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Executive Summary

The City of Perth has a vision – to provide an effective pedestrian friendly movement system integrating transport modes in order to maintain a high level of accessibility to and within the city (Strategic Community Plan: Vision 2029+).

The city is going through a period of immense change. The City’s residential and employee populations are increasing year-on-year and expected to increase by over 50% by 2031. Pressures relating to this level this growth are already being seen on the city’s pedestrian network, particularly within the CBD core.

While providing for pedestrians is a key theme in many of the City’s policies, there is still an underlying priority given to private vehicles. This is contrary to the City’s Urban Design Framework, which states that pedestrians should be afforded the highest level of priority within the city.

This study has highlighted two key barriers to the delivery of the City’s walkability vision. The first relates to the differing agendas of both Local and State Government, the objectives of which do not always align. At a simple level, Main Roads WA prioritises vehicle movements while the Public Transport Authority prioritises bus movements. This fits with their respective operating prerogatives; however, the prerogatives can be to the detriment of pedestrians and the urban environment.

The second key barrier is the lack of a ‘walkable voice’. When implementing city projects more emphasis is placed on the impact to vehicles than on pedestrians. In addition, complaints from road users are considered before pedestrians.

An absence of walkability tools available to decision makers to determine the walkability of a city project is also evident. There is currently no process in place to monitor the overall walkability of the city.

It is in the City’s and State Government’s interests to improve walkability. Research demonstrates that embracing walkability provides cities with a range of benefits. The health benefits are commonly recognised; however, there is a significant body of emerging evidence demonstrating the economic benefits. Other benefits include improved liveability, higher land valuation, less private vehicles on the road (less congestion and associated pollution) and high public transport patronage. These all benefit both the community and government directly.

It is recommended that the City builds upon the existing suite of strategies and polices, and introduces measures that put walkability at the forefront of city design. Stakeholders buy in is key and it is suggested that the City looks to develop a Walking Charter, signed by both internal and external key stakeholders.

Key recommendations include:

- Develop a City of Perth Walking Charter
- Develop a pedestrian network hierarchy
- Undertake ‘Link and Place’ assessment
- Introduce Quality Audits
- Utilise walkability assessment tools
- Monitor walkability
- Host a car free event
Introduction

Walking is the most frequent and basic form of transport. It is also a primary (although often unconscious) form of exercise. Pedestrian activity is a strong indicator of economic vitality and social inclusivity. For these reasons, it is very much a cornerstone of most cities’ planning and transport agendas.

Walking plays an important role in the overall operation and environment of the city. A significant proportion of Perth residents walk to work compared to the Perth region as a whole. Moreover, many thousands of walking trips occur between workplaces and other destinations including entertainment and retail.

<table>
<thead>
<tr>
<th>Mode of Travel</th>
<th>City of Perth Resident</th>
<th>Perth Region</th>
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<tr>
<td>Private Car</td>
<td>36.0%</td>
<td>68.9%</td>
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<tr>
<td>Public Transport</td>
<td>19.9%</td>
<td>10.4%</td>
</tr>
<tr>
<td>Walk</td>
<td>22.8%</td>
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Source: Strategic Community Plan: Vision 2029+

The City of Perth is working actively to improve walkability within the city. The ‘Our Walkable City’ initiative identifies that walking is a fundamental part of city life. It is a core component of the various initiatives the City is involved in. The creation of an Integrated Transport Strategy (ITS) to outline the City’s long term vision is central to the success of the initiative.

This Walkability Study is a strategic piece of work which will underpin the ITS and future work that the City will undertake regarding the walking environment.

Study Objectives

The objectives of the Study are as follows:

- Articulate the value of walking and highlight the variety of benefits associated with implementing walkability improvements
- Emphasise the benefits of an integrated approach to planning for the walking environment recognising the role of land use planning, economic development, transport planning, urban design, and other work streams
- Review the current practices being implemented to improve the walking environment in central Perth
- Highlight major impediments to walkability that exist today, and that may emerge in the future
- Recommend strategies, policies and projects that can improve walkability.
A Definition of Walkability

There is no universal definition of walkability. Abley (2005: p3) defines walkability as “the extent to which the built environment is walking friendly”.

Despite no absolute definition, many researchers have common ideas regarding the environmental attributes that contribute to walkability. These can be categorised as follows:

Connectivity

Connectivity refers to the density of the pedestrian network and the ease with which pedestrians can travel from one point to another. The physical permeability of a city is determined by the number and pattern of its public streets, lanes, alleys, arcades, squares and parks.

Blocks of 200m have a coarse circulation pattern, which is unsuitable for pedestrian circulation and movement. Blocks of 80-110 m offer a circulation mesh that is convenient both for pedestrian and vehicular movements. Finer mesh networks of 50-70m are highly appropriate in areas of intense pedestrian activity particularly in retail core blocks (Brierley, 2013).
Visibility

The visibility of pedestrians within the urban environment and extent to which they can be seen from nearby active land uses and frontages. Research shows, all things being equal, that natural surveillance can increase propensity to walk (Craig et al. 2002)

Sense of Place

People are attracted to people. Good built environments encourage social interaction, while also enabling people to choose when, where and with whom that interaction will occur. A key ingredient of a convivial space is a diversity of active, ground-floor frontages and activities to engage and attract a critical mass of pedestrians (Roberts et al. 2001)

Active frontage at night, Leederville

Forrest Place, Perth
Comfort

Comfort refers to the amenity afforded within the pedestrian environment including access to shade and shelter and the provision of street furniture for rest breaks, hydration and way-finding. Quality of the walking environment including streetscape amenity has been found to correlate with both active transport and recreational walking (Giles-Corti and Donovan, 2003; Humpel et al. 2002; King, 2008; Pikora et al. 2006; Titze et al. 2010)

Convenience

Walking is the most convenient form of transport within the city environment. There is no need for timetables or wasted time finding a suitable car parking space. To remain convenient pedestrian delays need to be kept to a minimum and desire lines catered for. Pedestrianisation of Hay and Murray Street Malls makes access to a range of retail and leisure uses convenient for pedestrians of all abilities.

Murray Street Mall, Perth

Hay Street Mall, Perth
Walkability Indices

Researchers have developed indices to represent relative walkability although disputes remain regarding the importance of certain attributes and their weightings (Frank et al. 2005; Owen et al. 2007; Owen et al. 2004). Various tools have been designed to audit the walkability of a given environment or specific (potential) benefits of a proposed investment in walkability. Examples include:

- **Walk Score** – a Web-based engine that creates walkability indices through assessment of the accessibility of selected ‘daily’ amenities

- **Pedestrian Environment Review System (PERS)** – a Web-based tool developed in the UK that can be used to audit in detail the attributes of a selected environment

- **New Zealand Transport Authority (NZTA) Economic Evaluation Manual** – analytical framework for estimating the value associated with walking and pedestrian improvements

- **Public Life & Public Spaces Survey** – developed by Jan Gehl Architects, a human behaviour and lifestyle survey analysing the quality of urban public space

This Walkability Study does not present any new definitions or try to address these uncertainties. Rather, it acknowledges the generally-accepted attributes of a walkable environment in the aggregate and discusses these in the context of the City of Perth. In particular, the relative applicability of these attributes to different spaces within the City is considered.
The Value of Walking

The Economic Case

Walking is traditionally one of the most undervalued and underrepresented modes of transport available, including its importance in creating liveable cities.

