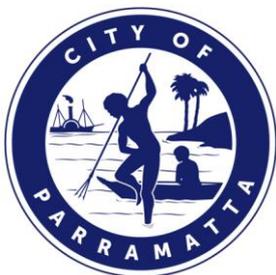


# Parramatta CBD Pedestrian Strategy

80016067

Prepared for  
City of Parramatta  
P00068162

30 May 2017



## Contact Information

### City of Parramatta

126 Church Street  
Parramatta NSW 2150

Contact: Mark Crispin  
Telephone: +61 2 9806 5050  
Email: [mcrispin@cityofparramatta.nsw.gov.au](mailto:mcrispin@cityofparramatta.nsw.gov.au)  
[www.cityofparramatta.nsw.gov.au/](http://www.cityofparramatta.nsw.gov.au/)

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# Executive Summary

## The Vision

City of Parramatta's vision is to be Sydney's Central City, sustainable, liveable, and productive – inspired by our communities.

**At its core, we are planning for the walkable heart of a vibrant and healthy city. Our streets will encourage all residents, workers, students, shoppers and visitors to make safe, accessible and simple pedestrian journeys to jobs, to schools, as well as to recreational, cultural, and retail districts. Pedestrians will be able to enjoy the streets as public spaces to meet, wait, watch and play. Those on foot or using a mobility aid will be prioritised and therefore safer in the CBD, enjoying stronger community connections and opportunities to be healthy and active. The economy will benefit through increased numbers of pedestrians on the street choosing to shop and linger.**

In preparing this strategy the City of Parramatta has taken into consideration the movement of residents, visitors, students, workers and visitors. We acknowledge that people using our streets will move about in various ways, some on foot and some with the support of mobility aids such as walking sticks or walking frames, scooters or wheelchairs. The City of Parramatta recognises and seeks to create a CBD that is inclusive and engaging of all people. The terms walkability and walking, as used in this document, are considered all-encompassing and descriptive of inclusive pedestrian movements, unless specifically stated. The intention, objectives and actions of this pedestrian strategy will create streets that welcome, encourage and support all people to move throughout the city as pedestrians.

The City of Parramatta, in partnership with the NSW Government, are planning for and delivering a CBD that will enhance the walking experience of our great city. As the CBD undergoes significant redevelopment, the Pedestrian Strategy aims to guide Council in planning for streets and city areas that are accessible, safe and prioritised for pedestrians. Drawing on best practice, walkable city centres and the unique character and opportunities of Parramatta, the key objectives for pedestrian movement in the CBD are outlined below:

- > Prioritise the time, safety and amenity of pedestrians
- > Enhance and activate spaces and streets, supporting the CBD's economy
- > Capitalise on the transformation of the CBD to benefit pedestrians
- > Improve the current and future pedestrian network
- > Grow walking mode share and support the use of public transport
- > An ongoing commitment to promote walking

## Recognising the benefits

As a signatory to the International Charter for Walking, Council recognises the many benefits of encouraging people to choose to walk more:

Economic	Environmental	Social
<ul style="list-style-type: none"><li>• Local business growth</li><li>• Travel time savings</li><li>• Low commuter costs</li><li>• Reduced traffic congestion</li><li>• Reduced demand for parking</li></ul>	<ul style="list-style-type: none"><li>• Reduced emissions and noise pollution</li><li>• Improved street environment</li><li>• Reduced heat island effect</li></ul>	<ul style="list-style-type: none"><li>• Improved mental and physical health</li><li>• Support equity and accessibility</li><li>• Social inclusion</li><li>• Improved safety</li><li>• Better personal security</li></ul>

## The current pedestrian experience

Parramatta CBD was planned to be walkable. A compact, legible Georgian street grid is complemented by relatively flat terrain and a network of laneways and arcades. The principal pair of pedestrian streets within the CBD are Church Street and George Street; they connect major transport, employment, recreational, cultural, service and retail destinations. The CBD is bordered with public open spaces like Parramatta Park, Prince Alfred Square and the city's parks, stitched together by the Parramatta River foreshore that flows through the heart of the city.

However, of all the trips within the local government area, only 15% are by walking, and within the CBD, just over 10% of residents walk to their place of employment. By comparison, almost half of all trips in the City of Sydney, and a quarter in the City of Melbourne are by foot.

## Harnessing opportunities and challenges

The CBD is currently subject to significant public and private investment that is transforming the buildings, streets and very fabric of the city. This growth will be the catalyst to transform our streets into places that are safe, active, and accessible for people at all times of the day and week. The construction of new civic infrastructure, streets and buildings will be disruptive to movement in the CBD, however this must be managed carefully to maintain the safety and accessibility of the pedestrian network. The change will be significant, as demonstrated in the diagrams opposite. The current "peak hour" for pedestrians in the city is in the middle of the day with a total of just over 80,000 movements (**Figure A**). This lunchtime peak has been strategically modelled out to 2056, and the substantial growth in volumes is shown in **Figure B**. The redevelopment of the CBD will present opportunities and challenges for pedestrian movements as travel demands increase, along with the resident and worker populations.

## Pedestrian actions

To address the pedestrian opportunities and issues, meet the future pedestrian demand and achieve the strategic pedestrian objectives, a range of actions for pedestrians are detailed in the Pedestrian Strategy. These actions are grouped to align with Transport for NSW's *Sydney's Walking Future*:

- > **Infrastructure and operations actions:** For traffic calming, pedestrian priority, improved perceptions of safety and direct paths of travel.
- > **Policy and development actions:** To ensure new developments contribute to pedestrian improvements.
- > **Behaviour change actions:** To provide residents, workers, students and visitors with the information, knowledge and confidence to choose to walk on foot or using a mobility aid for short trips

## The top 5

The five priority actions (there are 50 in total) are outlined below, and represent the five elements that will potentially have the greatest impact on pedestrian amenity, priority and safety in the CBD.

IO1: Implement 40 kilometre per hour (and advocate for 30 kilometre per hour) speed zones throughout CBD

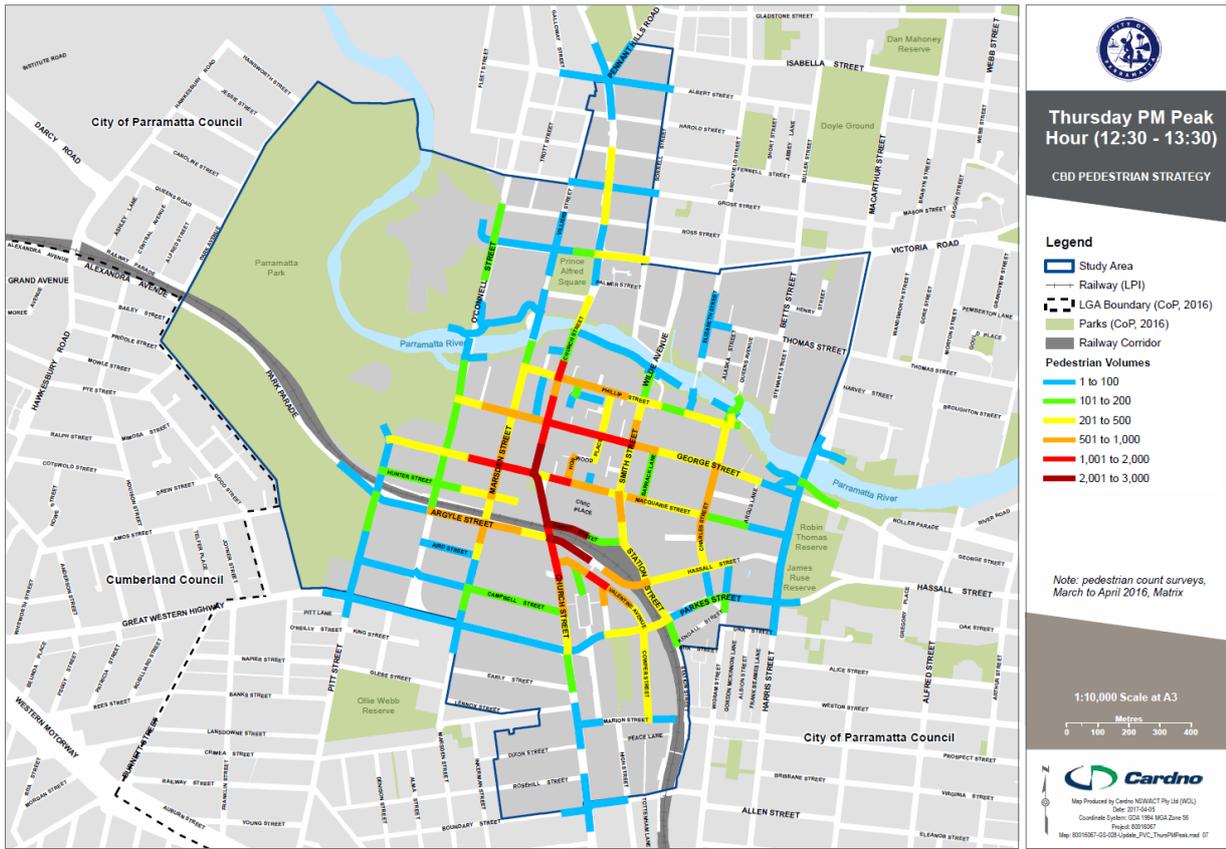
IO2: Undertake an audit of all footpaths and upgrade and provide new infrastructure which is accessible for all users

PD1: Apply the movement and place functions to the CBD with consideration of all transport modes

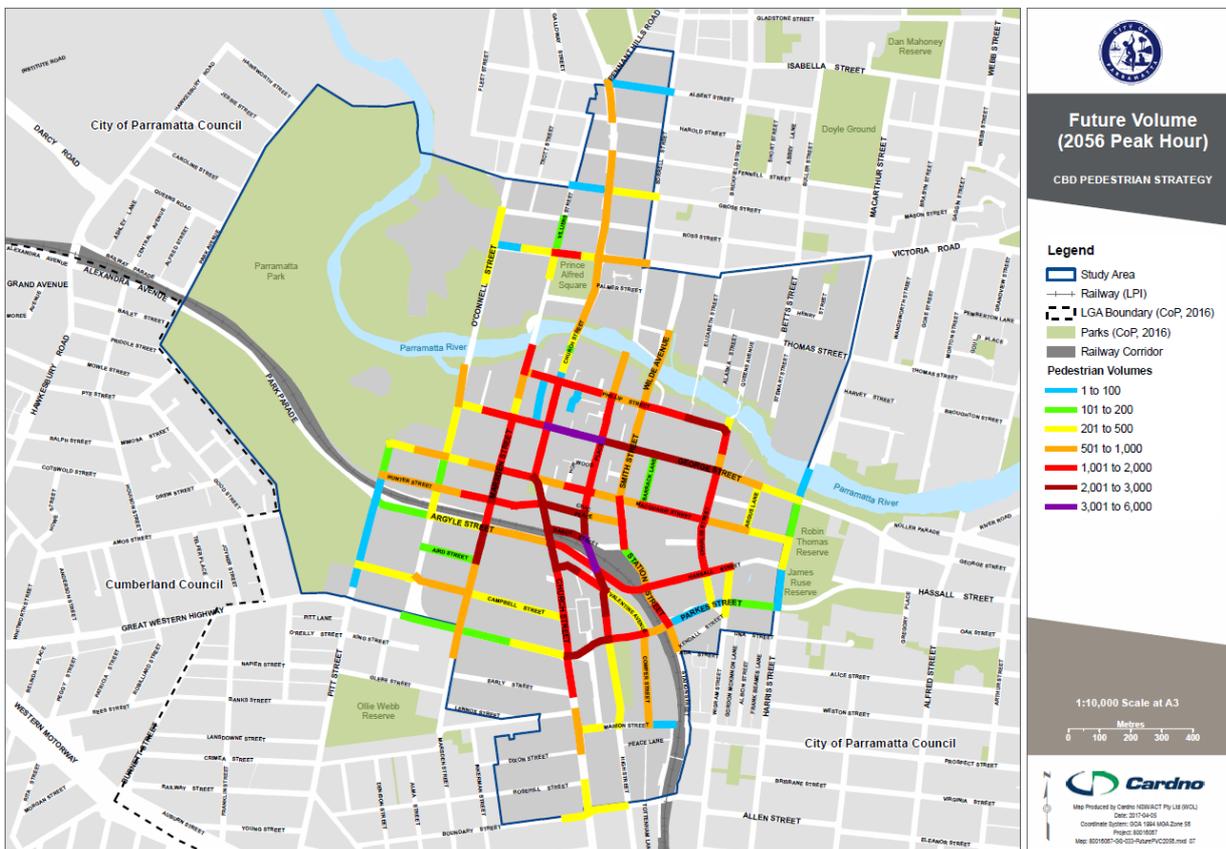
PD3: Amend DCP for permeable city blocks, active street frontages and high quality pedestrian infrastructure

BC1: Require developers to prepare Green Travel Plans with clear pedestrian objectives and actions

**Figure A Current pedestrian volumes - Thursday PM Peak**



**Figure B Future pedestrian volumes 2056 - Thursday PM Peak 12:30-13:30**



## The pedestrian network

Streets support a wide range of functions in city centres. Of these functions, 'place' and 'movement' are considered the most important for assessing a street's character and role within a network. A street's movement function supports through movement as part of a trip between an origin and a destination. A street's place function acknowledges that streets can be end destinations themselves. Activities such as shopping, sitting, eating and meeting people can occur on or adjacent to the street.

Streets across the CBD were considered for their pedestrian movement and place needs and categories of streets were then proposed to support both functions:

- > **Travel streets** (primarily movement);
- > **Activity streets** (balance between movement and place);
- > **Places for people** (primarily place); and
- > **Access and shortcuts** (minor, with movement and servicing).



