Development & Active Living:

Designing Projects For Active Living

A Development Assessment Resource & Navigational Tool

NSW GOVERNMENT

PREMIER'S COUNCIL FOR ACTIVE LIVING
NEW SOUTH WALES

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Designing Projects For Active Living

A Development Assessment Resource & Navigational Tool

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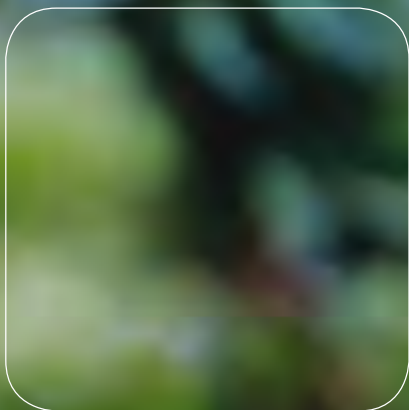
Foreword:

We know that active communities are more sustainable, liveable and desirable places to be. So designing urban spaces that help us incorporate physical activity into our everyday lives not only helps us, it also helps our environment and our communities.

Evidence clearly demonstrates that the built environment of our cities and local neighbourhoods can either facilitate or discourage active living. For example, neighbourhoods that have good access to destinations (including public transport), connected streets networks and higher residential densities are associated with increased levels of walking for transport. Access to quality open space also increases recreational activity.

Currently only half the NSW population meets the recommended level of at least 30 minutes of physical activity on most days of the week. So there is considerable opportunity to create environments that increase participation in physical activity and enhance the lives of our communities.

The NSW Government's State Plan identifies objectives that link active living and built environments; objectives such as increased active transport, jobs closer to home and more people using parks, sporting and recreational facilities.

The Premier's Council for Active Living (PCAL) is supporting our agencies, local councils and the development industry, to build the environments that support active lifestyles. The Council has prepared this Development and Active Living Resource to help navigate material already available, and to advise on urban design factors that will promote active living in your development.

It is designed to assist timely processing of development applications and includes information, case studies and a quick guide to help planners meet this challenge.

I recommend this resource to all who are working to create more sustainable, more liveable environments for the communities of NSW.

Kristina Keneally
Premier

How To Use The Resource

For those unfamiliar with the Resource:

Step 1. Read the Introduction which explains the purpose and scope of the Resource, lists five Active Living Principles and discusses the ways the DA process can help in achieving such outcomes.

Step 2. Note Part 2 which provides general advice that relates to all DAs (and other government functions).

Step 3. Note Part 3 which provides advice by specific DA type (eg. residential, industrial). These tables are the key element for those familiar with the Resource.

Step 4. Turn to the Quick Guide Checklist in Section 4.2, which is a summary of the matters that should be addressed (by development type and scale). This pro-forma also serves as a pre-lodgement checklist. The remainder of Part 4 provides further advice on submission requirements and conditions of consent, a quick guide to key documents and a glossary of terms.

For Strategic Planners using the Resource to produce in-house policy:

Step 1. Read the Introduction which explains the purpose and scope of the Resource, lists five Active Living Principles and discusses the ways the DA process can help in achieving such outcomes.

Step 2. Note Part 2 which provides general advice that relates to all DAs and Part 3 which provides advice by specific DA type (eg. residential, industrial). These tables are the key element for those familiar with the Resource.

Step 3. Note Part 4 which provides a quick-guide checklist (for consultants and assessment officers) and further advice on how to handle submission requirements and conditions of consent, a quick guide to key documents and a glossary of terms.

Step 4. Consider whether the Resource could be used as the basis for a free-standing set of controls (such as a DCP), a chapter in a consolidated set of controls, or as additions to existing policy documents (eg residential, industrial).

As a Council Assessment Officer familiar with the Resource:

Step 1. Go to the relevant Development-Type Table in Part 3 (eg. subdivision, residential, industrial). The Table lists DA level matters that should be addressed (for each of five Active Living Principles) in the merit assessment of a proposal.

Step 2. Note the icons in the table (♨ 👁 🚲) which refer to general cross-cutting advice (such as end-of-trip facilities and travel planning) in Part 2. This part provides good practice case studies and detailed references, where an issue warrants more detailed research.

Step 3. Consider these matters in assessment of the proposal. The Quick Guide Checklist in Section 4.2 is a summary of the matters that should be addressed (by development type and scale).

Step 4. As part of the assessment, consider the use of conditions of consent as a way to achieve Active Living outcomes. Consult Section 4.4 which discusses the scope of conditions (and provides examples).

As Consultants/ Developers/ Applicants familiar with the Resource:

Step 1. Go to the relevant Development-type Table in Part 3 (eg. subdivision, residential, industrial). The Table lists DA level matters that should be addressed (for each of five Active Living Principles).

Step 2. Note the icons in the table (♨ 👁 🚲) which refer to general cross-cutting advice, case studies and detailed references on key elements (such as end-of-trip facilities and travel planning) in Part 2.

Step 3. Incorporate these matters in the design and siting of the proposal and written documents (such as Statements of Environmental Effects). Section 4.3 provides advice on such submission requirements, including which matters should be addressed on plans or in written documents.

Step 4. Turn to the Quick Guide Checklist in Section 4.2, which is a summary of the matters that should be addressed (by development type and scale). The pro-forma also serves as a pre-lodgement checklist.

Contents:

Introduction: Development & Active Living

Why Active Living?

There is clear evidence that participation in regular physical activity has substantial positive impacts on our health and economy, reducing the risk of diseases such as cardiovascular disease, type II diabetes, colon and breast cancer, depression and falls. The direct costs attributable to physical inactivity of these conditions are estimated to exceed $1.5 billion nationally a year. Aside from the savings to the health system, active communities are likely to be more connected, to participate more in community activities, to be more productive, and to reduce the environmental impacts of car dependence.[1]

For State and National Governments, providing supportive environments for Active Living will promote healthy communities, reducing the health budget. At the local government level such actions will encourage community activity, improve amenity and generate economic growth. For the development industry, supportive environments and the active lifestyles they promote will increasingly be a selling point.

Some of the changes required are relatively simple and can be required through the development assessment process. Do streets have footpaths and are they in good repair? Are there pedestrian facilities so that people can safely cross the road? Are there seats along walking routes so that people can rest if they need to? Is there enough lighting in public places and do the lights work? Are there secure bicycle storage facilities at public transport stops and workplaces? Do workplaces provide shower and change room facilities for staff? Do workplaces promote staff participation in physical activities such as walking groups and lunch-time recreational games? Do our beaches, coastline, parks and bushland have trails to promote walking and cycling?

Others actions are more complex and require planning, coordination and long-term commitment. They are relevant to large scale proposals. Do State, regional and local planning policies encourage walking, cycling and access to parks and open space for sport and recreation? Do developers design suburbs that encourage Active Living – with safe and aesthetically pleasing streets and local facilities? Are there adequate transport options to help prevent reliance on the car? Do we have a culture that encourages active choices in favour of convenience?

Relationship to the Existing PCAL Design Guidelines

The NSW Premier's Council for Active Living (PCAL) is playing a significant role in centralising and coordinating the increasing number of references and sources on its existing PCAL Web-Based Resource 'Designing Places for Active Living'.[2] This Resource provides advice on seven broad "Environments":

1. Cities, Towns and Neighbourhoods;
2. Walking and Cycling Routes;
3. Public Transport;
4. Streets;
5. Open Space;
6. Retail Areas; and
7. Workplaces.

For each "Environment" covered by the existing PCAL Web-Based Resource there is a specific design objective, a list of design considerations and key references/resources. The web-site also contains a series of case studies.

Development Applications, at the local and State level, relate to particular projects on specific sites. **Relevant considerations in preparing or assessing such applications are contained in a cross-section of these PCAL Environments.** For example, a mixed-use development may be within a Town Centre and close to public transport/cycle routes, and local open space. There will also be open space on-site. The shops are workplaces!

This DA Resource draws heavily on the design objectives, considerations and case studies in the PCAL environments.

1. NSW Premier's Council for Active Living (2010), Why Active Living Statement. Available at: http://www.pcal.nsw.gov.au/__data/assets/file/0007/27646/active_living_statement.pdf
2. NSW Premier's Council for Active Living (2010), Designing Places for Active Living. Available at: http://www.pcal.nsw.gov.au/planning_and_design_guidelines

Purpose & Scope of the Resource

The PCAL Development and Active Living Resource has two principal purposes:

1. To assist Councils (and the State Government) with the preparation of Active Living policy documents, such as Development Control Plans (DCPs), or to address Active Living principles in their existing policies. This would provide an improved legal basis for addressing Active Living matters at the DA/Project stage.
2. In the absence of such policy provisions, to advise consultants/applicants and Assessment Officers (at the State and Local level) on matters for consideration, and design and siting action that will promote Active Living in development proposals.

More specifically, the objectives are to specify:
- five key principles of Active Living;
- the types of projects where such matters are relevant and value-adding;
- relevant matters for consideration, by project type and location, beyond basic DA assessment criteria, and elaborate on some established matters;
- appropriate submission requirements for applications; and
- realistic conditions of development consent.

The document is principally a 'wayfinding' resource, a tool for navigating through the extensive material already available, rather than a new set of DA Guidelines.

The Resource addresses all applications for development approval, at the State and Local level (under Part 3A and 4 of the EP&A Act), and environmental assessment under Part 5 of the Act. It directs the reader to advice on large scale subdivision and major centre redevelopment, through to significant local DAs, where cumulative effects are important.

It does not cover complying development or exempt development.

Target Audience

- Strategic Planners preparing DCPs, land use and transport strategies and other policy documents;
- Assessment Officers, at the Local and State Government level; and
- DA Proponents/Consultants (working with applicants).

Structure of the Resource

The Resource consists of four Parts:

Part 1 lists the five Principles of Active Living and outlines how the Development Assessment process can help to achieve them. These principles are utilised in Parts 2 & 3 to generate DA level issues, in general and for each of the development/ project types.

Part 2 provides Cross-Cutting Advice on the Active Living initiatives common to all types of development for which planning approval is sought. This section is also of use for other government activities (especially public domain planning and management). This advice is marked by the icons in Figure 1, which are also used in Part 3 to lead the reader back to relevant Ccross-Cutting Advice and examples of good practice.

Cross-Cutting Advice	
Principle - Walkability & Connectivity	
	Comfort of Walkers
	Connectivity
Principle - Active Travel Alternatives	
	End-of-Trip Facilities
	Transport & Travel Planning
	Traffic Management
Principle - Legibility	
	Wayfinding
Principle - Quality Public Domain	
	Safe & Clean Environments
	Quality Open Spaces
	Welcoming, Activated & Stimulating Places
Principle - Social Interaction & Inclusion	
	On-site Communal Open or Public Space
	Accessibility

Figure 1. Cross-Cutting Advice Icons

Part 3, the heart of the Resource, presents specific advice by development type. Broadly, the main development applications which will be received by an authority, and which can influence Active Living, can be classified into six broad Development Types. These Development Types have been classified to reflect the land uses defined in the NSW Department of Planning's *Standard Instrument - Principal Local Environmental Plan.* They are identified in Figure 2.

For each of these Development Types, Assessment Tables are provided, presenting specific *Matters for Consideration* and *Design and Siting Advice.*

Matters for Consideration when assessing each development type are defined within these assessment tables, drawn from each of the 5 Principles of Active Living. That is, the broad objectives which should be sought from a development application to promote Active Living.

More detailed Design and Siting Advice is then provided, illustrated and expanded with examples of good practice specific to each Development Type. Note that this advice does not constitute a comprehensive set of development assessment guidelines, rather provides statements of possible outcomes, leading the reader to existing detailed guidance and case studies on specific Active Living issues published elsewhere. The document is principally a 'wayfinding' resource, a tool for navigating through the extensive material already available, rather than reinvention of the wheel as a new set of DA Guidelines.

Whilst this advice is ordered by Active Living Principle, some elements are naturally more important to achieve, having a greater influence on outcomes. It is critical to recognise that many of these are higher order elements of development proposals and cannot be changed at a later date. They must be incorporated up-front, prior to detailed design work. Most crucially this involves establishing the movement framework, that is elements which impact *Walkability and Connectivity*. This is represented in Figure 3, which indicates how the hierarchy of users should be prioritised through the design.

Part 4 provides a Quick Guide for Applicants and Assessment Officers – a concise checklist of suggested Active Living measures for each development-type. In addition, this Part also provides a number of detailed appendices: advice on submission requirements and Conditions of Consent, and a Glossary of Terms used in the Resource.

Development Types Used in this Resource	*Examples of Permitted Uses Under the Standard LEP Instrument*
1. Subdivision	
2(a). Residential Accommodation - Medium Density, Multi-Unit Development, Residential Flat Buildings, and Tourism Accommodation	• *residential flat building;* • *mixed use development;* • *multi dwelling housing;* • *tourist and visitor accommodation.*
2(b). Residential Accommodation - Seniors Housing or People with a Disability	• *seniors housing.*
3. Industrial	• *industry;* • *bulky goods premises.*
4. Business / Office Premises, Retail Premises, Public Administration, or Entertainment (including Restaurant, Hotel, Club, or Tourism Facility uses)	• *business premise/ office premises;* • *retail premises;* • *public administration building;* • *entertainment facility;* • *restaurant / food and drink premises;* • *function centre.*
5. Institutional	• *community facility;* • *childcare centre;* • *educational establishment;* • *health services facility/ medical centre;* • *hospital.*
6. Transport Infrastructure	• *transport interchange*

Figure 2. Development Types and Permitted Uses

Consider First ⬇ Consider Last	• Pedestrians
	• Cyclists
	• Public transport
	• Specialist service vehicles, car share, and taxis
	• Private motor vehicles

Figure 3. User Hierarchy

Source: Department for Transport (UK), 2007, "Manual For Streets", Thomas Telford Publishing

Part 1:
Principles of Active Living & Development

1.1 The Principles of Active Living

W **A** **L** **Q** **S**

Walkability & Connectivity

Walkability is how friendly a place is to pedestrians, whether it invites and encourages people to walk. It is a measure of the ease of access for pedestrians to and from buildings and to key local destinations. Connectivity is also a measure of ease of access, by provision of clear, direct routes, between key destinations, for all travel modes. All development proposals have a direct interface with public land and should provide for safe and easy access for all ability levels–footpaths, edge treatment, clear pedestrian entrances and unobstructed travel paths. Depending on the scale of proposals, potential destinations and walking and cycling catchments should be identified and contributions made to the network (such as thru-site connections and facilities for the comfort of walkers).

Walking routes should be clearly identified/legible. All activities are physically connected to a range of external destinations. Similarly, for major developments, internal networks should provide ready access and connect with the existing network (and perhaps improve it).

Active Travel Alternatives

Active Travel Alternatives are modes of transport that involve physical activity, such as walking, cycling and public transport. Efforts should be made to reduce car reliance and promote the use of public transport, cycling and walking. Depending on the location, nature and scale of proposals, consideration should be given to managing parking demand (eg. user fees, carsharing allocation), reinforcing public transport facilities (including encouragement of adjoining active uses), promoting carsharing, provision of on-site/ end-of-trip facilities, ensuring local traffic management does not discourage cycling and walking, and signposting services and routes. For major developments, Traffic Management or Workplace Travel Plans may be appropriate.

The location of convenience shopping facilities (and workplaces) and community facilities in close proximity to residences reduces car trips and promotes walking. Major developments and significant DAs provide a unique opportunity to establish true mixed-use precincts. In residential areas, compatible activity-based uses (such as playgrounds) can promote vitality and safety and encourage active travel.

Legibility

Legibility is a measure of how well the surrounding environment promotes Wayfinding and an awareness of relative location. Knowledge of the local environment can provide the confidence to walk (or cycle) – the location of facilities and direct routes. Major developments, in their subdivision design, can ensure clarity in the local environment. Significant DAs can signpost local destinations, public transport stops/stations/timetables and direct occupants to walking/cycling routes.

Quality Public Domain

Most physical activity takes place in the public domain (on streets, in parks or at the beach). A Quality Public Domain supports Active Living by enabling walking and cycling, and by providing appropriate facilities for exercise and rest. All private developments sit within, and are visible from, the public domain. Consideration of CPTED principles can provide safe walking and cycling environments (day and night). In addition, attractive streetscapes, with appropriate tree planting (and shading) can enhance and encourage the experience. Major developments can require such design, and significant DAs can contribute to overall CPTED strategies and the implementation of public domain plans. The presence of multi-purpose open space encourages Active Living, facilitating both active and passive use of a place.

Attractive destinations can act as a magnet for locals. Major developments can provide well-located and designed local/ regional open space, and community facilities for all ages and ethnicities. Significant DAs can contribute to the provision and upkeep of such facilities and clearly signpost their relative location. Local Council-level Plans of Management (compulsory for all "community land") should address these issues.

Social Interaction & Inclusion

Social Interaction refers to people meeting together. Physical environments should encourage this by the provision of such opportunities, inclusive of all ages, ethnicities and ability levels. All development proposals interface with the public domain – streets, laneways, open space. Active street frontages in activity areas, and openly addressing the street in residential environments can promote social interaction (and safety).

All development proposals have some form of on-site open or public space for occupants/ users (possibly on rooftops). In addition, communal areas with a range of facilities can promote activity.

" An Active Development is one which W.A.L.Q.S "

1.2 The Role of DAs in Supporting Active Living

It is through the preparation and assessment of applications for specific projects that land development and building proceeds. Applications can range from major developments (such as large scale subdivision, infrastructure works and master-planned redevelopments) to significant local in-fill projects (within town centres, local facilities or residential development).

It is at the DA stage that:

- context, specific site opportunities and constraints are considered, permitting fine-grained consideration of siting, building design and the interface with the public domain;
- application is made, usually to the Council, for specific development proposals;
- provisions in statutory plans (such as LEPs, SEPPs, DCPs), policies and guidelines are implemented;
- location-specific environmental and social impacts are assessed;
- development contributions are levied;
- the direct interface between private developments and public domain works are addressed (by consent conditions); and
- cumulative impacts can be considered and monitored.

In New South Wales, a clear distinction is drawn between 'Major Projects', those State significant developments where the Minister for Planning receives and determines proposals (including rezonings), and 'local development' (which is a local Council responsibility):

i. Of particular significance are applications for 'Major Projects' and State significant sites (under Part 3A of the EP&A Act and the Major Developments SEPP). The extent, nature, location and scale of such projects – including large-scale subdivisions and major employment generating land uses – justifies application requirements for significant infrastructure (including off-site works and connections) and use-based requirements such as Workplace Travel Plans.

ii. Local development proposals are usually not of the same scale as Major Projects, but still provide the potential to pick-up site specific requirements (perhaps as conditions of development consent, such as on-site, destination-based facilities, to deal with the public - private interface) and to attract development contributions for funding local infrastructure. In addition, the following points should not be underestimated:

- the potential for proposals on specific sites (by good fortune or negotiation) to pick up missing pieces in local structure plans (such as through-site connections or local open space); and
- the cumulative effect of "minor" proposals in contributing to supportive environments.

In addition, a new approvals regime has recently been introduced for 'infrastructure' by SEPP (Infrastructure) 2007 – overriding local planning provisions on categorisation and permissibility. This is also significant as it covers key elements of the public domain. One implication of the SEPP is the possibility that infrastructure that does not need planning consent will require environmental assessment under Part 5 of the EP&A Act. As a result, Active Living Principles should be a consideration in Part 5 Reviews of Environmental Factors (and possible Environmental Impact Statements). Similarly, they should be considered in preparing and assessing site compatibility certification, required where proposals are prohibited by local controls.

Other SEPP's, such as Affordable Rental Housing, also have an impact on the categorisation of development – determining whether development consent is required (and imposing relevant standards).

1.3 Key Points of Intervention in the DA Process

The Development Assessment Process

The Development Assessment process can be depicted as a seven staged process, with discrete, generic stages and steps that apply at the State and local level: pre-application consultation; lodgement and initial administration; referral and public consultation; assessment; determination; development commencement; follow-up and finalisation. The four key stages for the purposes of this Resource are pre-application/lodgement and assessment/determination.

Consideration of Active Living Principles at the DA stage depends upon clear and appropriate submission requirements and matters for consideration/ criteria for assessment issued by a consent authority. One outcome of detailed assessment is the imposition of relevant and reasonable conditions of consent.

Process Stages	Snapshot of Key Provisions
Pre-Application/Lodgement	• Application type • Detailed site analysis • Submission requirements: Council level or Director-General's requirements
Assessment/ Determination	Formal assessment: • s79C for Part 4 • Conditions of consent: s80A for Part 4

Figure 4. Key Points in the DA Process

1.4 The Significance of Policy Documents: Private Development and the Public Domain

Preparation and adoption of Active Living policy documents at the local and State government level will add legal weight to such matters at the assessment/ determination stage (and to up-front submission requirements). For local-level development this could be a specific Active Living Development Control Plan (or chapter) or coverage in existing DCP. That is, as a statutory matter for consideration of DAs under section 79C of the EP&A Act. At the State level, such matters could be formalised and added to the existing Register of Development Assessment Guidelines (listed on the NSW Department of Planning website).

In addition, inclusion of Active Living matters in Public Domain/ Civic Improvement Plans will provide a reference point for linking private development proposals to public improvement plans and work programs (as conditions of consent or development contributions).

Part 2:
Cross - Cutting Advice: Things we can do at the Project Level

Many of the Active Living initiatives, which can be implemented at the project level, are common to all types of development for which planning approval is sought.

Accordingly, Cross-Cutting Advice for all Development Types is provided in Part 2 under each Active Living Principle.

Icons signify the Cross-Cutting Advice.

Figure 5 references the Cross-Cutting Advice icons.