There is a significant body of existing and emerging evidence demonstrating that enhanced walkability brings both immediate and strategic economic benefits for retail environments. These include:

- Increased footfall
- Duration-of-stay
- Expenditure
- Increased property values
- Increased capital investment
- Diversification and growth (reinforcing)
- District/ regional competitiveness.

Analysis completed by SGS Economics ahead of preparation of the City of Melbourne’s Draft Walking Plan found that a 10% increase to walking connectivity within the Hoddle Grid (CBD area bounded by Flinders Street, Spring Street, La Trobe Street and Spencer Street) could lead to a 6.6% uplift in the local economy worth about $2.1B (AUD).

Key Economic Statistics

- Improvements to public spaces can increase footfall and trading by up to 40%
- Investment in walking and cycling infrastructure and amenity can increase nearby retail sales by 30%
- Walking projects exert a positive influence on land values with evidence of 10-30% rates uplift
- Pedestrian delay at traffic signals is valued at $39.04 (AUD) per hour for business trips and $12.20 (AUD) per hour for non-business trips

*(Lawlow, 2012 and AECOM, 2011)*

Living Streets’ Making the Case report highlights a study in Bristol (UK) which found that retailers on a local high street overestimated the proportion of shoppers arriving by car by almost double at 41%, compared with the actual proportion of 22%. In fact, over half of the shoppers had arrived there by foot, and greater proportions had arrived by bus and cycle than estimated by retailers. Pedestrians also tended to visit more shops than those arriving by car.

Similarly, Transport for London's Town Centres Survey 2003-4 found that people walking to a town centre spent an average of £91 (GBP) per week in the area, as compared to £64 (GBP) for car drivers. These findings demonstrate that retailers may not be informed adequately of both the benefits of walking and the importance of walk-up patronage of their businesses.
(Re)Creating Liveable Cities

The walkability of a city is a key indicator to the liveability of a city. Put simply, cities with high levels of walking benefit from reduced congestion, improved air quality and social inclusion. Pedestrians, be it those who are walking for business, leisure or just lingering, are the blood of street life and creators of a sense of place.

The ability to walk to a range of local amenities was once a given. The creation of suburbia and car dominated cities removed this basic activity. It is now considered a luxury to be located within easy walking distance of shops and street activity.

US research demonstrates that the walkability of an area is directly linked to higher home values. Homes with above-average Walk Scores (according to walkscore.com) are worth $4,000 – $34,000 (USD) more than similar but less walkable homes (Cortright, 2009). A walkable lifestyle is now being branded with the same enthusiasm as a double garage.

Many cities are rebranding themselves as walkable, with major projects aimed at improving access for pedestrians regularly hitting the international headlines. The High Line in New York is a great example of pedestrian infrastructure introduced to benefit the residents of Manhattan but is also now a major tourist attraction.

London is currently in the process of planning a new pedestrian bridge crossing the Thames River. The Garden Bridge will create a new pedestrian-only route south in an expansive garden setting.

Case Study: Times Square, New York

A case study example from Times Square in New York demonstrates the value of tactical projects. In 2009, road-space was transformed overnight using cheap materials into a trial pedestrian plaza. After eight months, the plaza was made permanent on Broadway between 42nd and 47th, and 33rd and 35th Streets. According to NYDOT (2010), key outcomes included:

- No vehicular gridlock as some forecast
- 84% increase in dwelling pedestrians
- 42% of residents surveyed say they shop more often in the precinct
- 35% reduction in reported pedestrian injuries.
Healthy and Active

Regular physical activity is a crucial aspect of public health strategy to address health risk factors such as heart disease and obesity. It is also a simple and cheap treatment regime (Rees, 2003). In the mid-2000s, about 13,000 deaths per annum in Australia were attributable, at least in part, to physical inactivity (Begg et al. 2007).

Particular benefits of regular physical activity can include significantly reduced risk of serious chronic illness such as heart disease, osteoporosis, colon cancer and type II diabetes (Bauman et al. 2002; Davis et al. 2005; Miller and Dunstan, 2004; Transportation Research Board, 2005).

The majority of the population are ambulant and walking represents an easy means for regular, beneficial physical activity (Cao et al. 2006; Ploeger, 2003; Sallis et al. 2004).

Walking benefits those of all abilities however. Mental health and social capital are tied to walkability (Cavill, 2003; Putnam, 2000). When environments are conducive to walking activity and street life, there is added opportunity for chance encounters and socialisation. These are conditions that should typify activity intense inner-city locations.

Investment in walkability represent the realignment of urban planning and public health policy (Coburn, 2004; Frank et al. 2003; Greenberg et al. 2005). These sorts of investments, from a public health policy perspective, also represent value-for-money given they can benefit populations rather than just individuals (Giles-Corti et al. 2005; Sallis et al. 1998).
The Value of Walking: Summary

Walking is traditionally one of the most undervalued and underrepresented modes of transport available, including its importance in creating liveable cities. This because walking is often considered to be:

- Incidental to other activities
- Unimportant because, compared to vehicles, it does not provide the flexibility of mobility
- Less reliant on significant investment in supportive infrastructure, and corresponding job creation
- Simply a part of a trip chain involving other modes of transport. German research shows that about three times as many trips involve some walking compared to being walking exclusively (Brög et al. 2003).

There is a significant body of existing and emerging research demonstrating that enhanced walkability brings both immediate and strategic benefits for the economy, health and liveable cities.

Economic Benefits

- Improvements to public spaces can increase footfall and trading by up to 40%
- Investment in walking and cycling infrastructure and amenity can increase nearby retail sales by 30%
- Walking projects exert a positive influence on land values, with evidence of 10-30% rates uplift
- Pedestrian delay at traffic signals is valued at $39.04 (AUD) per hour for business trips and $12.20 (AUD) per hour for non-business trips
- Retailers significantly overestimate car use by shoppers and underestimated alternative mode use. Walking was most underestimated (by 44%)
- Homes with above-average Walk Scores (according to walkscore.com) are worth $4,000 – $34,000 (USD) more than similar but less walkable homes.

Health Benefits

- Walking is a simple and cheap treatment regime to compact inactivity significantly reducing risk of serious chronic illness such as heart disease, osteoporosis, colon cancer and type II diabetes
- The majority of the population are ambulant and walking represents an easy means for regular, beneficial physical activity
- Mental health and social capital are tied to walkability
- Investment in walkability represent the realignment of urban planning and public health policy.
Delivering Walkability

A Changing Planning Context

Traditionally, many standards and guidelines applicable to transport network planning in Australia and overseas have focused on vehicular priority and level-of-service. In some respects, provision of pedestrian infrastructure has been incidental to facilitating vehicular flows.

For example, network planning guidelines and standards from the second half of the 20th Century often specified how active transport infrastructure could be bolted-on to road reserves once the form and function of the road was determined within a vehicular movement hierarchy. There was little attention to the needs of pedestrians within activity intense environments: e.g. where there could be a higher density of pedestrian activity, greater crossing demands and more risk of conflict with traffic.