## Monitoring progress

Implementation of the Pedestrian Strategy will require commitment, collaboration and fortitude from all stakeholders. The recommendations are ambitious and will require all stakeholders to work towards prioritising pedestrian movements and space throughout the CBD.

The implementation, monitoring and review of the Pedestrian Strategy actions, and reporting on achievement against its objectives will be a crucial part in creating a pedestrian friendly CBD. The Pedestrian Strategy's monitoring and reporting framework proposes a range of indicators such as travel time, mode share, measuring satisfaction and the length of footpath network to track the implementation of the actions for promoting pedestrian movement and the progressive achievement of the strategic pedestrian objectives.

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- Appendix B** Best Practices Walkable Cities
- Appendix C** Pedestrian approach and modelling assumptions
- Appendix D** Review of Pedestrian considerations in the DCP
- Appendix E** Pedestrian Design Guidelines
- Appendix F** Walking guidelines for green travel plans
- Appendix G** Approach to behaviour change communication
- Appendix H** Economic Benefits Evaluation Strategy

## Attachments

- Attachment 1** Community Consultation Submissions

# 1 Introduction

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## 1.1 Purpose of the Pedestrian Strategy

The City of Parramatta has identified the need to plan and prepare for an attractive, safe and walkable centre as the CBD undergoes significant redevelopment and growth. This Pedestrian Strategy provides clear direction for improvements in policy, infrastructure and travel behaviour so that Council's vision for a healthy, liveable and sustainable city can be realised.

In preparing this strategy the City of Parramatta has taken into consideration the movement of residents, visitors, students, workers and visitors. We acknowledge that people using our streets will move about in various ways, some on foot and some with the support of mobility aids such as walking sticks or walking frames, scooters or wheelchairs. The City of Parramatta recognises and seeks to create a CBD that is inclusive and engaging of all people. The terms walkability and walking, as used in this document, are considered all-encompassing and descriptive of inclusive pedestrian movements, unless specifically stated. The intention, objectives and actions of this pedestrian strategy will create streets that welcome, encourage and support all people to move throughout the city as pedestrians.

A more walkable CBD will be a more vibrant place; it will attract different types of people throughout the day and as short trips in the CBD shift from motor vehicles to active transport, the CBD will be a safe place where people want to meet and dwell and the local economy will benefit.

Walking is a component of all trips, including those made by public transport or private vehicle. Improving walkability will support access via all modes and contribute to an integrated transport network.

Cardno was appointed by the City of Parramatta (Council) to develop the Pedestrian Strategy for the Parramatta CBD.

## 1.2 Pedestrian Strategy drivers

Parramatta is acknowledged in state government strategies as the "premier regional city with a growing role as Sydney's second CBD" and a part of the extended "Global Economic Corridor" which stretches from the Sydney CBD via Macquarie Park and Chatswood.

Parramatta's CBD (the CBD) is already experiencing a large volume of public and private investment and development, with significantly more planned over the next 40 years. This commercial, residential; cultural, recreational and public transport investment will drive growth in more workers, residents and visitors in the centre. CBD blocks will transform, land uses become denser and public spaces will be revitalised with activity at all times of the day and week. As the development occurs, new trips to, from and within the CBD need to be catered for.

### 1.2.1 Commitment to the International Charter for Walking

Council is a signatory to the International Charter for Walking. The Charter was developed by international organisation Walk21, and endorsed by the NSW Premier's Council for Active Living, the Western Sydney Local Health District (WSLHD) and the Western Sydney Regional Organisation of Councils (WSROC). It aims to promote the development of healthy, sustainable and efficient communities where people can safely choose to walk as a way of travel. The Charter details eight strategic principles for creating a culture where people can choose to walk:

1. Increased inclusive mobility
2. Well designed and managed spaces and places for people
3. Improved integration of networks
4. Supportive land-use and spatial planning
5. Reduced road danger
6. Less crime and fear of crime



7. More supportive authorities
8. A culture of walking

These eight principles are directly relevant for the Pedestrian Strategy and they are reflected in its strategic walking objectives and recommended actions.

### 1.3 Benefits of a walkable city centre

Walkable city centres provide a wide range of economic, social and environmental advantages for the CBD and the people who access it. City centres with a high proportion of trips made on foot benefit from reduced traffic congestion, pleasant street environments, more activity and less demand for parking spaces. A list of walking benefits is presented in **Table 1-1**.

Traffic congestion comes at a high cost for cities. Currently traffic congestion costs Sydney businesses \$5 billion each year and is projected to increase to nearly \$8 billion by the end of the decade. Increasing the proportion of walking trips in a city centre will reduce the amount of traffic congestion and as cities grow, investing in walking infrastructure is a cost-effective way of supporting a larger population without adding to street congestion.

**Table 1-1 Benefits of walkable city centres**

Economic	
Local business opportunities	Growth in foot traffic will increase the number of people passing shop fronts and businesses. Pedestrians visit non-grocery shops more often, and spend more in total over a month, than people who drive.
Reduction in travel time	More people choosing to walk in a city centre will reduce the number of vehicles on the road, this should alleviate traffic hence lower the travel times for the vehicles that need to be there, for example buses and delivery vehicles.
Lower commuter cost	Walking is free. There are no travel cost associated with walking unlike public transport or private vehicle usage.
Reduced traffic congestion	When people choose to walk and use public transport instead of driving, there will be less traffic. Walking as a mode of transport is also more space efficient in a city centre and it is more convenient for people to access places.
Reduced demand for parking	More walking trips will lead to a reduced demand of parking in the city centre. Previous car parking can be converted to higher value land uses.
Environmental	
Reduced noise pollution	With more vehicles driving comes more noise, therefore a reduction in vehicles in the city centre will lower noise pollution, increasing pedestrian health and amenity.
Reduced emissions pollution	Less vehicles on the road means less gases are being released into the atmosphere. Reducing the number of vehicles will also decrease traffic congestion so vehicles will spend less time idling.
Improved street environment	Walking environments support parks, landscaping and street furniture for pedestrians. These can create a pleasant atmosphere within a city compared to a congested road network where the majority of street space is taken up by vehicle lanes and parking.
Reduced heat island effect	The heat island effect, where metropolitan areas are significantly warmer than rural areas, is exacerbated by dark surfaces such as asphalt used on vehicles lanes. If fewer lanes are required for traffic, more street trees can be included on footpaths and there will be a contribution to a lower heat island effect.
Social	
Supports equity and accessibility	Walking is a mode of transport that can be available to everyone.
More social inclusion	Walking facilitates more social interactions between people in the city than use of private motor vehicles where people often travel alone.

Improved safety	The more people who walk, the safer it is for pedestrians. Vehicle drivers in city streets will expect to give way to people on foot and drive with caution when interacting with high pedestrian volumes.
Better personal security	More people choosing to walk means increased on-street activity and people on the street will provide surveillance of the street which discourages anti-social behaviour and crime.
Improves physical and mental health	Walking is good for people's health. The Heart Foundation notes that regular physical activity reduces the risk of heart disease and stroke, manages weight, blood pressure and cholesterol, prevents and controls diabetes, reduces risk of some cancers, maintains bone density and improves balance and coordination. It also helps to manage anxiety and stress and contributes to feelings of strength, energy and happiness.
Less stressful	Active transport modes are a less stressful way to travel than public transport and private vehicles. Commuting stress can largely be attributed to unexpected delays; this unpredictability and variability in travel time is prevalent when driving and using public transport. Walking trip times are more reliable.
Sense of community	Seeing more on foot and spending time on city streets enhances social connections, creates a vibrant atmosphere and contributes to a sense of community.
Opportunities for diverse land use	High volumes of passing pedestrian traffic provides opportunities for varied businesses.

## 1.4 The Parramatta CBD

The CBD is located in the heart of the Parramatta local government area. It is a major employment, retail and services centre servicing Western Sydney and is home to, or adjacent to major health, education and sporting facilities.

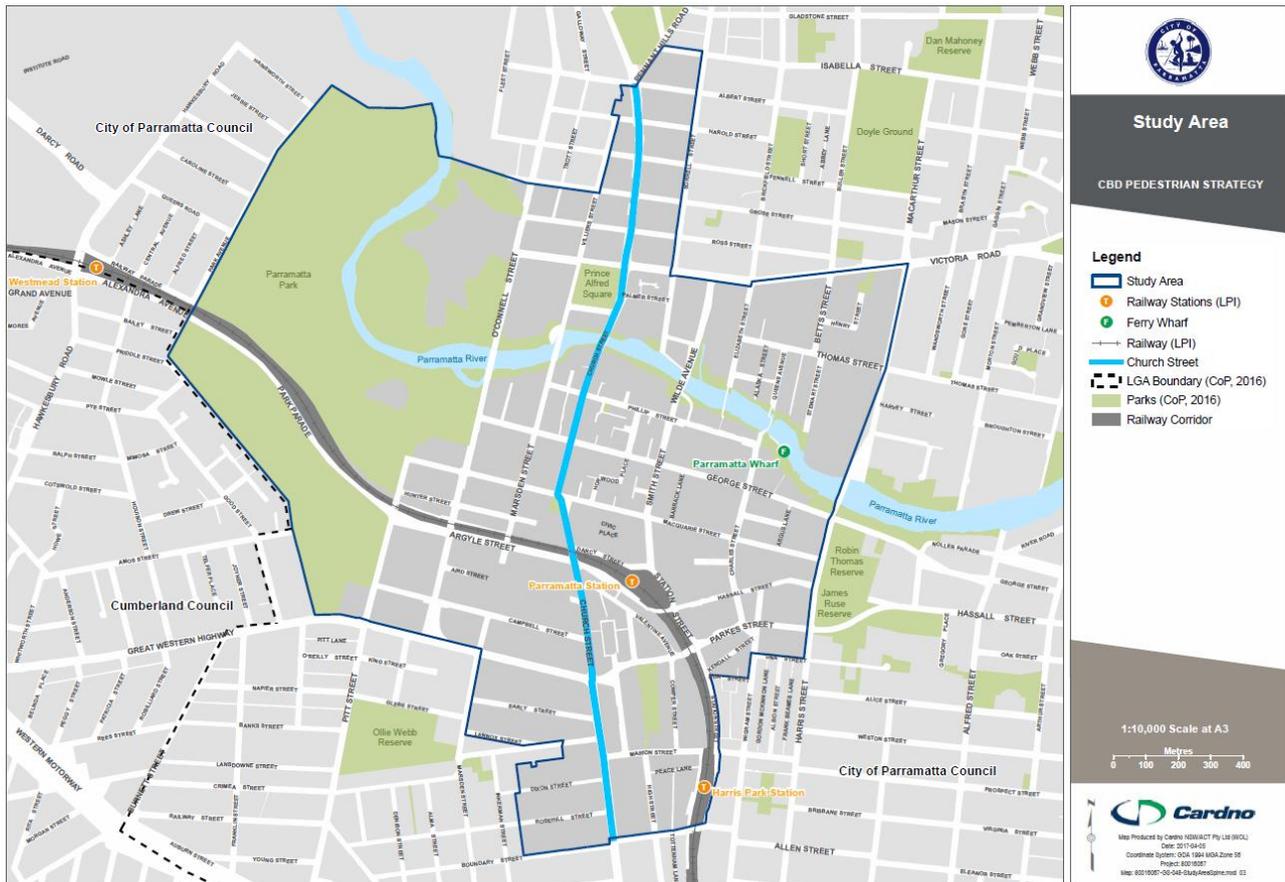
The CBD, as defined for the Pedestrian Strategy, covers the study area of two strategic documents, the Parramatta City Centre Planning Framework and the Pedestrian Amenity Zone outlined in the Parramatta Integrated Transport Plan. The study area is shown on **Figure 1-1**.

### 1.4.1 Relationship to surrounding area

While the focus of the Pedestrian Strategy is planning for and encouraging the growth of pedestrian movements in the CBD study area, there are a number of significant developments planned for precincts close to the CBD, many of which are within walking distance. The Pedestrian Strategy notes these developments and identifies regional gateway points at which people choosing to walk to the CBD will be likely to enter. Additionally, the Pedestrian Strategy acknowledges and recommends connections to the Parramatta Ways Green Grid network which currently surrounds the CBD. Developing the Parramatta Ways network and connecting it to the CBD will be part of an integrated approach to supporting regional walking trips to the CBD.

Expanding the study area of the Pedestrian Strategy in future revisions, or developing a pedestrian strategy for the entire Parramatta LGA, would help to plan for these longer walking trips from the surrounding precincts as they develop.

Figure 1-1 Study area



### 1.5 Community consultation

The Draft Parramatta CBD Pedestrian Strategy was on public exhibition during the month of April 2017. The feedback received included written submissions and verbal feedback from the drop in sessions at Parramatta Town Hall. These comments were considered in the development of the final strategy. The comments are presented in **Attachment 1**, following the appendices. A selection of the comments are also included below:

*"Pedestrian-friendly puts people first."*  
- Local resident

*"For the next five years, the construction of major projects will further deteriorate footpaths. Attention needs to be given to continually address maintenance needs and reinstatement of all footpaths in the CBD."*  
- Geoff Lee MP, Member for Parramatta

*"A walkable city is a liveable and healthy city."*  
- Local resident

*"The identification of walking indicators to measure performance and progress, within a monitoring and reporting framework are critical elements of the Parramatta CBD Pedestrian Strategy."*  
- WSLHD Population Health

*"To improve walkability Council should: Improve the amenity of the CBD and suburban streets by planting appropriate trees to create boulevards and green corridors."*  
- Geoff Lee MP, Member for Parramatta

## 2 Strategic context

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Parramatta is acknowledged in state government strategies as the “premier regional city with a growing role as Sydney’s second CBD”. With the residential population in the next 20 years set to triple, and 30,000 new jobs created, travel behaviours must evolve to support visions for a liveable city.