Cross-Cutting Advice		
Principle - Walkability & Connectivity		**Pg**
	Comfort of Walkers	11
	Connectivity	13
Principle - Active Travel Alternatives		
	End-of-Trip Facilities	15
	Transport & Travel Planning	17
	Traffic Management	19
Principle - Legibility		
	Wayfinding	21
Principle - Quality Public Domain		
	Safe & Clean Environments	23
	Quality Open Spaces	25
	Welcoming, Activated & Stimulating Places	27
Principle - Social Interaction & Inclusion		
	On-site Communal Open or Public Space	29
	Accessibility	31

Figure 5. Cross-Cutting Advice Icons

2.1(a) Principle: Walkability & Connectivity

All development proposals have a direct interface with public land and should provide for safe and easy access for all ability levels – footpaths, edge treatment, clear pedestrian entrances and unobstructed travel paths. Depending on the scale of proposals, potential destinations and walking and cycling catchments should be identified and contributions made to the network (such as thru-site connections and facilities for the comfort of walkers).

Walking routes should be clearly identified/legible. All activities are physically connected to a range of external destinations. Similarly, for major developments, internal networks should provide ready access and connect with the existing network (and perhaps improve it).

Cross-Cutting Advice: Comfort of Walkers

What is it? Why do it?

Considering the comfort of walkers during the design and approval process will greatly impact upon the walkability of an area. Carefully designed and equipped spaces, along routes to key local destinations, will make walking and cycling attractive, encouraging the community to be active. Examples include:

- Weather protection (e.g. shade);
- Places to stop and rest (e.g. seating augmented with amenities such as landscaping, toilets and water bubblers);
- Pedestrian crossings;
- Lighting;
- Clear of obstructions;
- Design which is inclusive of ages and abilities;
- Attractive landscaping;
- The prioritisation of walking and cycling over vehicles; and
- Minimising conflict between pedestrians and cyclists on shared paths.

Providing for the comfort of walkers also encompasses neighbourhood permeability, that is, the choices available to pedestrians to select one or more safe alternative routes and/or short cuts to complete a journey. This is discussed further in Part 2.1(b) Connectivity.

Walkers are most often also public transport users. Accordingly, by considering the comfort of walkers development actively benefits a range of Active Travel Alternatives.

Once implemented, there is a need to maintain the functionality and condition of these amenities to encourage the ongoing use of the space by pedestrians. Well designed and maintained footpaths are a more important determinator than street furniture.

Good Practice

A) Shaded picnic tables

B) Attractive streetscapes support walking and stimulate a vibrant retail environment.
Source: Healthy Spaces and Places, photographers SGS Economics and Planning; Edge Land Planning

Practical DA Level Issues to Consider

- Reduction of conflicts between paths and other route users through design, signage, and visible line-marking.[3]
- CPTED principles which consider the safety of pedestrians during both the day and evening, including enhancing surveillance and encouraging adjacent development to face (rather than back onto) pedestrian pathways and routes.
- Inclusion of maintenance funding in developments involving paths and other spaces affecting pedestrian access.
- The use of materials which aid the maintenance of spaces and their use by pedestrians. These have flat surfaces, do not create trip hazards, and are not affected by the weather.
- Installation of appropriate pedestrian crossings in areas where pedestrian access intersects roads with moderate to heavy traffic usage.
- Trees located to the north of paths provide greater shelter from the sun .
- Deciduous trees can provide shade in summer and solar access in winter.[4]
- A composition of trees and understorey planting provide shelter from wind.
- Shelter can be provided by trees or built form.
- Seating can be of both a formal and informal nature (such as the integration with planter boxes and other landscape features).
- Pause places can be designed to act as minor landmarks on a journey as well as a place to pause or rest.
- The presence of commercial uses alone, such as cafés, which can only be used by paying customers, do not contribute to the walkability of a place for all users.

3. NSW Government (2004), Planning Guidelines for Walking and Cycling.
4. David Lock Associates and the City of Greater Geelong (2008), Clause 56 Walkability Toolkit.

Practical DA Level Issues to Consider (Continued)	• Consider desire lines to ensure most direct route. • Street design which controls traffic speeds, particularly at intersections (for example, narrowing the roadway, not using roundabouts). Well designed intersections are an important part of the pedestrian environment and the walking experience. • Minimise conflicts with pedestrian movement. • Providing footpaths on both sides of the street, of adequate width for walkers to comfortably pass each other. • A three metre wide path is recommended for all shared routes.[5] • Optimise the retention/ provision of landscaping, particularly of trees, to create attractive spaces. • Landscaping for shade and comfort and visual interest. • Define vehicle parking.

Key Sources for Further Information	• Australian Standards - There are various Australian Standards relevant to pedestrian infrastructure and facilities. Information can be obtained from the Standards Australia website (www.standards.org.au) and copies of specific Standards can be ordered from SAI Global (http://infostore.saiglobal.com/store/). Key documents include:
	 - HB 69.13 (Guide to traffic engineering practices – Pedestrians)
	 - AS 1428.1 (Design for access and mobility – General requirements for access – New building work)
	 - AS 1428.2 (Design for access and mobility – Enhanced and additional requirements – Buildings and facilities)
	 - AS/NZS 1154.4 (Lighting for roads and public spaces – Lighting of pedestrian crossings)
	 - AS 1742.10 (Manual of uniform traffic control devices – Pedestrian Control and Protection)
	 - AP-R287/06 (Pedestrian-Cyclist Conflict Minimisation on Shared Paths and Footpaths)
	• Austroads (2009), Guide to Road Design - Part 6A: Pedestrian and Cyclist Paths.
	  Available at: http://www.onlinepublications.austroads.com.au/script/Details.asp?DocN=AUSTROADS41060
	• Cancer Council (1998), Under Cover: Guidelines for Shade Planning and Design
	  Available at: http://www.cancercouncil.com.au/editorial.asp?pageid=2326, or by contacting the Cancer Council on 02 9334 1900.
	• Cancer Council (2001), Shade for Outdoor Sport and Recreation.
	  Available at: http://www.cancercouncil.com.au/editorial.asp?pageid=2326, or by contacting the Cancer Council on 02 9334 1900.
	• Cancer Council (2009), The Shade Handbook.
	  Available at: http://www.cancercouncil.com.au/editorial.asp?pageid=2326
	• David Lock Associates and City of Greater Geelong (2008), Clause 56 Walkability Toolkit: Making walking preferable, not just possible.
	  Available at: http://www.geelongcity.vic.gov.au/ct/documents/item/8cbc6ecfe6db7e1.aspx.
	• Department of Sustainability and Environment (Victoria), (2005), Activity Centre Design Guidelines.
	  Available at: http://www.dse.vic.gov.au/CA256F310024B628/0/1F8224C16463B705CA2570130021078E/$File/Activity+Centre+Design+Guidel ines.pdf
	• Landcom (2008), Street Design Guidelines.
	  Available at: http://www.landcom.com.au/publications/TheLandcomGuidelines.aspx.
	• NSW Government (2004), Planning Guidelines for Walking and Cycling
	  Available at: http://www.planning.nsw.gov.au/plansforaction/pdf/guide_pages.pdf.
	• Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes - Junee
	  Available at: http://www.pcal.nsw.gov.au/case_studies/junee
	• Roads and Traffic Authority (2002), How to Prepare and Pedestrian Access and Mobility Plan.
	  Available at: http://www.rta.nsw.gov.au/doingbusinesswithus/downloads/technicalmanuals/mobility-plan_how-to.pdf.
	• Roads and Traffic Authority (2009) RTA Guide to Signs and Markings Reference Lists (4.17 Pedestrian Traffic)
	  Available at: http://www.rta.nsw.gov.au/doingbusinesswithus/downloads/technicalmanuals/technicalmanuals_dl1.html
	• Statewide Mutual (2009), Best Practice Manual - Footpaths, Nature Strips and Medians.
	  Available at: http://www.statewide.nsw.gov.au
	• Victorian Government, Walkability Checklist - Go for Your Life Campaign.
	  Available at: http://www.goforyourlife.vic.gov.au/hav/articles.nsf/pracpages/Walkability_Checklist?OpenDocument.
	• Western Australian Planning Commission (2004), Liveable Neighbourhoods (Edition 3).
	  Available at: http://www.planning.wa.gov.au/Plans+and+policies/Publications/26.aspx

5. Austroads (2009), Guide to Road Design - Part 6A: Pedestrian and Cyclist Paths.

2.1 (b) Principle: Walkability & Connectivity

Cross-Cutting Advice: Connectivity

What is it?
Why do it?

There is a clear association between the use of active travel alternatives and the urban structure of communities. Its primary influence is on the street pattern, a core determinant of whether a community is walkable and cycleable and able to be well served by public transport. Local street networks should be highly inter-connected, providing a denser pathway system for walking and cycling than for vehicles. Such networks provide numerous links and intersections to reduce walking and cycling distances and provide a choice of routes. They also facilitate efficient access for buses.

Connectivity will be achieved by -

- Creating permeable urban blocks through considering block size, length and shape with the aim to increase the number of blocks within a given area. Provide four-way vehicular intersections where appropriate;
- Designing streets which are oriented to give direct access to key destinations (ie centres and public transport stops);
- Creating a continuous, uninterrupted pedestrian network offering a choice of routes to destinations on paths which are flat;
- Ensuring that newly proposed streets and paths align and link to the surrounding network;
- Making walking and cycling trips short and direct - and vehicular trips less so;
- Providing footpaths on both sides of the street. Footpaths should be continuous, level and unobstructed;
- Providing safe, footpath-level linkages across roads. Such crossings also have the benefit of calming traffic speeds;
- Designing legible streets which are clearly signposted; and
- Making connections at the regional as well as neighbourhood scale. For example, aligning mixed use centres within corridors along major public transport routes and regional cycleway networks.

The urban structure which best promotes such walking and cycling connectivity is a modified grid layout. If streets are well connected, over 60% of the area within a potential 400m (or five-minute) walking radius is actually walkable. With poorly connected streets, efficiency can be as low as 10%.[6]

Less connected urban structures can be retrofitted through actions taken during the site development and DA process. This can include opening connections as well as maintaining and augmenting existing elements in the built form which act as movement paths (eg laneways and arcades).

Good Practice

A) A 'grid' formation of street layouts allows direct access and multiple routes for walking and cycling.

B) The integration of mixed land uses such as residential, open space and neighbourhood commercial outlets into a compact subdivision allows people to walk and cycle shorter distances and undertake multiple activities within the one trip.

Source: NSW Government (2004), Planning Guidelines for Walking and Cycling

C) A street layout comprising multiple cul-de-sacs limits direct access, discouraging walking and cycling to undertake relatively short trips, in favour of using a motor vehicle.

D) Regional connections for Active Travel Alteratives

Source: Healthy Spaces and Places, photographer Planning Institute of Australia

E) Direct route linkages across roads.

6. See footnote 3.

F) A lack of connections reinforces car use.
Source: Healthy Spaces and Places, TPG Town Planning and Urban Design

G) A connected street network brings the majority of places within 400 metres within a walkable catchment.
Source: Healthy Spaces and Places, TPG Town Planning and Urban Design

Practical DA Level Issues to Consider	• Ensure the pedestrian and cycling network is integral to the design. • Retrofit pedestrian connections to the network which restore route directness. For example, through-site links and using new public domain / open space as grid connectors for people and not cars. • Safe, footpath-level linkages across roads promote connectedness and walking and also act as traffic calming measures. • Reduce road widths on minor roads to make crossing easier for pedestrians. • Road closures which maintain pedestrian connectivity. • Installation of wayfinding elements. • Provide footpaths on both sides of the street. Footpaths should be continuous, level and unobstructed. • Minimise cul-de-sacs. • Minimise roundabouts, and allow four-way vehicular intersections where appropriately designed.
Key Sources for Further Information	• NSW Government (1998), Better Urban Living - Guidelines for Urban Housing in NSW • NSW Government (1998), Residential Subdivision - A handbook for the design and planning of new residential neighbourhoods • NSW Government (1998), Neighbourhood Character - An urban design approach for identifying neighbourhood character • NSW Government (2004), Planning Guidelines for Walking and Cycling • Premier's Council for Active Living (2009), Case Study: Cities, Towns and Neighbourhoods - Nelson's Ridge Available at: http://www.pcal.nsw.gov.au/case_studies/nelsons_ridge • Premier's Council for Active Living (2009), Case Study: Cities, Towns and Neighbourhoods - Tullimbar Village Available at: http://www.pcal.nsw.gov.au/case_studies/tullimbar_village • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes - Junee Available at: http://www.pcal.nsw.gov.au/case_studies/junee • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes – Coastal Cycleway Available at: http://www.pcal.nsw.gov.au/case_studies/coastal_cycle_way • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes – Cooks River Available at: http://www.pcal.nsw.gov.au/case_studies/cooks_river • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes – Fernleigh Available at: http://www.pcal.nsw.gov.au/case_studies/fernleigh

2.2 (a) Principle: Active Travel Alternatives

Efforts should be made to reduce car reliance and promote the use of public transport, cycling and walking. Depending on the location, nature and scale of proposals, consideration should be given to managing parking demand (eg. user fees, carsharing allocation), reinforcing public transport facilities (including encouragement of adjoining active uses), promoting carsharing, provision of on-site/ end-of-trip facilities, ensuring local traffic management does not discourage cycling and walking, and signposting services and routes. For major developments, Traffic Management or Workplace Travel Plans may be appropriate.

The location of convenience shopping facilities (and workplaces) and community facilities in close proximity to residences reduces car trips and promotes walking. Major developments and significant DAs provide a unique opportunity to establish true mixed-use precincts. In residential areas, compatible activity-based uses (such as playgrounds) can promote vitality and safety and encourage active travel.

Cross-Cutting Advice: End of Trip Facilities

What is it?
Why do it?

End-of-trip facilities are items required at any destination to facilitate walking and cycling as an alternative means of transport. This includes facilities which cater for the needs of both the cyclist and their equipment.

The availability and accessibility of end-of-trip facilities can influence and encourage the decision to walk or cycle to work, which can positively impact upon the health and well-being of individuals, including employees, students and visitors. Examples of end-of-trip facilities include:

- Conveniently located, safe bicycle parking areas;
- Secure storage areas which protect bicycles against theft and/or damage;
- Lockers or other storage space (for bicycle equipment and accessories such as helmets, clothing and backpacks);
- Hygienic changing rooms and showers for men and women;
- Space for drying clothes and towels; and
- Ironing and hair dryer facilities.

It is important that cycle parking is provided in a manner and location which is relevant to the destination and the trip purpose. For example, for shopping convenience is key, which requires street level parking at the entry with shade and security. It is generally only appropriate to locate employee cycle parking in less accessible locations as, for employees, security is more important than convenience. The level of 'comfort' of parking provided (eg. shade/weather protection, security, storage) is dependant on likely length of stay (eg. a basic hitching post for a short stay or a fuel sevice cycle centre).

Good Practice

A) Lockers should be designed to accommodate helmets and hanging clothes. An interlocking design saves space.
Source: Bicycle Victoria.
Available at: http://www.bv.com.au/bicycle-parking/40551/

B) Security cameras make the racking area safe and secure.
Source: Brisbane City Council and Queensland Transport , City2City (C2C) Initiative.
Available at: http://www.cycle2city.com.au/site.php?content=tour.
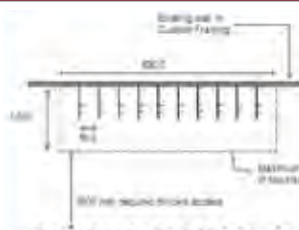
C) Space required to park 10 bikes using Ned Kelly wall mounted rails.
Source: Bicycle Victoria (2004), Bicycle Parking Handbook, page 9.
Available at: http://www.bv.com.au/file/file/The%20bicycle%20parking%20handbook.pdf.

D) A free towel service for staff.
Source: http://www.pcal.nsw.gov.au/case_studies/fairfax/gallery

E) A Mona Lisa rail uses previously wasted space above car spaces to park or securely store a bike. They can be bolted to solid or hollow masonry walls.
Source: Bicycle Victoria (2004), Bicycle Parking Handbook, page 10.
Available at: http://www.bv.com.au/file/file/The%20bicycle%20parking%20handbook.pdf

F) A Parkiteer - Secure and free bike parking cages at train stations. A bike cage contains 26 bikes covering an area equivalent to three car spaces.
Source: Bicycle Victoria. Available at: http://www.bv.com.au/bicycle-parking/43422/

G) Ned Kelly bicycle parking rails alternate in height and are ideal for locations where there are space constraints. They can be mounted on solid or hollow masonry walls, or to custom framing.
Source: Bicycle Victoria (2004), Bicycle Parking Handbook, page 9.
Available at: http://www.bv.com.au/file/file/The%20bicycle%20parking%20handbook.pdf.

H) A full service workshop which is also open to the public.
Source: Brisbane City Council and Queensland Transport , City2City (C2C) Initiative.

I) Additional equipment could be provided such as a towel service, irons, hairdryers, rails for drying clothes, spare bicycle repair tools, or company umbrellas for use on rainy days.
Source: Bicycle Victoria.

J) Hanging rails and a fan to assist the drying of damp clothing and towels at Brisbane City Council.
Source: Bicycle Victoria.

K) Secure storage at train stations.

Practical DA Level Issues to Consider	• End-of-trip facilities are, in most cases, included within the definition of Gross Floor Area (GFA) which in turn affects the development potential of a site by influencing Floor Space Ratio (FSR) calculations. This can influence a proponent's willingness to provide these amenities.
	• Plans should ensure that cycle parking is provided in safe, secure (eg lockable compound; well-lit; overlooked by nearby offices and passers by if outside) and sheltered locations, close to the building. Wherever possible they should be provided within a building's secure car park.
	• Example rates of provision -
	  • NSW Guidelines[7] identify bicycle parking provision rates (staff and customer) for a range of land use types. Generally this requires spaces for three-five% of staff.
	  • The NSW Guidelines also recommend one locker for every three racks, one male and female change room regardless of staffing, and one shower for the first 12 employees, increasing to four for 50 employees, and 8 for over 300.
	  • The Central Sydney Development Control Plan (DCP) (for the Sydney CBD) requires at least one car parking space to be dedicated for bicycle parking for every 100 car parking spaces (equal to one cycle space for every ten car spaces). The South Sydney DCP11 recommends one space per 20 staff.

Key Sources for Further Information	• ACT Planning and Land Authority (2006), Bicycle Parking Guidelines. Available at: http://apps.actpla.act.gov.au/tplan/planning_register/register_docs/bike_guidelines.pdf. • Austroads (2009), Guide to Road Design - Part 6A: Pedestrian and Cyclist Paths. Available at: http://www.onlinepublications.austroads.com.au/script/Details.asp?DocN=AUSTROADS41060 • Bicycle Victoria (2004), Bicycle Parking Handbook. Available at: http://www.bv.com.au/bicycle-parking/30250/ or http://www.bv.com.au/file/file/The%20bicycle%20parking%20handbook.pdf. • Bicycle Victoria (2005), Bicycle User Group Start-Up Manual. Available at: http://www.bv.com.au/file/BUG%20Start-up%20Manual%2026.3.03_1.pdf?phpMyAdmin=DhLMKS7n7oG8nIonGyRgo-K1uw6 • Bicycle Victoria (2007), Cycle-Friendly Work Places. Available at: http://www.bv.com.au/file/file/RTW/BICY%20-%20Cycle-Fndly%20Workplaces_v12.pdf?phpMyAdmin=DhLMKS7n7oG8nIonGyRgo-K1uw6 • Brisbane City Council and Queensland Transport, City2City (C2C) Initiative. Available at: http://www.cycle2city.com.au/site.php?content=tour. • City of Sydney (2009), Bicycle Parking Calculator. Available at: http://www.cityofsydney.nsw.gov.au/Environment/documents/BikeParkingCalculator.xls. • Green Building Council of Australia, Green Star. Available at: http://www.gbca.org.au/green-star/rating-tools/green-star-office-v3/1710.htm • NSW Government (2004), Planning Guidelines for Walking and Cycling Available at: http://www.planning.nsw.gov.au/plansforaction/pdf/guide_pages.pdf. • Premier's Council for Active Living (2009), Case Study: Workplaces – NSW Roads and Traffic Authority (RTA). Available at: http://www.pcal.nsw.gov.au/case_studies/workplaces • Roads and Traffic Authority (2005), NSW Bicycle Guidelines. Available at: http://www.rta.nsw.gov.au/doingbusinesswithus/downloads/technicalmanuals/nswbicyclev12_i.pdf • SAI Global (1993), Australian Standards 2890.3, Parking Facilities Part 3: Bicycle Parking. Available at: http://www.saiglobal.com

7. See footnote 3.

2.2 (b) Principle: Active Travel Alternatives

Cross-Cutting Advice: Transport & Travel Planning

What is it?
Why do it?

Traditional Traffic Management Plans (TMPs), such as those prepared during a masterplanning or development approvals process, have often focused on responding to the existing traffic needs of an area and tended to prioritise the needs of motor vehicles rather than alternative and more active forms of travel.

Transport Management and Accessibility Plan's (TMAP) are designed to promote a reduction in the use of motor vehicles in favour of increased use of public transport, cycling and walking as alternate modes of transport, with the overall view of increasing the sustainability and liveability of an area. The location of a range of essential facilities within walking or cycling distances allows people to access them by walking and encourages multi-purpose trips which reduces the total number of trips required.

NSW Guidelines[8] describe TMAPs as an agreed package of actions designed to:
- Manage transport impacts of developments;
- Maximise the use of public transport, walking and cycling;
- Reduce Vehicle Kilometres Travelled (VKT) growth by cars and commercial vehicles generated by the development;
- Reduce car reliance; and
- Minimise the impacts of freight, whilst allowing for efficient freight movement.

TMAPs usually contain an action plan agreed between the authority, the proponent and other relevant stakeholders.