In more recent years, traditional roads and transportation authorities and institutes – notably the UK Department of Transport, the US Institute of Transportation Engineers and Austroads – have produced more holistic design manuals. These manuals place much more focus on pedestrian needs especially within centres.

Furthermore, they encourage flexible infrastructure planning in recognition that there is no ‘one size fits all’ in complex urban environments. It is this sort of flexibility that is required in the City of Perth, given the diverse use of space across the administrative area.

Leading by Example

Internationally, Walking Plans have been prepared in many contexts in view of how important walkability is to the success of cities. London (2004), Melbourne (2014) and Knox, Victoria (2005) provide excellent examples of Plans for cities with different geographies.

Plans are structured typically to capture a City’s vision, cover aligned policy and strategy, address the City’s unique geography, overview facts, benefits and barriers, and specify an Action Plan.

The City of Melbourne’s Draft Walking Plan is a particularly useful reference for the City of Perth. The Plan was adopted in November 2014 by the Future Melbourne Committee and is intended to form part of an integrated approach to transport.

Its development was predicated by recognition of street life being of great importance in the CBD, and walking representing the start and end of virtually all trips (if not the primary mode choice). Furthermore, economic evaluation by SGS Economics as background to Plan demonstrated potential for strong economic spin-offs from investment in walkability (see preceding section). The City is aiming for a 63% increase in walking trips 2009-2030.

1 Examples include the UK Manual for Streets (editions 1 and 2), ITE Context Sensitive Solutions and Austroads Guide to Traffic Management Part 7 – Traffic Management in Activity Centres.


Walk 21 International Charter for Walking

The City of Perth, along with the City of Melbourne, are signatories to the Walk 21 Charter.

The Charter requires the cities to ‘work with others to create a culture where people choose to walk’ through application of following strategic principles:

- Increased inclusive mobility
- Well-designed and managed spaces and places for people
- Improved integration of networks
- Supportive land-use and spatial planning
- Reduced road danger
- Less crime and fear of crime
- More supportive authorities
- A culture of walking
An Integrated Approach

Achieving walkability demands an integrated multi-disciplinary, multi-agency, approach. A single-focus delivery of transport ‘solutions’ by agencies not only overlooks walkability, but also compounds barriers for walking and seldom facilitates intermodal exchange with safe and enjoyable walking routes and facilities.

The cornerstone of any project is political will and buy-in from a political champion. In Sydney, Mayor Clover Moore is an active walker and promotes walkability in the city. In the UK, Mayor Boris Johnson has championed bike and walking usage to great effect on the growth of London’s bike network.

Input from the community is also key to success. The community’s views should be sought upfront so their needs, concerns and aspirations can be documented and considered from the outset. To inform the emerging ITS, the City of Perth recently ran a community engagement campaign inviting users of the city to provide comment on all aspects of transport within the city. The feedback received should be treated with great importance as it provides a great insight into the views of those who regularly experience the city.

Planners and visionaries are required to understand what a city could offer from a walkability perspective and define existing deficiencies. These specialists, with the support of economists, can generate a convincing case for investing in walkability; answering the ‘why’ question.

Engineers and urban designers are needed to assist with defining physical solutions. Artists and others with strong creative skills can assist by helping to create unique senses of place as part of implementation. Policy-makers and project champions play a crucial role in delivery and advocacy.

Successful Walkability Plans and Strategies are developed inclusively and holistically. They also borrow liberally from work undertaken in other geographies, carrying forward lessons learned and tailoring solutions to benefit context. The City of Perth has adopted many of these ideals in previous work, the undertaking of the current study and with future production of an ITS.
Case Study: Integrated Delivery
St Georges Terrace Urban Realm Improvements

In 2011 the City of Perth commenced an $11.4m upgrade to St Georges Terrace. This project formed part of a wider initiative to transform the CBD into a pedestrian-friendly and vibrant area to work, live and play.

The upgrade implemented wider footpaths, a broader median strip and enhanced pedestrian crossings improving access to shops, offices and the Perth foreshore. Pedestrian areas were repaved with high-quality granite and lined with trees to make the Terrace more inviting, relaxing and suitable for alfresco dining.

Bus lanes were established in both directions along with new bus stops. Traffic lanes were reduced from six to four lanes and a new 40km/hr speed limit introduced in order to make the area safer for pedestrians.

The project was led by an integrated multi-disciplinary team of professionals from the City of Perth and State Government, including:

- Urban designers
- Arboriculturists
- Traffic engineers
- Public transport planners

The project has been a great success and highlights what can be achieved through an integrated approach to design. The project also demonstrates the City’s experience in delivering projects in a collaborative, integrated manner.
Delivering Walkability: Summary

A Changing Planning Context

Traditionally, many standards and guidelines applicable to transport network planning in Australia and overseas have focused on vehicular priority and level-of-service. In some respects, provision of pedestrian infrastructure has been incidental to facilitating vehicular flows.

In more recent years, traditional roads and transportation authorities and institutes – notably the UK Department of Transport, the US Institute of Transportation Engineers and Austroads – have produced more holistic design manuals. These manuals place much more focus on pedestrian needs especially within city centres.

Leading by Example

Walking Plans have been prepared in many contexts in view of how important walkability is to the success of cities. Melbourne and London provide excellent examples of plans for cities with different geographies.

The City of Perth is a signatory to the Walk 21 Charter. The Charter requires the cities to ‘work with others to create a culture where people choose to walk’ through application of following strategic principles:

- Increased inclusive mobility
- Well-designed and managed spaces and places for people
- Improved integration of networks
- Supportive land-use and spatial planning
- Reduced road danger

- Less crime and fear of crime
- More supportive authorities
- A culture of walking.

An Integrated Approach

Achieving walkability demands an integrated multi-agency multi-disciplinary approach.

The cornerstone of any project is political will and sponsorship from a political champion. Input from the community is also key to success.

Planners and visionaries are required to understand what a city could offer from a walkability perspective. With the support of economists, these specialists can generate a convincing case for investing in walkability; answering the ‘why’ question.

Engineers and urban designers are needed to assist with defining physical solutions. Artists and others with strong creative skills can assist by helping to create unique senses of place as part of implementation. Policy-makers and project champions play a crucial role in delivery and advocacy.

The upgrade of St Georges Terrace was delivered using a collaborative design approach and demonstrates the City’s experience in delivering projects in a collaborative, integrated manner.
**Policy Vision**

The City of Perth possess a suite of existing policy documentation which set out a sound vision for walkability within the city. Key documents include:

- Strategic Community Plan: Vision 2029+
- Urban Design Framework
- Public Spaces and Public Life
- City Planning Scheme 2
- Forgotten Spaces – Revitalising Perth’s Laneways

In addition to the City’s policy documents State Government has produced the 2012 CBD Transport Plan, which is more initiative and implementation focused.
**Strategic Community Plan: Vision 2029+**

The City of Perth’s Strategic Community Plan: Vision 2029+ sets out the Council’s latest aspirations, objectives and vision for the city.

The vision for 2029 places particular emphasis on the need to provide an accessible and connected movement network to encourage people to walk.

