
- Locate seats in an easily accessible position, with space for people in wheelchairs to sit next to people on seats. Seats with backs and armrests are most appropriate for older adults and the frail aged. Seat and armrest height should also be set at levels to suit older adults (i.e. a seat not too low to the ground and an angular armrest that assists with getting up and sitting down).
- Locate seating along shared paths with a minimum of one metre clearance from the path.
- Arrange seats to facilitate social interaction, e.g. positioned at right angles.
- Align seats with attractive vistas and points of special interest, e.g. outlooks over play areas, wetlands, local views or a sporting oval.
- Provide shaded seating options for protection from weather extremes.

Signage

- Provide signage and site maps to provide clear direction to points of interest, including distance and duration of journey for active transport modes.
- Use signage to add character and interest to the streetscape.
- Design clear, concise and consistent signage. Use clear, large lettering, non-reflective materials and sufficient colour contrasts.
- Ensure signage is free of obstructions such as growing vegetation.
- Illuminate signage after dark.
- Where shared paths or recreational walking trails are present, include signage leading to the paths or trails and at regular intervals along the route. Include distances, trail gradings, directional indicators, destinations and other locally relevant information.
- To minimise maintenance, design signage to be durable over time.

For detailed information on signage for shared paths, refer to:

- *VicRoads Cycle Notes No.10: Shared Path Behavioural Signs.*
- *VicRoads Cycle Notes No. 11: Directional Signing for Off-Road Paths.*

Lighting

- Position lighting for pedestrians and cyclists along walking and cycling routes, key road crossing points and intersections and places where people gather.
- Avoid placing low level or in-ground lights along walking and cycling routes as they limit the vision of pedestrians and cyclists moving along the path.
- Provide lighting in areas intended for night use and/or areas accessed by pedestrians after dark. Avoid lighting areas not intended for use at night.

For further information on lighting refer to the 'Safer Design Guidelines' developed by the Department of Planning and Community Development. Available from www.dpcd.vic.gov.au

Fencing and walls

- Use low walls or transparent fencing along street frontages and open space.
- Design residential dwellings to overlook public open space. This avoids back fencing facing onto parks.
- Design side fencing to achieve a balance between privacy and visual connection to the public realm.
- Avoid 'fortress' or gated residential developments where residents are not encouraged to connect with the public realm.

For further information on fencing and walls, refer to 'Safer Design Guidelines' developed by the Department of Planning and Community Development. Available from www.dpcd.vic.gov.au

Provide lighting in areas intended for night use and/or areas accessed by pedestrians after dark.

Fostering community spirit

Community spirit is about people having a sense of ownership and belonging in their local area. It encourages strong social networks and creates an atmosphere where people want to be. Active communities contribute to the degree of community spirit in a local area – people are out and about, contributing to the local economy, promoting neighbourliness and creating opportunities to meet and gather.

While not strictly a design consideration, developing 'community spirit' is critical to achieving healthy and socially vibrant communities.

Built environments that address many of the design considerations in this resource also support a strong sense of community spirit. In addition, you may also consider the following:

Design objective

To develop built environment and community participation strategies that foster active communities and a sense of community spirit.

Design considerations

Involve your community in planning activities

- Engage community members early in the planning process to accommodate their ideas about their local area (refer Appendix A: Making it real: a resource for community consultations).
- Liaise with young people and children when planning new development areas or urban renewal projects.
- Obtain community input into design features that encourage active transport, such as a walk to school group, disability access group or bicycle user group.
- Incorporate high quality community art programs into public spaces and buildings.

Create spaces for community activity

- Design spaces to accommodate community events and cultural development programs, such as walking and discussion groups, carols by candlelight and local arts or other festivals.
- Consider opportunities for establishing community gardens, particularly in higher density housing precincts. These may be incorporated into broader open space planning strategies.