Travel Plans can be prepared for most development types, commonly workplaces, but also schools, residential developments, stations, stadia and hospitals for example. Travel Plans promote the use of sustainable transport options at the level of an individual organisation, destination or place of employment. They encourage the use of alternative forms of transport to travel to and from the workplace, including walking, cycling, public transport and carsharing/ pooling. A fundamental difference to a TMAP is that a Travel Plan is built on the continuous participation and engagement of site users (eg. employees). They aim to identify the financial, health and time-saving benefits of an increase in the use of these forms of active travel and a reduction in the reliance on motor vehicles. A Travel Plan could include carsharing schemes, commitments to improve cycling infrastructure, dedicated bus services or operational changes to reduce peak demand (eg. staggered start times).

Whilst the content of Travel Plans is not prescribed (they can contain as many or as few initiatives as required), and are unique to each site, they should detail measures which develop/ promote the use of active travel for:
- public transport (eg. site specific bus service funded by employer, working with operators to improve services/ relocate bus stops, taxi services);
- cycling (eg. end-of-trip facilities, establishment of the Bicycle User Groups (BUGs)); and
- walking (eg. pedestrian only entrance from surrounding locality, reflecting desired paths of travel; maps and audits).

Evidence consistently demonstrates that the most effective Travel Plans also detail supportive car parking management measures (supply, location and regulation; prioritised access according to need), promotion of car share services, as well as management measures which reduce the need to travel. Critically measures will be directed at improving staff awareness, such as by providing public transport information within the workplace (eg user friendly, simplified timetables), such as Transport Access Guides (TAG). A TAG is a concise set of information on how to reach a destination or particular site using active and sustainable forms of travel - public transport, cycling and walking. The guide can be provided in a number of formats .e.g. printed, web-based etc) and include summarised or detailed maps and written information.

Good Practice

A) Bus stops located directly outside office buildings can encourage the use of public transport to and from work.

B) The location of multiple services and facilities within close proximity to each other encourages walking and cycling for short trips and reduces the amount and length of travel required.
Source: NSW Government (2004), Planning Guidelines for Walking and Cycling.

8. See footnote 3.

C) Car parking spaces allocated to pool vehicles can encourage car-pooling.

D) Shelter provided at bus, train and tram stops to encourage use of public transport.

E) A pocket travel guide provides information about active travel options for commuting to and from places for work. (Image courtesy of Optus).

Practical DA Level Issues to Consider	• Negotiation of a Travel Plan. The most effective are a mix of incentives and disincentives. • Preparation of a Transport Access Guide. • Mode share targets, as a percentage of single occupancy vehicle trips. Targets must be based on a realistic, quantitive assessment of the likely achievable change in mode share. • Preferential parking for carshare. The number of on-site parking spaces to be made available for car sharing scheme vehicles varies depending on the level of access to private cars and car parking spaces. This can be as high as one per 50 dwellings in residential flat buildings which have restricted parking availability.

Key Sources for Further Information	• Australian Standards (various). *A variety of Australian Standards relating to traffic management and cyclist/pedestrian safety are available for purchase through SAI Global. Key standards include:*
	  - *AP-R287/06 (Pedestrian-Cyclist Conflict Minimisation on Shared Paths and Footpaths)*
	  - *HB 69.13 (Guide to traffic engineering practices – Pedestrians)*
	• Austroads (1998), Cities for Tomorrow: A Better Practice Guide.
	• City of Sydney (2004), Review of Parking Controls for New Development.
	  Available at: http://www.cityofsydney.nsw.gov.au/Council/documents/meetings/2004/cosc_cm_mc2_pdtc_260704_item5.pdf
	• Commonwealth Government (2003), TravelSmart Employers Kit.
	  Available at: http://www.travelsmart.gov.au/employers/pubs/travelsmartemployerskit.pdf.
	• Department of Sustainability and Environment (Victoria), (2005), Activity Centre Design Guidelines.
	  Available at: http://www.dse.vic.gov.au/CA256F310024B628/0/1F8224C16463B705CA2570130021078E/$File/Activity+Centre+Design+Guidelines.pdf
	• Department of Transport (Victoria), "Travel Planning".
	  Available at: http://www.transport.vic.gov.au/DOI/Internet/ICT.nsf/AllDocs/E5AF7CD2C2AA3744CA257610000FF0AC?OpenDocument.
	• Department of Transport (Victoria), "Workplace Travel Plans".
	  Available at: http://www.transport.vic.gov.au/doi/internet/ict.nsf/headingpagesdisplay/travelsmarttravel+planningworkplace+travel+plans.
	• Department for Transport (UK) (2008), Essential Guide to Travel Planning.
	  Available at: http://www.dft.gov.uk/pgr/sustainable/travelplans/work/
	• Ministry of Transport (NSW), City of Sydney and Parsons Brinckerhoff Australia Pty Ltd (2008), Green Square Urban Renewal: Transport Management and Accessibility Plan (TMAP). Prepared on behalf of the NSW Ministry of Transport, City of Sydney and Landcom.
	  Available at: http://www.cityofsydney.nsw.gov.au/development/UrbanRenewalProjects/GreenSquare/GreenSquareTMAP.asp#DL
	• NSW Government (2004), Planning Guidelines for Walking and Cycling.
	  Available at: http://www.planning.nsw.gov.au/plansforaction/pdf/guide_pages.pdf
	• Premier's Council for Active Living (2009), Case Study: Optus Relocation.
	  Available at: http://www.pcal.nsw.gov.au/case_studies/optus
	• Premier's Council for Active Living (2009), Case Study: Streets – Chippendale.
	  Available at: http://www.pcal.nsw.gov.au/case_studies/chippendale
	• Premier's Council for Active Living (2009), Case Study: Cities, towns, neighbourhoods: Nelson's Ridge.
	  Available at: http://www.pcal.nsw.gov.au/case_studies/nelsons_ridge
	• Premier's Council for Active Living (2009), Case Study: Public Transport – Parramatta Road Bus Station.
	  Available at: http://www.pcal.nsw.gov.au/case_studies/parramatta_road
	• Premier's Council for Active Living (2009), Case Study: Workplaces – NSW Roads and Traffic Authority (RTA).
	  Available at: http://www.pcal.nsw.gov.au/case_studies/workplaces.
	• Premier's Council for Active Living (2010), NSW Workplace Travel Plan Guide.
	  Available at: http://www.pcal.nsw.gov.au
	• Roads and Traffic Authority, Producing and Using Access Guides
	  Available at: http://www.rta.nsw.gov.au/usingroads/downloads/sedatransportaccessguide_dl1.html.
	• Sustrans (2008), Active Travel Workplace Toolkit.
	  Available at: http://www.sustrans.org.uk/what-we-do/active-travel/active-travel-publications/active-travel-workplace-toolkit

2.2 (c) Principle: Active Travel Alternatives

Cross-Cutting Advice: Traffic Management

What is it?
Why do it?

Traffic management involves monitoring and improving traffic flow, increasing the consistency of travel times, reducing congestion and enhancing the safety of all users with the overall aim of maximising the efficient operation of the transport network. It can involve the implementation of a range of programs, initiatives and restrictive measures.

An area which is perceived as safe is likely to encourage more active use of both the road and nearby facilities such as cycleways, parks and community facilities with street frontage. It also facilitates a more connected community, encouraging cyclists and pedestrians to easily move from one space to another or to use these routes for short trips as well as recreational and exercise purposes.

Effective traffic management, including the use of traffic calming devices such as the narrowing of streets, promotes the safety of road users including motor vehicle drivers and cyclists, as well as pedestrians. A reduction in speed limits, particularly from 50km/hr to 40km/hr, significantly lowers the risk of pedestrian fatalities.[9]

The Roads and Traffic Authority[10] identifies that traffic management contains a number of key elements:
• Limiting traffic speed (including the limiting of carriageway widths, traffic calming devices, changes to speed limits)
• Limiting traffic volume (including addressing road connectivity, traffic flow management, reducing road widths, user charges)
• Pedestrian safety
• Cyclist safety
• Bus route provision
• Parking provision
• The link to geometric design - including desired space requirements and required manoeuvring spaces

Traffic calming devices are generally designed to promote travel in a manner and speed which is appropriate for local conditions. Queensland Transport[11] categorises traffic calming devices as:
• Slow points – including central islands, pinch points and chicanes
• Road humps
• Road closures and one-way streets
• Small diameter roundabouts
• Surface treatments

Shared spaces ("naked streets") are also an effective and affordable way to slow traffic. Such design integrates cars, pedestrians and cyclists by reducing barriers and traffic signs and signals. For example, having no distinction between footpath and roadway. Their design enhances safety by increasing the perception of risk and making drivers more alert. In turn, they become more social, active spaces.

Good Practice

A) An example of a "naked street", a road open to motor vehicles but with an absence of lights and signs. The appearance of the road, including paving and the presence of street furniture, as well as a reduced speed limit encourages motorists to take additional care in the area.

B) & C) Traffic calming devices – Platform Threshold.

9. Archer, J.,Fortheringham, N.,Symmons, M. & Corben, B. (2008) "The impact of lowered speed limits in urban and metropolitan areas", Monash University Accident Research Centre, Report No.276.
10. Roads and Traffic Authority (2002), Guide to Traffic Generating Developments Version 2.2.
11. Queensland Transport (2006), Cycling and Traffic Calming.

Good Practice (Continued)

D) Refuge island crossing.

E) School crossing point which includes a narrowing of the road to reduce speeds of motor vehicles in the area.

F) The car spaces, footpath and carriageway are clearly defined and avoid any conflict or saftey issues.
Source: Healthy Spaces and Places, photographer Planning Institute of Australia.

Practical DA Level Issues to Consider	• Reinforce the primacy of pedestrians and cyclists. • Support road safety objectives for cyclists and pedestrians by reducing traffic conflicts. • Attend to the connectivity between roads and their adjoining functions. • Incorporate setbacks for bus priority at the intersections of major roads. • Require Local Area Traffic Management Plans where appropriate. • Inclusion of cyclists and pedestrians in design and management. • Note: The responsibility for authorising traffic control devices is vested in the RTA. Any departure from these standards requires RTA approval.

Key Sources for Further Information	• Archer, J., Fotheringham, N., Symmons, M. & Corben, B. (2008) "The impact of lowered speed limits in urban and metropolitan areas, Monash University Accident Research Centre, Report No. 276.
	Available at: http://www.monash.edu.au/muarc/reports/muarc276.pdf
	
	• Australian Standards (various). A variety of Australian Standards relating to traffic management and cyclist/pedestrian safety are available for purchase through SAI Global. Key standards include:
	  - AP-R287/06 (Pedestrian-Cyclist Conflict Minimisation on Shared Paths and Footpaths)
	  - HB 69.13 (Guide to traffic engineering practices – Pedestrians)
	
	• Austroads, (1988), Guide to Traffic Engineering Practice: Local Area Traffic Management, Publication No. AP-11.10, Ambassador Press.
	
	• Austroads (1998), Cities for Tomorrow: A Better Practice Guide.
	
	• City of Sydney (2004), Review of Parking Controls for New Development.
	Available at: http://www.cityofsydney.nsw.gov.au/Council/documents/meetings/2004/cosc_cm_mc2_pdtc_260704_item5.pdf
	
	• City of Sydney (2007), Pedestrian Cycling and Traffic Calming Plans.
	Available at: http://www.cityofsydney.nsw.gov.au/Development/CityImprovements/RoadsAndStreetscapes/PCTCPlan.asp
	
	• Department of Housing and Regional Development (Commonwealth) (1995), AMCORD: A National Resource Document for Residential Development.
	Available at: http://www.lgpmcouncil.gov.au/publications/files/amcord.pdf
	
	• Department of Human Services, Victoria, (2009), Traffic Calming: Description and Benefits.
	Available at: http://www.dhs.vic.gov.au/__data/assets/pdf_file/0008/276605/TrafficCalming.pdf
	
	• Department of Transport (UK) (2008), Building Sustainable Transport into New Development: A Menu of Options for Growth Points and Eco-towns.
	Available at: http://www.dft.gov.uk/pgr/sustainable/sustainabletransnew.pdf
	
	• Department of Urban Affairs and Planning (NSW) (2001), Integrating Land use and Transport.
	Available at: http://www.planning.nsw.gov.au/programservices/pdf/prg_transport.pdf
	
	• Kenworthy, J. (2000), "Techniques for Urban Sustainability: Traffic Calming", Institute for Sustainability and Technology Policy, Murdoch University.
	Available at: http://www.istp.murdoch.edu.au/ISTP/casestudies/Case_Studies_Asia/tcalming/tcalming.html
	
	• Federal Office of Road Safety, (1993), Towards Traffic Calming: A Practitioners' Manual of Implemented Local Area Traffic Management and Blackspot Devices, CR 126, September 1993.
	
	• Heart Foundation, (2008), Promoting safe walking and cycling by reducing traffic speed.
	Available at: http://www.heartfoundation.org.au/SiteCollectionDocuments/Safe%20Speed%20Research%20Summary%20Nov%202008.pdf
	
	• Newstead, S., Hoareau, E. & Cameron, M. (2002)"Evaluation of 50 km/h speed limits in Victoria - Summary of interim analysis of all crashes and crashes involving pedestrians".
	Available at: http://www.monash.edu.au/muarc/reports/papers/Vic50.pdf
	
	• Pedestrian Council of Australia.
	Available at: http://www.walk.com.au
	
	• Queensland Transport, (2006), Cycling and Traffic Calming.
	Available at: http://www.transport.qld.gov.au/resources/file/eb690b44342af49/B8_Cycling_and_traffic_calming.pdf
	
	• Roads and Traffic Authority (2002), Guide to Traffic Generating Developments, Version 2.2.
	Available at: http://www.shop.nsw.gov.au/pubdetails.jsp?publication=5838
	
	• Roads and Traffic Authority (2009) RTA Guide to Signs and Markings Reference Lists-Topics Summary.
	Available at: http://www.rta.nsw.gov.au/doingbusinesswithus/downloads/technicalmanuals/technicalmanuals_dl1.html
	
	• Roads and Traffic Authority (May 2009), Traffic Signal Design - Section 2 Warrants.

2.3 (a) Principle: Legibility

Knowledge of the local environment can provide the confidence to walk (or cycle) – the location of facilities and direct routes. Major developments, in their subdivision design, can ensure clarity in the local environment. Significant DAs can signpost local destinations, public transport stops/stations/timetables and direct occupants to walking/ cycling routes.

»» Cross-Cutting Advice: Wayfinding

What is it?
Why do it?

Wayfinding refers to the manner in which people orientate themselves in their physical environment and navigate from one place to another. It incorporates the processes of knowing where you are, where you are going to, the best way to get there, recognising when you have arrived at your destination and knowing how to leave the area. Wayfinding can also include indications of where people should *not* go.

Wayfinding systems should include information which allows users to:
- *Confirm they are at the correct start or finish point of an individual journey*
- *Identify their location within a building or an external space*
- *Reinforce they are travelling in the right direction*
- *Orient themselves within a building or an external space*
- *Understand the location and any potential hazards*
- *Identify their destination on arrival*
- *Escape safely in an emergency.*

Wayfinding elements can be delivered through architectural design as well as visual, audible and tactile communication elements. Wayfinding systems incorporate:
- Signage and signposting - including identification, information, directional and regulatory (safety). Signposting includes Public Domain markers such as tactile pads, colour coding, use of ideograms, permeable urban environments.
- Architecture – the layout of a building or a site, including the logical progression of spaces
- Landscape architecture (e.g paving, planting)
- Landmarks – internal and external
- Lighting
- Orientation points – providing consistent clues to assist users with spatial problem-solving.[12]

Effective design of spaces, including consistent cues, can facilitate spatial problem solving by individuals to navigate their way to, and through, a particular area. Measurement of way finding systems include how 'communicative elements' facilitate the process of getting from one place to another, as well as the overall use of a particular space. Places which are perceived as being safe, welcoming and enjoyable through effective wayfinding systems are likely to encourage a greater number of people to make more frequent active use of the area, including for recreational activities and as a walking or cycling route to a destination.

Good Practice

A) Digital Wayfinding touch-screen facilities which allow users to view information, maps, searchable business directories. Information can be downloaded to mobiles via Bluetooth.
Source: Apelt, R. (2008), "Wayfinding in the Built Environment", presented at the Facility Management Association of Australia (QLD) Branch July Breakfast, Brisbane, 23 July 2008.

B) Landmark (marker) wayfinding.

C) An information panel sign.
Source: Apelt, R. (2008), "Wayfinding in the Built Environment", presented at the Facility Management Association of Australia (QLD) Branch July Breakfast, Brisbane, 23 July 2008.
Available at: http://www.build.qld. gov.au/downloads/tdd/wayfinding_ guidelines_08.pdf

D) Directional signage within developments.

12. Apelt R, Crawford, J. and Hogan, D., of the Cooperative Research Centre for Construction Innovation (2007), Wayfinding Design Guidelines.

E) This identification sign allows users to identify their current location (through the "You are Here" symbol) and make decisions about how to reach their desired destination.

F) 'The Cows' at Stanhope Gardens provide both a cultural link to the area's former dairy farm use and act as a landmark and orientation point at the entry to the estate.
Source: Landcom Open Space Design Guidelines, page 31.

G) Landscape architecture - a clearly defined route marked by design features.
Source: Healthy Spaces and Places, photographer TPG Town Planning and Urban Design

H) Clearly defined walking opportunities designed to encourage active use of the space.
Source: Jillian Woolmer, City of Gosnells, All About Wayfinding in the City of Gosnells

I) An example of Tactile Ground Surface Indicators. The coloured, raised dots provide a marker or warning that there is a potential hazard ahead, such as stairs.
Source: Guide Dogs NSW/ACT

J) Royal North Shore Hospital – Before and after the implementation of a signage strategy.
Source: NSW Health, Strategic Procurement and Business Development Branch (2009), Technical 2 Series "Wayfinding for Health Facilities", published 25 June 2009.

Practical DA Level Issues to Consider	• Wayfinding Strategy. • Permeable layout and design. • Street and pathway location and orientation respond to local landmarks and interesting features and desired paths of travel, reinforcing local focal points. • Design embraces consistent themes to encourage user familiarity. • Pathways and junctions are well signposted.
Key Sources for Further Information	• Apelt, R. (2008), "Wayfinding in the Built Environment", presented at the Facility Management Association of Australia (QLD) Branch July Breakfast, Brisbane, 23 July 2008. Available at: http://www.build.qld.gov.au/downloads/tdd/wayfinding_guidelines_08.pdf • Apelt, R., Crawford, J. And Hogan, D., of the Cooperative Research Centre for Construction Innovation (2007), Wayfinding Design Guidelines. Available at: http://www.construction-innovation.info/index.php?id=1097 • Apelt, R., Crawford, J. And Hogan, D., of the Cooperative Research Centre for Construction Innovation (2007), Wayfinding System Audit. Available at: http://www.construction-innovation.info/images/pdfs/Publications/Industry_publications/CRC0001_CRC_Wayfinding_Audit.pdf • Australian Standards, (2002) AS 1428.4 – Tactile Indicators. Copies of specific Standards can be ordered from SAI Global Available at: http://infostore.saiglobal.com/store/ • Cooperative Research Centre for Construction Innovation (2007) Wayfinding in the Built Environment: Final Report Stages 2 & 3. Available at: http://www.construction-innovation.info/images/pdfs/Research_library/ResearchLibraryC/Final_reports/2004-028-C/2._Final_Report_-_Wayfinding_Stages_2__3.pdf • J.A. Grant and Associates (2006), Bendigo CBD: A Wayfinding Strategy and "Walkability" Report. Available at: http://www.bendigo.vic.gov.au/Files/BendigoCBDWayfindingStrategy.pdf • NSW Health, Strategic Procurement and Business Development Branch (2009), Technical 2 Series "Wayfinding for Health Facilities", published 25 June 2009. Available at: http://www.health.nsw.gov.au/policies/gl/2009/GL2009_010.html • Woolmer, J., City of Gosnells (2009) All About Wayfinding in the City of Gosnells. Available at: http://www.dpi.wa.gov.au/walking_wayfinding_seminar08.pdf

2.4 (a) Principle: Quality Public Domain

All private developments sit within, and are visible from, the public domain. Consideration of CPTED principles can provide safe walking and cycling environments (day and night). In addition, attractive streetscapes, with appropriate tree planting (and shading) can enhance and encourage the experience. Major developments can require such design, and significant DAs can contribute to overall CPTED strategies and the implementation of public domain plans.

Attractive destinations can act as a magnet for locals. Major developments can provide well-located and designed local/ regional open space, and community facilities for all ages and ethnicities. Significant DAs can contribute to the provision and upkeep of such facilities and clearly signpost their relative location. Local Council-level Plans of Management (compulsory for all "community land") should address these issues.

Cross-Cutting Advice: Safe & Clean Environments

What is it?
Why do it?

People are more likely to use an area, including as a route to a destination or for active recreation and leisure if they feel safe and perceive there is a low risk to their personal safety. Spaces which are well-designed and maintained and perceived as being safe, encourage active use. NSW guidelines[13] identify a number of urban design elements which encompass the four principles outlined below and need to be considered in the creation of safe environments:

- Lighting
- Natural surveillance and sightlines
- Signage building design
- Land use mix (eg. activation)
- Landscaping
- Spaces safe from entrapment; and
- Management and maintenance

The four key principles for evaluating an area are:

Territorial Re-enforcement
Use of actual or perceived boundaries or markers, legible spaces and indicators designed to create a connection with a particular space and encourage community ownership or guardianship of a particular place. Areas which are well cared for and where appropriate activities are undertaken are more likely to be used and create a sense of enjoyment.

Surveillance
Surveillance or supervision of an area can be:
- Natural – when other users of a space can view and be viewed by others.
- Technical / mechanical – such as CCTV cameras and help points.
- Formal or organised – such as security guards or other on-site supervisors

People are more likely to use and feel safe in an area when they are able to see and be seen by others. Areas which are well used, either by regular attendees (such as shop owners and neighbours) or visitors, facilitate higher levels of surveillance and deterrence from committing a crime in the area.