### 2.1 Redevelopment of Parramatta’s CBD

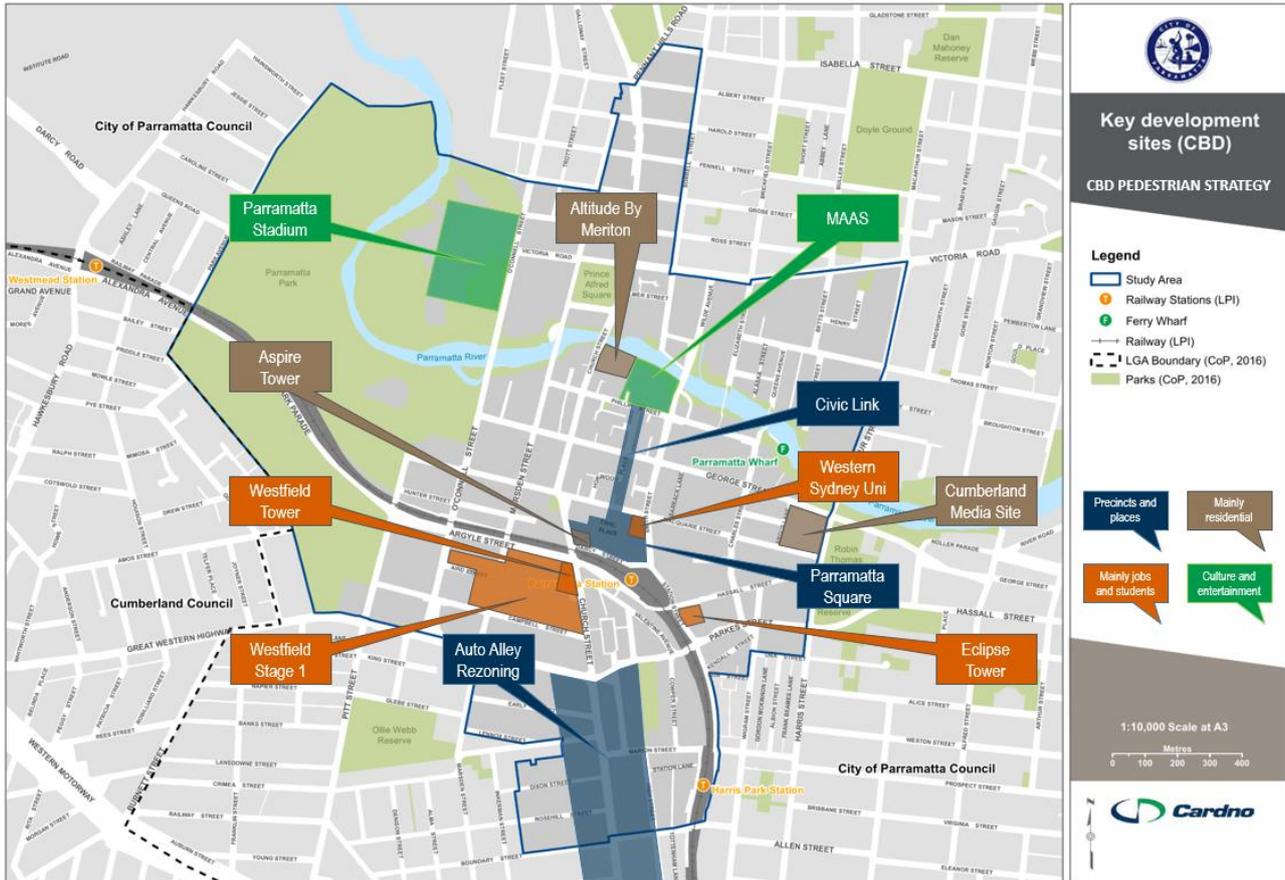
A major driver for the Pedestrian Strategy is the significant redevelopment already underway in the CBD and surrounding areas. This transformation, which will consolidate Parramatta’s role as Sydney’s 2nd CBD, involves:

- > A large volume of public and private development;
- > Around 30,000 more jobs by 2036;
- > Significant growth in CBD residential developments and adjacent precincts within walking distance;
- > New transport initiatives like the Parramatta Light Rail;
- > Significant investment in cultural and social infrastructure and new CBD spaces; and
- > Investigation of new parking options.

### Key development sites in the CBD

A number of major redevelopments are already planned and underway throughout the CBD. These are driven by Council, State Government and private developers and will contribute more people and activity in the CBD in the short to medium term. Growth in the night-time and weekend economy can be expected to occur as the residential developments are populated and cultural and sporting attractions open. Specific city-changing developments and investment within the CBD are shown on **Figure 2-1** and described below.

**Figure 2-1 Key development sites within the CBD**



#### Development of Parramatta Square

240,000sqm of mixed-use development and new Council facilities. The precinct will include a Western Sydney University Campus which will be able to enrol students for 2017.

Underway



#### Creation of the car-free Civic Link

A pedestrian link connecting the train station and Parramatta Square to the River and linking to lanes and arcades.

In planning



**Relocation of the Museum of Applied Arts & Sciences (MAAS)**

Opening in 2022 and able to exhibit 40% more than the current MAAS.

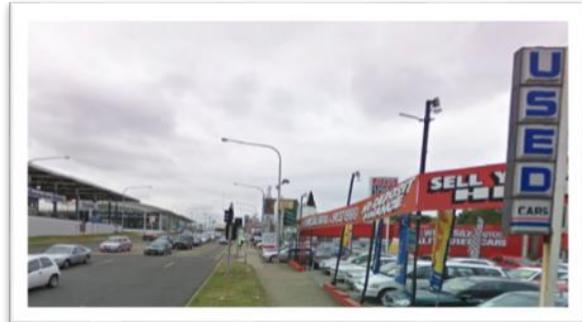
In planning



**Rezoning of Auto Alley to mixed use**

Up to 26,000 jobs could be created, with a further 2,600 residents.

In planning



**New Parramatta Stadium**

New 30,000 seat stadium, to be completed by 2019.

In planning



**Parramatta Light Rail**

New light rail route connecting Westmead and Camellia with the Parramatta CBD and Carlingford. Further route to Strathfield via Sydney Olympic Park still in planning.

In planning



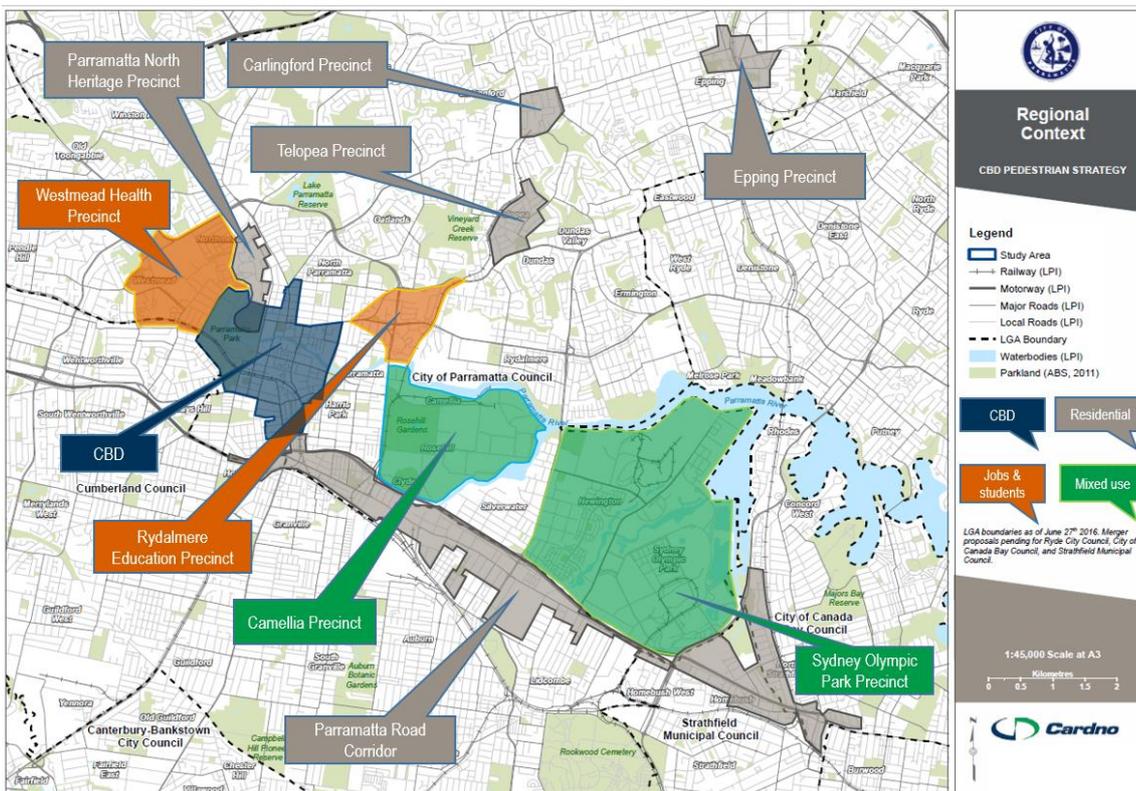
**Growth precincts – Westmead to Sydney Olympic Park**

As well as the development occurring within the CBD, there are a number of key residential, commercial and education developments adjacent to, or located close to the CBD, will also affect travel demand. These developments include:

- > Westmead Health Precinct – 13,000 more jobs, increasing to 25,000 and 4,000 more students increasing to 6,000 by 2030;
- > Parramatta Road – up to 40,000 new homes along Parramatta Road between the Sydney CBD and Parramatta in the next 30 years, with Granville nominated as one of the key sites;
- > Camellia – Establish new town centre with increase in residents and higher job density;
- > Sydney Olympic Park – 18,000 more homes and around 500,000 square metres for new commercial, retail, community uses and sporting venues. 6,000 new dwellings will be delivered by 2030;
- > Parramatta North heritage precinct – approximately 7,000 new residents over the next ten years;
- > Rydalmere Education Precinct – increase in students from 13,000 to 30,000 over the next 20 years;
- > Epping Precinct – 247 hectares have been rezoned to accommodate 3,750 new dwellings;
- > Carlingford Precinct – 2,700 new dwellings are planned to accommodate population growth; and
- > Telopea Precinct – approximately 3,500 to 4,500 new dwellings are planned for the precinct.

The major development planned around the CBD are shown on **Figure 2-2**.

**Figure 2-2 Growth precincts adjacent to the CBD**



**Relevance for the Pedestrian Strategy**

The significant amount of public and private investment and development in the CBD will lead to a growth in pedestrian demand. The Pedestrian Strategy must identify this growth and set objectives and plan actions to accommodate it.

## 2.2 State Government plans and strategies

This Pedestrian Strategy aligns with the State Government's vision for integrated transport. A complete review of strategic documents is provided in **Appendix A**.

### **State Infrastructure Strategy**

The NSW State Infrastructure Strategy (2012) presents a vision for 2032 and makes recommendations for infrastructure investment over the next 20 years, including infrastructure provision in the Parramatta area to establish its role as Sydney's second CBD. The key recommendations outlined in the Strategy include a \$1 billion investment to improve public transport between Parramatta and the Greater Sydney area.

### **A Plan for Growing Sydney**

A Plan for Growing Sydney (2014) identifies opportunities for improving the Parramatta transport network, in particular public transport, and walking and cycling connections that extend from Westmead to Rydalmere through the Parramatta CBD. The Plan references a proposed active transport network referred to as the "Green Grid", which aims to provide convenient links between the Parramatta CBD and surrounding recreational and open spaces. The Parramatta Ways project will bring this to life.

### **The Long Term Transport Master Plan**

The NSW Long Term Transport Master Plan (2012) identifies strategies and actions for integrated transport across the state over the next 20 years. Short-term actions identified for the Parramatta area will support a growth in active transport mode share in the CBD, including improved pedestrian and cycle connections through the CBD and to regional destinations, improved amenity around the Parramatta transport interchange, and alignment of the bus network with light rail network proposals.

### **Parramatta Strategic Framework**

The Parramatta Strategic Framework (2016) identifies six key urban values to develop the character of Parramatta: Resilient, Connected, Vibrant, Inclusive, Respectful and Prosperous. Key principles directly relevant to the Pedestrian Strategy include optimising the 'spine and shoulders' structure of the CBD as a walkable and active city centre, and utilising that spine for high intensity retail with residential and commercial above.

### **Sydney's Walking Future**

The NSW Government is focused on supporting walking for short trips, understanding that increased walking will benefit the community's health, the environment, and relieve pressure on local road networks. Sydney's Walking Future (2013) identifies Parramatta as a major activity centre as part of the Connecting Communities Program which aims to encourage people to walk at these centres, prioritising the development of pedestrian infrastructure within a two kilometre catchment of major centres and interchanges.

#### **Relevance for the Pedestrian Strategy**

The State Government plans, policies and strategies demonstrate strong support for the development of Parramatta as Sydney's second major employment centre, facilitating the location of desirable jobs and important services closer to where people live. The State Government is committed to sustainable transport and wants to create a culture of walking, improve liveability and connect communities with safe walking infrastructure.

## 2.3 City of Parramatta plans and strategies

### **Parramatta CBD Planning Strategy**

The Parramatta CBD Planning Strategy (2015) sets the visions, principles, actions and implementation plan to guide a new planning framework for the Parramatta CBD.

The Strategy's vision states: Parramatta will be Australia's next great city, defined by landmark buildings and high quality public spaces with strong connections to regional transport. It will respect its heritage, be an exemplar in design excellence and ensure its streets are well activated. The Strategy aims to create a liveable, active and highly desirable city.

The Strategy sets out the following jobs and population targets for 2036:

- > Jobs – increase 27,000 from 49,000 (2011) to 76,000 (2036)
- > Dwellings – increase 7,500 from 3,800 (2011) to 11,300 (2036)

The Strategy commits Council to investigating the required regional and local transport infrastructure upgrades required to facilitate the growth of the CBD across public domain improvements, including new CBD spaces and street upgrades and access and transport improvements, including light rail.