The Plan identifies six key themes for delivering the vision, of which the majority relate directly or indirectly to walkability:

- **Getting around Perth** – An effective pedestrian friendly movement system integrating transport modes to maintain a high level of accessibility to and within the city

- **Healthy and Active in Perth** – A city with a well-integrated built and green natural environment in which people and families choose a lifestyle that enhances their physical and mental health and take part in arts, cultural and local community events

- **Perth as a Capital City** – The City is recognised as a city on the move and for its livability, talented people, and centres of excellence and business opportunities

- **Living in Perth** – The City is a place where a diverse range of people choose to live for a unique sustainable urban lifestyle.

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**City of Perth Community Vision for 2029**

‘In 2029, Perth is recognised as one of the safest cities in the world. The city is people-oriented, a social hub that attracts people to its heart day and night. People feel safe to visit the city after dark, promenade along its streets, visit its attractions and use its transport systems. Movement to and within the city is efficient and easy to use. The accessibility and connected nature of the movement network encourages people to walk and cycle.

Excellent public transport services are the preferred choice of people coming into the city for all purposes. Mass transit systems such as light rail have been introduced to accommodate increased movement between major activity nodes in and around central Perth, including major medical facilities and universities.

The city has a number of distinct residential communities within the mixed use city environment in which people can live, play and shop locally.’
**Urban Design Framework**

The City of Perth Urban Design Framework: A Vision for Perth 2029 (UDF), published in 2010, is a design tool that provides a physical interpretation of the City of Perth’s vision and strategies. It helps to ensure that the built environment reflects the Council’s vision.

The UDF prioritises pedestrians in a modal hierarchy. Pedestrians include those who have arrived within the city by public transport or private car and transition to walking.

The UDF targets improved pedestrian permeability within the city setting an objective to increase the granularity of the walking network. In particular, it encourages the creation of pedestrian routes through large street blocks where pedestrian routes do not exist currently.

A general principle of the UDF is to seek the gradual removal of pedestrian overpasses, as alternative street level options become better developed. At present Perth railway station is accessed via pedestrian overpasses bridging Wellington Street and Roe Street. Perth Exhibition Centre is accessed via a pedestrian overpass bridging Mounts Bay Road.

The UDF includes a clear future plan for the movement of pedestrians through the city, taking into areas of future development including Elizabeth Quay, Riverbank and Perth City Link.

---

**Urban Design Framework: Transport Hierarchy**

- 1. Pedestrians
- 2. Cyclists
- 3. Public Transport
- 4. Taxis
- 5. Service Vehicles
- 6. Private Vehicles
Urban Design Framework: Movement of Pedestrians and Cyclist
Public Spaces and Public Life

Public Spaces & Public Life (2009) was commissioned jointly by the City of Perth and the Department for Planning. The report, produced by Gehl Architects, gathered data about the public life in central Perth, and identifies constraints and opportunities for future public realm planning.

The main purpose the study was to provide an update to an earlier study undertaken in 1994.

The 2009 study made a total of eight recommendations for the future planning of the city, all of which bring benefits for walkability:

- Celebrate the unique setting
- The waterfront is key
- Bring in more residents
- Bring in more students
- Create a diverse and vibrant 24-hour city
- Expand and refine the people friendly city
- Create a fine city for cycling
- Provide more invitations for enjoying the city.

Recommendations from the 1994 study included reducing waiting time for pedestrians at traffic signals to no more than 45 seconds and removing push buttons. The 2009 study observed that these recommendations had not been adopted.

City Planning Scheme 2

All land that the City of Perth is responsible for is subject to the City of Perth City Planning Scheme (CPS) No 2.

Section 4 of the CPS provides guidance on the design of buildings and spaces to achieve an enhanced urban environment, and to improve the experience of the city for pedestrians. It addresses urban design and integration of land use, vehicle and pedestrian movements, and traffic management.

An objective of the policy is to deliver a high level of amenity within the public realm. The scale of development should create a comfortable pedestrian environment that feels safe and inviting, and is accessible to all users.

Key design principles in relation to pedestrians include:

- Buildings and public spaces are designed to be accessible to all users whatever their ability, with equity and dignity
- Places are designed to encourage accessibility and local permeability through integration with neighbouring developments
- Building designs contribute to an interesting pedestrian environment providing opportunities for weather protection.

The policy identifies the role development intensity, including bonus plot ratio, plays in achieving pedestrian interest and activity.
Forgotten Spaces – Revitalising Perth’s Laneway

The City of Perth has embarked on a long term plan to revitalise the City’s laneways and forgotten spaces. In August 2008, the City of Perth formally adopted the strategy “Forgotten Spaces – Revitalising Perth’s Laneways”.

The City’s commitment to improve laneways and encourage a ‘finer grain’ of activities in the central city area has already stimulated commercial interest in these previously neglected spaces.

To date a number of laneways have been upgraded including Grand Lane, Prince Lane, Wolf Lane and Howard Lane.

Public Health and Wellbeing Plan 2014-2016

The City of Perth Public Health and Wellbeing Plan 2014 – 2016 identifies the health and wellbeing needs of the community and defines the Council’s key priority areas for the next three years.

The Plan includes a range of strategies and actions that have been developed to align with health priorities at the global, national and state level. A number of these relate to walking and implementing walkable environments.

An action of the Plan identifies the need to promote the principles and projects contained within the City of Perth Urban Design Framework.

CBD Transport Plan (2012)

The CBD Transport Plan to 2016 includes a range of initiatives to manage the impact of major developments and a growing population on Perth’s city transport system. Key improvements for pedestrians include converting one-way to two-way streets and all-walk pedestrian crossing phases to parallel operation.

Since publication of the Plan Murray Street, Mounts Bay Road and Hay Street have all been converted to two-way operation. Barrack Street will become two-way in late 2015.

The Plan identifies conversion of 56 intersections from all-walk pedestrian operations to parallel pedestrian phasing. To date, over 34 intersections have been converted.
Policy Vision: Summary

The City of Perth possesses a suite of existing policy documentation that provides a sound vision for walkability within the city and gives clear instruction on how this vision is to be achieved. A key document in this suite is the overarching Strategic Community Plan for 2029 that commits to providing an accessible and connected movement network, which encourages people to walk.

The Urban Design Framework clearly interprets this vision and places great emphasis on the need to provide for pedestrians. A fundamental policy in the Urban Design Framework is the prioritisation of pedestrians over all other modes within the city. The Urban Design Framework also includes a clear future plan for the movement of pedestrians through the city, taking into areas of future development.

Implementing the principles and polices of the Urban Design Framework is a key action of the Public Health and Wellbeing Plan.

To date a number of the key elements of the Urban Design Framework have been implemented including the two-way street program and development of the Forgotten Spaces – Revitalising Perth’s Laneways strategy. Nevertheless, it can be argued that other policy elements are falling behind, particularly the prioritisation of pedestrians, as seen at many of the signalised intersections within the city. Poor cycle times and phasing leads to pedestrian delays.

The 2009 Public Spaces and Public Life study reflects the overall city vision and makes a total of eight recommendations for the future planning of the city, including reconnecting the city to the water front, attracting more residents, creating a vibrant 24-hour city and providing more invitations for enjoying the city.