Design for safe and healthy communities:

The matrix of like design considerations

Planners are asked to consider a range of guidelines that impact on health, safety and access, often in isolation from each other. The following 'Matrix of Like Design Considerations' is a practical tool that can be used to demonstrate the synergies between the different guidelines that influence built environment design. While the Matrix can be used to aid design, it is also important to consider every situation in context.

The Matrix supports an integrated approach to planning healthy and safe communities and provides practical guidance to planners, helping them to synthesise a range of design considerations. This tool provides value-added design outcomes. For example, if physical activity is the main design consideration applied, the Matrix helps to achieve benefits in several other areas, at no additional cost.

	A **Physical activity**	B **Shade**	C **Safer design**	D **Access design**	E **Road user safety**
1. Sightlines and surveillance	Provide clear sightlines for safety and visibility for pedestrians and cyclists	Ensure shade structures and tress allow clear sightlines	People should be able to see, to be seen and to interpret their surroundings	Ensure continuous accessible paths of travel are clearly defined	Ensure approach speeds and road conditions are consistent with sightlines for all road users
2. Lighting	Ensure lighting meets the visibility needs of pedestrians and cyclists Highlight crossing points	Light shade structures if required (for example, bus shelters)	Use lighting to designate safe paths and places Lighting can encourage or discourage use (for example, effective lighting at crossovers, public transport shelters/stops Light safe connections from shops to public transport	Provide a safe, comfortable visual environment for pedestrian and wheeled transport movement at night Refer Australia Standard (AS)1158.3.1	All road users should be considered when providing overhead lighting Provide higher levels of lighting at crossing points and intersections.
3. Signage	Provide clear orientation to places of interest for pedestrians and cyclists Signage should be clear, concise and consistent Signage should complement the overall landscape/ streetscape design	Identify communal shaded areas on maps and community information boards Divide signs into groups: prohibitory; way finding; interpretive; informative Use of symbols/ pictograms should follow Australian Standards	Provide clear signage for paths, connections and destinations Design sign hierarchies to show information from most to least important Use vandal and graffiti resistant material Enter asset on maintenance system schedule	All signage to be large, clear and adjacent to Continuous Accessible Paths of Travel Refer AS 1428. 1 and 2 Signage should include information in tactile and Braille forms Refer Building Code of Australia D3.6	Signage must be clearly visible and understandable to all road users The location of signage structures should not be a hazard to road users

Design for safe and healthy communities:

The matrix of like design considerations

	A **Physical activity**	B **Shade**	C **Safer design**	D **Access design**	E **Road user safety**
4. Maintenance	Ensure pedestrian and cycle paths are free from obstructions, for example, overgrown vegetation or fallen branches	Don't plant trees that require frequent watering and pruning Ensure regular maintenance of built shade structures	Ensure adequate and timely asset management and maintenance – a rundown or vandalised appearance suggests an area is unsafe Use vandal and graffiti resistant material and design features Develop maintenance system schedule for public and commercial areas	Ensure adequate maintenance for Continuous Accessible Paths of Travel Rough surfaces and puddles are not accessible to wheeled transport users	Provide safe access for maintenance vehicles Provide call out phone numbers for hazard removal
5. Landscaping and open space	Ensure equitable distribution of open space across walkable neighbourhoods Promote local active recreation using landscaping to delineate routes and destinations	Provide shade through planting broad leaf, broad canopy trees and installing shade structures	Ensure clear sightlines Use landscaping to designate public and private space boundaries Use robust and vandal-proof finishes and fixtures for fencing, seating and signage	Provide Continuous Accessible Paths of Travel to and within all parks, playgrounds and gardens Refer AS 1428 standards Provide accessible furniture and equipment, and manoeuvring space for mobility aid users	Avoid creating roadside hazards in landscape design Maintain clear sightlines at intersections, roundabouts and pedestrian crossings
6. Concealment and entrapment	Locate paths away from potential hiding places and entrapment spots	Ensure vegetation does not create hiding places or entrapment spots	Design out potential hiding places and entrapment spots Avoid blank walls, unsecured loading docks off walkways and recessed entrances	Design space to ensure that users, particularly women, children, older people and people with disabilities can see a safe route, day and night	Locate car parking away from potential entrapment spots
7. Trees and vegetation	Provide trees for shade and aesthetics along access routes and places where people gather	Provide tall trunk, broad canopy, broad leaf trees to ensure useful shade during times of peak UV radiation Plant vegetation to minimise reflected UV rays (for example, climbing plants on walls)	Low vegetation up to 700mm and broad canopy trees with sightlines clear to 2,400mm above ground level Use vandal-resistant treatments for example, tree guards	Remove tree debris from paths Trim tree foliage up to a height of 2,400 mm and at the sides of paths	Ensure that tree plantings do not obstruct driver visibility of any other road users particularly at conflict points such as intersections and access points Ensure that tree species and vegetation, particularly within 'clear zones' on roads with speed limits over 50 km/h, are forgiving for errant drivers (for example, tree trunks with a maximum diameter of 100 mm at maturity)
8. Fencing and walls	Use low walls or transparent fencing along street frontages and open space	Ensure shade structures cannot be accessed by climbing adjacent fences, walls, buildings or trees Avoid surfaces that reflect UV radiation	Keep fences low or transparent for clear sightlines Provide front fences and walls no more than 1.2 metres high if solid or up to 1.8 metres if at least 50 per cent transparent Avoid high fences backing onto public space, roads or parks Plant thorny creepers to discourage climbing or graffiti on walls	Don't use turnstiles Bollards, gates and chicanes must provide access for wheeled transport	Avoid 'back fence' lot orientations on collector and arterial roads by providing service roads or boulevards Fences should not obstruct sightlines for road users, particularly at intersections and accesses If within the clear zone, ensure materials do not constitute a hazard to errant drivers

Design for safe and healthy communities:

The matrix of like design considerations

	A **Physical activity**	B **Shade**	C **Safer design**	D **Access design**	E **Road user safety**
9. Seating	Ensure frequent and accessible seating for pedestrians and cyclists Arrange seating to facilitate social interaction	Provide shade to seating and picnic areas	Place seating to allow clear sightlines of paths, play areas and toilets Use vandal and graffiti resistant materials	Provide seats with back and arm rests, at close intervals, along Continuous Accessible Paths of Travel (CAPT) Drinking fountains should be wheelchair accessible and adjacent to CAPT Refer AS 1428.2	Seats made of solid materials that could damage errant vehicles and occupants should be located outside the clear zone
10. Shelter	Provide shelter for protection from weather extremes Ensure shelter does not impede pedestrian and cyclist movement along footpaths	Avoid locating shelter on or near surfaces that reflect UV radiation	Shelter interiors should be visible from paths, placed near areas of high activity and well lit Use vandal and graffiti resistant materials	All constructed shelter should comply with the Building Code of Australia and AS 1428 standards Approaches must provide continuous, accessible paths of travel	Shelter should not be built of materials that could constitute a hazard to road users Shelters (for example, at bus/tram stops) should not block the sight requirements for road users at intersections and access points
11. Street design	Provide safe and accessible pedestrian and cycle paths to homes, shops, public transport, businesses and community facilities Ensure crossovers, where required, maintain pedestrian priority. (refer to section 16 of the matrix)	Plan shade provision to maximise sun protection without compromising sightlines or access to people with motor impairment Provide broad canopy trees to provide shade for all road users	Design for a network of walkable neighbourhoods Design streets that encourage walking to put more 'eyes on the streets' Design streets to balance the needs of all users Ensure active frontages and use buildings to frame public places Maximise on-street parking	Property and fence lines must be clear and barrier free to enable Continuous Accessible Paths of Travel (CAPT) Facilities such as car parks and public toilets must be linked by CAPT, including circulation spaces for people using mobility aids Refer VicRoads and (AS) 1428 standards	Design local and high-use pedestrian streets to reduce traffic speeds and provide pedestrian and cyclist-friendly environments Design roundabouts to slow vehicles and provide for pedestrian visibility and safe movement On the pedestrian desire line (for example, path to path), as a minimum, kerb cut-outs and splitter island breaks should be provided