Access Control
Refers to the restriction, channelling and encouragement of both vehicles and people into, around and out of a particular place. Access controls can be in one or more of the following forms:
- Natural – effective use of landforms and waterways, design features (e.g. building layout), pathways, landscaping, gardens and fences
- Technical / mechanical - through the use of security hardware (eg alarms)
- Formal or organised – through on-site personnel such as security guards

Space Management
The use and safety of a space can be maximised through the supervision and management of the space, which ties in with territorial re-enforcement. NSW Police identify a high correlation between urban decay, fear of crime and avoidance behaviour. To encourage active use of an area as either a thoroughfare or space in its own right, an area should be well maintained and cared for, including the prompt removal of graffiti and repairing of damaged or decaying facilities.

13. NSW Police (2008), "Safer by Design".

A)) Carefully-located activities can assist in the supervision of public places.

Source: Healthy Spaces and Places, photographer TPG Town Planning and Urban Design

B) Natural surveillance is facilitated by clear sight-lines along pathways, with low-cut ground shrubs and trees with branches taller than 1.2 metres.

Source: Landcom Open Space Design Guidelines, page 5.

C) Well-light areas, particularly those adjoining residential developments, improve safety and encourage the use of spaces at night.

Source: Landcom Open Space Design Guidelines, page 33.

D) A mobile café on the boundary of a public park encourages activated use of the area. Activated use of boundaries encourage people to frequent the area.

E) Bus stops should be located adjacent to active land uses, particularly those that operate at night.

F) Pedestrian and cycling paths provided to connect areas of open space with other land uses.

G) Places should be well-maintained, including the prompt removal of graffiti.

H) Clear surveillance of pathways from nearby properties (including balconies) and an absence of entrapment or concealed areas.

MIXED COMMERCIAL & RESIDENTIAL USES

BIKE LANE

BUILDING TO DEFINE EDGE OF SPACE BESIDE ROAD

CAFE

OPEN SPACE

I) Effective land use mix promotes casual surveillance.

Source: Healthy Spaces & Places, TPG Town Planning & Urban Design

J) Well lit active street frontages support night time activity.

Source: Healthy Spaces and Places, photographer Pamela Miller

Practical DA Level Issues to Consider	Changes can be required to building design or landscaping elements to improve community safety outcomes. This should ideally occur during the design phase, however action can also be taken by conditions of approval. For example, measures could maximise visibility (eg viewing ports in doors, installation of convex security mirrors), remove potential entrapment and concealment spots (eg bringing forward building lines, installing gates, specifying required landscaping treatments), 'harden' buildings by requiring particular materials to be used during construction, specifying wayfinding elements, or the minimum lighting levels to be achieved in certain locations.
Key Sources for Further Information	• Australian Standards (20047-2007), Australian Standard 1158: Lighting for Roads and Public Spaces. Publications available for purchase from SAI Global at: http://infostore.saiglobal.com/store2/Details.aspx?ProductID=356100 • Department of Sustainability and Environment (Victoria), (2005), Activity Centre Design Guidelines. Available at: http://www.dse.vic.gov.au/CA256F310024B628/0/1F8224C16463B705CA2570130021078E/$File/Activity+Centre+Design+Guidelines.pdf • Department of Sustainability and Environment (Victoria), Safer Design Guidelines for Victoria. Available at: http://www.dse.vic.gov.au/dse/nrenpl.nsf/FID/-CA9798F0F6911DB3CA256DC200253417?OpenDocument • Department of Urban Affairs and Planning (2001), Crime Prevention and the Assessment of Development Applications – Guidelines Under Section 79C of the Environmental Planning and Assessment Act 1979. Available at: http://www.police.nsw.gov.au/__data/assets/pdf_file/0003/9390/duapguide_s79c.pdf • Landcom (2008) Open Space Design Guidelines. Available at: http://www.landcom.nsw.gov.au/downloads/uploaded/2008_Open_Spaces_Design_Guidelines_4a54.pdf • McCamley, P. (2001), "Crime, Design and Urban Planning: From Theory to Practice", New Planner, Royal Australian Planning Institute. Available at: http://amwac.health.nsw.gov.au/public-health/health-promotion/injury-prevention/safe-communities/pdf/crime_design.pdf • NSW Police (2008), "Safer By Design". Available on the NSW Police website, at: http://www.police.nsw.gov.au/community_issues/crime_prevention/safer_by_design • Sarkissian Associates Planners (in Collaboration with ACT Planning and Land Management) (2000), ACT Crime Prevention and Urban Design Resource Manual. Available at: http://apps.actpla.act.gov.au/tplan/planning_register/register_docs/resmanual.pdf • Statewide Mutual (2009), Best Practice Manual - Footpaths, Nature Strips and Medians. Contact Statewide Mutual for a copy of the document by visiting: http://www.statewide.nsw.gov.au

2.4 (b) Principle: Quality Public Domain

Cross-Cutting Advice: Quality Open Spaces

What is it?
Why do it?

Open space can include land that is held both publicly or privately which the public has access to and is encouraged to use. Importantly, this includes streets and urban plazas, in addition to parks. The presence of multi-purpose open space encourages Active Living by facilitating both active and passive use of a place. Use of open space can also be increased if it adjoins or is within close proximity to other land uses, such as residential dwellings, employment or public transport services. Pedestrian and cycle networks along and through public open spaces also encourages use of these areas as part of active travel to a destination or specifically for recreational purposes.

Open Space should be -
- accessible;
- adaptable, allowing for a variety of uses, both now and to which it can also be adapted over time;
- integrated with/ connected to the surrounding network;
- activated/ integrated with other land uses;
- safe; and
- comfortable and engaging, providing a setting for socialisation as well as physical activity.

Consideration should be given to the nature of the open space, that is whether it is to be classified as a district or neighbourhood space, as well as the purpose for which it will be used (eg. active/passive), in determining both its size and required features. Councils' Section 94 and 94A Plans generally contain details regarding the provision of open space at a district / neighbourhood level.

Quality open space requires the presence and maintenance of amenities/ facilities for use by individuals and groups of different ages and levels of mobility. These facilities can be similar to those outlined in the Cross-Cutting Initiative "Comfort of Walkers" and can include, but are not limited to:
- Shading
- Seating / Tables
- Accessible toilets
- Bubblers / water fountains
- Children's active facilities (play space)
- Recreational facilities (e.g. basketball courts, walking paths)

Co-location of various activities should be well managed (eg. dog walking areas).

The quality of open space, and therefore its level of use, can be affected by its perceived level of safety during both the day and evening. Close attention should be paid to ensuring that crime prevention principles are considered for open space – surveillance, territorial reinforcement, access control and space management. Further information about these principles is contained in the Cross-Cutting Initiative "Safe and Clean Environments". These principles can be implemented through factors such as:
- Quality lighting
- Natural surveillance (e.g. through buildings facing onto areas of open space)
- Clear sight-lines

Natural surveillance can also be achieved by enabling activated use of both open space and adjoining land uses, such as the presence of restaurants, cafés and child care facilities.

Good Practice

A) Pedestrian and cycling paths provided to connect areas of open space with other land uses.

B) Tracks accessible to a range of users.

C) Adequate open space needs to be incorporated into masterplanned mixed use developments.

D) Pedestrian and cycling paths provided to connect areas of open space with other land uses.

E)Urban squares which are welcoming and activated encouraging social interaction.

F) Places to stop, rest and socialise.

G) Houses overlooking parks provide natural surveillance of the area.

H) Activated and stimulating urban plazas.

Source: Healthy Spaces and Places, photographer Planning Institute of Australia.

I) Provision of a sufficient amount of seating in shaded areas.

J) A variety of equipment in areas of public open space to cater to different age groups – a toy train for younger children near tennis courts designed for older children and adults.

K) Provision of well-designed and maintained facilities to encourage both active and passive use of public open space.

L) Fitness equipment adds a purposeful use to open space.

Practical DA Level Issues to Consider	• The NSW Growth Centres Development Code[14] suggests that a district park be available within two kilometres, and a neighbourhood park within 400 metres of residential lands.
	
	 • Dedication of land or embellishment of existing open space.
	
	 • Disability Discrimination Act compliance.
	
	 • Consider ongoing costs and finanacial viability when determinining the number and type of facilities to co-locate.
	
	 • Designed to maximise safety of users (see Section 2.5(A)).
	
	 • Extension of networks and corridors.
	
	 • Quality is more important than simple size however. Suggestions to achieve high quality open space include:
	   • Provision of generous, purposeful and well-defined public spaces
	   • Inclusion of elements which are engaging, encouraging and convenient for use
	   • Consideration of landscaping which contributes positively to the quality of the space
	   • Provision of conveniences for public comfort
	   • Considerations to maintain the quality of the space[15]

Key Sources for Further Information	• Department of Sustainability and Environment (Victoria), (2005), Activity Centre Design Guidelines. Available at: http://www.dse.vic.gov.au/CA256F310024B628/0/1F8224C16463B705CA2570130021078E/$File/Activity+Centre+Design +Guidelines.pdf • Landcom (2008), Open Space Design Guidelines. Available at: http://www.landcom.nsw.gov.au/downloads/uploaded/2008_Open_Spaces_Design_Guidelines_4a54.pdf • NSW Government (1998), Residential Subdivision - A handbook for the design and planning of new residential neighbourhoods. • NSW Government (1998), Better Urban Living - Guidelines for Urban Housing in NSW • NSW Government (1998), Neighbourhood Character - An urban design approach for identifying neighbourhood character • Premier's Council for Active Living (2009), Case Study: Cities, towns, neighbourhoods: Nelson's Ridge. Available at: http://www.pcal.nsw.gov.au/case_studies/nelsons_ridge • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes – Fernleigh. Available at: http://www.pcal.nsw.gov.au/case_studies/fernleigh • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes – West Wyalong. Available at: http://www.pcal.nsw.gov.au/case_studies/west_wyalong/design_process • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes –Coastal Cycleways. Available at: http://www.pcal.nsw.gov.au/case_studies/coastal_cycle_way • Premier's Council for Active Living (2009), Case Study: Open Space – Blayney Heritage Park. Available at: http://www.pcal.nsw.gov.au/case_studies/blayney_heritage_park • Premier's Council for Active Living (2009), Case Study: Open Space – Warriewood Valley. Available at: http://www.pcal.nsw.gov.au/case_studies/warriewood_valley • Premier's Council for Active Living (2009), Designing Places for Active Living – Open Spaces. Available at: http://www.pcal.nsw.gov.au/planning_and_design_guidelines/open_spaces

14. NSW Growth Centres Commission, (October 2006), NSW Growth Centres Development Code.
15. Department of Sustainability and Environment (Victoria), (2005), Activity Centre Design Guidelines.

2.4 (c) Principle: Quality Public Domain

Cross-Cutting Advice: Welcoming, Activated & Stimulating Places

What is it?
Why do it?

Places which are welcoming, activated and stimulating are more likely to be used. Such places are likely to contain elements which are perceived by users as:

- Safe during the day and evening – through well-lit and maintained facilities, the presence of other people, some form of surveillance (natural, technical or formal) and an absence of potential risk (e.g. no concealed areas or possible entrapment);

- Activated - the presence of activity generators, such as a café at the boundary of a park;

- Adequately serviced – the presence of footpaths, shade, water fountains, toilets, shops, transport options etc. which are appropriate for a particular place;

- Accessible – both physically, financially and via active forms of transport (e.g. public transport, walking or cycling) for people of different ages from different socio-economic backgrounds and with varying degrees of mobility;

- Connected – either en route or in close proximity to other places such as shops, places of work or schools; and

- Stimulating and enjoyable – a place which engages multiple senses of its users:
  - Sights (e.g. aesthetically pleasing and interesting natural, historical, artistic, landmark or other interpretive elements)
  - Sounds (natural, mechanical or from other users)
  - Smells (including from both natural sources and nearby facilities, such as a café)
  - Tactile elements – including items which encourage learning and imaginative play.

Design guidelines can be incorporated into a development to enhance its attractiveness. Landcom[16] identifies the following measures which can enhance the meaningfulness of a particular place:

- Access to and integration of significant physical geographic features which have environmental value in the area (e.g. bodies of water)
- Conservation and integration of historical and heritage features
- The use of the landscape, public art and interpretive mechanisms such as signage to explain the significance or history of a place
- Design of spaces which stimulates imaginative play
- Optimisation of the sensory experience for users
- Facilitation of community-based events.

Good Practice

A) Unusual and stimulating items added to the streetscape can encourage active play by children of varying ages.
Source: Healthy Spaces and Places, photographer Planning Institute of Australia

B) Features which incorporate aspects of the place's heritage or environment can also be a source of imaginative play.
Source: Healthy Spaces and Places, photographer SGS Economics and Planning

C) Public art which reflects the history, cultural heritage and features of the local area.
Source: Healthy Spaces and Places, photographer SGS Economics and Planning

16. Landcom (2008), Open Space Design Guidelines.

D) Areas which contain equipment encourage active play amongst children.

E) Public art can be incorporated into footpath design. Footpath detailing also conveys the impression that pedestrians matter.

F) Landscaping plays a significant role in creating an attractive and welcoming place.

G) Shaded picnic tables along walking and cycling tracks.

H) A giant chess board under a shaded area facilitates a stimulating environment for a variety of ages.

Practical DA Level Issues to Consider	Welcoming, activated and stimulating places can be developed through: • The integration of mixed land uses • Streetscape design that encourages activity • Maintenance of public spaces • Street frontages that enhance the aesthetics and amenity of public spaces • Physical accessibility of a place and its associated facilities
Key Sources for Further Information	• Australian Local Government Association, National Heart Foundation of Australia, Planning Institute of Australia (2009), Healthy Spaces and Places: A National Guide to Designing Places for Healthy Living. Available at: http://www.healthyplaces.org.au/userfiles/file/HS&P%20An%20overview.pdf • Cancer Council (1998), Under Cover: Guidelines for Shade Planning and Design. Available at: http://www.cancercouncil.com.au/editorial.asp?pageid=2326, or by contacting the Cancer Council on 02 9334 1900. • Cancer Council (2001), Shade for Outdoor Sport and Recreation. Available at: http://www.cancercouncil.com.au/editorial.asp?pageid=2326, or by contacting the Cancer Council on 02 9334 1900. • Cancer Council (2009), The Shade Handbook. Available at: http://www.cancercouncil.com.au/editorial.asp?pageid=2326 • David Lock Associates and City of Greater Geelong (2008), "Clause 56 Walkability Toolkit: Making walking preferable, not just possible." Available at: http://www.geelongcity.vic.gov.au/ct/documents/item/8cbc6ecfe6db7e1.aspx • Department of Sustainability and Environment (Victoria), (2005), Activity Centre Design Guidelines. Available at: http://www.dse.vic.gov.au/CA256F310024B628/0/1F8224C16463B705CA2570130021078E/$File/Activity+Centre+Design+Guidelines.pdf • Landcom (2008), Open Space Design Guidelines. Available at: http://www.landcom.nsw.gov.au/downloads/uploaded/2008_Open_Spaces_Design_Guidelines_4a54.pdf • Landcom (2008), Street Design Guidelines. Available at: http://www.landcom.com/downloads/file/forpartners/StreetDesignGuidelines.pdf • NSW Government (2004), Planning Guidelines for Walking and Cycling Available at: http://www.planning.nsw.gov.au/plansforaction/pdf/guide_pages.pdf • Premier's Council for Active Living (2009), Case Study: Open Space – Blayney Heritage Park. Available at: http://www.pcal.nsw.gov.au/case_studies/blayney_heritage_park • Premier's Council for Active Living (2009), Case Study: Walking and Cycling Routes – Coastal Cycleway. Available at: http://www.pcal.nsw.gov.au/case_studies/coastal_cycle_way • Premier's Council for Active Living (2009), Case Study: Walking and Cycling – West Wyalong. Available at: http://www.pcal.nsw.gov.au/case_studies/west_wyalong/design_process

2.5 (a) Principle: Social Interaction & Inclusion

All development proposals interface with the public domain – streets, laneways, open space. Active street frontages in activity areas, and openly addressing the street in residential environments can promote social interaction (and safety).

All development proposals have some form of on-site open space for occupants/ users (possibly on rooftops). In addition, communal areas with a range of facilities can promote activity.

Cross-Cutting Advice: On-Site Communal Open or Public Space

|	
What is it? Why do it?	Private open or pubic space provisions are shrinking and lifestyles are changing, with less time available to access public open space. Communal open space is a critical component of residential flat developments, providing opportunities for residents to engage in active lifestyles, either formally or informally, whether provided at ground level, on a podium or roof, on-site. The design and physical features provided impact on residents perception of the space and in turn their usage levels. Communal open space needs to - • be attractive, with features and landscaping which creates memorable spaces. Microclimate is a key factor in promoting use. Public art can be used to engage residents; • be usable, that is of an adequate size that allows a wide scope of activities and uses to occur; • be flexible, able to facilitate a range of recreational and social activities. This is particularly important as residents' tastes and composition will change over time. Its design should be appropriate to all ages, including families, elderly and the mobility impaired; • provide opportunities for informal socialisation, with particular consideration to the extent and orientation of seating and tables. • be conveniently located along key resident movement paths where it is highly visible, that is between the building entry and unit entries. It should be directly accessible to as many dwellings as possible; • be located to optimise solar access and minimise overshadowing; • be suitably screened to maintain privacy and amenity of units, whilst maintaining casual surveillance of the space; and • be low maintenance.
Practical DA Level Issues to Consider	• Minimum dimension not less than 4m and 25m^2 in size.[17] • Provide a range of equipment, including playground equipment. • Provide a range of facilities. Typically, this can include a swimming pool, gym, tennis court, garden/ BBQ area, community garden/ composting. • The amount of communal open space required may decrease as the developments Floor Space Ratio increases in high density areas. Generally, a minimum of 10m^2 of communal open space per one bedroom dwelling is provided, increasing as the number of bedrooms increases to 25-30% of site area. • Primarily provided at ground level. • Ventilation ducts for basement car parking located unobtrusively and should not adversely impact on the space. • Optimise solar access and visual privacy.
Key Sources for Further Information	• NSW Government (2002) Residential Flat Design Code: Tools for improving the design of residential flat buildings.

Good Practice

A) On site facilities provide the opportunity for recreation & socialisation
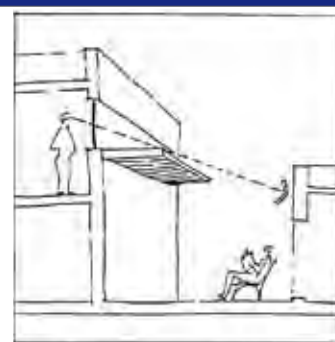
B) Awnings and pergolas prevent overlooking of lower outdoor areas
Source: Department of Urban Affairs and Planning and NSW Government Architect (1998), Better Urban Living: Guidelines for urban housing in NSW.

17. NSW Government (2002), Residential Flat Design Code: Tools for improving the design of residential flat buildings.

2.5 (b) Principle: Social Interaction & Inclusion

	Cross-Cutting Advice: Accessibility

What is it?
Why do it?

Increasing the accessibility of both the natural and built environment for people of varying ages, abilities and mobility can be beneficial to increasing the level of peoples' activity, with positive health flow-on effects for both the individual and the wider community. Accessibility refers to the ability of people of different ages and backgrounds, levels of mobility and capabilities to enter, use and exit a particular environment. Accessibility needs to encompass the needs of people with:

- Sensory impairments
- mobility impairments
- dexterity impairments

In the built environment physical and psychological barriers to accessing spaces can be affected by the following:
- Irregular, uneven or broken surfaces
- Gradients or steps
- Lack of railings
- Lack of detectable surface textures
- Imperceptible kerb cuts (i.e. dropped kerbs)
- Door location
- Lack of crossing opportunities
- Traffic lights with long signal cycles
- Traffic lights without audible and/or easily visible pedestrian sequences
- Traffic hazards
- Pavement furniture
- Non-standard fixtures (e.g. shop front rails, baskets and stalls)
- Overhead obstructions (e.g. overhanging signs, cables, vegetation etc.)
- Inability to read visual cues (e.g. street signs)
- Lack of cues (e.g. open space)
- Distance
- Crowds of people
- Weather[18]

The Centre for Universal Design[19] has produced Seven Principles of Universal Design which are intended to assist in the "design of products and environments to be useable by all people, to the greatest extent possible, without the need for adaptation or specialised design". The Seven Universal Design Principles are:

1. Equitable Use - The design is useful and marketable to people with diverse abilities.
2. Flexibility in use - The design accommodates a wide range of individual preferences and abilities.
3. Simple and Intuitive Use - Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.
4. Perceptible Information - The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.
5. Tolerance for error - The design minimizes hazards and the adverse consequences of accidental or unintended actions.
6. Low physical effort - The design can be used efficiently and comfortably and with a minimum of fatigue.
7. Size and space for approach and use - Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.

In addition, accessibility can be improved through the use of wayfinding elements, particularly for those with visual and auditory disabilities.[20]

18. Gollege, R.G and Stimpson, R.J (1997), P.493, cited in Jackson, R.D (1998) "Cognitive Mapping Without Sight: Four Preliminary studies of spatial learning". Journal of Environmental Psychology, Vol 18, pp.289-305.
19. Centre for Universal Design (1997), "Seven Principles of Universal Design" (Version 2.0)
20. See footnote 12

Good Practice

A) Footpath ramps facilitate access for wheelchairs, walking frames and scooters.

B) Flat gradients provide access for all users.

C) Upgrading of pathways to enable access by users of different ages and levels of mobility.