Since the production of the 2009 Public Spaces and Public Life study, the major Elizabeth Quay development has commenced, which will reconnect the city with the river. The City’s residential population is also on the rise. A vast amount of work has been put into holding events within the city including the Fringe Festival, Twilight Hawkers Market, Urban Orchard and Night Noodle Markets. These events assist with creating a diverse and vibrant city, which attract visitors from afield. Nevertheless, there is still a long way to go to achieve a true 24-hour city. Restrictions in retail hours are a major barrier.

The City Planning Scheme provides direction for the implementation of the vision. The City Planning Scheme provides clear guidance on the design of buildings and spaces to achieve an enhanced urban environment, and to improve the experience of the city for pedestrians. 140 William Street is a success story demonstrating what this policy is aiming to achieve. It has been enhanced to create better interaction with the street edge.

The CBD Transport Plan to 2016 includes a range of initiatives to manage a growing population on Perth’s city transport system. Key improvements for pedestrians include converting one-way streets to two-way and all-walk pedestrian crossing phases to parallel operation.

Since publication of the Plan Murray Street, Mounts Bay Road and Hay Street East have all been converted to two-way operation. Barrack Street will be two-way in late 2015.

The Plan identifies conversion of 56 intersections from all-walk pedestrian operations to parallel pedestrian phasing. To date, over 34 intersections have been converted.
City of Perth Experience

On 9 and 10 April 2015, a two-part workshop was held to inform the development of the Walkability Study. The workshop involved a walkability brainstorming session followed by a walking tour.

The workshop was used as a medium for determining current practice used by the City and State Agencies with an interest in city planning to deliver walkability. The workshop was also used to determine what walkability means to the City, what the City considers is being done well to improve walkability and existing barriers to the delivery of more walkable environments.

The subsequent walking tour was designed to be an opportunity to explore the workshop findings and observe some key case study environments.

The primary findings of the workshop and walk tour are discussed in the following sections.

Walkability and the City of Perth

Workshop attendees were asked to summarise that walkability means to the City. The workshop highlighted that walking is seen as a mode of transport suited for short trips within the city. It was agreed that it should be easy, safe and ‘a given’. It should be the mode of choice and at the top of the mode hierarchy.

The workshop identified that there is a range of pedestrians within the City, from commuters to those walking for leisure. It was acknowledged that public transport users and car drivers are all pedestrians once they disembark from their vehicles.

Attendees noted that the area bordered by William, Wellington and Barrack Streets, and St Georges Terrace lacks legibility, especially throughout the network of arcades, over and under passes. Pedestrians have almost exclusive access throughout this area, but the level changes, lack of signage and poor through-block sight lines mean that this area is not easy to navigate, particularly for visitors to the city.

The walking tour highlighted differences in quality of walking environments within the city. The walking environment around Perth station is of high quality while McIver station is poor and in need of improvement (see the following case studies). This emphasises the level of investment devoted to improving the central core of the city and need to start to focus on areas outside of the core.
Case Study: Successful Walking Environment

Perth Station and Forrest Place

- Choice of routes for pedestrians to cross Wellington Street – underground (via station underpass), at-grade or over (via Forrest Place footbridge)
- Wellington Street at-grade pedestrian crossing provides a strong link between Forrest Place and Perth Station
- Pedestrian count-down at crossing considered positive
- Little delay to pedestrians at crossing
- Passive surveillance during the day. Night time less so
- Overpass provides a direct link to Northbridge and Perth Cultural Centre
- Comfortable environment – shade and seating
- Width of crossing allows multi-directional movements.
Case Study: Poor Quality Walking Environment

McIver Station

- Level-crossing frequently called leading to time delays for pedestrians moving through the area
- Poor lighting on links leading to the station
- Very little passive surveillance, especially at night
- No or little shade
- Noise pollution from frequent train movements
- Cycle and pedestrian conflict on Principal Shared Path (PSP)
- Poor legibility and way-finding
- Poor connection to Wellington Street
- Poorly maintained environment with graffiti (excluding commissioned murals) and rubbish
- Hostile environment for pedestrians.
Current City Projects

The workshop highlighted the range of projects, programs and initiatives being delivered by the City of Perth and State Government to make the city more walkable, notably:

- Parallel walks program – City-wide initiative
- Two-way streets program – Barrack Street, Murray Street West, Hay Street etc
- Laneway enhancements – Prince Lane, Howard Lane, Wolf Lane etc
- Ongoing general public realm improvements including St Georges Terrace and Forrest Place
- Perth parking levy to fund improvements
- MRA projects - Perth City Link, Elizabeth Quay etc.

Laneway Enhancements, Wolf Lane, Perth
Parallel Walks – A Successful Walkability Initiative?

The City of Perth has a strategy to make parallel walks the standard crossing facility in the city. This means pedestrians walk parallel with the traffic flow, with turning vehicles giving way to pedestrian traffic.

The CBD Transport Plan to 2016 identifies conversion of 56 intersections from all-walk pedestrian operations to parallel pedestrian phasing. To date, over 34 intersections have been converted.

The use of parallel walks split opinion. The primary objectives of the parallel walks program is to improve the connectivity of the footpath network and reduce the delay to pedestrians crossing. The theory states that removing exclusive pedestrian crossing phases provides improvements in traffic flow for both traffic and pedestrians, ultimately reducing congestion in the city.

In 2014 the City of Perth undertook a review of operation of all parallel works intersections in Central Perth. The review noted that cycle times for many intersections are very high (often two minutes or above), resulting in significant delays to pedestrians. Due to signal cycle times remaining the same throughout the day pedestrian delays occur at all times despite reduced levels of traffic.

Delays can cause pedestrians to become frustrated. This can lead to jay-walking, finding an alternative route or mode, or even not making the trip. The optimisation of signals at intersections to reduce delays to pedestrians is therefore essential.

At parallel walks intersections pedestrians are provided with a head-start before traffic turning is given a green signal. This allows pedestrians to establish their presence on the road. A head-start of five seconds is generally provided. This works well where there are large number of pedestrians crossing collectively as there is a perception of ‘safety in numbers’; however, at locations with lower pedestrian demand, crossing pedestrians (particularly vulnerable users such as the elderly) can feel exposed and unsafe.
Barriers to Delivery

One of the key barriers to improving walkability is the differing agendas of both Local and State Government, the objectives of which do not always align. At a simple level, Main Roads WA prioritises vehicle movements while the Public Transport Authority prioritises bus movements. This fits with their respective operating prerogatives; however, the prerogatives can be to the detriment of pedestrians. Whilst there is acknowledgement that public transport user’s start and end as pedestrians, this can often be lost in the end design.

Differing agendas are particularly evident when discussing the pros and cons of parallel walks, and pedestrian crossings in general. There is a want to reduce waiting times for pedestrians; however, this is perceived to be a detriment to bus travel times.

Internal stakeholder interests are also a barrier. City of Perth Parking (CPP) is run as a commercial entity and it is in their interest to encourage vehicle parking. This is also the case for private car parking operators who have facilities within the city, such as Wilson Parking. While all car drivers are pedestrians once they enter the public realm, traffic relating to parking has an impact on the overall walkability of the city.

Another barrier is the lack of a ‘walkable voice’. There is more emphasis on the impact on vehicles than on pedestrians and the public realm. In addition, complaints from road users are considered before pedestrians.

It is also evident that there are an absence of tools available to decision makers to determine the walkability of a city project and to monitor the overall walkability of the city.