	A **Physical activity**	B **Shade**	C **Safer design**	D **Access design**	E **Road user safety**
12. Building design	Design buildings to facilitate a variety of uses within a neighbourhood (for example, schools used after hours as community facilities, public libraries for educational and training sessions)	Be aware of daily and seasonal shade patterns created by surrounding structures to maximise effectiveness of supplementary shade Build and use materials to minimise both direct and reflected UV radiation	Design windows and activities to overlook streets, pedestrian routes, open spaces and car parks to support natural surveillance Ensure entrances are clearly defined, face the street and provide clear sightlines	Buildings must conform to the access requirements of the Disability Discrimination Act 1992, and the Building Code of Australia	Loading bays should be separated from pedestrian routes Design to facilitate forward vehicular movements between buildings and arterial roads Give priority access to pedestrians/ cyclists and public transport modes Locate car parks to the rear of buildings
13. Active frontages	Promote more active and lively streets that encourage people to meet and interact	Provide tree plantings and encourage the use of verandahs to provide shade and amenity for shoppers	Use active frontages to add interest and vitality to public places Provide frequent doors and windows, with few blank walls Encourage lively internal uses visible from the outside, or spilling on to the street Articulate facades with projections such as porticos or verandahs	Property and fence lines must be clear and barrier free to enable Continuous Accessible Paths of Travel Refer to AS 1428 standards	Encourage active frontages along shopping strips Slow traffic speeds to less than 50km/h along active frontages Road design should be more permeable and provide greater connectivity Traffic-calming measures will promote 'liveable' residential streets Design streets to encourage lower speeds
14. Mixed use	Provide local focal points to support walkable neighbourhoods Increase mixed use development through the provision of housing, shops, services, parks and commercial spaces that facilitate active transport	Do a shade audit Consider tree height, growth, seasonal effects, root systems and maintenance Highlight when a built structure may be more appropriate	Provide a mix of uses in neighbourhood centres to encourage activity Plan for 'eyes on the street' day and night Encourage uses compatible with residential areas	Avoid evergreen trees that may obstruct solar access in winter All development should meet the requirements of the Disability Discrimination Act 1992	Design safe access for all road users Slow traffic speeds to less than 50km/h along active frontages

Design for safe and healthy communities:

The matrix of like design considerations

	A **Physical activity**	B **Shade**	C **Safer design**	D **Access design**	E **Road user safety**
15. Connections	Plan for permeable street networks to provide both direct and leisurely paths to neighbourhood destinations	Provide shade along pedestrian and cyclist routes, with consideration for road user safety	Provide clear sightlines to enable natural navigation to destinations Avoid movement predictor routes and allow for multiple alternative routes, if possible	Provide safe and convenient transitions from street to destination	On local streets, avoid straight uninterrupted sections longer than 400 metres to discourage excessive driver speed Use traffic management measures to slow motor vehicles where local route straight sections exceed 400 metres
16. Walking and cycling routes	Design safe and attractive routes Design wide footpaths, adequate lighting, calmed traffic and crossing points adjacent to neighbourhood destinations	Maximise shade over paths, cycle routes and at rest stops Ensure shade structures don't obstruct access	Achieve clear and safe connections through signage, landscaping, lighting and edge treatments Integrate cycle lanes into road and open space networks Provide appropriate lighting for pedestrians and cyclists, in addition to street lighting Don't separate walking and cycling paths from street networks unless there are clear sightlines, opportunities for natural surveillance and no entrapment spots	Make paths and trails Continuous Accessible Paths of Travel to enable safe sharing by cyclist and pedestrians. Refer to AS 1428 standards Kerb ramps should comply with VicRoads specifications Paths, ramps and walkways should comply with AS1428.1, 1428.4 and 4586	Provide paths and safe crossing points along predictable pedestrian and cyclist desire lines, including approaches to schools, parks and shopping precincts Align kerb cut-outs and ramps with pedestrian and cyclist access requirements and desired lines of travel Minimise and/or control conflict points with vehicular traffic Provide low gradients on vehicular driveways at crossing points with walkways and cycle paths and maintain pedestrian/cyclist priority
17. Public transport	Provide accessible public transport stops to encourage dual-mode journeys	Provide useful and appropriate shade at transport stops (for example, bus shelters)	Locate bus/tram/taxi stops in active locations Ensure stops are clearly visible from surrounding development and houses, do not locate them in isolated places Ensure well-used movement routes between transport stops are designated and designed for safe movement with clear, well lit and visible signage and emergency call points	Bus stops should comply with VicRoads specifications Public transport infrastructure should comply with National Accessible Public Transport Standards	Connection points must be clear to and from both sides of the road and should take into consideration 'desire lines' for convenient crossing Reduce vehicle speed around connection points on all roads