Practical DA Level Issues to Consider	• For development proposals, accessibility is currently addressed in the Building Code of Australia (BCA).[21] • Compliance with basic pysical access provisions is required when planning and implementing development projects.[22] • The Draft Disability Standard[23] specifies how the objectives of the Commonwealth Disability Discrimination Act are to be achieved in providing accessible premises. These technical design and construction requirements will become equivalent to those in the BCA. • Building and dwelling entry's are level. • A level or gently sloping wheelchair accessible path provides easy access from the road to dwelling entries and amenities in accordance with AS1428.1. • Compliance with pathway and doorway accessibility standards (adequate width and gradients, provision for a turning wheelchair, etc). Pathway minimum width of 1.5m with passing areas of 1.8m. • Wayfinding signage. • Wheelchair access to communal areas. • Adequate lighting levels (min 10lux). • Paths clear of obstructions.
Key Sources for Further Information	• Apelt, R., Crawford, J. And Hogan, D., of the Cooperative Research Centre for Construction Innovation (2007), Wayfinding Design Guidelines. Available at: http://www.construction-innovation.info/index.php?id=1097. • Australian Standards - There are various Australian Standards relevant to pedestrian infrastructure and facilities. Information can be obtained from the Standards Australia website (www.standards.org.au) and copies of specific Standards can be ordered from SAI Global (http://infostore.saiglobal.com/store/) Key documents include: - AS 1428.1 - (Design for access and mobility - General requirements for access - New building work) - AS 1428.2 – (Enhanced and additional requirements - Buildings and facilities) - AS 1428.3 – (Requirements for children and adolescents with physical disabilities) - AS 1428.4 – (Tactile Ground Surface Indicators) - AS 1735.12 - (Lift facilities for persons with disabilities) AS 2890.1 - (Car Parking) • Building Code of Australia (BCA) (2009) Part D3. Available at: http://www.abcb.gov.au • Centre for Universal Design. Available at: http://www.design.ncsu.edu/cud/about_ud/udprinciples.htm and in text form at http://www.design.ncsu.edu/cud/about_ud/udprinciplestext.htm and in poster format at: http://www.design.ncsu.edu/cud/pubs_p/docs/poster.pdf • Commonwealth Government (2009), Draft Disability (Access to Premises – Buildings) Standards 2009. Available at: http://www.ag.gov.au/premisesstandards • Disability Discrimination Act (DDA) 1992 (Commonwealth). Available at: http://www.comlaw.gov.au/comlaw/management.nsf/lookupindexpagesbyid/IP200401406?OpenDocument • Golledge, R.G. and Stimpson, R.J. (1997), p. 493, cited in Jackson, R.D. (1998), "Cognitive Mapping without sight: Four preliminary studies of spatial learning", Journal of Environmental Psychology, Volume 18, pp. 289-305. • NSW Government (2004), State Environmental Planning Policy (Housing for Seniors or People with a Disability). Available from the NSW legislation website by ticking "EPI" during a search at www.legislation.nsw.gov.au • NSW Government (2004), Planning Guidelines for Walking and Cycling Available at: http://www.planning.nsw.gov.au/plansforaction/pdf/guide_pages.pdf • NSW Health Facility Guidelines Available at: http://www.healthfacilityguidelines.com.au/guidelines.htm • Statewide Mutual (2009), Best Practice Manual - Footpaths, Nature Strips and Medians Available at: http://www.statewide.nsw.gov.au/doc/footpath.doc

21. Building Code of Australia (BCA) (2009) Part D3.
22. Australian Standards (2001), AS1428.1 - Design for access and mobility Part 1: General requirements for access - New building work.
23. Commonwealth Government (2009), Draft Disability (Access to Premises - Buildings) Standard.

Part 3:
Matters for Consideration in Development Assessment

Many of the Active Living initiatives, which can be implemented at the project level, are common to all types of development for which planning approval is sought.

Accordingly, Cross-Cutting Advice for all Development Types is provided in Part 2 under each Active Living Principle.

In each Development Type Table in Part 3, icons have been included to direct readers to relevant Cross-Cutting Advice summarised in Part 2.

Figure 6 references the Cross-Cutting Advice icons.

Cross-Cutting Advice		
Principle - Walkability & Connectivity		**Pg**
	Comfort of Walkers	11
	Connectivity	13
Principle - Active Travel Alternatives		
	End-of-Trip Facilities	15
	Transport & Travel Planning	17
	Traffic Management	19
Principle - Legibility		
	Wayfinding	21
Principle - Quality Public Domain		
	Safe & Clean Environments	23
	Quality Open Spaces	25
	Welcoming, Activated & Stimulating Places	27
Principle - Social Interaction & Inclusion		
	On-site Communal Open or Public Space	29
	Accessibility	31

Figure 6. Cross-Cutting Advice Icons

3.1 Development Type: Subdivision

DA Level Issues - Matters for Consideration	Design & Siting Advice
	Active Living Principle - Walkability & Connectivity
Walking Is Convenient, Safe And Attractive	• Footpaths are provided at all street frontages, preferably double sided. • Pedestrian crossings and other aids for crossing streets are incorporated, where required (eg refuges, raised table tops at street crossings). • Locating dwellings within 800m[24] of schools encourages children to walk or cycle to school. • Dwellings within walking distance (400m)[25/26] of local retail, commercial and community services, open space, schools, and public transport encourage walking. The development's layout should be based on walkable catchments.
Streets And Pathways Integrate New Development With The Adjoining Urban Structure To Improve Connectivity And Reduce Local Travel Distances	• Streets and pathways connect logically to existing vehicle, pedestrian and cycle networks and do not simply stop at the site boundary. • Streets and pathways provide a direct choice of routes leading to local destinations and focal points (such as shops, schools, parks and public transport stops). • Routes are continuous and direct, with active frontages. • Open space corridors are created between surrounding areas and link to regional open space. Open space links with key attractors.
	Active Living Principle - Active Travel Alternatives
Promotes Active Forms Of Transport As A Means Of Access From Surrounding Areas	• Prioritisation of pedestrians and cyclists over vehicular access routes. • Vehicular speeds appropriately managed through the design and layout of streets and intersections.[27] • Dedicated cycle lanes provided on high volume roads. • Cyclists and pedestrians are separated on major routes to avoid conflict. • Roundabouts are minimised as an intersection treatment, due to their negative effect on pedestrians. • Staging plans provide adequate walking and cycling infrastructure at the development's outset to encourage use, and deter the development of car-dependent communities (for example, the development of an 'attractive route' to walk).
Public Transport Is Available And Accessible	• Major streets designed to accommodate a bus route. • Bus stops and railway stations provided at regular distances to enable all dwellings to be located within walking distance (400m & 800m respectively)[28] along a connected pathway. • Neighbourhood centres aligned within corridors to support high frequency public transport services.
Reduce The Need To Travel, Particularly By Car	• Mix of housing, employment, services and public facilities provided in accessible centres to meet resident needs and increase the local employment base. • Residential densities near public transport corridors and service nodes maximised appropriately. • Opportunities provided to work locally.
	Active Living Principle – Legibility
Streetscape And Pedestrian Environment Are Recognisable And Coherent	• Design embraces consistent themes to encourage user familiarity (the development's design statement and proposed planning controls define a coherent local identity and character). • Street and pathway location and orientation respond to local landmarks and interesting features and desired paths of travel, reinforcing local focal points. • Design promotes open space as a feature of its layout and orientation. • Streets are of a grid layout, with a regular block structure and smaller block sizes, providing a permeable block structure to increase legibility, accessibility and reduce travel distances. Cul-de-sacs are minimised.
Residents And Visitors Are Informed About Local Services And Networks	• Wayfinding Strategy (for larger scale developments)
	Active Living Principle - Quality Public Domain
Welcoming, Activated And Stimulating Places	• Streetscapes are attractive and welcoming. • Street frontages are active and lively, with a mix of land uses. Active land uses adjoin or habitable rooms overlook the public domain (eg dwellings address the street, with garages located to the rear of lots). • Landscape design creates an attractive and distinct identity (via street trees, landscape elements and street furniture). • A Public Domain Plan prepared (for larger subdivisions). • Footpaths are landscaped for shelter and shade. • Inclusion of public art and cultural facilities, incorproating opportunities for children's play across age groups and interactive public art.

24. Burke M. & Brown A. L. (2007) 'Active Transport in Brisbane: How much is happening and what are its characteristics?' Urban Research Program, Griffith University.
25. Commonwealth Department of Housing and Regional Development (1995), AMCORD: A National Resource Document for Residential Development(and companion document AMCORD practice notes).
26. NSW Government (2009), State Environmental Planning Policy (Affordable Rental Housing).
27. Austroads (2006), Pedestrian - Cyclist Conflict Minimisation on Shared Paths and Footpaths AP-R287/06
28. NSW Department of Urban Affairs and Planning (2001), Improving Transport Choice -Guidelines for Planning and Development.

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| Comfort of Walkers | Connectivity | End-of-Trip Facilities | Transport & Travel Planning | Traffic Management | Wayfinding | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design & Siting Advice
	Active Living Principle – Quality Public Domain (continued)
Welcoming, Activated And Stimulating Places (continued)	• Existing mature trees retained wherever possible. • Active Living Principles incorporated into any Building Design Guidelines approved to guide the future development of the subdivision.
Access To Usable Open Space, With Facilities For All Ages, Abilities And Ethnicities	• Adequate levels of useable open space available should be within 400m of all dwellings.[29] 🌳 • Open space is located in prominent and accessible locations (rather than as 'space left over in planning'). 🌳 • Masterplan respects natural features in its allocation of open space, incorporating them as assets (eg drainage swales). • A range of active and passive, formal and informal open space and recreation facilities is provided. • The size, layout and facilities within open spaces are capable of accommodating a variety of uses which reflect the likely demography and social needs of residents.[30] • Open spaces activated with non-residential land uses (eg cafe). • Open space is bounded by streets, and is not backed onto by dwellings.
Promotes A Safe Community	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). 👁 • Safe pedestrian and cyclist routes provided through the subdivision (eg well lit with high levels of natural surveillance). • Active land uses adjoin or habitable rooms overlook the public domain. • Design minimises conflict between pedestrians, cyclists and vehicles. 🚗 The speed of vehicles should be controlled through the fundamental design of the development, rather than by relying on retrofitting traffic calming devices. For example, narrower road widths, tightended intersections, shorter straight lengths. • Street frontages are activated and overlooked by habitable rooms, instead of high walls and garage doors. Balconies overlook the street. • Land uses are proposed which are utilised and activated (and therefore safeguarded) by the local community at nights and weekends. This can involve businesses as well as community facilities (such as recreation resources). 🔥 • Visibility between vehicles and pedestrians/ cyclists, particularly at intersections, maintained.
	Active Living Principle – Social Interaction & Inclusion
Access To Facilities Which Satisfy Residents' Social, Cultural, Recreation And Health Needs	• Streetscapes are attractive and welcoming. 🤝 • Street frontages are active and lively, with a mix of land uses. Active land uses adjoin or habitable rooms overlook the public domain (eg dwellings address the street, with garages located to the rear of lots). • Landscape design creates an attractive and distinct identity (via street trees, landscape elements and street furniture). • A Public Domain Plan prepared (for larger subdivisions). • Footpaths are landscaped for shelter and shade. ⋀ • Inclusion of public art and cultural facilities, incorporating opportunities for children's play and interactive public art. • Existing mature trees retained wherever possible. 🪑 • Active Living Principles incorporated into any Building Design Guidelines approved to guide the future development of the subdivision.
Barrier Free Movement And Entry	• Open space and recreation facilities are designed to provide for all abilities. 🌳 ♿

29. See footnote 14.
30. See footnote 16.

Good Practice

A) A 'grid' formation of street layouts allows direct access and multiple routes for walking and cycling.

B) A street layout comprising multiple cul-de-sacs limits direct access, discouraging walking and cycling to undertake relatively short trips, in favour of using a motor vehicle.

C) Playgrounds provided along corridors

D) Walking and cycling are perceived as convenient, safe and attractive within the subdivision, which is assisted by smooth footpaths on both sides of the street.

E) Adequate open space needs to be incorporated into new subdivisions. A focal point such as a pond and garden with clear paths running through the subdivision to provide easy access to the area.

F) Seating and bike racks included along path networks encourage active travel within and through the subdivision.
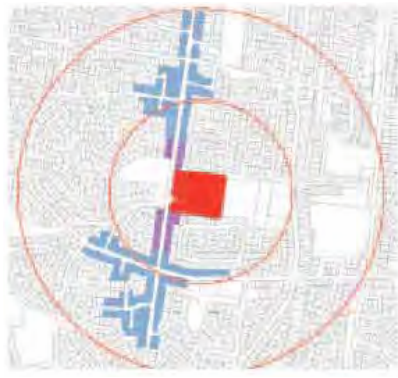
G) The integration of mixed land uses such as residential, open space and neighbourhood commercial outlets into a compact subdivision allows people to walk and cycle shorter distances and undertake multiple activities within the one trip.

Source: NSW Government (2004), Planning Guidelines for Walking and Cycling

3.2 (a) Development Type: Residential - Medium Density, Multi-Unit Development, Residential Flat Buildings, And Tourism Accommodation

DA Level Issues - Matters for Consideration	Design & Siting Advice
	Active Living Principle - Walkability & Connectivity
Direct And Convenient Access Is Provided To The Street	• Multiple access points are provided into buildings as well as through any internal open spaces. • Car park entries are discrete and separated from pedestrian entries.
Movement Past And Through The Site Is Facilitated	• Footpaths are provided at all street frontages. • Through-site links provided, where appropriate, to reflect the adjoining street and pathway network. • Appropriate cycle and pedestrian pathway design and materials. • Movement paths are unobstructed (eg location of street plantings, outdoor cafés). • Footpaths are not diverted or shared to accommodate vehicle entries. (i.e. their design is not compromised) • Pedestrian crossings are incorporated, where required.
Pathways Connect Logically To The Existing Pedestrian, Cycle And Public Domain Network	• Pathways connect logically to the existing pedestrian and cycle network. • Connections to the pathway network are convenient and accessible. • Pathways provide a choice of routes leading to local destinations and focal points (such as shops, schools, parks and public transport stops). • Routes are continuous and direct. • Traffic Management Plan (TMP) prepared, which maintains pedestrian and cyclist connectivity during construction.
	Active Living Principle - Active Travel Alternatives
Promotes Active Forms Of Transport As A Means Of Access From Surrounding Areas	• Prioritisation of pedestrians and cyclists over vehicular access routes. • Reduction in off-street parking supply in areas with good accessibility to public transport.[31] • Allocation of car parking spaces to a commercial car share service (in large developments). • Design of access to have regard to vehicular speed.
Public Transport Is Available And Accessible	• Provision or upgrading of bus stops along the street frontage with shelter and seating (where site is adjacent to a bus route). • Active frontages are provided adjacent to any bus stops. • Directional signage which identifies the location of and distance to public transport stops and cycleways. • Appropriate end-of-trip facilities such as on-street cycle racks for visitors (and customers of mixed use businesses), as well as carpark cycle storage for residents. • Mix of land uses provided on activity streets to meet resident needs and increase the local employment base.
Supportive Facilities Available Reduce The Need To Travel, Particularly By Car	• Mix of land uses provided on activity streets to meet resident needs and increase the local employment base.
	Active Living Principle - Legibility
Streetscape And Pedestrian Environment Are Recognisable And Coherent	• Design embraces consistent themes to encourage user familiarity. • Pathways are readily identifiable. • Pathway location and orientation respond to local landmarks and interesting features and desired paths of travel.
Residents And Visitors Are Informed About Local Services And Networks	• Wayfinding Strategy. • Pathways and junctions are well signposted, including locality maps. • Locality map fixed in building lobby and common areas, identifying safe and direct pathway routes leading to local destinations and focal points. • Signage displays walking times to nearby destinations as well as physical distances.
	Active Living Principle - Quality Public Domain
Welcoming, Activated And Stimulating Places	• Building form contributes to the character of the streetscape. Blank walls, including within car parking areas, are avoided. • Buildings are designed to address adjoining streets and pathways. • Footpaths are landscaped for shelter and shade. • Seating is provided in appropriate places (internally and externally), sheltered and shaded. • Inclusion of public art and cultural facilities, incorporating opportunities for children's play and interactive public art. • Existing mature trees retained wherever possible.
A Frontage Which Is Activated	• Street frontages are active and lively, with a mix of land uses where possible. • Ground floor dwellings are accessible from the street. • Non-residential land uses are co-located in focal points in places of high accessibility.

31. City of Sydney (2004), Review of Parking Controls for New Development. Available at: http://www.cityofsydney.nsw.gov.au/Council/documents/meetings/2004/cosc_cm_mc2_pdtc_260704_item5.pdf

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| Comfort of Walkers | Connectivity | End-of-Trip Facilities | Transport & Travel Planning | Traffic Management | Wayfinding | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design & Siting Advice
	Active Living Principle – Social Interaction & Inclusion
Access To Usable Open Space, With Facilities For All Ages, Abilities And Ethnicities	• Appropriate and attractive communal spaces for socialisation and activity (eg central courtyard, communal gardens). • The size, layout and facilities within communal spaces are capable of accommodating the proposed uses and reflect the likely demography and social needs of residents. • Communal spaces are shaded in summer and have protected sunny areas in winter. • Location of useable 'green' open space available within a short walk and included in locality map. • Publicly accessible internal plazas and arcades provided. • Communal spaces activated with non-residential land uses (eg retail, kiosk, cafe).
Promotes A Safe Community	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). • Active land uses adjoin or habitable rooms overlook the public domain. • Clear pedestrian sightlines provided - along pathways, from building entries, and from communal spaces. Landscaping does not obstruct pedestrian sight lines. • Design or landscaping does not provide places for concealment or entrapment (eg recessed features). • Building entries prominently located, clearly demarcated, and positioned to maximise casual surveillance. Residential entries are separated from those of other land uses. Shared entries serve only a small number of dwellings. • Well-lit public domain.[32] • Design minimises conflict between pedestrians, cyclists and vehicles. • Safe pedestrian and cyclist routes provided along frontages and through the site.
	Active Living Principle – Social Interaction & Inclusion
Opportunities To Interact Access To Facilities Which Satisfy Residents' Social, Cultural, Recreation And Health Needs	• Where possible, on-site communal areas and provision of social infrastructure to meet resident needs (eg a community garden, rooftop/podium terrace). • Mix of land uses provided which meet resident needs and increase the local employment base. Street level retail uses include cafes. • Provision of visually interesting, safe places to stop and rest - internally and along frontages. • Social, health and retail facilities encourage walking when available within 300 - 400 metres.[33]
Barrier Free Movement And Entry	• Compliance with Disability Discrimination Act (DDA) and Accessibility Standards (demonstrated by an Accessibility Assessment). • Pathways incorporate regular texture changes to assist the visually impaired.

Good Practice

A) Active ground floor uses which meet local need.

B) Provide facilities for the comfort of walkers.

C) Attention paid to the interface of the building with the street (articulation of façade, habitable rooms overlook the street). Street trees provide shade and character. Entries demarcate private and public space. Car parking spaces are buffered within landscaped areas. Pathways are clearly identifiable and unobstructed.

D) Create inclusive spaces, where accessibility measures are incorporated, rather than requiring wide detours to out of the way locations.

E) Provide on-street cycle parking near active frontages.

F) Places to stop, rest and socialise incorporated into landscaping leaving movement paths unobstructed.

32. Australian Standards (2004 - 2007), AS1158 - Lighting for Roads and Public Spaces.
33. See footnote 24.

🌳 Quality Open Spaces　　🤝 Welcoming, Activated and Stimulating Places　　🪑 On-site Open or Public Space　　♿ Accessibility

DA Level Issues - Matters for Consideration	Design & Siting Advice
	Active Living Principle - Walkability & Connectivity
Direct And Convenient Access Is Provided To The Street	• All entrances (to buildings and each dwelling) are well-lit and covered so that they are dry and safe. • Building and dwelling thresholds are level so that access from outside to inside is level. • A level or gently sloping path provides easy access from the street to dwelling entry points.[34]
Movement Past And Through The Site Is Facilitated	• Compliance with pathway and doorway accessibility standards (adequate width and gradients, provision for a turning wheelchair, etc).[35] • Movement paths are barrier free. That is, no potential blockages such as landscaping (which could grow to obstruct paths with low hanging branches) or parked cars (illegally or legally). • Footpaths are provided at all street frontages. Streets adjoining the site have footpaths on both sides.[36] • Pathway materials specified are non-slip materials without trip hazards, to ensure appropriate design for the frail-aged or people with disability. • Pathways and stairs (internal or external) are accessible to the ambulant disabled. This could involve including handrails/ grab rails, and appropriate stair design. • Public amenities (toilet facilities and water bubblers) provided within the context of the broader pathway network. • Safe street crossings provided (eg adequately timed lights, pedestrian refuges/ traffic-calming devices, disability access compliance, clearly marked intersections).
Pathways Connect Logically To The Existing Pedestrian, Cycle And Public Domain Network	• A safe and accessible pathway network connects to local destinations and focal points (such as shops, schools, parks and public transport stops).
	Active Living Principle - Active Travel Alternatives
Provides For Alternative Forms Of Transport For The Less Mobile	• Pathway widths accommodate mobility scooters.[37] • Mobility scooters parking bays allocated, both within the development and also near any on-site uses such as libraries or GPs.
Public Transport Is Available And Accessible. Transport Is Critical To Combating Social Isolation	• Provision or upgrading of bus stops along the street frontage with adequate shelter and seating. Bus stop connected to dwellings by accessible pathways. • On-street parking and boarding area allocated near the development's entry for Community Transport Buses. • Provision of on-site vehicle transport (village bus).
Reduce The Need To Travel, Particularly By Car	• Mix of land uses provided to meet resident needs (e.g. shops) and increase the local employment base.
	Active Living Principle - Legibility
Streetscape And Pedestrian Environment Are Recognisable And Coherent	• Accessible features incorporated in the public domain, such as tactile paving (utilised to demarcate paths and alert people with vision impairments to hazards or their approach to streets) and universal signage.
Residents And Visitors Are Informed About Local Services And Networks	• Signage is legible to the sight impaired (ie. large lettering, colour contrast, plain fonts and non reflective surfaces). • Information is provided on local transport options (such as a lobby noticeboard). • Wayfinding Strategy (for major developments).
	Active Living Principle - Quality Public Domain
Welcoming, Activated And Stimulating Places	• Adequate provision of shade and comfortable resting places. • Wheelchair accessible public toilets.
Facilitates 'Ageing In Place'	• Compliance with relevant Seniors Housing provisions.
Access To Usable Open Space, With Facilities For All Ages, Abilities And Ethnicities	• Provision of communal spaces for socialisation and a variety of activities. • Provision of a small fenced playground, for residents interacting with/ supervising their grandchildren.
Attends To Fall Prevention	• Maintenance Plan provided, detailing pavement maintenance and repair, as well as graffiti and rubbish removal.
Promotes A Safe Community, Recognising That Fear Of Crime Is A Key Factor In Restricting Use Of Public Space	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). • Clear pedestrian sightlines provided - along pathways, from building entries, and from communal spaces. • Well-lit public domain, to encourage night time activity and prevent falls. Pathway lighting must provide at least 20 lux at ground level.