### **Integrated Transport Plan for the Parramatta CBD**

The Integrated Transport Plan for Parramatta City Centre (2010) responds to the Parramatta City Centre Plan (2007) which sets the planning framework for an additional 30,000 jobs and 20,000 residents by 2031.

It aims to manage the existing and future sustainable transport needs of the CBD as it works to move away from reliance on car use to public and active transport. The sustainable transport objectives for the CBD are:

- > Promote and support walking, cycling and sustainable travel change;
- > Support and facilitate public transport use; and
- > Manage traffic to minimise its adverse impacts especially car commuters and through traffic.

Four key elements of the Plan support an enhanced walking experience in Parramatta:

1. Ongoing lobbying for improved public transport. Recent commitments have demonstrated the effectiveness of this element;
2. Creation of a Pedestrian and Cycle Amenity Zone, delivering improvements through new facilities and lower speed limits;
3. Support of City and Regional Ring Roads to ensure traffic uses appropriate routes, remove through traffic from the CBD and improve conditions for pedestrians and cyclists in the CBD; and
4. Relocating car parking to the CBD periphery.

The Pedestrian Amenity Zone is proposed to include: 40 kilometre per hour speed limit, additional crossing infrastructure, conversion of one-way streets to two-way, completion of the riverside shared path, reductions to pedestrian-vehicle conflicts at driveways and widening of footpath space.

An updated Integrated Transport Plan is being prepared to support the CBD Planning Proposal.

### **Parramatta Strategic Transport Study**

The Draft Parramatta Strategic Transport Study (2017), aims to inform Council of the transport infrastructure requirements from implementing the Parramatta CBD Planning Strategy. The Study undertook a review of existing public transport services and infrastructure, travel patterns, parking yields and land use scenarios, and prepared a series of travel demand recommendations for consideration by Council. Significant extra demand on all transport modes has been identified and is the subject of further investigation.

### **Parramatta City Centre Lanes Strategy**

Recognising that lanes provide significant benefits to the walkability and experience of city centres, the Parramatta City Centre Lanes Strategy (2010) identifies lanes throughout the CBD to include in a lane improvement pilot program.

The Strategy notes that the CBD's primary street network provides large CBD blocks of up to 250 metres in the east-west direction. Over time lanes have developed to provide servicing, access to car parks and through the development of shopping arcades.

The Strategy's Lanes Framework Plan recommends 23 new lanes and retention of the existing 57 lanes in the short-term. For each new, retained or removed (long term) lane, the Lanes Framework Plan sets out the type, strategic purpose, timing, owner, feasibility and action required for each lane.

### **Parramatta Safety Plan**

The Parramatta Safety Plan (2014) aims to implement initiatives that improve the safety of the local community and visitors, and also promotes both the CBD and wider LGA as a pleasant and safe place to live, work and play.

The Plan has developed five strategic objectives, which oversee a program of proposed actions in response to the issues identified. Of relevance to the CBD and the Pedestrian Strategy is Objective 2:

#### *2. Build a safe and more prosperous Parramatta CBD for people, businesses and organisations*

The proposed actions grouped under the five objectives range from the implementation of facility and infrastructure upgrades, to launching community initiatives and cooperation with government and private organisations.

### **Parramatta Ways**

The Parramatta Ways Report (2017) sets out the opportunities to connect green spaces across the Local Government Area (LGA) with community facilities, transport nodes and neighbourhood destinations via safe and enjoyable walking routes with the aim to reshape Parramatta as a liveable, walkable city. Parramatta Ways will deliver the NSW Government's vision for the Green Grid, becoming Australia's largest interconnected open space, bushland, and urban walking network.

Whilst the focus of the project is on streets outside of the CBD, Parramatta Ways provides direct connectivity to the CBD.

#### **Relevance for the Pedestrian Strategy**

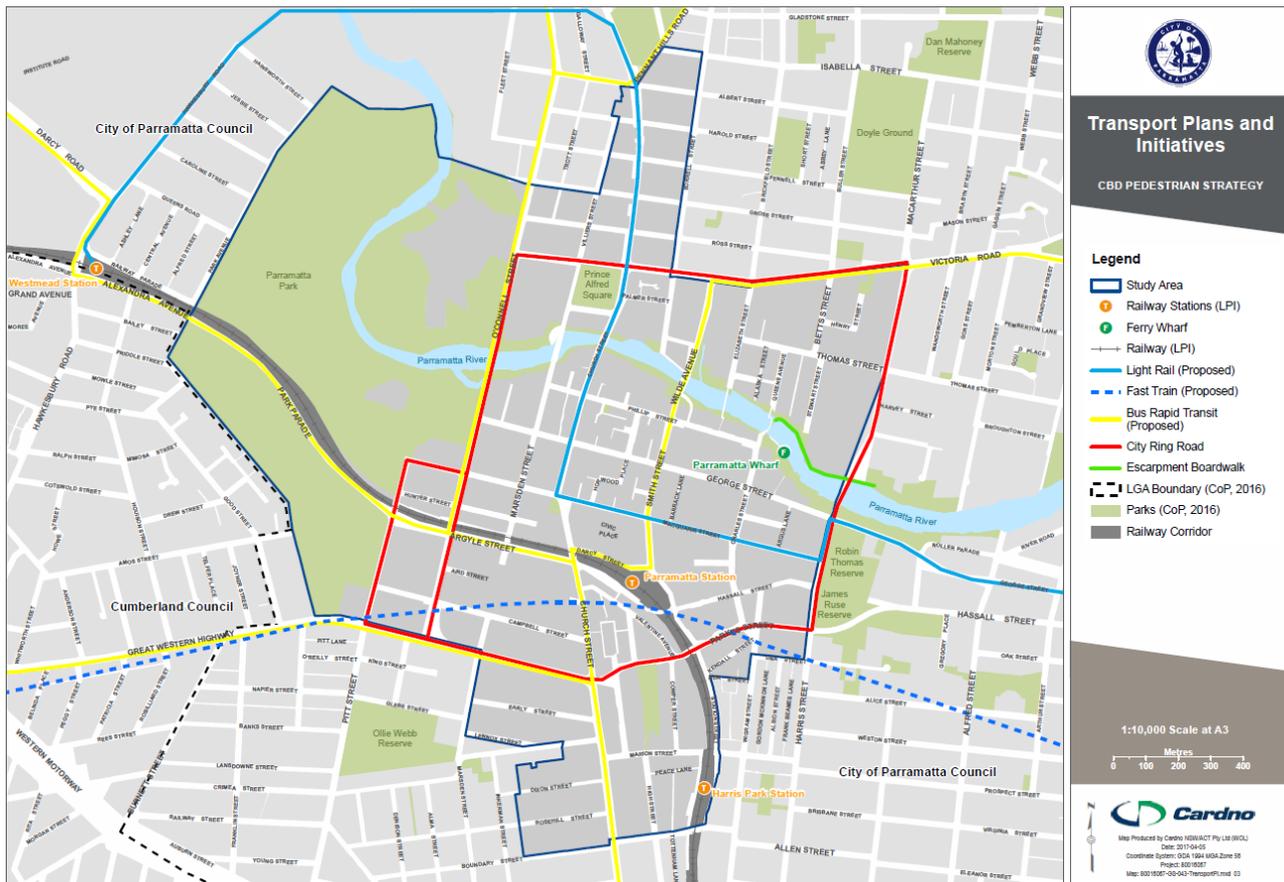
City of Parramatta is planning for a sustainable transport system that will support the growth and transformation of the CBD. Council's strategic plans are focused on the need to promote active and public transport modes and reduce the current reliance on the private motor vehicle to support the "creation of a pedestrian friendly city".

The Pedestrian Strategy needs to align with existing transport strategies and influence and inform future planning of the CBD's transport networks.

## **2.4 Transport plans and initiatives**

The NSW Government and City of Parramatta are planning for a sustainable transport system that will support the growth and transformation of the CBD. Council's strategic transport plans recognise the need to promote active and public transport modes and reduce the current reliance on the private motor vehicle. These projects are shown on **Figure 2-3** and described in the following sections.

**Figure 2-3 Transport plans and initiatives**



**Parramatta Light Rail**

As part of Parramatta’s path to become Sydney’s second CBD, a new light rail service is being designed to provide frequent and reliable public transport that connects housing, employment, education precincts. The proposed light rail service is 12 kilometres long and will include:

- > Stage 1 connecting the Westmead Health precinct to the Parramatta CBD and Carlingford via; and
- > Stage 2 from Camellia to Strathfield via Sydney Olympic Park is being developed in conjunction with Sydney Metro West.

**Fast train link**

Options for fast train link between the new Badgerys Creek airport, the Parramatta CBD and the Sydney CBD will be investigated. The Federal Government has indicated funding for the project with plans for provision of a new line by the time the airport opens in 2026. The proposed service would consist of entirely new and separated infrastructure, generally constructed in tunnels between Parramatta CBD and Sydney CBD. It will provide a 15 minute trip between Parramatta CBD and Sydney CBD and 25 minutes between Parramatta CBD and the proposed Western Sydney Airport.

Based on the potential for train services at 5 minute headways in each direction and assuming half a train capacity of 600 (1,200 full capacity) people either boarding or alighting each service at Parramatta, there could be in the order of 14,400 people movements to or from the fast train station in an anticipated peak period. Given it would offer a parallel route connection to the Sydney CBD, some of these volumes would not be new trips. Pedestrian issues to consider will be access points to the station and the distribution of pedestrian flows.

**Western Sydney Rail Upgrade Program**

The Western Line is the most heavily used and least reliable line on Sydney’s heavy rail network. The Western Sydney Rail Upgrade Program is a major works program dealing with the upgrade and

modernisation of the network. The Western Line will have upgraded signalling and an advanced train control system will be introduced. This program will unblock 12 major bottlenecks in the network and deliver more and faster services. Improvements in capacity to the Western line will facilitate increased services and more comfortable and reliable train journeys which will encourage additional train passenger trips to Parramatta.

### **Ferry service upgrades**

Transport for NSW is planning to renew its ferry fleet that will access the Parramatta ferry wharf. Still in early planning with little available detail, the new ferry fleet could have more capacity and may be able to access the ferry wharf more often than the current service.

### **Bus Rapid Transit**

Transport for NSW will investigate Bus Rapid Transit (BRT) on Victoria Road between Parramatta and the Sydney CBD and along Parramatta Road. BRT services to the Parramatta CBD would increase the reliability and frequency of bus trips, this would likely lead to an increase in bus patronage and people accessing CBD bus stops.

### **The City and Regional Ring Roads**

Council identified that eight strategic road corridors converge in Parramatta, causing excessive congestion. Two ring roads, one regional and one around the Parramatta CBD, are proposed to improve traffic flow and support growth. A series of intersection upgrades along the regional ring road on the M4, James Ruse Drive and Cumberland Highway were identified to create a free flowing arterial ring road and to result in key traffic and economic benefits. The city ring road consists of Victoria Road, O'Connell Street/Pitt Street, Great Western Highway/Parkes Street and Harris Street/Macarthur Street.

### **Parramatta River Cycleway upgrades**

Council is planning to complete missing links in the Parramatta Valley Cycleway (PVC) and upgrade sections. A master plan for the PVC is being implemented stage by stage. As part of the upgrades a boardwalk is planned for the section on the northern side of the river to the east of the CBD. The Escarpment Boardwalk will be a critical section of the Cycleway which, when completed, will allow continuous connection between the University of Western Sydney at Rydalmere past the CBD to Parramatta Park. Planned for the northern side of the river, the boardwalk will support regional walking and cycling trips to the CBD.

### **CBD Pedestrian and Cycle Amenity Zone**

The Integrated Transport Plan for Parramatta City Centre (2010) supports the "creation of a pedestrian friendly city". Council has begun to deliver this vision with the \$5 million facelift of Church Street which reopened at the end of 2014. A key recommendation of the Plan was the implementation of a Pedestrian Amenity Zone across the CBD. The Pedestrian Amenity Zone is proposed to include: 40 kilometre per hour speed limit, additional crossing infrastructure, conversion of one-way streets to two-way, completion of the riverside shared path, reductions to pedestrian-vehicle conflicts at driveways and widening of footpath space.

### **Sydney Metro West**

The NSW Government has recently announced a new underground metro linking Parramatta CBD and Sydney CBD.

The new service is projected to be able to move about 40,000 people an hour in each direction and relieve pressure on the existing T1 Western Line, and is expected to be operational in the second half of the 2020s.

#### **Relevance for the Pedestrian Strategy**

The plans to improve the transport networks that access the CBD will support growth in public transport patronage, reduce the need to drive to the CBD, provide new cycling connectivity and remove through traffic from CBD streets. New and improved transport services will generate new pedestrian demand and will require high quality walking access to interchange between services and to access destinations across

the CBD. The Pedestrian Strategy will help to ensure that the start and end of public transport trips within the CBD are convenient, legible and safe.

## 2.5 Potential future transport technology and proposals

This section considers the potential impacts of the following future technologies on the Parramatta CBD:

- > Autonomous vehicles; and
- > Information Technology Impacts on Transport Networks.

### **Autonomous vehicles**

The emergence of autonomous vehicle technology has the potential to produce both positive and negative consequences. Autonomous vehicles could be for private use only or potentially as hire for ride services. This has the potential to increase the efficiency of the road network, with vehicle trips optimised to reduce road network demands and avoid areas of high pedestrian activity where possible.

Autonomous vehicles are more likely to avoid crashes, especially with pedestrians. A risk of private ownership is that, to avoid parking fees, vehicles will be sent to other locations or back to the home point to park for free. This could potentially double demands on the road network, reducing pedestrian amenity.