Case Study: William Street/Murray Street Intersection

The intersection of Murray Street and William Street provides direct access to the pedestrianised core of the city. As such, it is crossed daily by a significant numbers of pedestrians.

Pedestrians wishing to cross at this location are required to wait up to 120 seconds. While the pedestrian count-down facility is considered positive (providing pedestrians with information on how long they have left to cross), long delays to pedestrians can lead to overcrowding on the footway. Combined with a lack of shade and shelter and a high volume of bus movements on William Street, this results in a poor pedestrian environment at a key entry point into the heart of the city centre.
City of Perth Experience: Summary

Walkability and the City of Perth

- Walking is seen as a mode of transport suited for short trips within the City. It should be the mode of choice and at the top of the mode hierarchy
- Walking should be easy, safe and ‘a given’
- Public transport users and car drivers are all pedestrians once they disembark from their vehicles
- Poor legibility within the city core due to the network of arcades, over and under passes
- Walking environments within the City are of variable quality, emphasising the level of investment devoted to improving the central core of the city and reinforcing the need to start to focus on areas outside of the core.

Current City Projects

- Parallel walks program
- Two-way streets
- Laneway enhancements
- Ongoing general public realm improvements including St Georges Terrace and Forrest Place
- Perth parking levy to fund improvements
- MRA projects - Perth City Link, Elizabeth Quay etc.

Barriers to Delivery

- Differing agendas of both Local and State Government, the objectives of which do not always align
- Internal stakeholder interests, including City of Perth Parking (CPP)
- Lack of a ‘walkable voice’
- Complaints from road users are considered before pedestrians
- Absence of tools available to decision makers to determine the walkability of a city project and to monitor the overall walkability of the city.
Future City Planning

Key Demographics

Population

The City of Perth population forecast for 2015 is 22,324. This is anticipated to increase by 58.48% to 35,378 by 2036\(^5\).

Local Jobs

The number of people working in the City of Perth has grown 62% since 2001, reaching a total of 190,000+ in the year ending June 2014\(^7\). Planned increased in office and retail space, as well as the addition of a number of new hotels, is expected to stimulate an ongoing increase the number of local jobs within the city.

Future Development

The City of Perth is evolving constantly. Some of the more notable developments influencing this evolution include:

- Elizabeth Quay – $2.6 billion project consisting of 200,000 sqm of new office space, 1,400 new residents and hotel accommodation
- Perth City link – A major development consisting of 220,000 sqm of new office space, 13,500 new residents, a new public square and bus station
- Waterbank – A 40-hectare riverside destination accommodating 7,000 new residents, shops, cafes, bars and an urban beach
- Capital Square - $1 billion development consisting of a 50-level high-rise residential tower and a 60,000 sqm commercial tower
- Perth Stadium –Major new sporting and entertainment precinct with future capacity for 70,000 patrons located on Burswood Peninsula. A new footbridge will link the stadium to East Perth
- Queen Elizabeth Medical Centre (QEII-MC) – Major ongoing redevelopment establishing QEII-MC as one of Perth’s major tertiary hospitals and a key health care delivery centres
- Princess Margaret Hospital (PMH) – PMH is to be relocated to QEII-MC and redeveloped as mixed-use commercial, retail and residential.

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Implications for Walkability

An increase in residential population and employment will lead to an overall increase in pedestrian movements across the city. This will result in increased demand on existing pedestrian infrastructure, particularly within the core of the CBD. This is likely to be problematic in areas where pedestrian infrastructure is already close to capacity.

At present the key area of focus is the central core, which is bounded by Wellington Street, St Georges Terrace, William Street and Barrack Street. As major developments come on line new desire lines and areas of activity will form extending the core beyond its existing boundary.

The development of Perth City Link and Elizabeth Quay will extend the core to the north and south. Perth City Link removes the east west barrier of the railway line and will provide a seamless connection from the CBD to Northbridge. This new link will benefit pedestrian access greatly. Elizabeth Quay will provide a destination to the south of the core, reconnecting the city with the foreshore; however, as shown in the previous figure there is a risk that The Esplanade may act as a barrier to pedestrians wishing to access the development, particularly from the north.

Major redevelopment to the east, including the new Perth Stadium and Waterbank, will provide a west east pedestrian desire line through the City and lead to an increase pedestrian movements in and around East Perth.

The new Perth Stadium is anticipated to be a major pedestrian attractor, on both event and non-event days. A new pedestrian bridge is to link East Perth to the Stadium precinct. On event days the bridge is forecast to accommodate in the region of 28,000 two-way pedestrian movements. The existing Windan Bridge will accommodate an additional 18,000 pedestrians. On non-event days, the pedestrian bridge will provide a leisure route from East Perth to Burswood Peninsula.

The need to provide an east west link is highlighted in the UDF, which identifies Hay Street as a secondary pedestrian link. Other routes are available via Murray Street, St Georges Terrace and Wellington Street.

To the west of the city the existing Princess Margaret Hospital is to be redeveloped to a mixed use development including residential. Whilst the site is within walking distance of West Perth and Kings Park, Thomas Street serves as a barrier.
Anticipated Pedestrian Growth
Planning to 2031

The creation of extended north south and east west pedestrian desire lines are reflected in the Department of Transport Perth Pedestrian Model. The model provides details of anticipated pedestrian movements on key links throughout the CBD in 2016, 2021 and 2031.

The adjacent figure illustrates the anticipated percentage change in relative pedestrian flows within the CBD core from 2016 to 2031. Growth is expected across the whole area, with significant high levels of growth predicted east of Barrack Street. This reflects the proposed level of future development to the east of the city.

Longer Term Planning

A Future Planning workshop was held of the 13th April 2015 with City of Perth Officers from City Design and Sustainable City Development and State Government representatives from the Department of Transport and Metropolitan Redevelopment Agency. Workshop attendees were asked to identify areas within the City that are likely to be the focus for future development, above and beyond the current committed developments.

Attendees indicated that both City West and McIver stations are considered areas of future redevelopment.

Network analysis was conducted in GIS to define the 400m and 800m catchments around these locations, using the existing pedestrian network. 400m equates to a 5 minute walk and 800m equates to a 10 minute walk (approximate). The respective analysis is detailed overleaf.
City West Walking Catchment
City West Walking Catchment

Observations

- The existing pedestrian network is limited by the coarse grain of the urban form. This is partially due to the position of larger scale buildings located to the north and south of the railway line.
- The railway line that runs through the centre of the catchment area significantly reduces north south pedestrian permeability.
- Opportunities to cross the railway line are limited, reducing the catchment significantly.
- The catchment to the north is restricted due to the Mitchell Freeway. This effectively reduces the potential 800m catchment by half.
- The 800m catchment extends to the west, beyond Loftus Street. Whilst this area is accessible within an 800m walk, Loftus Street is likely to act as a barrier. Pedestrian facilities in Loftus Street can be considered adequate, however the pedestrian environment is relatively unattractive due high traffic volumes and a lack of amenity.
- Railway Street, which runs through the heart of the catchment, is a relatively unattractive route due to a lack of shade and passive surveillance.
- Gradient change to the south of catchment may reduce practical walk distances.