Case studies

Case study: Healthy planning for healthy lifestyles – Places Victoria's Aurora project

When completed, Aurora will be home to up to 8,500 households with a total population of up to 25,000 people. Aurora is located in the City of Whittlesea, within a 20-kilometre radius due north of Melbourne's Central Business District.

Supportive Environments for Physical Activity design considerations have been applied to maximise opportunities for social interaction, provide accessibility for all ages and abilities and to promote a healthy lifestyle through design that supports walking and cycling.

Walking and cycling routes

Higher density housing is located close to public transport and commercial amenities and a permeable street network encourages people to walk to these services.

Streets in Aurora will have a minimum of 1.5 metre wide footpaths along both sides of the street. Wider footpaths are proposed along approach routes to town and neighbourhood centres and schools to actively encourage higher levels of pedestrian activity.

A network of shared paths through open space and on major roads will link community facilities and encourage walking and cycling. These paths will be typically 2.5 metres wide, will be supported by natural surveillance from adjacent housing and will minimise the need for street crossings to encourage children to walk or cycle to school off road.

Local destinations

Aurora has been designed to keep local destinations such as schools, multi-purpose community centres and local shops within 800 metres walking distance from the overriding majority of dwellings.

Parks & open space

Local parks will be distributed throughout Aurora, servicing residents living within approximately 200 metres. Parks are designed to accommodate seating, formal and informal play areas suitable for small children and informal gathering spaces for residents to meet and relax.

Neighbourhood parks will service residents living within approximately 400 to 500 metres of the majority of dwellings. These parks are expected to facilitate a broader range of recreation opportunities for a wider range of users.

District parks are also located along Edgars Creek. These parks are expected to provide a higher standard of facilities including larger play areas, informal ball play areas and multiple seating areas. Public open space will be supported by natural surveillance from overlooking housing. No high side or back fencing will border public open space.

Contact

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Case study: Wellington Shire Council planning scheme amendment

Recognising their key role in creating environments that support active living, Wellington Shire Council has led the way for other Victorian local governments, becoming the first to incorporate principles of healthy urban design into its planning scheme. This was the result of Council's participation in the Supportive Environments for Physical Activity (SEPA) program. This program provided the basis for development of the Heart Foundation resource '*Healthy by Design*: a planner's guide to environments for active living' (2004).

The Wellington Shire Council Planning Scheme came into operation in 2000. Planning Scheme Amendment C38 was approved on 31 May 2007, introducing a number of healthy urban design principles into the scheme. In particular, Clause 43.04 Schedule 1 requires that any endorsed development plans take the *Healthy by Design* guidelines into account.

This change was based on an external review of Council policies, protocols and practices to identify opportunities to increase physical activity related design considerations in line with *Healthy by Design*. Subsequent policy amendments were proposed and approved by the state planning department, whose support of such initiatives is crucial.