Road user pricing reforms are anticipated to mitigate some of this impact. In the context of Parramatta, there is potential that congestion charging could be required in the long term to regulate vehicle demands in the CBD and maintain an amenable environment for pedestrians.

Autonomous vehicles will choose the best route based on real time traffic conditions and could encourage users to walk to meet the vehicle at an optimal location away from vehicle congested areas.

### **Information Technology (IT)**

The development and integration of IT and transport data is providing the opportunity to better utilise existing transport resources. Smart phone trip planning applications are well used to plan public transport trips. Existing applications allow private vehicle owners to offer transport services to the general public at a lower rate than traditional taxi services. Uber currently operates in Australia with Lyft and Shofer likely competitors.

Car sharing services such as GoGet provide people with access to cars on a half hourly basis, reducing the need to own a car or a second car. These services are useful for reducing parking demand and encouraging sustainable transport choices. All costs are paid at the time of use, versus private vehicle ownership where operating costs like registration, insurance, and servicing are paid on an advance or annual basis.

It is reasonable to expect there will be a convergence in transport applications whereby multi-modal trip planning is completely integrated. Additionally, public transport services may be able to be modified on demand, based on user origin and destination, resulting in continually tailored routes and stops.

### **Relevance for the Pedestrian Strategy**

It is unlikely that these services will be quite as convenient as private vehicle ownership, however as less people buy private vehicles for personal use only, more walking trips are likely to be undertaken and increasing demands will be placed on the pedestrian network. Walking is highly likely to remain a fundamental form of transport and its priority at the top of the transport mode hierarchy maintained given the positive benefits and minimal impacts.

When autonomous vehicles start to emerge as commonplace, reviews will need to be conducted to assess the impact and need for policy, controls and legislation to mitigate any negative impacts.

## 3 Walking in the CBD

### 3.1 Mode share

The current travel behaviour of residents, and visitors, to the Parramatta area was analysed using the following data sets:

- > Parramatta CBD – defined by travel zone data obtained from the NSW Bureau of Transport Statistics (BTS);
- > Parramatta Suburb – defined by Census data from the Australian Bureau of Statistics (ABS); and
- > Parramatta LGA – defined by Household Travel Survey (HTS) data obtained from the NSW BTS.

#### 3.1.1 Walking trips

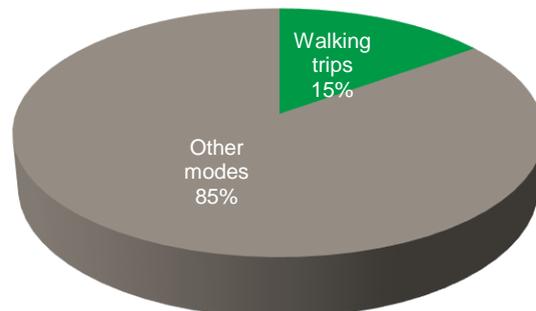
Across the Parramatta LGA, the walking mode share for all Journey to Work trips has remained at approximately 11.9% since 2001, with an increase to 12.9% observed in 2006 before a slight decrease to 12.3% in 2011.

Across the Parramatta LGA, 15% of all residents' trips (including commuting and non-commuting purposes) were undertaken by walking, compared to 49% of resident trips in the City of Sydney LGA, as shown on **Figure 3-1** and **Figure 3-2**.

**Figure 3-1 Walking trips City of Sydney LGA**



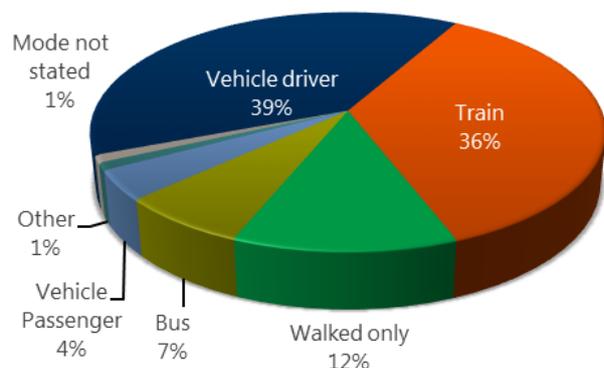
**Figure 3-2 Walking trips Parramatta LGA**



#### 3.1.2 Commuter trips

Of the 8,432 Parramatta CBD residents who were recorded as being employed, just over one-tenth choose to travel to work by walking. This is compared to 51% of inner Sydney CBD residents who walk to work and 4.1% of Greater Metropolitan Sydney residents. The preferred mode of travel for Parramatta CBD residents is split equally between private vehicles (as either a driver or passenger) and public transport (train and bus), with each attracting 43% of the total mode share. Journey to Work (JTW) mode share for residents is shown on **Figure 3-3**.

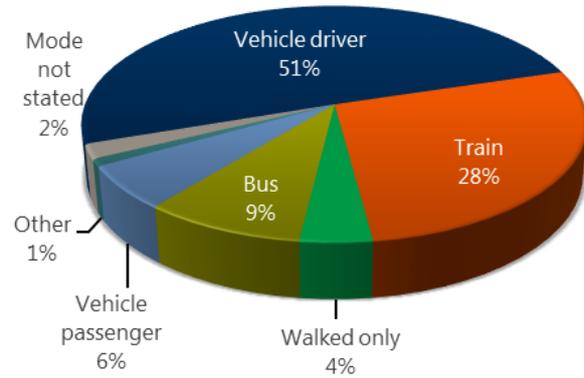
**Figure 3-3 Commuter trip mode share (residents) - 2011**



Source: Bureau of Transport Statistics JTW Explorer

**Figure 3-4 Commuter trip mode share (workers) - 2011**

Of the 43,337 people who were recorded as working in Parramatta, 4% travel to work by walking. This is compared to 6% of inner Sydney CBD workers who walk to work and 4.1% of Greater Metropolitan Sydney workers. The majority of workers travel by private vehicle (as either a driver or passenger) with 57% of the total mode share. Public transport attracts a total of 37%, split 28% and 9% each for train and bus respectively. JTW mode share for people who work in the Parramatta CBD is shown on **Figure 3-4**.

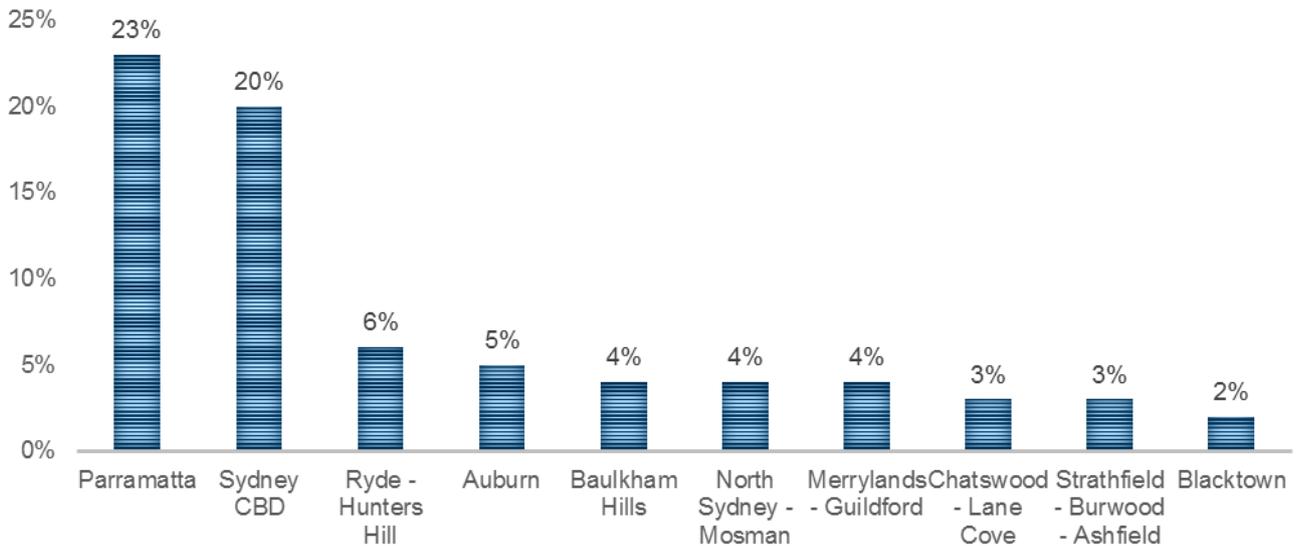


Source: Bureau of Transport Statistics JTW Explorer

### 3.1.3 Commuter origins and destinations

**Figure 3-5** shows the top ten employment destinations for Parramatta residents in 2011. Of the 8,432 recorded as being employed residents, the highest proportion travel to Parramatta with 13%, followed by the Sydney CBD with 8%. People who live and work within the same area present a strong opportunity to change to active transport.

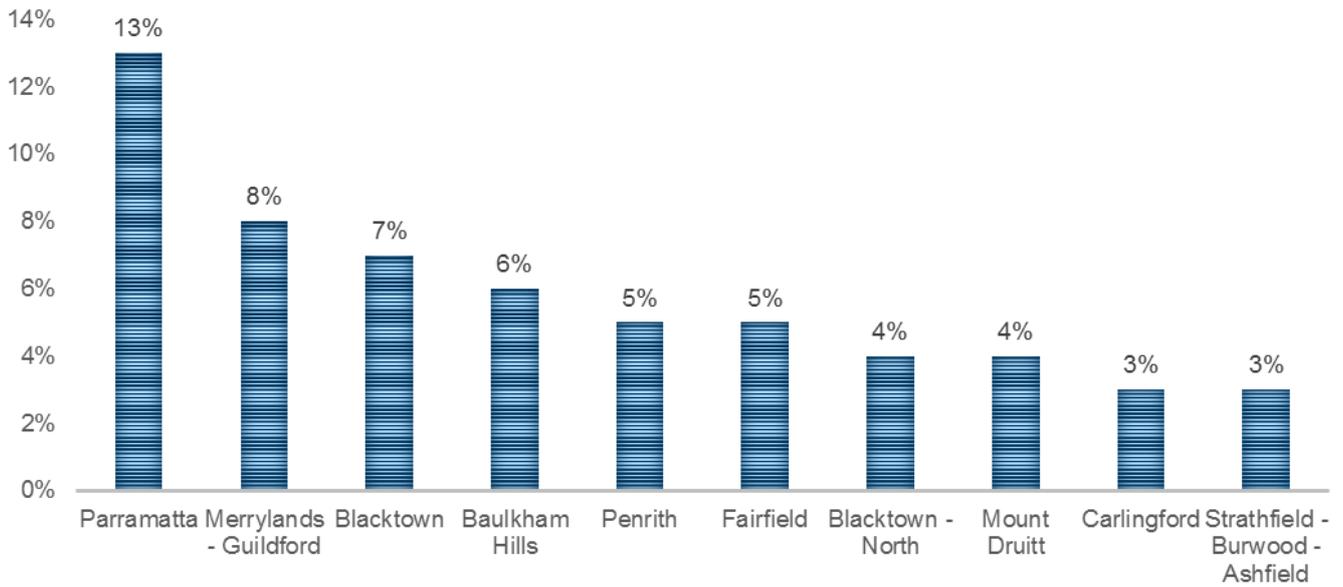
**Figure 3-5 Top ten employment destinations for Parramatta residents – 2011**



Source: Bureau of Transport Statistics JTW Explorer - 2011

**Figure 3-6** shows the top ten places of residence for Parramatta workers. Of the 43,337 recorded as working in the Parramatta CBD, the highest proportion originate from Parramatta, with 23% followed by the Merrylands and Guildford areas with 20%.

**Figure 3-6 Top ten places of residence for Parramatta workers - 2011**

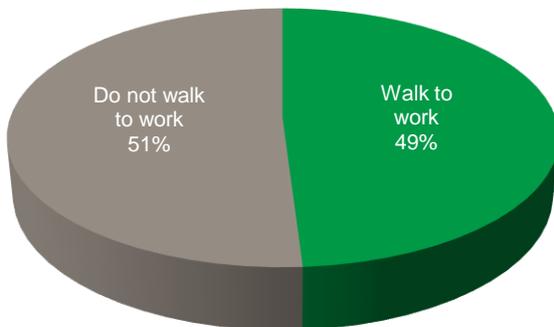


Source: Bureau of Transport Statistics JTW Explorer - 2011

**3.1.4 Commuter walking trips within the LGA**

Of the CBD residents employed in the Parramatta LGA, almost half walk to work. Of the Parramatta LGA residents who work in the CBD, 29% travel there on foot. The contrast in mode share is shown on **Figure 3-7** and **Figure 3-8**.