Future Planning

- Improve the urban form in order to allow greater pedestrian permeability, reduce walk distances and increase catchment.
- Improve pedestrian amenity of Loftus Street and Railway Street to make sure they do not act as barriers to pedestrian accessibility.
McIver Station Walking Catchment
McIver Station Walking Catchment

Observations

- The 400m catchment area is reduced, particularly to the south, due to the location of the railway line and coarse urban form.
- Opportunities to cross the railway line are limited reducing the catchment significantly. At-grade rail infrastructure is a major barrier to the future development of the area.
- Opportunities to cross Lord Street to the east are limited to unattractive underpasses.
- Large areas allocated to at grade car parking reduce the percentage of active land uses with walking distance of the station.
- Clusters of large buildings surrounding the station, such as Perth Royal Hospital, act as barriers and reduce pedestrian permeability significantly.
- The existing pedestrian link between Wellington Street and Moore Street is critical for walking access across the catchment; however, it is currently of very poor quality and lacks legibility.

Future Planning

- Need to prioritise the improvement of pedestrian links essential to the connectivity of the overall area.
- The catchment demonstrates the need to improve the urban form in order to allow greater pedestrian permeability. This is relevant for the redevelopment of larger blocks of land.
- The Perth Stadium station and future airport rail link will increase train frequencies, increasing the number of time the level crossing is called.
- Although there are strong destinations in this area (e.g. Hospital, Station, Wellington Street) there is little in the way of active frontages. A precinct masterplan is required to provide greater activation as well as greater permeability to reduce walking distances and promote pedestrian desire lines.
Future City Planning: Summary

Key Demographics

- The City of Perth population forecast for 2015 is 22,324. This is anticipated to increase by 58.48% to 35,378 by 2036
- The number of people working in the City of Perth has grown 62% since 2001
- Planned increases in office and retail space are expected to create more jobs within the City.

Future Developments

The City of Perth is evolving constantly. Some of the more notable developments influencing this evolution include:

- Elizabeth Quay
- Perth City link
- Waterbank
- Perth Stadium

Implications for Walkability

- An increase in population and employment will lead to an overall increase in pedestrian movements across the city, resulting in increased demand on existing pedestrian infrastructure, particularly within the core of the CBD
- Current investment in walking infrastructure is focused within the central core, bounded by St Georges Terrace, Wellington Street, William Street and Barack Street
- The development of Perth City Link and Elizabeth Quay will extend the core to the north and south
- Major redevelopment to the east, including the new Perth Stadium and Waterbank, will provide a west east pedestrian desire line through the city and lead to an increase pedestrian movements in and around East Perth
- The need to provide an east west link is highlighted in the UDF, which identifies Hay Street as a secondary pedestrian link. Other routes are available via Murray Street, St Georges Terrace and Wellington Street
- Barriers to the future walkability of the city include the railway line and freeway.

Longer Term Planning

- Both City West and McIver stations are considered areas of future redevelopment
- At both locations there is a need to improve the urban form in order to allow greater pedestrian permeability, greater activation, reduce walk distances and increase catchment.
Key Recommendations

The City of Perth is working hard to improve walkability throughout the city core. There is high awareness of the principles of walkability among City of Perth Officers and other State Agencies.

The need to provide for pedestrians within the City is highlighted in various City of Perth polices including the Urban Design Framework. A key theme of the Strategic Community Plan is to provide an effective pedestrian friendly movement system integrating transport modes in order to maintain a high level of accessibility to and within the city.

Nevertheless, the City continues to face a range of challenges associated with the walking environment. In particular, the competing objectives of Government stakeholders can be of detriment pedestrian safety, comfort and connectivity.

The recommendations look to strengthen further the City’s polices and provide tools to deliver better and more holistic outcomes for walking.

Develop a City of Perth Walking Charter

The City should partner with key stakeholders including Main Roads WA, Public Transport Authority and Department of Transport, to develop a Walking Charter for Perth.

The Charter should specify agreed walkability objectives for the city and policies key to delivering these. All stakeholders should be signatories to the Charter.
Develop a Pedestrian Network Hierarchy

Building on the pedestrian movement network identified within the UDF the City should develop a pedestrian network hierarchy identifying primary, secondary and tertiary links and intersections.\(^6\) This will help to inform discussions regarding the level of priority placed on pedestrian movements and provide focus when allocating capital budget funding for future street improvement projects. The Perth Parking Management Act provides the basis for this work with definition of street categories.

As a matter of priority the City should identify a primary west east pedestrian route which will link the city core to the new Perth Stadium and Riverside. The UDF currently identifies Hay Street as a secondary route. A study is required to identify a suitable primary route, which may include the promotion of Hay Street to a primary status.

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Case Study: City of Port Phillip Greenlight Project

The City of Port Phillip is implementing improvements to a number of signalised intersections across the municipality. Green Light Pedestrian Priority Intersections will provide for the highest priority to pedestrians and include improvements such as:

- Auto call up - Not requiring pedestrians to press the button to activate a pedestrian crossing phase
- Lengthening the green man phase time to accord with the actual crossing time
- Late call up - pressing the button within the phase allows the green man pedestrian crossing to be triggered preventing excessive delays for pedestrians
Undertake ‘Link and Place’ Assessment

Urban streets have both link and place functions. As a link, a street is used for movement and designed for users to pass through as quickly and conveniently as possible (e.g. St Georges Terrace in rush hour) while as a place, the street is a destination in its own right, where people are encouraged to spend time taking part in activities (e.g. Hay Street Mall).

Both functions have their own sets of design requirements, and often compete for scarce space and capacity. A Link and Place assessment allows measured analysis of the urban environment and assignment of form and function spatially. The assessment has been applied successfully in several English cities, continental European cities and some Australian cities, offering a balanced approach to street planning and design.\(^7\)

For key pedestrian links it is recommended that the City undertakes a link and place assessment weighing views of how different streets function today and how they are aspired to function in future. The role of streets during the day and at night should also be considered. This exercise will help determine:

- Infrastructure requirements and street design elements
- Level of provision
- Balance of space/capacity allocation.

A link and place assessment will benefit all street users and would be consistent generally with the State Government’s TransPriority work.

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Case Study: Link and Place Assessment Port Road, Adelaide

In 2010, the area outside the Entertainment Centre was transformed: the tram line was extended to a new tram stop in front of the Centre and its forecourt area was redesigned. New cafes, restaurants and businesses have now opened up in the immediate area. More people are now commuting to the destination and staying longer when events are on.

Before these works took place, Place activities in the immediate area were limited to shoppers from the neighbourhood; concert goers mainly travelled through the area. The much more visible staying activity from visitors following the redesign work has increased Place status from Neighbourhood (D) to Metropolitan (A).
Introduce Quality Audits

The use of Quality Audits is recommend to make sure walkability is given due consideration when developing projects within the City.

Quality Audits were introduced in the UK in 2007 through the publication of the Department of Transport’s Manual for Streets guidance document. Manual for Street promotes the use of Quality Audits to help integrate many of the fragmented processes involved in delivering streets.

A Quality Audit is made up of a number of assessments that, depending on the project, may include some of the following:

- Visual quality audit
- Community use of the streets review
- Road safety audit and risk audit
- Access audit
- Walking audit
- Cycle audit
- Non-motorised user audit
- Place check audit.