The successful incorporation of *Healthy by Design* into the Wellington Shire Council Planning Scheme is a significant achievement. The changes ensure that both Council and developers are provided with clear direction regarding urban development with a view to creating a built environment that supports active living.

Putting this into practice is now the task of Council planners who are able to refer to the *Healthy by Design* guidelines in the Planning Scheme when dealing with property developers and briefing civil works designers. Already this has allowed for the incorporation of physical activity related design considerations in the East Sale – Outline Development Plan 2007.

Council now has the opportunity through a supportive planning framework to positively affect the quality of urban design for recreation, environment, transport and health, with long term outcomes possible. The degree to which results are achieved will depend on the level of internal and external support the principles receive when they are applied to real planning applications.

Contact

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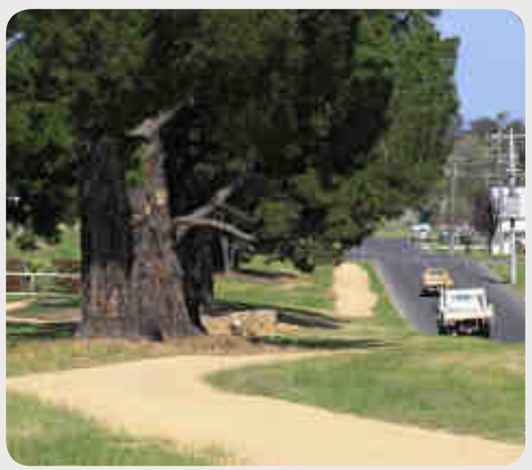

Case study: Active by design subdivision guidelines and checklist for residential development – Baw Baw Shire

The aim of the Active by design subdivision guidelines and checklist for residential development is to ensure that new subdivisions in Baw Baw Shire support residents to lead active and healthy lifestyles. The intended audience for the document is developers, designers and Council planners.

The guideline contains three parts:

- Part A – ensuring adequate connectivity: addresses the structure of the area within which a development will occur to ensure future residents can easily access their typical basic needs.
- Part B – ensuring adequate quality: defines the characteristics of built environments that support walking and cycling.
- Part C – ensuring adequate open space: ensures that subdivisions provide adequate, attractive and accessible open spaces for relaxation and recreation.

The guidelines include a checklist which prompts a comprehensive analysis of all the physical characteristics of the site and proposed subdivision layout. In addition, the less tangible environmental considerations such as providing visual stimuli and creating a comfortable and friendly place are also considered as important factors in encouraging outdoor activity.

The Council first amended its Municipal Strategic Statement in 2010 to implement the guidelines and checklist so that they are used in all residential subdivision proposals and form part of the planning assessment process and approvals. Clause 21.05 – Settlement, acknowledges the contribution that open space and providing for walking and cycling can have on community health and wellbeing. It includes the objectives to 'design residential subdivisions to ensure that residents have the best chance of leading active and healthy lifestyles'. Clause 21.12 – Transport infrastructure, similarly supports safe and direct access for pedestrians and cyclists in order to improve community health and wellbeing.

Compliance with the guidelines and checklist will be deemed to satisfy some of the objectives under Clause 56 – Residential Subdivision in relation to provision of public open space and the creation of walking and cycling networks.

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Case study: Integrated planning in Whittlesea

The City of Whittlesea has demonstrated that health and planning can be combined to create change within an organisation and a community. The Heart Foundation conducted a Supportive Environments for Physical Activity (SEPA) pilot project with the City of Whittlesea with an aim of incorporating guidelines for supportive environments into key policy, planning and urban design documents.

SEPA workshops helped identify areas of high priority within the municipality. As a result, the Council identified new property developments as a future focus. Staff from a variety of branches collaborated to incorporate SEPA design considerations at a planning and subdivision design level and to provide capacity for incidental physical activity through good planning and urban design.

The City of Whittlesea Health Planning and Strategic Planning Units worked together to develop a SEPA Policy and Practice Framework to help guide Council's planning decisions and how these are implemented in the community. The Framework will assist local government planners to promote the use of appropriate design features (that encourage active living in the built environment) in the development plans they review and approve.