**Figure 3-7 CBD residents commuting on foot to the Parramatta LGA**



Source: Bureau of Transport Statistics JTW Explorer - 2011

**Figure 3-8 Parramatta LGA residents commuting on foot to the CBD**

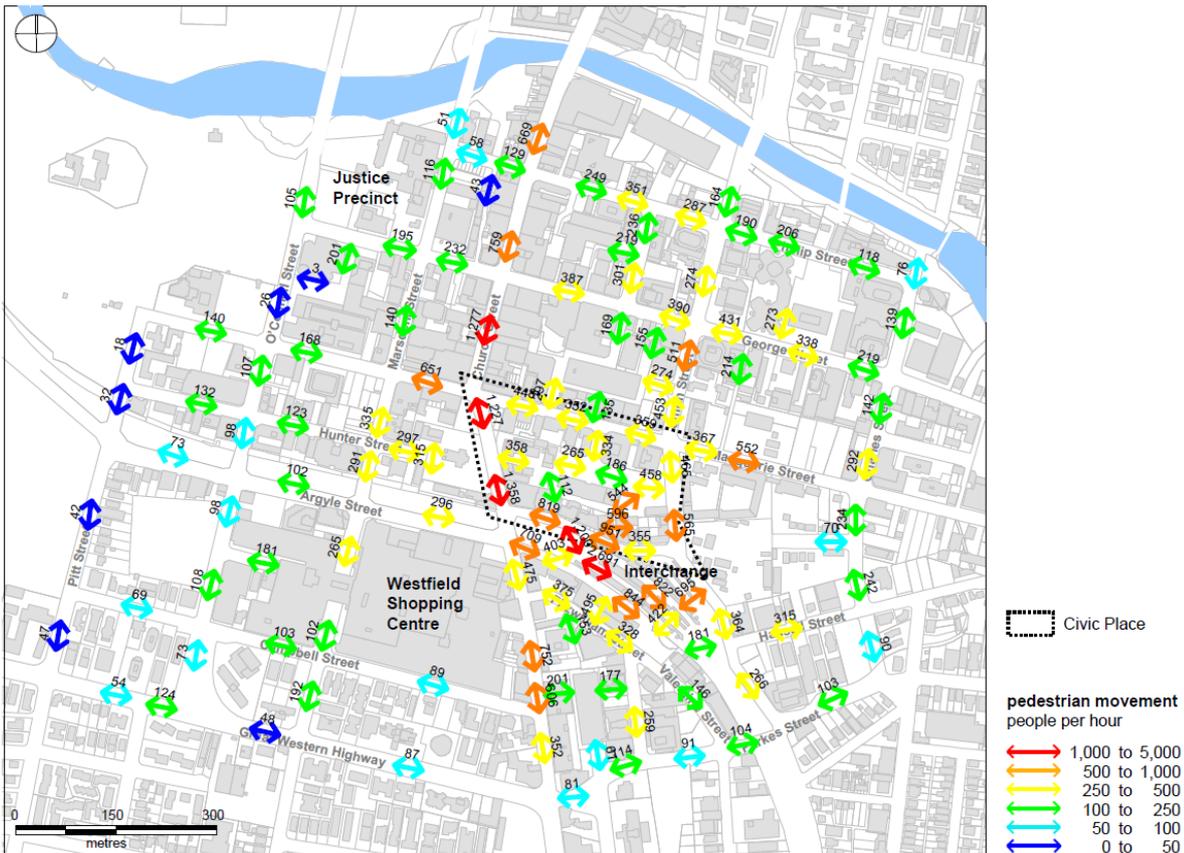


Source: Bureau of Transport Statistics JTW Explorer - 2011

**3.1.5 Growth in pedestrian volumes**

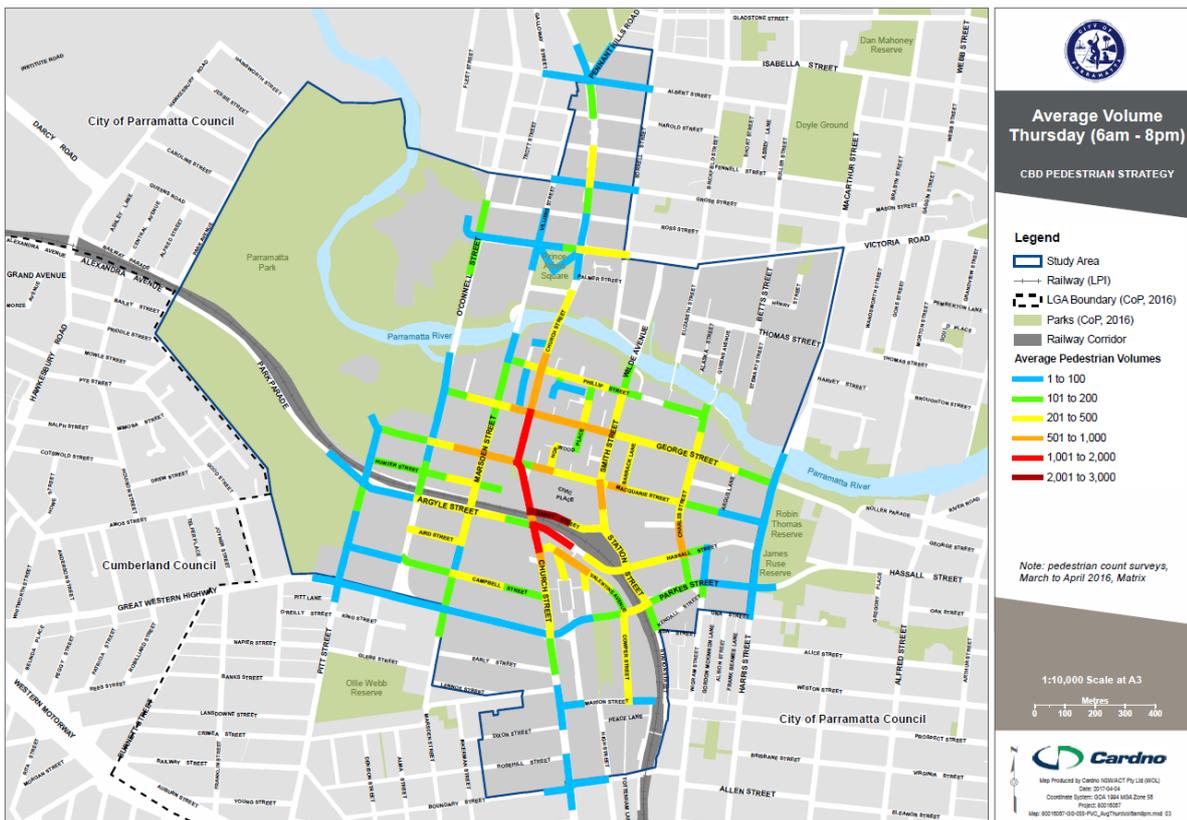
Average weekday pedestrian volumes over the past 10 years show an increase in walking trips within the CBD. Between 2006 and 2016, pedestrian volumes have increased in a number of locations. These include Darcy Street, George Street between Smith Street and Church Street, Macquarie Street between Horwood Place and O’Connell Street, and Argyle Street south of the Parramatta Transport Interchange. Average weekday pedestrian volumes for 2006 and 2016 are shown on **Figure 3-9** and **0**.

Figure 3-9 Average weekday pedestrian volume 2006



Source: Space Syntax Central Parramatta Study 2006

Figure 3-10 Average weekday pedestrian volume 2016



### 3.1.6 Summary

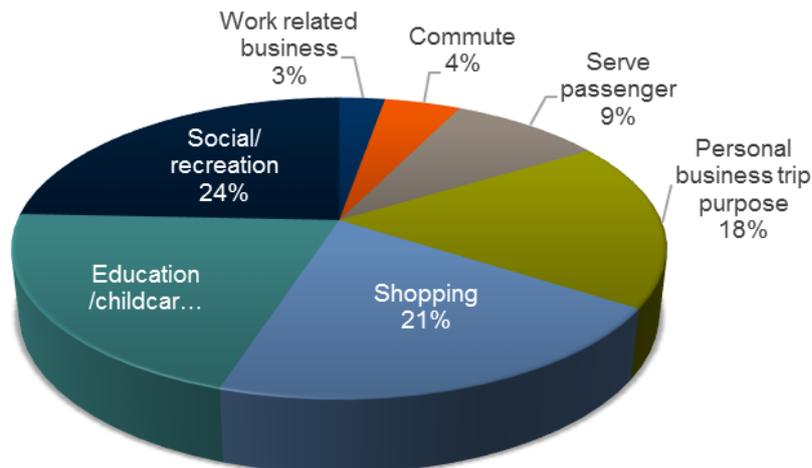
Walking mode share for commuting trips from Parramatta (suburb) has remained steady over the past 15 years at around 12%. This will need to significantly increase as the number of residents in the CBD grows. The opportunities presented by the mix of commercial and residential developments planned for the CBD means that more people will be able to live and work in the area. Walking trips to the CBD from surrounding precincts should be encouraged with clear routes, lighting and sign posting.

Compared to the Sydney CBD, Parramatta's proportion of walking mode share for all trips is currently low. With more, and a greater mix of, local destinations and improved infrastructure and information, walking will be a viable choice as people stay local for shopping, recreation and services.

## 3.2 Trip purpose

The proportion of walking mode share also differs depending on the purpose of the trip. In the Parramatta LGA, 81% of all trips taken are not considered to be commuting trips. Commuting trips make up only 19% of daily trips. Of the non-commuting trips, walking comprises approximately a quarter of the trips taken for shopping, education/childcare and social/recreation. It comprises only 3% of the total mode share for work related business trips. In comparison, 5% of commuting trips are undertaken by walking. **Figure 3-11** below presents the variations in walking mode share by trip purpose for the Parramatta LGA.

**Figure 3-11 Walking mode share in the Parramatta LGA based on trip purpose**



Source: Bureau of Transport Statistics Household Travel Survey

### 3.2.2 Summary

While some types of trips have a walking mode share around 20%, there is opportunity to grow mode share for commuting and work related business. With the average trip length across all trip types and modes by Parramatta LGA residents at eight kilometres, there will be some trips that are too long to consider walking as the primary mode. Residents should be encouraged to consider walking more for local trips across all purposes.

## 3.3 Vehicle ownership

An analysis of car ownership in the suburb of Parramatta was undertaken using historical data from the past three national censuses as obtained from the Australian Bureau of Statistics (ABS). The distribution of vehicle ownership is based on the number of vehicles in each household.

From 2001 to 2011, there has been a general increase in vehicle ownership in the Parramatta suburb, with an 8% increase in households owning one vehicle (to 53% in 2011), and 3% increase for two vehicles (to 17% in 2011) respectively. The proportion of households with no ownership of a private vehicle peaked in 2006 at 25% and recorded a slight decrease in 2011 to 24%, whilst the proportion of households owning three or more vehicles has remained constant at 4% over the ten year period. There has been a significant

increase observed in the overall reporting of vehicle ownership by Parramatta households, with only 2% not stating their ownership status in 2011 compared to 16% in 2001.

The observed trend of increasing car ownership in the Parramatta suburb has direct implications for the long term future of the CBD, with higher ownership figures likely to drive demand for appropriate parking facilities in the CBD area. Particular focus should be given by Council to supporting and promoting sustainable initiatives that increase the mode share for walking, particularly for shorter trips to, from and within the CBD. These include prioritising pedestrian movements over those of private vehicles throughout the CBD, supporting car share programs, and increasing public transport access to and from the CBD.

### **3.4 The walking experience**

Parramatta's CBD is a compact CBD based on a strong grid network of streets and fine grain blocks. It is supported by over 55 laneways and arcades for permeable access and more direct routes. Beyond the significant commercial, retail and services, the CBD and adjacent areas support a range of culturally and socially important destinations that support the City's diversity and vibrancy. Parramatta has a relatively flat topography, providing a high level of accessibility and helping to make walking an easy choice.

While Parramatta Park and Parramatta River border the CBD and could be considered barriers to access on the western side, they also present very pleasant walking routes to and around the CBD and attract pedestrian activity. Parramatta Park is used both recreationally but also as an important walking commuting route between Westmead and the CBD and the east-west alignment of the Parramatta River provides access from residential and employment areas on either side of the CBD.

#### **3.4.1 Footpaths and crossings**

The CBD has an extensive footpath network, almost every block has footpaths on both sides of the road. Many of the CBD's major intersections are signalised, allowing pedestrians safe crossing while vehicles wait. Pedestrians have highest priority at a number of scramble signalised intersections as well, sometimes with longer movement times than vehicles. There are a few zebra crossings in the CBD, on Church Street, Phillip Street, Darcy Street and Fitzwilliam Street.

#### **3.4.2 Laneways**

Laneways and arcades are an important part of the pedestrian network in the Parramatta CBD. They allow pedestrians to shorten their journey with more direct access to destinations and are often associated with access to car parking. While they don't have dedicated footpath infrastructure, lanes have lower volumes of vehicle traffic which supports safe pedestrian connectivity.

### 3.4.3 Major routes

A major north-south spine through the CBD runs along Church Street, providing pedestrian connection to major destinations such as the train station, Westfield, the Eat Street restaurant precinct and the Riverside Theatre. It has low traffic volumes due to single and one-way traffic lane configurations and pedestrianised blocks, which along with widened footpaths, emphasises its pedestrian priority.