34. NSW Government (2004) State Environmental Planning Policy (Housing for Seniors or People with a Disability).
35. Australian Standards (2003) AS1428 - Design for Access and Mobility.
36. National Heart Foundation of Australia (2004), Healthy By Design: A Planners' Guide to Environments for Active Living.
37. See footnote 34.

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| | Comfort of Walkers | | Connectivity | | End-of-Trip Facilities | | Transport & Travel Planning | | Traffic Management | | Wayfinding | | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design and Siting Advice
	Active Living Principle - Social Interaction & Inclusion
Opportunities To Interact	• Appropriate on-site communal areas and provision of social infrastructure to meet resident needs. For example - community garden; workshop; a multifunctional auditorium (suitable for events, functions and indoor sports); library and craft area; & consultation rooms (and waiting area) appropriate for visiting services, including doctors and hairdressers. In addition, 'corner' stores can play a role in building social connections. 🪑 🌳 • Common areas (eg foyers) designed to allow residents to stop and chat (eg seats and planter boxes). • Incidental informal meeting spaces provided throughout and adjacent to the development (eg in building corridors). • Adequate social, health and retail facilities encourage walking when available within 300 - 400 metres.[38]
Barrier Free Movement And Entry	• Compliance with Disability Discrimination Act (DDA) and Accessibility Standards (demonstrated by an Accessibility Assessment). ♿
	Good Practice

A) Footpath ramps facilitate access for wheelchairs, walking frames and scooters.

B) Signage indicating that speed be reduced around areas where seniors may be pedestrians.

C) Provide footpaths and road crossings which can accommodate mobility devices.
Source: Healthy Spaces and Places, photographer Billie Giles Corti;PCAL

D) Eliminate trip hazards

38. See footnote 24.

3.3 Development Type: Industrial

DA Level Issues – Matters for Consideration	Design and Siting Advice
	Active Living Principle – Walkability & Connectivity
Movement Past And Through The Site Is Facilitated	• Footpaths are provided at all street frontages. • Through-site links provided, where appropriate, to reflect the adjoining street and pathway network (particularly given the large lot sizes involved). • Appropriate cycle and pedestrian pathway design and materials. • Movement paths are unobstructed (eg location of street plantings) • Footpaths are not diverted or shared to accommodate vehicle entries. (i.e. their design is not compromised) • Pedestrian crossings are incorporated, where required.
Pathways Connect Logically To The Existing Pedestrian And Cycle Network	• Pathways connect logically to the existing pedestrian and cycle network. • Connections to the pathway network are convenient and accessible. • Routes are continuous and direct. • Pathways provide a choice of routes leading to local destinations and focal points (such as shops, child care, schools, parks and public transport stops). • Masterplan demonstrates physical integration to the surrounding locality to provide better services, amenity and transport options for employees. • Open space corridors created between surrounding areas and the employment lands. Open space links with key attractors (for major developments).
	Active Living Principle – Active Travel Alternatives
Supportive Facilities Available	• Appropriate end-of-trip facilities.
Promotion Of Initiatives Which Will Increase Commuting By Alternate Forms Of Transport Other Than The Private Vehicle	• A Workplace Travel Plan (WTP), a means of achieving mode-share targets, may be set as a condition of consent. • Prioritisation of pedestrians and cyclists over vehicular access routes. • Reduction in off-street parking supply in areas with good accessibility to public transport.[39] • Designation of priority car parking spaces near building entries for car pooling vehicles. • Streets, pathways and bus stops are located closer to the building envelope than staff car parking.
Public Transport Is Available And Accessible	• Provision or upgrading of bus stops along the street frontage with adequate shelter and seating (where site is adjacent to a bus route). • Building or estate serviced by public transport (particularly any 'social hub' building (see box)). Alternately, provision of a free staff Shuttle Bus Service, connecting the site with nearby communities and rail stations (if the development is adequately sized). • Bus or train station within walking distance (400m & 800m respectively)[40] along a pathway connected to the site. • Active land uses are provided adjacent to any bus stops. • Directional signage which identifies the location of and distance to public transport stops.
Reduce The Need To Travel, Particularly By Car	• Mix of land uses provided to meet reasonable workforce needs (for example, convenience shopping, medical facilities, cafe's, ATM's, childcare facilities, gymnasium, and food outlets). Other potential commercial land uses include a tavern and recreation facilities.
	Active Living Principle – Legibility
Streetscape And Pedestrian Environment Are Recognisable And Coherent	• Design embraces consistent themes to encourage user familiarity. • Pathways are readily identifiable, follow logical desire lines and have clear entry and exit points. • Pathway location and orientation respond to local landmarks and interesting features and desired paths of travel. • Open space provides a break in the overall industrial built form thereby providing visual relief.
Workers And Visitors Are Informed About Local Services And Networks	• Wayfinding Strategy (for larger scale developments). • Design promotes open space as a feature of its layout and orientation (eg man-made lakes). • Pathways and junctions are well signposted. Clear user-friendly directional signage to key focal points. • Transport Access Guide (TAG), ensuring that staff and visitors are aware of alternative ways of getting to the workplace. • Locality map fixed in building lobby and common areas, identifying safe and direct pathway routes leading to local destinations and focal points. • Signage displays walking times to nearby destinations, as well as physical distances.
	Active Living Principle – Quality Public Domain
Welcoming, Activated And Stimulating Places	• Building form contributes to the character of the streetscape, creating an attractive and distinct identity (which in turn attracts investment, and creates a comparative advantage over other employment areas, improves employee performance and attracts quality staff). • Buildings are designed to address adjoining streets and pathways. Car parks are not located between the building and the street. • Street frontages are active and lively, with a mix of land uses.

39. See footnote 31.
40. See footnote 28.

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| | Comfort of Walkers | | Connectivity | | End-of-Trip Facilities | | Transport & Travel Planning | | Traffic Management | | Wayfinding | | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design and Siting Advice
	Active Living Principle - Quality Public Domain (continued)
Welcoming, Activated And Stimulating Places (continued)	• Footpaths are landscaped for shelter and shade. • Seating is provided in appropriate places (internally and externally), sheltered and shaded. • A Public Domain Plan prepared (for larger estates).
Access To Usable Open Space, With Facilities For All Ages, Abilities And Ethnicities	• On-site and nearby off-site open space or commercial recreation facilities provide for the informal recreation needs of workers. • Building floor plans encourage walking whilst at work. For example, stairwells are accessible. • Common seating and lunch gathering areas are shaded in summer and have protected sunny areas in winter. • End-of-trip facilities included in larger businesses and in any 'social hub' to promote physical activity during lunchtimes and before and after work. • Estate developments provide a range of active and passive, formal (eg corporate team sports) and informal (lunch time uses) recreation facilities to encourage participation by employees. This can range from pleasant lunch-time picnic spots, an urban plaza, an exercise trail or playing fields. Rates of provision (such as for open space) vary between local authority, but can be approximately 20% of the amount provided for residents. • Open space is provided and designed in a manner which facilitates use by surrounding residential communities in order to meet their needs. For example, sporting events (field sports, mini-triathalons) and community access to facilities such as gyms.
Promotes A Safe Community, Developing Community Use And Ownership Of The Estate	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). • Safe pedestrian and cyclist routes provided along frontages and through the site. • Landscaping does not obstruct pedestrian sight lines. • Design or landscaping does not provide places for concealment or entrapment (eg recessed features). • Active land uses adjoin or habitable rooms overlook the public domain. • Building entry's are prominently located, clearly demarcated, and positioned to maximise casual surveillance. • Design minimises conflict between pedestrians, cyclists and vehicles. • Well-lit public domain.[41] • Land uses are proposed which are utilised and activated (and therefore safeguarded) by the local community at nights and weekends. This can involve businesses as well as community facilities (such as recreation resources). • Regular landscape maintenance services to be provided by site management for common areas, streets, bikeways, walkways & parks (demonstrated by a Plan of Management).
	Active Living Principle - Social Interaction & Inclusion
Opportunities To Interact	• Appropriate on-site communal areas, incorporating green space where possible (eg rooftop/podium gardens). • Communal seating and lunch gathering areas are shaded in summer and have protected sunny areas in winter.
Barrier Free Movement And Entry	• Compliance with Disability Discrimination Act (DDA) and Accessibility Standards (demonstrated by an Accessibility Assessment).
Full Provision For The Human Services Needs Of The Workforce, Preferably On-Site To Encourage Linked Trips And Reduce Demand For Car Based Trips	• Adequate community services encourage walking when available within 400 metres.[42] • Where possible the development should contain, in addition to employment lands, a range of other social infrastructure items to serve the needs of employees, as well as the wider community. For larger estates, these other uses could be grouped into a 'social hub' (see blue box below). • Provision of facilities for on-site activities and events such as outdoor performances, training and community education.

What is a 'social hub'?

Industrial Estates ideally contain a range of social infrastructure items to serve the needs of employees (and reduce trip generation), and potentially the wider community. This could include cafes, convenience shopping, ATMs, childcare facilities, gymnasium, community meeting spaces, civic space suitable for performances and social gatherings, or medical services and a pharmacy. For larger new estates, these land uses could be grouped into a 'social hub'. Such a hub provides a local identity, opportunities for interaction, development of a sense of community and focal point for the employment lands. For example, at a large scale, a social hub could be a building of 6,000m² (providing for 5,000 employees (itself hosting 200 jobs)) set in a pleasant environment (eg lakeside) with a civic square (suitable for performances and gatherings) and a half size playing field. The scale of uses provided through a hub are not to be contrary to NSW Department of Planning Centres Policy or Subregional Strategies.

41. See footnote 32.
42. See footnote 24.

Good Practice

A) A Cafe as the hub and centrepiece of the development. Perhaps forming part of another premises, Shade is important to the design and orientation. Outdoor areas can be orientated to overlook open space.

B) Attractive and inviting covered walkways link together "mini-precincts" and make the whole development walkable.

C) Appropriate ancilliary land uses (such as health and fitness centre) anchor estates and draw the community into the estate.

D) Identity is a key feature, marked by distinctive urban design and wayfinding elements..

E) Recreational spaces and walking paths make use of natural and design features.

F) Landscape themes continue throughout the estate. Landscaping visually links across roads to recreational areas. Note seamless flow into adjoining older industrial areas.

G) Recreational spaces and walking paths make use of natural and design features.

3.4 Development Type: Business (Commercial or Retail), Public Administration, or Entertainment
(Including Restaurant, Hotel, Club, or Tourism Facility Uses)

DA Level Issues - Matters for Consideration	Design and Siting Advice
	Active Living Principle - Walkability & Connectivity
Movement Past And Through The Site Is Facilitated	• Footpaths are provided at all street frontages. • Through-site links provided, where appropriate, to reflect the adjoining street and pathway network. • Appropriate cycle and pedestrian pathway design and materials. • Movement paths are unobstructed (eg location of street plantings, outdoor cafés). • Footpaths are not diverted or shared to accommodate vehicle entries. (i.e. their design is not compromised) • Pedestrian crossings are incorporated, where required.
Pathways Connect Logically To The Existing Pedestrian And Cycle Network	• Pathways connect logically to the existing pedestrian and cycle network. • Connections to the pathway network are convenient and accessible. • Pathways provide a choice of routes leading to local destinations and focal points (such as shops, schools, parks and public transport stops). • Routes are continuous and direct. • Traffic Management Plan (TMP) prepared, which maintains pedestrian and cyclist connectivity during construction.
	Active Living Principle - Active Travel Alternatives
Supportive Facilities Available	• Appropriate end-of-trip facilities (such as caged bike storage for workers within an underground carpark).
Promotion Of Initiatives Which Will Increase Commuting By Alternate Forms Of Transport Other Than The Private Vehicle	• A Workplace Travel Plan (WTP), a means of achieving mode-share targets, may be set as a condition of consent. • Prioritisation of pedestrians and cyclists over vehicular access routes. • Reduction in off-street parking supply in areas with good accessibility to public transport.[43] • Designation of priority car parking spaces near building entries for car pooling vehicles. • Streets, pathways and bus stops are located closer to the building envelope than staff car parking.
Public Transport Is Available And Accessible	• Provision or upgrading of bus stops along the street frontage with adequate shelter and seating (where site is adjacent to a bus route). • Bus or train station within walking distance (400m & 800m respectively) along a pathway connected to the site.[44] • Active land uses are provided adjacent to any bus stops. • Directional signage is provided which identifies the location of and distance to public transport stops.
Reduce The Need To Travel, Particularly By Car	• Mix of land uses provided to meet reasonable workforce needs (for example, convenience shopping, medical facilities, cafe's, ATM's, childcare facilities, gymnasium, and food outlets).
	Active Living Principle - Legibility
Streetscape And Pedestrian Environment Are Recognisable And Coherent	• Design embraces consistent themes to encourage user familiarity. • Pathways are readily identifiable.
Workers And Visitors Are Informed About Local Services And Networks	• Wayfinding Strategy (for larger scale developments). • Pathways and junctions are well signposted. • Transport Access Guide (TAG), ensuring that staff and visitors are aware of alternative ways of getting to the workplace. • Locality map fixed in building lobbies and common areas, identifying safe and direct pathway routes leading to local destinations and focal points. • Signage displays walking times to nearby destinations as well as physical distances.
	Active Living Principle - Quality Public Domain
Welcoming, Activated And Stimulating Places	• Building form contributes to the character of the streetscape. Blank walls, such as within car parking areas, are avoided. • Buildings are designed to address adjoining streets and pathways. • Street frontages are active and lively, with a mix of land uses. • Footpaths are landscaped for shelter and shade. • Seating is provided in appropriate places (internally and externally), sheltered and shaded.
Access To Usable Open Space, With Facilities For All Ages, Abilities And Ethnicities	• On-site and nearby off-site open space or commercial recreation facilities provide for the informal recreation needs of workers. • End-of-trip facilities included in larger businesses to promote physical activity during lunchtimes and before and after work. • Building floor plans encourage walking whilst at work. For example, stairwells are accessible.

43. See footnote 31.
44. See footnote 28.

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| | Comfort of Walkers | | Connectivity | | End-of-Trip Facilities | | Transport & Travel Planning | | Traffic Management | | Wayfinding | | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design and Siting Advice
	Active Living Principle - Quality Public Domain (continued)
Promotes A Safe Community	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). 👁 • Safe pedestrian and cyclist routes provided along frontages and through the site. • Landscaping does not obstruct pedestrian sight lines. • Design or landscaping does not provide places for concealment or entrapment (eg recessed features). • Active land uses adjoin or habitable rooms overlook the public domain. • Building entrances are prominently located, clearly demarcated, and positioned to maximise casual surveillance. • Design minimises conflict between pedestrians, cyclists and vehicles. 🚗 • Well-lit public domain.[45]
	Active Living Principle - Social Interaction & Inclusion
Opportunities To Interact	• Where possible, provision of on-site communal areas, incorporating green space (eg rooftop/podium gardens). 🪑 • Communal seating and lunch gathering areas are shaded in summer and have protected sunny areas in winter. 🤝
Barrier Free Movement And Entry	• Compliance with Disability Discrimination Act (DDA) and Accessibility Standards (demonstrated by an Accessibility Assessment). ♿
Provision For The Human Services Needs Of The Workforce, Preferably On-Site	• Adequate community services encourage walking when available within 400 metres.[46] • On-site provision of social infrastructure to serve reasonable workforce needs (where appropriate). For example, cafes, convenience shopping, medical services, ATM's, childcare facilities, or gymnasium. 🤝

Good Practice

A) An office building which has incorporated retail tenancies at the street level, creating street level activity and a more human scale for pedestrians. A bus stop is positioned adjacent to these active land uses.

B) The provision of supportive transport infrastructure should be negotiated with the applicant. (Image Courtesy of Optus)

C) End-of-trip facilities are crucial if staff are to be encouraged to walk or cycle to work. (Image Courtesy of Optus)

D) The stairs are easily accessible as an alternative to the lift.

E) Other uses combine with business land uses to activate spaces and reduce the need to travel.
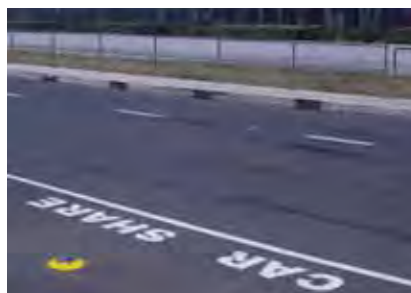
F) Car parking should be managed, with priority parking provided for car pooling staff

G) Integrated open spaces providing a hub for social activity.

H) Well-designed internalised streets, lanes and pedestrian connections make a retail centre easy to navigate on foot. Trees provide shade and a local micro-climate.

45. See footnote 32.
46. See footnote 24.

🌳 Quality Open Spaces 　 🤝 Welcoming, Activated and Stimulating Places 　 🪑 On-site Open or Public Space 　 ♿ Accessibility

3.5 Development Type: Institutional

(Including Educational Facilities (schools, childcare and universities), Community Facilities (recreation and community centres) and Health Care Facilities(medical centres, hospitals and aged care (high & low care) facilities))

DA Level Issues – Matters for Consideration	Design & Siting Advice
	Active Living Principle - Walkability & Connectivity
Movement Past and Through the Site is Facilitated	• Footpaths are provided at all street frontages. A three metre wide path is recommended for all shared routes. • Through-site links provided, where appropriate, to reflect the adjoining street and pathway network. • Capitalises upon opportunities to provide walking circuits around the site. • Appropriate cycle and pedestrian pathway design and materials. • Movement paths are unobstructed (eg location of street plantings, outdoor cafés). • Footpaths are not diverted or shaped to accommodate vehicle entries. (i.e. their design is not compromised) • Pedestrian crossings are incorporated, where required. • Adequate lighting, seating and shade provided along pathways.
Pathways Connect Logically to the Existing Pedestrian and Cycle Network	• Pathways connect logically to the existing pedestrian and cycle network. • Connections to the pathway network are convenient and accessible. • Pathways provide a choice of routes leading to local destinations and focal points (such as shops, schools, parks and public transport stops). • Routes are continuous and direct.
	Active Living Principle - Active Travel Alternatives
Supportive Facilities Available	• Appropriate end-of-trip facilities in larger facilities for visitors (such as bike storage, showers and change room) and staff (such as secure bike parking).
Promotion of Initiatives which will Increase Commuting by Alternate Forms of Transport other than the Private Vehicle	• A Workplace Travel Plan (WTP) (or School Travel Plan), a means of achieving mode-share targets, may be set as a condition of consent. • Prioritisation of pedestrians and cyclists over vehicular access routes and car parking. Road and pathway layout can adequately accommodate bicycles. • Reduction in off-street parking supply in areas with good accessibility to public transport.[47] Parking charges preferably higher than the cost of an average public transport trip. • Designation of priority car parking spaces near building entries for car pooling vehicles, car share schemes and disabled peoples parking. • Streets, pathways and bus stops are located closer to the building envelope than staff car parking. • Well located taxi rank, provided with facilities similar to, or co-located with, a bus stop.
Public Transport is Available and Accessible	• Provision or upgrading of bus stops along the street frontage with adequate shelter, lighting, information and seating (where site is adjacent to a bus route). • Bus or train station within walking distance (400m & 800m respectively) along a pathway connected directly to the site.[48] • Active land uses and street frontages are provided adjacent to any bus stops. • Directional signage is provided which identifies the location of, and distance to, public transport stops. Information about bus services should be located inside the entrance. • Provision of a free staff shuttle bus service, connecting the site with nearby communities and rail stations (if the development is adequately sized).
Reduce the Need to Travel, Particularly by Car	• Mix of land uses provided to meet reasonable visitor and workforce needs (for example, convenience shopping, cafe's, ATM's, childcare facilities, gymnasium, and food outlets).
	Active Living Principle - Legibility
Streetscape and Pedestrian Environment are Recognisable and Coherent	• Design embraces consistent themes to encourage user familiarity. • Pathways are readily identifiable.
Workers, Students and Visitors are Informed about Local Services and Networks	• Wayfinding Strategy (for larger scale developments) both internal and external to the building. Signage proposals should be simplified (such as using numbers, colour coding, and symbols or coloured line-marking on floors). Information kiosks may be appropriate. • Pathways and junctions are well signposted. Main entrances should be numbered and clearly signed from all approaches. • Transport Access Guide (TAG), ensuring that staff and visitors are aware of alternative ways of getting to the facility. For example, TAGs could be distributed with all planned admissions to health facilities. • Locality map fixed in building lobbies and common areas, identifying safe and direct pathway routes leading to local destinations and focal points. • Directional and informative signage displays walking times to nearby destinations (eg public transport), as well as physical distances.