Quality Audits are an integral part of design and implementation process. They make sure that appropriate consideration is given to all relevant aspects of the urban environment including walkability, and encourage a holistic design approach.

Quality Audits can be used at any stage of the project life cycle although they are best introduced at project conception to assist in establishing objectives. This can assist in managing conflict demands between stakeholders.

Utilise Walkability Assessment Tools

A key outcome of the Future Planning workshop was the need for a tool to allow Officers to gauge the impacts that land development applications may have on walkability. Officers recognise that there is a range of policy and design guidance, developed by the State and City available to them.

In 2013 the State Government of Western Australia and Royal Automobile Club of Western Australia developed a digitised walking audit tool. The tool dispensed with the cumbersome paper-based tool that had been developed previously. The purpose of the tool is to equip network designers and planners - especially in local government - with means to vet both existing and future infrastructure and development proposals, to make sure that the five 'Cs' (connected, conspicuousness, comfortable, convivial and convenient) of walkability are being met.

The tool summarises many separate standards and guidelines, and providing users with a benchmark for evaluation.

It is recommend that the City of Perth look to utilise the Departments of Transport’s tool when assessing development applications or planning street infrastructure projects. Future work could include development of a City of Perth tool that includes City specific policies.

The use of such a tool will ensure a consistent approach to the assessment of walkability.
Monitor Walkability

The City does not currently monitor the impacts of individual projects and initiatives. It is recommend that the City research and develop a range of walkability indices (similar to Walkscore\(^8\)), which can be used to measure and monitor walkability.

Undertaking annual monitoring will allow the City to track the success of the emerging Integrated Transport Strategy and other walkability initiatives.

Utilise the Perth Pedestrian Model

Good future planning requires an understating of how the city is to evolve over time. In 2015, the Department of Transport updated the Perth Pedestrian Model to include planned major developments and MAX light rail. The model provides details of anticipated pedestrian movements on key links throughout the CBD in 2016, 2021 and 2031.

The City should look to utilise this tool to understand the implications of committed development and to test a range of “what if” land use scenarios, beyond what is currently planned.

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Case Study: How walkable is Melbourne? The development of a transport walkability index for Metropolitan Melbourne

The University of Melbourne developed and mapped a walkability index with three components found to be associated with walking for transport: mixed use planning, population density and street connectivity. The aim of the tool is to assist decision-makers to identify areas for renewal to increase local walkability; and to monitor progress towards creating more walkable neighbourhoods over time.
Create Fun ‘Car Free’ Days

It is recommended that the City consider hosting car-free city event. This could potentially be linked to the signing of a City of Perth Walking Charter, or the launch of the Integrated Transport Strategy.

Car-free days are an informal global initiative to raise awareness about travel habits and explore sustainable alternatives to personal motor vehicles like walking, cycling and using public transport. But more importantly their objective is to engage the community, make walking a fun activity and show that life without cars can be so far more positive. The official World Car Free Day is held on the 22\textsuperscript{nd} September. However as other case studies have shown (e.g. Bath and New York Times Square) any days can be car-free and once the community is engaged and the benefits are realised, change can occur quickly.

Cities which have hosted and continue to host car free events include:

- Bath, UK
- Vancouver, Canada
- Jakarta, Indonesia

Case Study: Make Sundays Special, Bath, UK

The Make Sundays Special event was introduced in 2013. Once a month, between May and September, a core area of the city centre is closed to traffic and fully pedestrianised. The streets are transformed into a family friendly festival space accommodating food stalls, street entertainers, street games, markets and live music.
Frontage Improvement Programme

It is recommended that the City investigate opportunities to incentivise property owners to improve or retrofit blank, inactive street frontages.

The existing annual PUBLIC event organised by Form has been a great success in improving the streetscape in areas which include large expanses of blank wall space.

It has also provided a reason for people to explore the city by foot. Walking maps, which provide a tour of all art pieces, have been produced for Perth and Northbridge⁹.

## Recommendation Summary

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<td><strong>Develop a pedestrian network hierarchy</strong></td>
<td>City of Perth</td>
<td>Main Roads WA, Public Transport Authority, Department of Transport</td>
<td>Medium term – 12 to 18 months</td>
</tr>
<tr>
<td><strong>Undertake ‘Link and Place’ assessment</strong></td>
<td>City of Perth</td>
<td>Main Roads WA, Public Transport Authority, Department of Transport</td>
<td>Medium term – 12 to 18 months</td>
</tr>
<tr>
<td><strong>Introduce Quality Audits</strong></td>
<td>City of Perth</td>
<td></td>
<td>Medium term – 12 to 18 months</td>
</tr>
<tr>
<td><strong>Utilise walkability assessment tools</strong></td>
<td>City of Perth</td>
<td>Department of Planning</td>
<td>Medium term – 12 to 18 months</td>
</tr>
<tr>
<td><strong>Monitor walkability</strong></td>
<td>City of Perth</td>
<td>Department of Planning</td>
<td>Medium term – 12 to 18 months Monitoring: Ongoing</td>
</tr>
<tr>
<td><strong>Frontage improvement programme</strong></td>
<td>City of Perth</td>
<td>Department of Planning</td>
<td>Medium term – 12 to 18 months</td>
</tr>
</tbody>
</table>
**Future Studies**

It is recommend that the City consider undertaking the following studies in order to help further inform this Walkability Study and the emerging ITS.

**Pedestrian Activity at Night**

The majority of guidance and policy documents focus on pedestrian activity during the day time. It is recommended that the City undertake a review of pedestrian activity at night in order to understand how pedestrians move through the city at this time and to determine whether adequate pedestrian amenity is provided in these areas, with an emphasis on personal safety. A prime example is Perth Cultural Centre. Throughout the day the area is heavily populated, benefiting from passive surveillance and strong sense of place. The cultural buildings such as the Library and Museum provide a diversity of active, ground floor frontages. At night the area is less populated with very little passive surveillance or active frontages resulting in a relativity hostile environment for pedestrians.

**Pedestrian Overpass Review**

A general principal of the UDF is to seek the gradual removal of pedestrian overpasses within the city. It is recommended that the City undertake a study of the existing overpasses in order to understand how they are used, the local context (such as surrounding land uses, alternative crossing facilities etc.) and the alternative infrastructure required should they be removed. The Perth Pedestrian Model is an existing tool that can be used to support such a review.

The overpasses linking Forrest Place (over Wellington Street) and the Perth Cultural Centre (over Roe Street) to Perth Station require particular consideration due to the role they play in providing access to a key public transport hub.

**Speed Limit Review**

It is recommend that the City undertake a review of speed limits within the city, taking into consideration the future expansion of the city core due to new developments, such as Elizabeth Quay and Perth City Link.

The review could include expansion of the existing 40km/h zone plus a further reduction to 30km/h is high areas of pedestrian activity, such as Northbridge.
References

Benefits and Barriers


King D. Neighbourhood and Individual Factors in Activity in Older Adults: Results From the Neighbourhood and Senior Health Study. Journal of Aging and Physical Activity. 2008;16:144-70.


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**Economics**

AECOM. (2001) Economic evaluation of pedestrian improvement


Sustrans (2006) *Shoppers and how they Travel*, Information Sheet LN02, Bristol: Sustrans