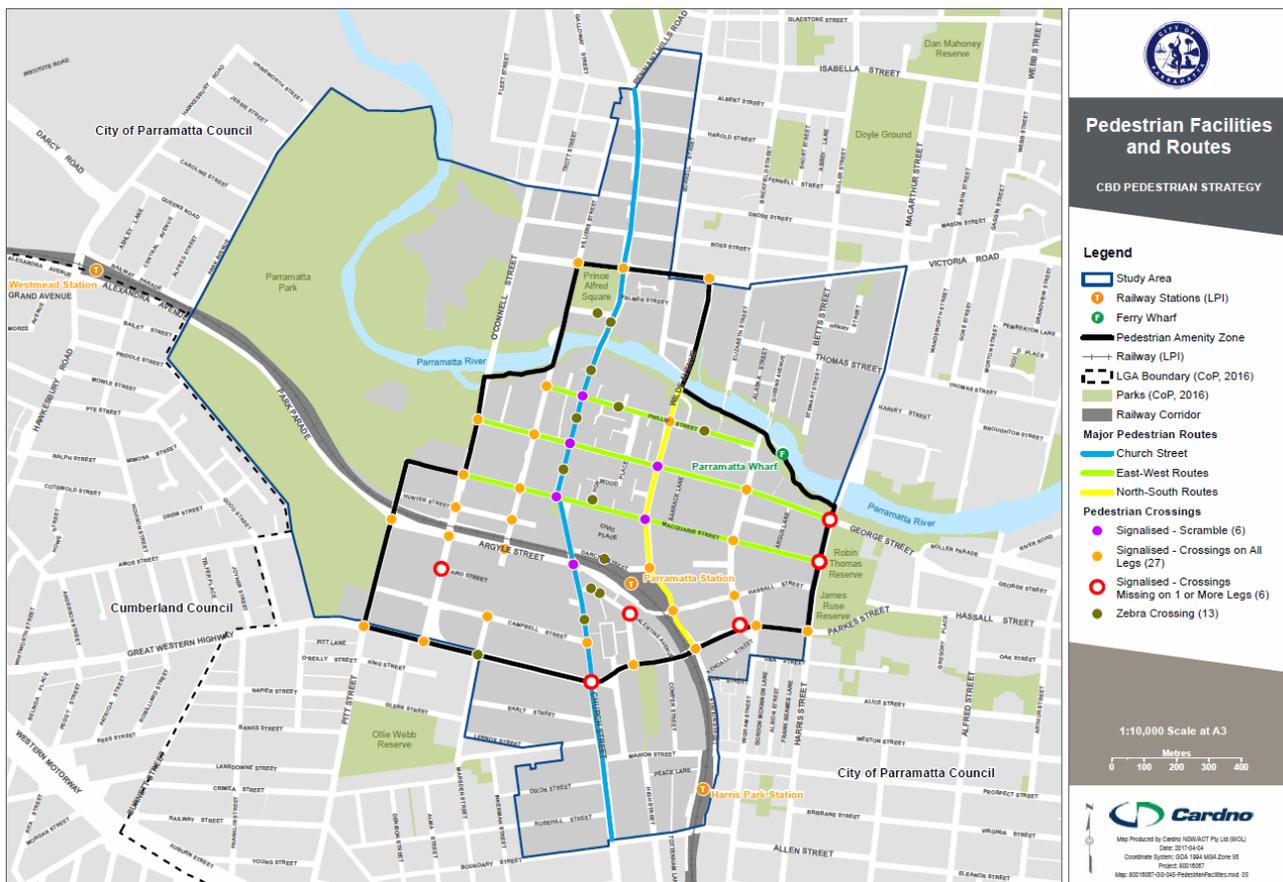
Smith Street provides another key north-south pedestrian route through the CBD. Smith Street connects the train station with commercial buildings and the schools in the east of the CBD. Wide footpaths run along the entire length of the street on both sides, and crossing legs are provided at all four signalised intersections, with scramble facilities available at two of these intersections (with George and Macquarie Streets). Smith Street has limited active street frontages, the majority of the blocks along it are occupied by commercial office building with no public access. North-south pedestrian routes are shown on **Figure 3-12**.

There are several key east-west pedestrian routes through the CBD available for pedestrians, also shown on **Figure 3-12**. To the north of the rail corridor, Macquarie Street and George Street provide one-way vehicular access through the CBD, and pedestrian links to key land uses including connecting commuters to employment centres, school children to the schools to the east of Smith Street and retailers.

Further north, Phillip Street provides connections to destinations along the Parramatta River foreshore. Footpaths from Phillip Street provide access to the foreshore and link to key destinations including the Parramatta ferry wharf and the southern river foreshore (currently under redevelopment), and the Parramatta Cycleway along the river which is used for recreational walks.

The current pedestrian volumes on streets throughout the CBD are presented and discussed in **Section 6.2**.

**Figure 3-12 Pedestrian facilities and major routes**



### 3.5 Current land uses

The CBD has a diverse range of public and private land uses. Precincts throughout the CBD are focused on different services and spaces.

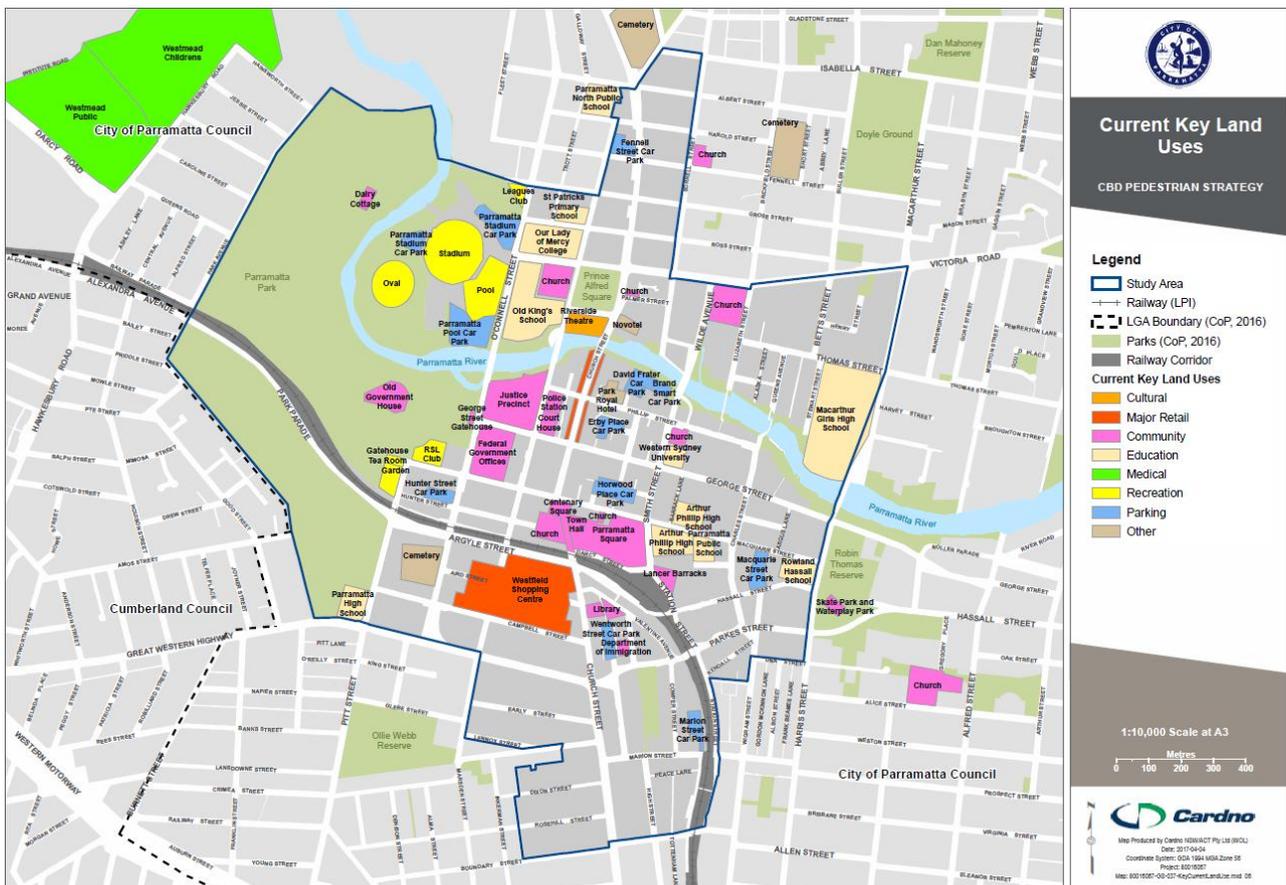
Church Street connects key CBD precincts and destinations including the Parramatta train station, the Justice Precinct, the Town Hall, Council Chambers and the Westfield Shopping Centre. Church Street has densely active street frontages including Eat Street, the block to the south of the Parramatta River with many restaurants and cafes.

The core CBD blocks, to the north-east of the train station are focused on commercial office buildings with some retail at ground level. Schools are also located in this precinct. Parramatta Park to the west of the CBD provides significant passive recreational space and connection to the Parramatta River. Other green space is provided along the river foreshore.

The Westfield Shopping Centre is a major retail destination for visitors from across Sydney. The centre includes extensive car parks and has limited access points from the street network. It does however have direct underground pedestrian access from the train station.

The current key land uses throughout the CBD are shown on **Figure 3-13**.

**Figure 3-13 Current key land uses**



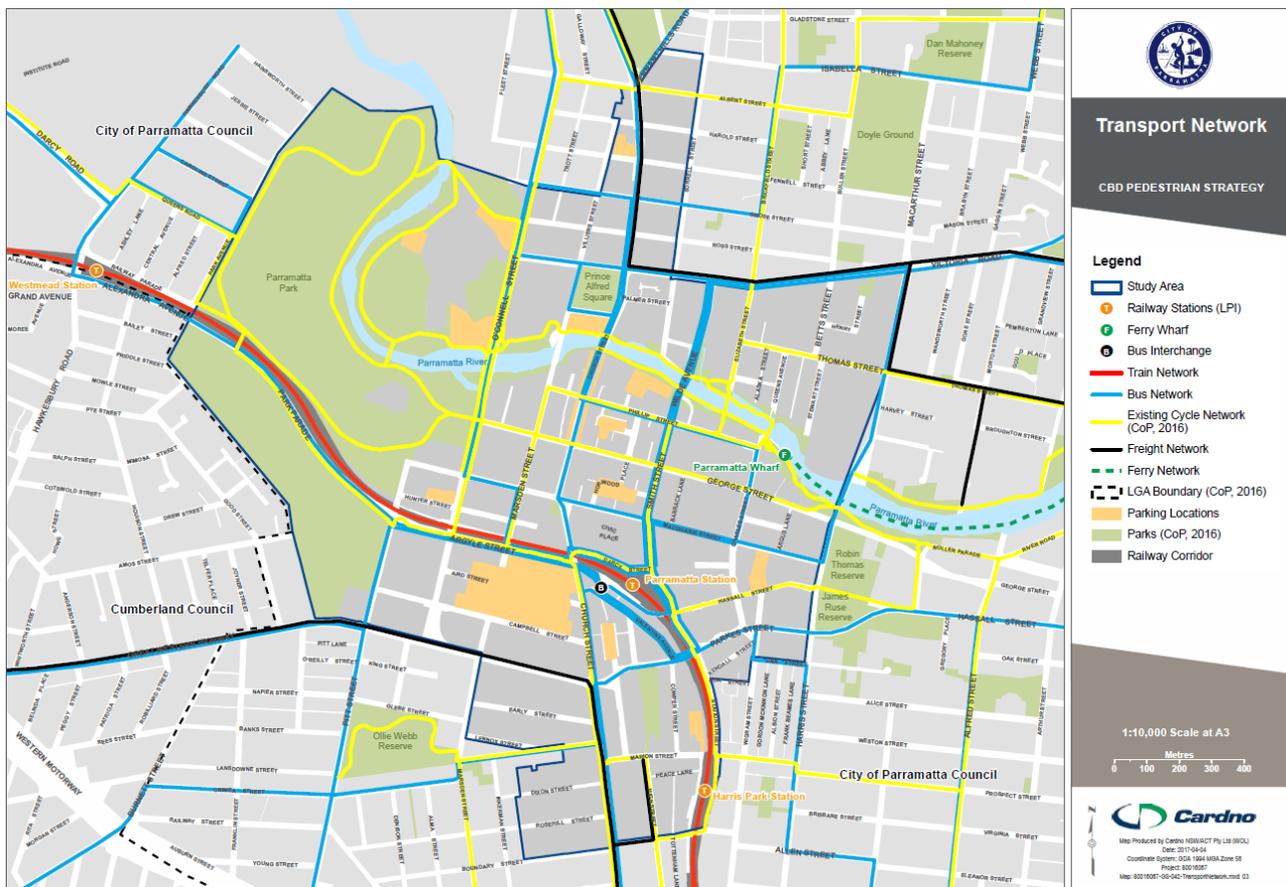
### 3.6 Integration with other transport modes

The CBD is well serviced by a combination of different transport modes, including public transport options such as trains, buses and ferries, which provide access to most of the wider Sydney Metropolitan area, including the Sydney CBD, in addition to the North-west and South-west growth centres. Options for private transport include the provision of both on-street and off-street parking for use by the public, and these are located throughout the CBD area.

Good pedestrian connections are vital to the function of the wider transport network, as all trips involve walking as a component of the door-to-door journey, both when accessing and leaving private and public transport. In the CBD, footpaths are available to most transit stops, providing links between key land uses in the CBD with nearby transit stops and major interchanges.

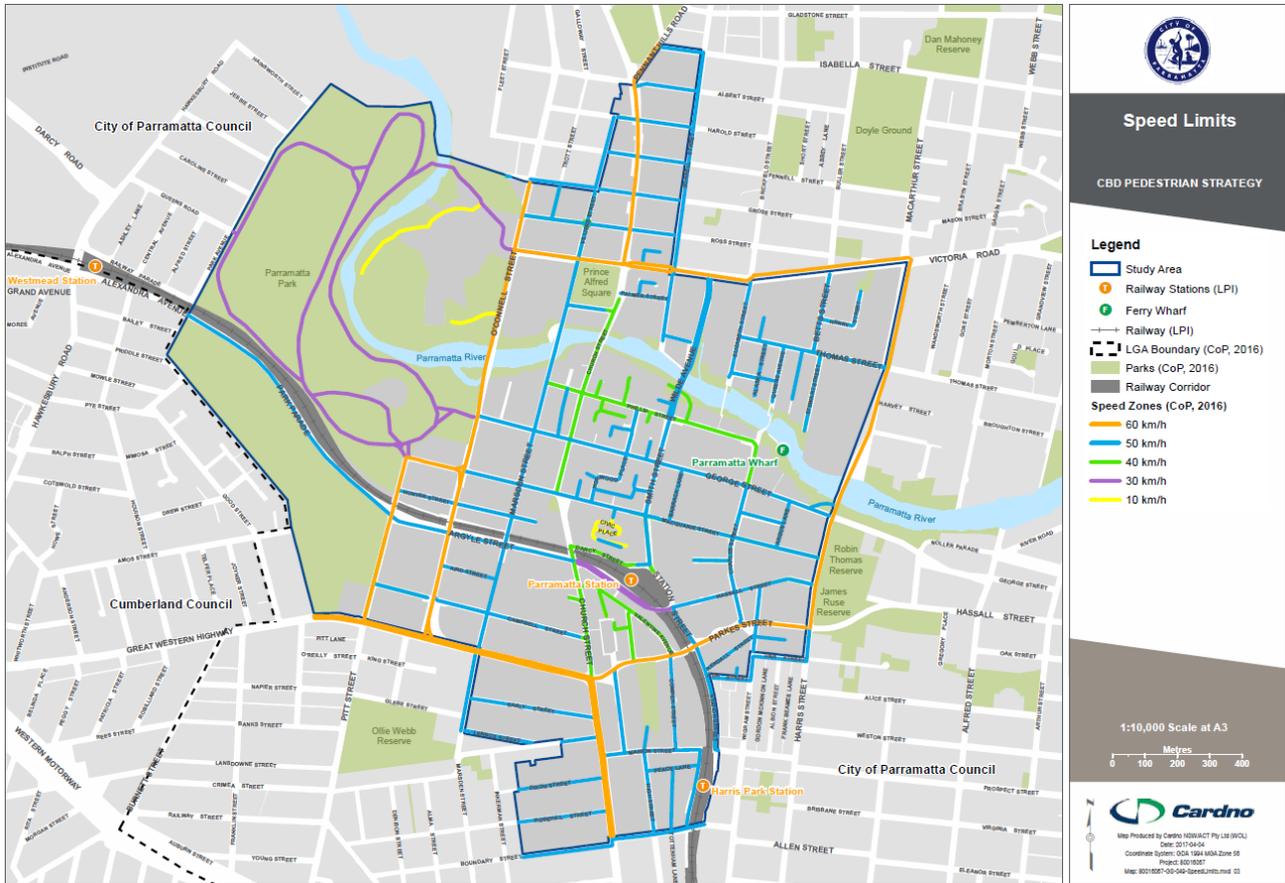
The CBD transport networks are shown on **Figure 3-14** and described in the following sections.