47. See footnote 31.
48. See footnote 28.

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| | Comfort of Walkers | | Connectivity | | End-of-Trip Facilities | | Transport & Travel Planning | | Traffic Management | | Wayfinding | | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design & Siting Advice
	Active Living Principle – Quality Public Domain
Welcoming, Activated and Stimulating Places	• Streetscapes are attractive and comfortable. Building form contributes to the character of the streetscape. Blank walls, such as at car parking areas, are avoided. • Buildings are designed to address adjoining streets and pathways. • Street frontages are active and lively, with a mix of land uses. • Footpaths are landscaped for shelter and shade. • Seating is provided in appropriate places (internally and externally), sheltered and shaded. • Provide appropriate and safe facilities and spaces for children to play.
Access to Usable Open Space, with Facilities for All Ages, Abilities and Ethnicities	• On-site and nearby off-site open space or commercial recreation facilities provide for the informal recreation needs of workers. • End-of-trip facilities included in larger facilities to promote physical activity during lunchtimes and before and after work. • Building floor plans encourage walking whilst at work. For example, stairwells are accessible.
Promotes a Safe Community	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). • Safe pedestrian and cyclist routes provided along frontages and through the site. • Landscaping does not obstruct pedestrian/cyclist sight lines. • Design or landscaping does not provide places for concealment or entrapment (eg recessed features). • Active land uses adjoin or occupied rooms overlook the public domain. • Building entrances are prominently located, clearly demarcated, and positioned to maximise casual surveillance. • Design minimises conflict between pedestrians, cyclists and vehicles. • Well-lit public domain.[49]
	Active Living Principle – Social Interaction & Inclusion
Opportunities to Interact	• Where possible, provision of on-site communal areas, incorporating green space.
Barrier Free Movement and Entry	• Compliance with Disability Discrimination Act (DDA) and Accessibility Standards (demonstrated by an Accessibility Assessment).
Provision for the Human Services Needs of the Workforce, Preferably On-Site	• On-site provision of social infrastructure to serve reasonable workforce needs (where appropriate). For example, cafes, convenience shopping, ATM's, childcare facilities, or gymnasium.
Good Practice	

A) Car parking should be managed, with priority parking provided for car pooling staff

B) Active traffic calming measures.

C) Separate pedestrian crossings on heavily trafficked routes.

D) Ancillary uses activate the well signposted street frontage. Pedestrian access is prioritised.

49. See footnote 32.

3.6 Development Type: Transport Infrastructure
(Including Railway Lines, Highways / Major Roads, Public Transport Interchanges, Bus Stops & Railways Stations)

DA Level Issues – Matters for Consideration	Design & Siting Advice
	Active Living Principle - Walkability & Connectivity
Pathways Connect Logically to the Existing Pedestrian and Cycle Network	• Walking is convenient, safe and attractive. • Appropriate, high quality cycle and pedestrian pathway design and surface materials. • Pathways connect logically to the existing pedestrian and cycle network. • Connections to the pathway network are direct, convenient and accessible. • Infrastructure doesn't create a barrier to walking or cycling.
	Active Living Principle - Active Travel Alternatives
Convenient Location in Well Patronised Locality	• Public transport stops are centrally located, near a variety of pedestrian generators, providing a high level of convenience to users. • Retail and commercial uses are combined with public transport stops to form viable and convenient, mixed-use, after-hours precincts.
Makes Public Transport Easy to Use	• Bus stops are provided at regular distances to enable all dwellings to be located within walking distance (400m & 800m respectively) along a connected pathway.[50] • Neighbourhood centres are aligned within corridors to support high frequency public transport services. • Residential densities near public transport corridors and service nodes are maximised appropriately.[51] • Public transport stops and access points are integrated within the layout of the road network. • Directional signage is provided which identifies the location of and distance to public transport stops. • Road design within key strategic corridors and centres assigns a high priority to public transport. • Public transport stops are safe, comfortable and attractive
Supportive Facilities Available	• End-of-trip facilities are provided appropriate to the scale of the infrastructure. For example, ranging from informal opportunities for cycle parking at a minor bus stop, to cycle parking stands, to cycle parking cages as the scale and patronage increases. • Active land uses are provided adjacent to any bus stops. • Pedestrians can safely and efficiently cross to bus stops. • Design conveys that cyclists are welcome, through dedicated cycle lanes, signage indicates shared use of path networks and the provision of end-of-trip facilities. • Public amenities provided (eg accessible toilet facilities and water bubblers).
Promotion of Initiatives which will Increase Commuting by Alternate Forms of Transport other than the Private Vehicle	• Reduction in off-street parking supply in areas with good accessibility to public transport.[52]
	Active Living Principle - Legibility
Streetscape and Pedestrian Environment are Recognisable and Coherent	• Pathways are readily identifiable. • Design provides an attractive focal point for local activity.
Patrons are Informed about Local Services and Networks	• Wayfinding Strategy. Signage displays walking times to nearby destinations as well as physical distances. • Relevant and accessible information on available transport services.
	Active Living Principle - Quality Public Domain
Welcoming, Activated and Stimulating Places	• Transport infrastructure is designed to have a form and character that is compatible with high quality pedestrian amenity and comfort (in terms of bulk and scale, noise, wind and sun protection). • Pathways and public transport stations are landscaped to be attractive and provide a high level of user amenity (e.g. provision of shelter and shade). • Waiting areas are attractive, safe, well-lit, clean and comfortable, with adequate seating (conventional, as well as café-style tables and stools) and shelter. • Space is allocated for waiting passengers. The width of adjacent footpath ensures patrons do not obstruct passing pedestrians. • Seating set back from the road for comfort and orientated so that users can see oncoming buses. • Inclusion of public art and cultural facilities, incorporating opportunities for children's play and interactive public art.
Promotes a Safe Community	• Compliance with crime prevention (CPTED) principles (demonstrated by Crime Risk Assessment). • Transport infrastructure such as stations and main bus stops are located at areas of constant activity with good lighting and surveillance to reduce perceptions of isolation at night. • A Maintenance Plan establishes that the infrastructure will be well maintained.

50. See footnote 28.
51. Austroads (1998), Cities for Tomorrow: Integrating Land Use, Transport and the Environment - Better Practice Guide, published by Austroads Incorporated.
52. See footnote 31.

Icons reflect that further information is available within Cross-Cutting Advice in Part 2.

| | Comfort of Walkers | | Connectivity | | End-of-Trip Facilities | | Transport & Travel Planning | | Traffic Management | | Wayfinding | | Safe & Clean Environments |

DA Level Issues – Matters for Consideration	Design & Siting Advice
	Active Living Principle - Quality Public Domain (continued)
Promotes a Safe Community (continued)	• Design or landscaping does not obstruct pedestrian sight lines or provide places for concealment or entrapment (eg recessed features). • Well-lit public domain.[53] • Design minimises conflict between pedestrians, cyclists and public transport vehicles. 🔴 • Land uses are proposed which are utilised and activated (and therefore safeguarded) by the local community at nights and weekends. This can involve businesses as well as community facilities (such as recreation resources). 🤝
	Active Living Principle - Social Interaction & Inclusion
Barrier Free Movement and Entry	• Compliance with Disability Discrimination Act (DDA) and Accessibility Standards (demonstrated by an Accessibility Assessment). ♿

Good Practice

A) Stopping bays for buses are incorporated into road designs.

B) Path networks provide connections to local train stations and bus stops. They encourage active travel methods for trips to and from places where transport infrastructure is located.

C) Bus stops conveniently located in well patronised areas such as directly outside office buildings.

D) Infrastructure which facilitates active transport use can co-exist with infrastructure for motor vehicles.
Source: BCC & Qld Transport, City2City Initiative

E) Bus stops located next to activated places during the day and evening (e.g. a 24-hour service station / convenience store increases the safety of users).

F) Clear signage and pathways to insure safety of cyclists and pedestrians along major roads.

G) Designated bus lanes along major roads

H) Bus stop providing adequate shade and shelter

I) Retail and commercial uses are combined with public transport stops to form viable and convenient, mixed-use precincts.

J) Designated cycle lanes reduce potential conflict between cyclists and other road users (including motor vehicles and pedestrians)

K) Train, bus and cycle interchange with active retail uses.

53. See footnote 32.

Part 4:
Quick Guide
& Detailed Appendices
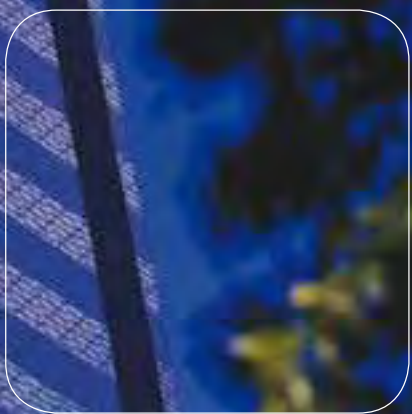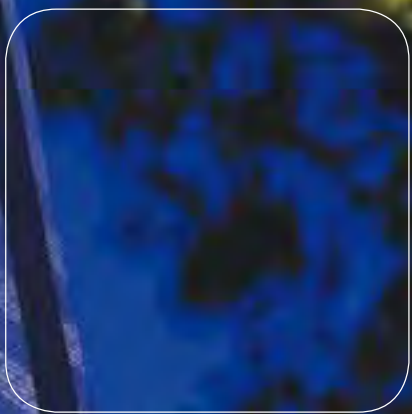
4.1 Overview

This part is divided into five sections.

Section 4.2, the Quick Guide, specifies possible Active Living actions by type of DA (including cross-cutting advice), for use by applicants' consultants and government assessment officers. The actions are listed under the relevant Active Living Principle, and follow a logical sequence from on-site matters, through actions in the public/ private interface (buildings and the public domain) to off-site actions. For each DA type there are four options: actions relevant to -

• all projects
• large-scale projects and/ or significant locations
• mixed-use
• not applicable

Rather than specifying numeric thresholds for determining large-scale projects, it is suggested that users adopt a qualitative approach in considering applicability. Similarly, strategic locations will vary by Council area. In all cases, applicability should be considered in context.

For applicants/consultants considering design, siting and potential impacts, the Quick Guide will act as a prompt for matters that should be covered in applicants' submissions. **Section 4.3** elaborates on this by reference to the requirements of the Regulations, and in suggesting whether such matters should be included on plan or in Statements of Environmental Effects, Environmental Impact Statements or Director-General's Requirements (for Major Developments).

For government assessment officers, the Quick Guide can act as a prompt in project assessment (with possible use in reporting). Where matters have not been addressed in applicants' submissions, it is possible to require some actions by Condition of Consent. Elaborating on this, **Section 4.4** provides advice on the scope and legal obligations for conditioning development consents in relation to Active Living matters. It also briefly discusses financing of public works, including development contribution options (and the Contribution Plans and Public Domain Plans that should underpin them).

Finally, **Section 4.5** provides a Glossary of Key Terms used in the Resource.

Legend: ○ = Applies to all · ▨ = Applies to large scale/strategically located projects · M = Applies to mixed use projects · ■ = N/A

Matters that DAs can Address	Subdivision	Residential Accommodation	Residential: Seniors Housing	Industrial	Business: Commercial/Retail, Public Administration or Entertainment	Institutional	Transport Infrastructure
Walkability and Connectivity							
Possible through-site connections	▨	▨	▨	▨	▨	▨	▨
Location of pedestrian entrances: direct and convenient access from streets and adjacent uses; separated from traffic; prominent and well-lit, with passive surveillance	○	○	○	○	○	○	○
Provision of footpaths on streets; both sides where possible	○	○	○	○	○	○	○
Detailed design of footpaths or shared paths, kerb ramps, pavement and edge treatments: grades and materials	■	○	○	○	○	○	○
Compliance with DDA requirements and local accessibility standards	■	○	○	○	○	○	○
Weather protection: awnings at least on corner sites ("pockets of protection")	■	○	○	○	○	○	○
Provision of safe and easy access across streets - pedestrian crossings, close to the direct line of travel	○	○	○	○	○	○	○
Pathways connecting logically to existing pedestrian and cycle networks: continuous and direct	○	○	○	○	○	○	○
Provision of public facilities for the comfort of walkers	■	▨	▨	▨	▨	▨	▨
Local urban structural improvements - improving walking and cycling catchments; to public transport, shops, open space and other key destinations	▨	▨	▨	▨	▨	▨	▨
Local traffic calming measures; Local Area Traffic Management	▨	▨	▨	▨	▨	▨	▨
Street layout: subdivision pattern and internal pathways promoting accessibility	▨	▨	▨	▨	▨	▨	▨
Accessible local facilities; within walking distance to homes	▨	▨	▨	▨	■	■	▨
Location relative to centres, open space and other key destinations	▨	▨	▨	▨	▨	▨	▨
Active Transport Alternatives							
Reduced car parking on site: with levels appropriate to the location and nature of development	■	▨	▨	▨	▨	▨	■
Preparation of Workplace Travel Plans (WTPs)	■	■	■	▨	▨	▨	■
Priority parking for car pooling/car share	■	■	■	▨	▨	▨	■
Signposting bicycle routes for building occupants	■	▨	▨	▨	▨	▨	▨
End-of trip facilities on-site (such as bicycle parking, change room and showers)	■	▨	▨	▨	▨	▨	▨
Design to reduce traffic conflict; location of vehicular access points away from major bus routes; possible confinement of vehicular access to side streets (through lot consolidation if necessary)	○	○	○	○	○	○	○
Restrained parking on streets	▨	▨	▨	▨	▨	▨	▨
Design for mobility scooters (pathways and parking bays)	■	▨	○	■	■	■	▨
Design for bicycle access: interface design /gradients, bike-friendly	○	○	○	○	○	○	○
Traffic Impact; TMAPs (including cyclists)	▨	▨	▨	▨	▨	▨	■
Provision of shuttle bus services (complementary to commercial services)	■	■	○	○	○	○	○
Design for on-site buses	▨	■	○	○	○	○	○
Location of transit-supportive activities/ active uses at bus stops (corner shops, phone boxes)	▨	M	■	■	○	○	○
Location of development relative to bus routes	○	○	○	○	○	○	○
Street design to allow for bus access; dedication of setbacks at intersections for future bus priority treatment	○	○	○	○	○	○	○
Possible re-location of bus stops in accordance with the "Bus Stop Guide"	▨	▨	▨	▨	▨	▨	■
Public transport enhancement or improvement (including services and accessibility)	▨	▨	▨	▨	▨	▨	■
Provision of cycling and walking infrastructure eg dedicated cycle lanes	▨	▨	▨	▨	▨	▨	▨

Applies to all   ▨ Applies to large scale/strategically located projects
M Applies to mixed use projects   ■ N/A

Matters that DAs can Address	Subdivision	Residential Accommodation	Residential: Seniors Housing	Industrial	Business: Commercial/Retail, Public Administration or Entertainment	Institutional	Transport Infrastructure
Legibility							
Clear and unobstructed pedestrian and cyclist entrances							
Provision, on-site, of information to assist with safe route planning: locality and route maps and the location of public transport, walking and cycling paths	■	▨	▨	▨	▨	▨	▨
Well signposted pathways to and from the development	■	▨	▨	▨	▨	▨	▨
Provision of directional signage, with consistent themes to encourage familiarity; directions to cycleways/ pedestrian paths/ railway/ bus stops and key destinations	■	▨	▨	▨	▨	▨	▨
Incorporating orientation features (such as landmarks and key sites) into public domain planning	▨	▨	▨	▨	▨	▨	▨
Preparation of Transport Access Guides	■	▨	▨	▨	▨	▨	▨
Preparation of a Way Finding Strategy	■	▨	▨	▨	▨	▨	▨
Legible street and pathway layout	▨	▨	▨	▨	▨	▨	▨
Quality Public Domain							
CPTED principles: surveillance, territorial reinforcement, access control and space management; "natural surveillance" preferred; well lit / overlooked by buildings / clear sightlines							
Attractive and welcoming street frontages; addressing the street; active frontages, where possible							
Preparation of detailed guidelines for building form/ streetscapes	▨	▨	▨	▨	▨	▨	
Provision and maintenance of street trees							
Sun protection/ shading: public spaces; external areas	▨	▨	▨	▨	▨	▨	▨
Preparation of/ contribution to a Public Domain Plan	▨	▨	▨	▨	▨	▨	▨
Location of active land uses, such as corner shops, near public transport stops	▨	M	▨	▨	▨	▨	▨
Space on streets for cyclists, with appropriate signage and road markings	▨	▨	▨	▨	▨	▨	▨
Shared paths: carefully designed, with sufficient width, adequate sightlines, gentle gradients and turns, and marked centrelines	▨	▨	▨	▨	▨	▨	▨
Stimulating and attractive routes to key destinations: landscaping, shade, opportunities to stop and rest	▨	▨	▨	▨	▨	▨	▨
Well maintained public spaces and streets	■						
Provision of Public art	■	■	■	■	▨	▨	▨
Social Interaction & Inclusion							
Provision of an on-site focus for social interaction: communal open space, meeting room, communal garden (possibly roof-top/ podium); with seating, children's active facilities; shading and weather protection	■	▨	▨	▨	▨	▨	▨
Mixed of land-uses on-site	■	M	■	■	M	■	■
"Social Hub" on-site	■	▨	M	▨	▨	M	■
Promoting a street focus; addressing the street	■						
Provision of rest places in the public domain	▨	▨	▨	▨	▨	▨	▨
Proximity to local parks and recreation areas	▨	▨	▨	▨	▨	▨	■
Provision of a new residents' "Welcome Pack"	▨	▨	▨	■	■	■	■

Legend:

(blank)	Applies to all	▨	Applies to large scale/strategically located projects
M	Applies to mixed use projects	■	N/A

4.3 Application Submission Requirements

Ideally, Active Living measures should be addressed by applicants (on the basis of Council / State level advice) up-front, on plans and in Statements of Environmental Effects / Environmental Assessments. Design and siting measures can be incorporated into projects, rather than treated as afterthoughts or required as modifications, by Conditions of Consent.

The starting point for Part 4 DAs (usually to Council) is Schedule 1 of the EP&A Regulation, which lists the information and documents required to accompany a DA. Many of these matters (eg. detail on plans) are incorporated into Councils' DA Forms. Of particular relevance in the regulation are the following:

(i) Details on plans relevant to the promotion of Active Living:
- a statement of environmental effects (in the case of development other than designated development)
- an environmental impact statement (in the case of designated development),
- existing levels of the land in relation to buildings and roads and the location and uses of buildings on sites adjoining the land.
- proposed finished levels of the land in relation to existing and proposed buildings and roads,
- proposed parking arrangements, entry and exit points for vehicles, and provision for movement of vehicles within the site (including dimensions where appropriate).

(ii) Matters that must be addressed within a Statement of Environmental Effects (SEE):
- the environmental impacts of the development; how the environmental impacts of the development have been identified and the steps to be taken to protect the environment or to lessen the expected harm to the environment. This includes the social environment (see s.4 of the EP&A Act)
- In relation to SEPP 65 residential flats, consideration of the context

While SEEs are not required for Part 3A Major Projects, similar matters may be required as Director-General's Requirements (DGRs).

While not specifically listed in the Regulation, good practice is the preparation and submission of a detailed site analysis - generally consisting of an annotated plan, supported by a written statement providing a general description of the site and its surrounds, including the site's broader context within the neighbourhood or area. The written statement would also explain how the development design has responded to the site analysis. The SEE should discuss elements of the site that have not been captured on the annotated site analysis plan or require further clarification or discussion over and above what the plan shows.

The Quick Guide in Section 4.2 provides an indication of the matters that should be addressed by type of DA, as measures to support Active Living (for example, pedestrian accessibility (on-site, at the interface and off-site), attention to reducing traffic conflict, clear signposting to accessways and quality public domain treatment). Other matters in the table should be addressed for large scale developments, where the scale and location warrants attention. For example, a range of traffic impact/ management reports:
- Traffic Impact Statement (TIS);
- Traffic Management Plan (TMP); or
- Traffic Report.

The discussion in Section 4.1 about "large scale" and "significant sites" is relevant in determining the matters and levels of detail that should be covered in submissions.

Where possible, siting and design matters should be addressed at the site-analysis stage and included on the plans for the development. Other matters, including detailed specifications should be covered in Statements of Environmental Effects/ Environmental Assessments.

4.4 Conditions of Consent

While it is ideal for Active Living measures to be incorporated within Application Submissions, there is considerable scope for the application of Conditions of Consent to achieve such outcomes. Conditions can also reinforce plan/SEE/Commitments, and require operational actions (such as maintenance).

This section is presented in three sub-sections:

- General advice on conditioning consents
- Utilising existing standard conditions
- Active-living-specific conditions.

General Advice on Conditioning Consents

The "Newbury Test"[54] requires that a condition must:

i. be imposed for an (environmental) planning purpose

ii. fairly and reasonably relate to the development for which consent is being given; and

iii. be reasonable, it must be a condition which a reasonable local authority, properly advised, might impose.

The scope of conditions for Part 4 DAs (usually to the local Council) is further refined by some key provisions of the EP&A Act, at section 80A:

1. Conditions-generally A condition of development consent may be imposed if:

    (a) it relates to any matter referred to in section 79C (1) of relevance to the development the subject of the consent, or

    (c) it requires the modification or cessation of development (including the removal of buildings and works used in connection with that development) carried out on land (whether or not being land to which the development application relates), or

    (e) it requires the removal of buildings and works (or any part of them) at the expiration of the period referred to in paragraph (d), or

    (f) it requires the carrying out of works (whether or not being works on land to which the application relates) relating to any matter referred to in section 79C (1) applicable to the development the subject of the consent, or

    (g) it modifies details of the development the subject of the development application, or

    (h) it is authorised to be imposed under section SO (3) or (5), subsections (5)-(9) of this section or section 94, 94A, 94EF or 94F.

2. Ancillary aspects of development A consent may be granted subject to a condition that a specified aspect of the development that is ancillary to the core purpose of the development is to be carried out to the satisfaction, determined in accordance with the regulations, of the consent authority or a person specified by the consent authority.