Contact

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Case study: Warrnambool foreshore promenade

The Warrnambool Foreshore Promenade is an initiative of the Warrnambool City Council in close consultation with the Department of Natural Resources and Environment and auspiced by the Gerner Foreshore Management Plan and the Warrnambool Coastal Action Plan. The Promenade not only provides spectacular views and access to local facilities, it also offers a safe and welcoming place for residents and visitors to be active.

The Promenade has far exceeded Council's estimate of the level and extent of use, with residents literally 'voting with their feet.' An extensive planning process has been a major contributor to this success. A variety of external stakeholders, Council departments and community members came together to develop and shape the project, resulting in an infrastructure facility that will remain with the community for years to come.

The Promenade's 2.5 metre wide, 5.7 kilometre long, smooth paths accommodate skateboards, roller-blades, bicycles, scooters, prams and wheelchairs as well as jogging, walking and running. It provides an important link between Warrnambool's Central Business District, residential areas and the foreshore and includes many defined beach access points.

Complete with seating, night lighting, drinking taps, links to existing facilities and spectacular sea views, the Promenade provides Warrnambool with its greatest recreational asset to date.

Contact

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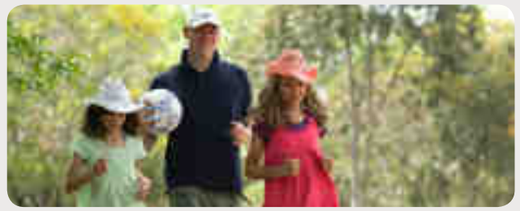
Case study: Increasing activity in Ararat – a recreational trails project

Ararat Rural City Council and the Ararat Apex Club jointly funded the construction of 1.2 kilometres of trails to encourage walking, jogging and cycling in a safe and appealing environment.

Part of an overall planned network, the trails follow existing creek reserves and link with key focus points, such as schools. The trails were constructed within the Ararat Township for ease and accessibility, and connect to an existing trail and footpath network.

The trails are constructed of smooth surfaces, are wide enough to accommodate two walkers side by side, and avoid traffic where possible.

Since the construction of the trail the number of people using the route has increased. Walking groups, runners, walkers, families and children now use the trails regularly.



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Case study: Catering for the community – Mount Alexander Shire

A walking track is a key feature of Castlemaine's Botanical Gardens, situated in the Mount Alexander Shire. But when residents voiced concerns that people who would most benefit from the track – the elderly and people recovering from operations or illness – could not use it, Council worked with the community to find a solution.

A group of residents recovering from heart surgery approached the Mount Alexander Shire Chief Executive Officer (CEO) about the walking track. The residents needed to walk each day to improve their health but the park had insufficient seats making it difficult to walk from one seat to the next.

In response, the Shire installed seats with backs and armrests throughout the Gardens. This new addition to the Gardens lets people sit and chat between their walks. The CEO has reported an increased number of people using the Gardens, particularly older people and those using wheelchairs.

This provides an example of a Council responding to a local need in the community in a simple, effective manner, contributing to the well being of the entire community and increasing the capacity for people to walk.

> Mount Alexander Shire — contributing to the well being of the entire community and increasing the capacity for people to walk.

Case study extracted from 'Leading the Way: Councils creating healthier communities' video. Produced by Mudpuppy Productions for VicHealth, 2003.

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Putting healthy planning into practice

The three key development stages detailed below provide a comprehensive and sustainable approach to implementing *Healthy by Design* in local government. Implementing the suggested actions at all three levels will achieve the best results. These suggestions can be integrated into an existing planning process or framework.

Strategic development

A 'Strategic Development' approach aims to adopt healthy design considerations as core Council business. Supportive leaders, senior management and Councillors will aid the development of a strategic approach to planning healthy urban environments.

To foster strategic development:

- Seek high-level endorsement and support from Council and Senior Management to adopt 'healthy urban environments' as core Council business.
- Use supporting research (refer Appendix B) to support the social, economic, environmental and health benefits for Council.
- Develop a 'whole of government' approach – planning for healthy urban environments requires joint ownership and management by a number of business units. To encourage this:
  - establish a cross departmental senior working group to explore how healthy design considerations can be best integrated and developed
  - establish new links between businesses branches (this may be integrated into a current working group).
- Establish a formal Council policy on healthy urban environments.
- Incorporate healthy urban environments into a formal policy statement within the Municipal Strategic Statement.
- Incorporate healthy urban environments into the Corporate Plan, reflecting the built environment as an integral factor in influencing health, vitality and social interaction in the community.
- Consider the design objectives detailed in *Healthy by Design* in strategic decision making processes and integrate them into current and future operational plans.

Policy integration

A 'Policy Integration' approach seeks to incorporate healthy design considerations into a variety of policies, strategies and plans across a range of business units.

- Consider current policies, strategies and plans that relate to the design of the built environment, such as an Open Space Strategy, Road Safety Plan, Access Strategy and Housing Strategy.
- Incorporate healthy design objectives into development plans and supplementary guides for developers.
- Use healthy design considerations in the assessment of developer proposals and particularly in pre-application meetings and discussions.
- Assess new development plans using healthy design considerations, ensuring Council provides infrastructure for safe, accessible and convenient walking and cycling, and access to public transport.
- Incorporate healthy design considerations into an urban development policy to ensure a sustainable approach to future development.
- Use healthy design considerations to develop a customised design prompt for referral in the assessment of development proposals.

Project initiation

Establish a working group to implement a demonstration project that supports healthy urban environments. Link the project with the aims of the Strategic Development and Policy Implementation approaches.

- Establish a cross-Council working group. Select a healthy design objective identified as a high priority within the strategic planning process and coordinate a project to work toward this objective. For example:
  - conduct a walking audit along a school-walking route and follow this up with an improvement program
  - install seats for residents in a local park
  - improve vegetation and planting to provide a more pleasing place for people to gather
- Make a list of people, groups and organisations that can support a healthy urban environments project. For example, strategic planners, safety officers, parks and gardens staff, a local mothers' pram walking group or local senior citizens group.
- Conduct a walking tour of the municipality with selected planning professionals. Create a range of scenarios using wheelchairs, walking frames, prams and blindfolds to assess ease of use and associated actions for improvement.
- Establish a series of workshops to brief new staff on planning for healthy urban environments, or use as a form of induction.
- Include healthy urban environments in an annual Community Satisfaction Survey.
- Link healthy design considerations to existing projects with complementary objectives, such as safer design initiatives.
- Develop a customised set of healthy design considerations into a healthy urban environments directions document. Include associated goals, actions and strategies and the business units involved in its implementation.

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- Places Victoria

Appendix A: Further reading

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Resources

The following resources have been developed by the Heart Foundation and are available from www.heartfoundation.org.au

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Appendix B: Supporting research

Research provides a strong case for the promotion and development of environments that are conducive to active living. The sources detailed below document a variety of design factors found to influence the extent to which people walk and cycle in their local neighbourhood.

These factors include:

- aesthetic features (articles 1, 2, 4, 5, 7-9, 11)
- proximity to shops and local facilities (articles 1, 3-8, 11, 13, 14)
- footpath widths, presence of paths and streets designed for walking (articles 3, 4, 6-8, 10, 11)
- continuous routes (particularly for cyclists) (article 11)
- a safe environment (including crossings and lighting, being seen) (articles 1, 5, 11, 14)
- higher density, compact neighbourhoods (articles 2, 5, 6, 10)
- mixed use zoning (articles 5, 6, 10)
- convenience and accessibility (articles 1, 4, 5, 12)
- traffic speeds and volume (articles 4, 11, 14)
- traffic control measures (article 4)
- access to public transport (article 11).

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