3. A consent authority that has not determined a request to indicate whether a specified aspect of development has been carried out to the satisfaction of the consent authority, or a person specified by the consent authority, within the relevant period, prescribed by the regulations, applicable to the aspect or the development is, for the purpose only of section 97, taken to have determined the request by indicating that it, or the person, is not satisfied as to the specified aspect.

4. Conditions expressed in terms of outcomes or objectives A consent may be granted subject to a condition expressed in a manner that identifies both of the following:

    (a) one or more express outcomes or objectives that the development or a specified part or aspect of the development must achieve,

    (b) clear criteria against which achievement of the outcome or objective must be assessed.

5. Modification or surrender of consents or existing use rights. If a consent authority imposes (as referred to in subsection (1) (b)) a condition requiring the modification or surrender of a consent granted under this Act or a right conferred by Division 10, the consent or right may be modified or surrendered subject to and in accordance with the regulations.

6. Conditions and other arrangements concerning security. A development consent may be granted subject to a condition, or a consent authority may enter into an agreement with an applicant, that the applicant must provide security for the payment of the cost of any one or more of the following:

    (a) making good any damage caused to any property of the consent authority (or any property of the corporation) as a consequence of the doing of anything to which the consent relates,

    (b) completing any public work (such as road work, kerbing and guttering, footway construction, stormwater drainage and environmental controls) required in connection with the consent,

    (c) remedying any defects in any such public work that arise within 6 months after the work is completed.

7. The security is to be for such reasonable amount as is determined by the consent authority.

8. The security may be provided, at the applicant's choice, by way of:

    (a) deposit with the consent authority, or

    (b) a guarantee satisfactory to the consent authority.

9. The security is to be provided before carrying out any work in accordance with the development consent or at such other time as may be agreed to by the consent authority.

10. The funds realised from a security maybe paid out to meet any cost referred to in subsection (6). Any balance remaining is to be refunded to, or at the direction of, the persons who provided the security.

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54. "Newbury Test" (House of Lords UK) 1981 Planning Appeal Decision: Newbury District Council v Secretary of State Environment).

In summary, the scope of section 80A is broad, with the opening reference to the section 79C(1) matters for consideration (for Part 4 DAs). In particular, section 79C(1) covers the following:

- any planning agreements (or drafts)
- the social impacts in the locality
- the public interest

Where Councils have addressed Active Living outcomes in their LEP and/or DCPs extra legal weight would be applied. Similarly, some SEPPs address Active Living Principles.

It needs to be stressed that s.79C is a Part 4 matter (relating to "local development") and does not apply to Part 3A Major Projects. In practice, the principles may still be applied.

Section 80A also enables modification of proposals, off-site works to be undertaken, ancillary matters to be addressed later in the process, security bonding and development contributions, all of which are potentially relevant to Active Living outcomes. Sub-section (4) enables "performance based" conditions, where outcomes are specified, and means of achieving them are flexible. An example could be the nomination of mode-share targets. Also of particular interest for interface and off-site works, is the dividing line between s.80A(1)(f) (carrying out of works) and Development Contributions (authorised by s.80A(l)(h)).

Aside from the legal scope, there are a number of good practice rules for conditioning consents. They should:

- be framed so that an Accredited Certifier can come to the same conclusion as Council (both of whom can act as a Certifying Authority for building approval and construction).
- nominate desired outcomes: Australian Standards; standards in Councils LEP/DCP.
- be tied to appropriate post-determination stages i.e. prior to issue of Construction Certificate, prior to work commencing, prior to occupation.

Utilising Existing Standard Conditions

Most Councils have a suite of existing conditions of consent that cover the following:

- bonding for protection of the public domain (eg. footpaths, street trees).
- Section 94 development contributions for public works (as per adopted Contributions Plan).
- detailed landscape design (and maintenance).
- requirements for on-site car parking numbers and design
- access and mobility requirements

It is recommended that Councils undertake a review of existing standard conditions to flag and discuss those that could be applicable to Active Living.

Active Living Specific Conditions

Within the legal scope outlined above, additional, specific conditions relating to Active Living measure should be considered. For instance, in relation to on-site, interface and off-site issues:

a) On-site Matters

- Transport mode-share targets and Workplace Travel Plans.
- Directional signage and location maps (to transport networks).
- On-site display of travel information.
- Newcomers "Welcome Pack".
- Landscape Plan of Management.
- Provision of on-site facilities, such as shading, seating, etc.
- Reduced car parking standards.

b) Interface Matters

- Compliance with accessibility/DDA standards (SEPP; Australian standards)
- Pathway treatment - materials, etc.
- Provision of footpaths.
- Active street frontage/ ground floor uses.
- Clear and positive building address to street.
- Direct pedestrian access off the primary street.

c) Off-site Matters

- Contributions (flat rate, or as per s.94 Contributions Plan)
- Street trees - provision and maintenance.
- Facilities for walkers, cyclists.

A number of examples of such conditions sourced from various councils are provided below:

1. Traffic & Pedestrian Management Plan

Prior to the issue of a Construction Certificate, a Traffic and Pedestrian Management Plan prepared by a suitably qualified person shall be submitted to and approved by the Certifying Authority. The Plan shall address, but not be limited to, the following matters:

(1) ingress and egress of vehicles to the site,

(2) loading and unloading, including construction zones,

(3) predicted traffic volumes, types and routes, and

(4) pedestrian and traffic management methods,

The Proponent/applicant shall submit a copy of the approved plan to the Council prior to commencement of work.

2. Workplace Travel Plan

The proponent/applicant shall develop a Workplace Travel Plan for the proposal with the goal of achieving ...% modal share by employees in their journey to work, and submit the Plan for approval by ... prior to the issuing of an Occupation Certificate for the development. The Workplace Travel Plan shall also include ...

3. Number of Bicycle Spaces

A minimum of ... bicycle spaces are to be provided in the development. Details shall be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate.

4. Bicycle Access & End of Trip Facilities (example only)

Prior to the issue of the Construction Certificate, plans are to be submitted for the approval of the Certifying Authority identifying the following traffic and parking details:

- Separated access for bicycles via the carpark entry ramps are to be provided (by bollards or similar safety barrier) whilst also avoiding the requirement for bicycles to enter via the boom gates. To minimise any chance of conflict between cyclists and vehicles on the access ramps

- The location and design of ... bicycle storage spaces to be provided in accordance with the requirements of Council's adopted ... (policy/DCP) (eg 1 space per 200 sq.m. GFA), with the provision of male/female shower facilities and lockers.

5. Disabled Access

Access and facilities for people with disabilities shall be provided in accordance with AS1428 - "Design for Access and Mobility" where required by the Building Code of Australia (BCA), and the .... (Council) Access Policy (date). Prior to the issue of a Construction Certificate for new building work, a certificate certifying satisfaction of this condition from an appropriately qualified person shall be provided to the Certifying Authority.

6. Disability Discrimination Act

There is no guarantee the proposal will comply with the Disability Discrimination Act 1992. The proponent or DA applicant should consider the access requirements of the BCA to reduce the risk of non-compliance with the Disability Discrimination Act.

BCA Compliance – alterations and additions – upgrade of whole or part of building is required (CC Required)

(a) Pursuant to Clause 94 of the Environmental Planning and Assessment Regulation 2000, the building must comply with deemed-to-satisfy provisions of the Building Code of Australia (BCA) and the following:

(i) Access for people with disabilities (to the ground floor) – Part D3

(ii) Sanitary and other facilities – Part F2

(b) If compliance with the deemed-to-satisfy provisions of the BCA and the conditions listed above cannot be achieved, an alternate solution in accordance with Part A0 of the BCA must be prepared by a suitably qualified and accredited person and submitted to the Certifying Authority illustrating how the relevant performance requirements of the BCA are to be satisfied. Prior to a Construction Certificate being issued, the Certifying Authority must ensure that the building complies with the Building Code of Australia.

7. Street Awnings

The street awnings are to be designed and certified by a professional engineer. Awnings shall be designed and constructed with:

a) The minimum underside clearance:
- To the footpath – 3.0 metres
- Between the lowest part of the fascia or outer beam of an awning and the footpath – 2600mm

b) A minimum of 600mm clearance from the street kerb face

c) Beams and/ or stays (to support the awning) attached to the building. All structural metal fasteners, including nuts and bolts to be stainless steel

d) Roof water drained by an approved method to the internal property drainage system

e) Sufficient clearance of any powerlines and possible arcing – in accordance with .... Guidelines.

f) A qualified structural engineer is to inspect and certify that the awning is structurally adequate and in good repair, at a minimum of 5 year periods

These requirements shall be reflected in the Construction Certificate plans.

8. Outdoor Lighting

All outdoor lighting shall comply with, where relevant, AS/NZ1158,3.1: 2005 Pedestrian Area (Category P) Lighting and AS4282: 1997 Control of the Obtrusive Effects of Outdoor Lighting. Details demonstrating compliance with these requirements are to be submitted to the satisfaction of the Certifying Authority prior to the issue of a Construction Certificate for above ground works.

9. Design Modifications (example only)

Documentation incorporating the following amendments shall be submitted for approval to ... prior to the issue of a Construction Certificate for above ground works:

(1) Weather protection device to provide continuous cover over the footpath along the Road frontage, extending from ... to ...

(2) Installation of security cameras along western elevation of the buildings facing rail corridor to address security for fire exits and future cycle way,

(3) Final design of fencing along the ... boundary including type and style endorsed by .... Such fencing shall be coated with anti-graffiti paint or other coating to ensure that the graffiti can be easily removed.

(4) Mechanical ventilation, where required to achieve acoustic privacy, shall be incorporated into the overall design to avoid any external structures to be installed on ad-hoc basis.

(5) Carpark glazed facades along Road: `treatment of the glazed facades up to 1.4 metres from finished level of footpath to provide visual Interest in display such as changing graphic display, public art, translucent or patterned glazing etc. Third party advertising shall not be permitted. The treatment should be compatible with maintaining passive surveillance of the carpark.

10. Treatment of Vehicular Entry

In order to improve the appearance of the building when viewed from the street, any part of the walls and ceilings of vehicular entry points that are visible from the street shall be finished in high quality materials and no service ducts or pipes are to be visible. Details shall be provided to the Certifying Authority prior to issue of Construction Certificate for above ground works.

11. Roads Act, 1993

A separate application shall be made to Council for approval under Section 138 of the Roads Act, 1993 to undertake any of the following:

    (1) erect a structure or carry out a work in, on or over a public road, or

    (2) dig up or disturb the surface of a public road, or

    (3) remove or interfere with a structure, work or tree on a public road, or

    (4) pump water into a public road from any land adjoining the road, or

    (5) connect a road (whether public or private) to a classified road.

12. Public Works (example only)

The following public works are required:

* Reticulation of electricity supply underground within the immediate vicinity of the site (...Streets) at the applicant's expense
* Replacement and widening of footpaths within ....(Streets), subject to consultation and approval from Council
* Provision of significant street plantings, streetscaping .....within....

13. Public Domain Improvements

Public domain improvements shall be undertaken in accordance with the landscape Master Plan prepared by .....

Improvements along the street frontages of the site shall have regard to ..... (Council Streetscape Policy)

14. Bicycle Tracks (example only)

A two metre wide bike track will be constructed within the four metre wide strip which runs along... and will extend from the northern side of the road to the northern boundary of the property. It is intended that an x metre wide landscape strip be provided on each side of the pathway. It is assumed that the natural levels of the site are satisfactory for the construction of the bikeway without the need for any significant site works. All existing services, such as drains, catch drains, traps, pits, grates and covers will remain in place. If any relocation or services is required this will only be with the approval of ....

15. Relocation of Bus Zones & Changes to Signposting

Approval will be sought from Council's Traffic Committee to approve relocation of bus zones and changes to any signposting. Compliance with any such conditions of this approval must be presented to the satisfaction of the Certifying Authority prior to commencement of work on the site.

16. Village Bus Service Provision

A bus service to and from .... shall be provided for the use of residents of the Seniors Housing 'free of charge', or provision made for a public bus service to the development occupation of the development.

17. Provision of Street Trees

A total of .... street trees shall be planted in the Council nature strips in .... (street). The tree species shall be ..... These trees are to:

* have tree grates and vandal resistant tree guards; and
* have a minimum plant pot size of 250mm;

Details of the location of the street trees are to be approved by Council's .... Section and :

* Kept clear of underground public utility services (utility services are to be shown in detailed design plan)
* Located not to impede/reduce sight distance of drivers of vehicles entering/exiting the site;
* Constructed with a suitable root barrier where the trees are to be located adjacent to any kerb and gutter and any stormwater infiltration/detention area within the site (and adjacent sites)

18. Establishment of Landscaping /Street Trees

A Landscape Establishment Report is to be submitted to the Council following completion of a three month maintenance period, verifying that satisfactory maintenance of the landscape works has been undertaken and any necessary rectification measures have been carried out to a high professional standard.

19. Landscape Maintenance

The owner/ proponent shall ensure that landscaping provided in private ownership is maintained at all times to the standard approved in the Landscape Plan required herein.

20. Protection of Trees - Street Trees

All street trees, shall be protected at all times during construction. Any tree on the footpath, which is damaged or removed during construction, shall be replaced, to the satisfaction of Council.

21. Detailed Landscape Design for Cycleways: CPTED

Detailed landscape design for the cycleway connection along.... to be submitted and approved prior to the issue of a Construction Certificate, must encourage use of these pathways by the general public, and be designed in accordance with principles of Crime Prevention Through Environmental Design, allowing for sufficient lighting and sight lines from adjoining residential development.

22. Detailed Landscape Design for Cycleways: Maintenance

Detailed plans for public open space areas, to be submitted and approved prior to the issue of a Construction Certificate, shall demonstrate that all bridges, boardwalks or similar structures associated with cycleways, parks or pedestrian paths are of robust construction and designed to minimise long term maintenance. The subframe will be either hardwood, recycled plastic, fibre composite or similar material. The decking, kickboards and handrails shall utilise appropriate recycled plastic materials.

23. Evaluation and Monitoring of Projects

Evaluation and monitoring strategy is to be prepared and approved by the Director General/Council prior to the issue of an Occupation Certificate. In particular, the strategy is to cover...

4.5 Glossary of Terms

Term / Acronym	Definition
Accessibility	The ability and ease with which an individual can enter, use and exit a particular environment, regardless of age and/or level of mobility.
Accessibility Assessment	A report undertaken by a qualified individual or organisation to identify whether a proposed development (including new facilities, upgrades, extensions etc) complies with all relevant standards, such as the applicable sections of the Building Code of Australia (BCA) and a Council's own standards (such as a Pedestrian Access and Mobility Plan). The report may assess the physical accessibility of the site of the development and the immediate surrounds, as well as the means available (e.g. public transport) to access nearby facilities and services.
Active frontage	Street frontages where there is active visual engagement between those in the street and those on the ground floors of buildings. This quality is assisted where the front facade of buildings, including the main entrance, faces and opens towards the street.[55]
Active Street	Streets along which people shop, work meet, relax and often live and are usually well serviced by public transport.
Active Travel	Walking, cycling and/or using public transport.
Amenity	Relates to the qualities, characteristics and attributes people value about a place which contributes to their experience of a high quality of life.[56] These include the physical landscape or streetscape; areas of vegetation and public and private open space for recreation, such as parks, reserves and gardens; urban design, including the scale and dominance of buildings; historic and cultural heritage; public views and outlooks; privacy; physical safety; and the accessibility of places.[57]
Australian Standards (AS)	The peak non-government organisation charged by the Commonwealth Government which recognises, rewards and promotes excellence in design and innovation.
Bicycle Users Group (BUG)	A group of people with some shared interests and goals in relation to cycling.[58]
Building Code of Australia (BCA)	A set of technical provisions for the design and construction of buildings and other structures, covering matters such as structure, fire resistance, access and egress, as well as certain aspects of health and amenity. The Code is produced and maintained by the Australian Building Codes Board on behalf of the Australian Government. The Code has been given the status of building regulations by all States and Territories.
Car Pooling	The planning and shared use of a car or other motor vehicle by the driver and one or more passengers travelling in the same direction at the same time.
Car Sharing	Shared use motor vehicles provided by a membership based organisation with a centralised booking and billing system. Vehicles can be booked for as little as one hour.
Crime Prevention through Environmental Design (CPTED)	A crime prevention strategy that focuses on the planning, design and structure of cities and neighbourhoods. It reduces opportunities for crime by using design and place management principles that reduce the likelihood of essential crime ingredients (law, offender, victim or target, opportunity) from intersecting in time and space.[59]
Crime Risk Assessment	A systematic evaluation of the potential for crime in an area. It provides an indication of both the likely magnitude of crime and likely crime type. The consideration of these dimensions (crime amount and type) will determine the choice and appropriate mix of Crime Prevention Through Environmental Design (CPTED) strategies.
Disability Discrimination ACT (DDA)	The key piece of Commonwealth legislation which aims to eliminate, as far as possible, discrimination against persons on the grounds of disability in the areas of service delivery and access to services and employment.[60]
End-of-Trip Facility	Items required at a destination to facilitate the use of walking and cycling as an alternative means of transport. This includes facilities which cater for the needs of both the cyclist and their equipment.
Habitable Room	A room used for normal domestic activities such as a bedroom, living room, lounge room, kitchen, dining room, study, playroom or sunroom.[61]
Legibility	The extent to which people can understand the urban layout and find their way, including from different types of cues.[62]

55. See footnote 15.
56. Bell, K. 2000, Urban Amenity Indicators: The Liveability of Our Urban Environments, Environmental Performance Indicators, Technical Paper No.63 Urban Amenity, report prepared by EnviroSolutions NZ Ltd and Glasson Potts Group Ltd for the Ministry of the Environment.
57. PCE 1996, The Management of Suburban Amenity Values: Administration by Auckland, Christchurch and Waitakere City Councils, Parliamentary Commissioner for the Environment, Wellington, New Zealand.
58. Bicycle Victoria (2005), Bicycle User Group Start-Up Manual.
59. See footnote 13.
60. Commonwealth Government (1992), Disability Discrimination Act.
61. Department of Urban Affairs and Planning and NSW Government Architect (1998), Better Urban Living: Guidelines for urban housing in NSW.
62. See footnote 25.

Term / Acronym	Definition
Liveability	In a planning context, it refers to the perceived quality of a place, including the built environment and open space, as well as the location and accessibility of services and facilities required to undertake daily activities. It can also encompass intangible elements such as a place's character, cultural heritage and 'sense of place'.
Local Area Traffic Management (LATM)	Involves the re-engineering of local roads to distribute and in some cases reduce traffic in particular streets through the use of traffic calming devices. It also encourages traffic to slow down
Maintenance Plan	A plan designed to address the continuous protective care of an item or area, as distinguished from repair, which involves restoration or reconstruction.
Mode-share	The proportion of travel which is undertaken using different forms of transport, such as public transport, car, bicycle and walk.
Pedestrian and Access Mobility Plan (PAMP)	A comprehensive strategic and action plan to develop policies and build pedestrian facilities.[63]
Permeability	The degree of physical and visual accessibility; more specifically, maximising connections with surrounding streets and activities and making their role clear to potential users.[64]
Public Domain Plan	A set of construction level plans, sections and details showing the public domain surrounding a development site reconstructed in accordance with a Council's standards.[65]
State Environmental Planning Policy (SEPP)	A policy proposed by the Minister and approved by the Governor. They address matters of State significance, such as seniors housing.
State Environmental Planning Policy – Housing for Seniors of People with a Disability (Seniors Living SEPP)	A NSW government policy which aims to encourage the provision of housing (including residential aged care facilities) in order to increase the supply and range of residences that meet the needs of older people and people with a disability. It sets out the development criteria and standard which must be met in terms of a development's built form and the availability of, or access to, appropriate support services.[66]
Transport Access Guide (TAG)	A concise set of information on how to reach a destination or particular site using active and sustainable forms of travel - public transport, cycling and walking. The guide can be provided in a number of formats .e.g. printed, web-based etc) and include summarised or detailed maps and written information.
Traffic Management Plan (TMP)	A plan which is designed to manage traffic during the construction of a project to reduce congestion, by clearly directing and controlling traffic flow which has been affected by the development, whilst minimising interruptions.
Transport Management and Accessibility Plan (TMAP)	A plan designed to promote a reduction in the use of motor vehicles in favour of increased use of public transport, cycling and walking as alternate modes of transport, with the overall view of increasing the sustainability and liveability of the area.
Vehicle kilometres travelled (VKT)	A measure of the total distance travelled by cars and other vehicles.
Walkability	In qualitative terms, it is the relative condition of an area to be conducive to accessing on foot. In quantitative terms, walkability is defined by drawing a line along all streets up to a distance of 400 metres (for a centre) or 800 metres (for a centre that includes a public transport stop) and identifying all sites accessible to that line.[67]
Walkability catchment	The space within which it is considered possible to readily reach on foot. The catchment area is generally defined as a radius of 400m (or 5 minutes walk) around a centre, and 800 metres (or 10 minutes walk) around a centre that includes a public transport stop.[68]
Wayfinding	Wayfinding refers to the manner in which people orientate themselves in their physical environment and navigate from one place to another. It incorporates the processes of knowing where you are, where you are going to, the best way to get there, recognising when you have arrived at your destination and knowing how to leave the area. Wayfinding can also include indications of where people should not go.
Workplace Travel Plan (WTP)	A document created at a place of employment or organisational level. They are designed to create awareness and increase use of more sustainable travel options to and from the workplace, including walking, cycling, public transport and car-pooling. They also aim to identify the financial, health and time-saving benefits of an increase in the use of these forms of active travel and a reduction in the reliance on motor vehicles.

63. See footnote 10.
64. See footnote 25.
65. City of Sydney (2009) Public Domain Manual.
66. See footnote 34.
67. See footnote 3.
68, See footnote 3.