**Figure 3-14 CBD transport networks**



Speed limits in the CBD vary between 10 and 60 kilometres per hour, depending on the location. The majority of streets in the CBD have a speed limit of 50 kilometres per hour, key pedestrian streets such as Church Street and Darcy Street have speed limits of 40 kilometres per hour. CBD speed limits are shown on **Figure 3-15**.

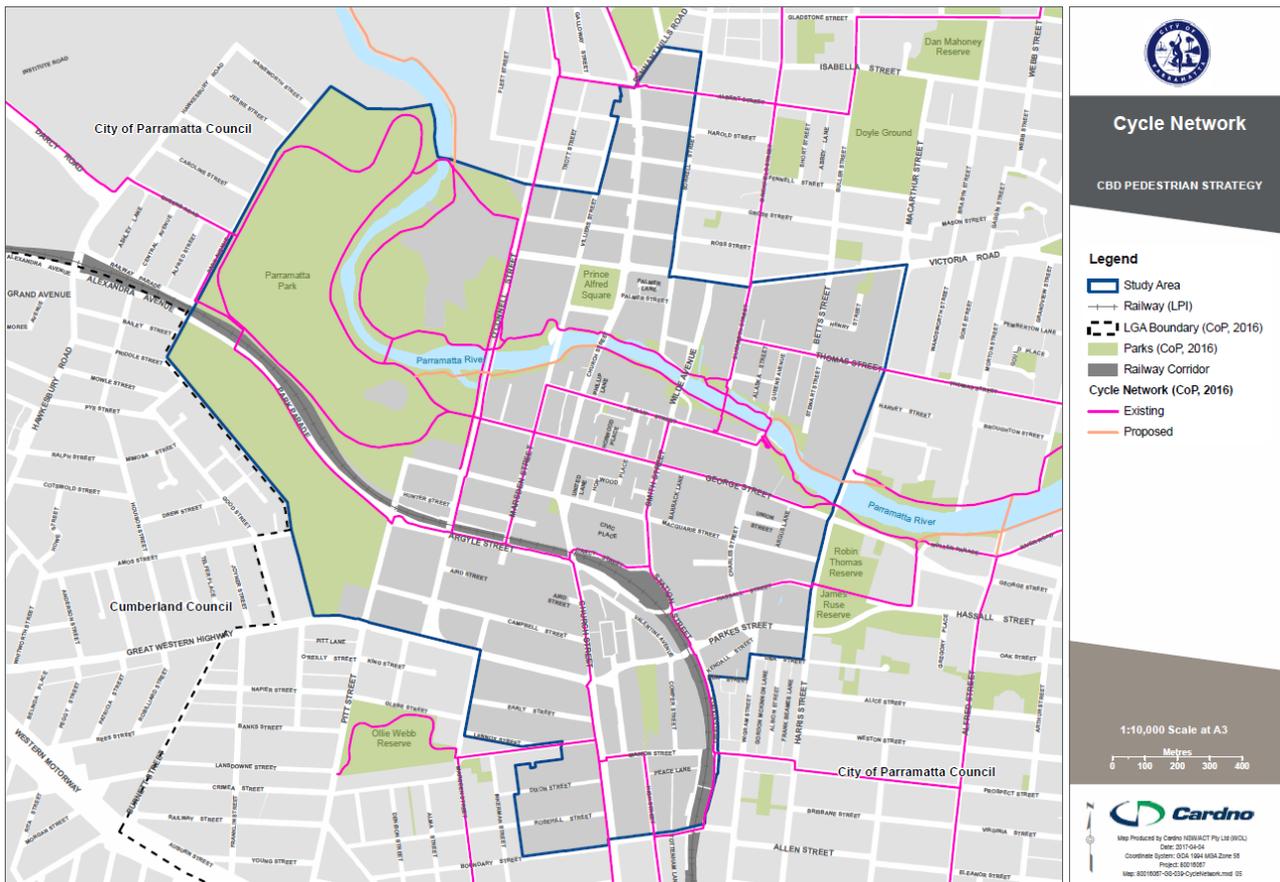
**Figure 3-15 CBD speed limits**



### 3.6.2 Cycling

Pedestrians and cyclists often share the same desire lines (the shortest or easiest route to navigate) and corridors as each other. Parramatta’s existing cycle network provides connections to the CBD from each direction but there is a lack of separated cycling facilities within the CBD. The existing routes incorporate a combination of primarily on-road (mixed traffic) and some off-road facilities. Clear through routes are provided from the east to west, however direct north-south connections are lacking. Existing and proposed cycling routes are shown on **Figure 3-16**.

**Figure 3-16 Existing and proposed cycling routes**



Two key on-road routes proceed directly through the CBD and run from east to west along Macquarie and George Streets. The link along George Street connects from the west through Parramatta Park and proceeds to the east towards Alfred Street.

From the north, two routes provide connections to the CBD; the first is an off-street facility along O’Connell Street, with an on-road facility along Elizabeth Street connecting to a shared path bridge across the Parramatta River, and connecting to Phillip Street.

From the south, two on-road routes provide links to the east-west route along Macquarie Street via Station Street, and Wigram Street continuing along Charles Street. Another off-road route approaches from the south-west along Pitt Street, before continuing east along Argyle Street and connecting to the Westfield Shopping Centre and Parramatta Transport Interchange.

A recreational shared path facility called the Parramatta River Cycleway is provided on both sides of the Parramatta River foreshore, beginning at the Parramatta ferry wharf and proceeding west towards Church Street. West of Church Street, the path continues on-road along Market Street, before returning to an off-road environment and proceeding through Parramatta Park. The Parramatta River Cycleway connects to Sydney Olympic Park in the east and Westmead in the west.

Along with the cycleway, there are only a few other routes in the CBD where pedestrians and bicycles currently interact. There are some shared paths for use by both bicycles and pedestrians, generally located on the periphery of the CBD; along Pitt Street, the railway line near Harris Park Station and Harris Street. The northern side of Argyle Street between Church Street and Pitt Street is also a shared path.

There are a number of regional routes for cyclists. The M4 cycleway, the T-way from the north west, and the Parramatta Valley Cycleway from the east provide east-west links. From the south, shared paths on the western side of Church Street, Station Street, and Pitt Street provide a connection to the CBD.

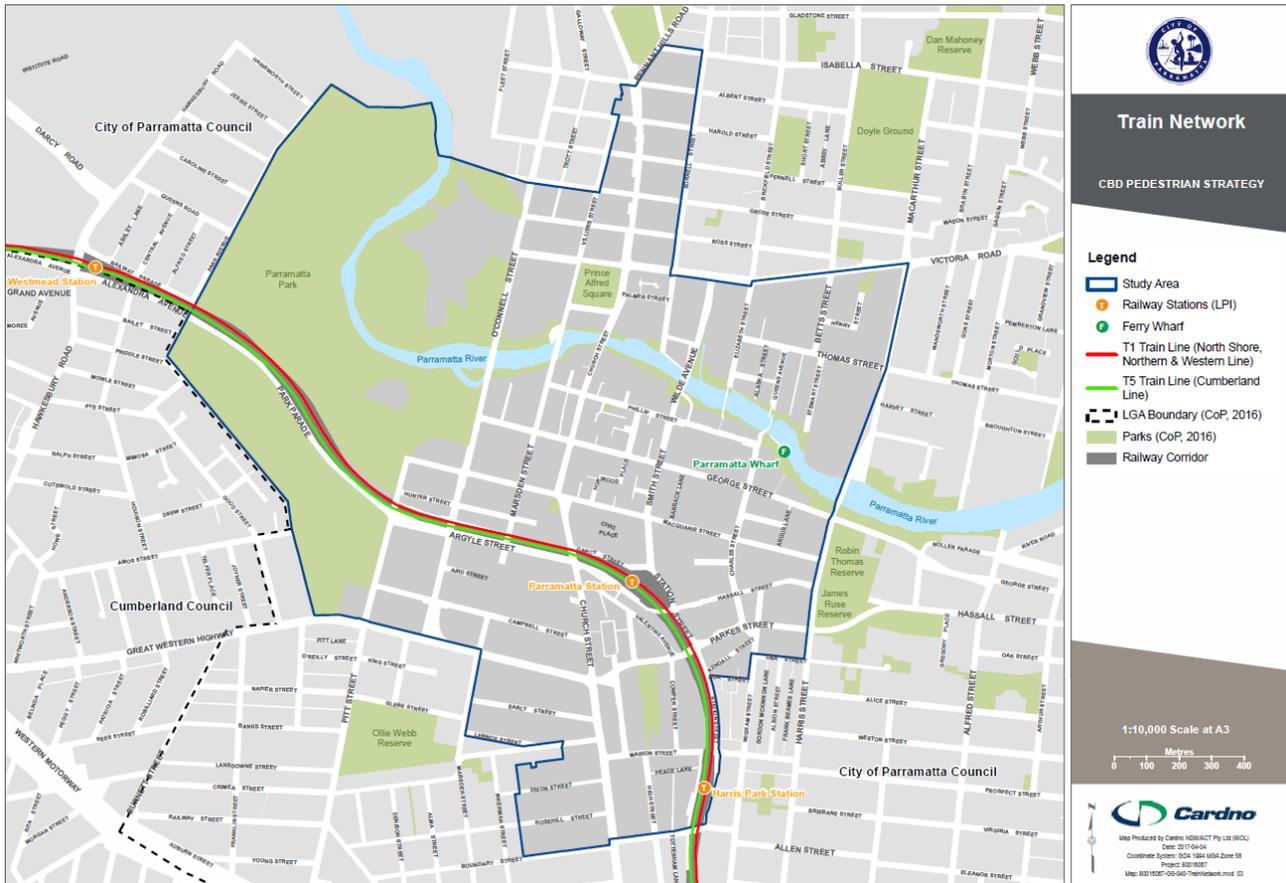
Separation of pedestrians and bicycles should be encouraged as the CBD develops and population grows. Cyclists should be provided with their own dedicated facilities to encourage people travelling longer than two

kilometres to consider cycling rather than driving. The existing shared paths should be assessed for their appropriateness into the future. As demand from both pedestrians and cycling grows, separation is recommended to reduce conflict and perception of safety.

### 3.6.3 Trains

Parramatta Station is located within the Parramatta Transport Interchange, directly opposite the Westfield Shopping Centre on the eastern side. The station is a major pedestrian trip generator, and provides access to trains operated by Sydney Trains and NSW Trainlink along the T1 Western Line towards Emu Plains, Richmond or Berowra, the Blue Mountains line towards Bathurst, and the T5 Cumberland Line towards Schofields and Campbelltown. The train network is shown on **Figure 3-17**.

**Figure 3-17 Parramatta CBD train network**



Footpath connections are available on all surrounding streets, including Darcy, Station, Church and Argyle Streets. To access the station from the northern side, an entrance is provided on Darcy Street. This street is designated as a high pedestrian area with a 40 kilometre per hour speed limit, and users must cross at a zebra crossing to access stairs and lifts connecting to the station concourse. Another entrance point is available further to the east on Station Street; users may also opt to proceed along Church Street and access the station from the southern entrance portals.

To access the station from the southern side, multiple access points are available to users via Church, Argyle and Fitzwilliam Streets. These entrances are located along the eastern area of the Westfield Shopping Centre, and connect to an underground pedestrian link providing access to the station concourse. Above-ground links to the station are also available from the northern side of the Argyle Street bus interchange, with access available via a signalised pedestrian crossing along the mid-block.

The rail corridor is wholly elevated above street level as it passes through the CBD; this elevated segment begins at Harris Park Station located to the south-east of the CBD, and continues through to Parramatta Park located to the west. This has an impact on the connectivity of the CBD, as pedestrian access to each side of the rail corridor is restricted to locations where street underpasses are provided. Excluding the Parramatta Transport Interchange, there are six road underpasses in the CBD area which pedestrians can

use to cross the rail corridor and access the northern and southern precincts. Wide footpaths are provided along all six, and additional lighting is provided only along the link off the Station Street / Hassall Street intersection. Along the remaining five underpasses, the areas are relatively dark, even during the daytime.

In 2014, the following passenger usage counts were recorded by Sydney Trains:

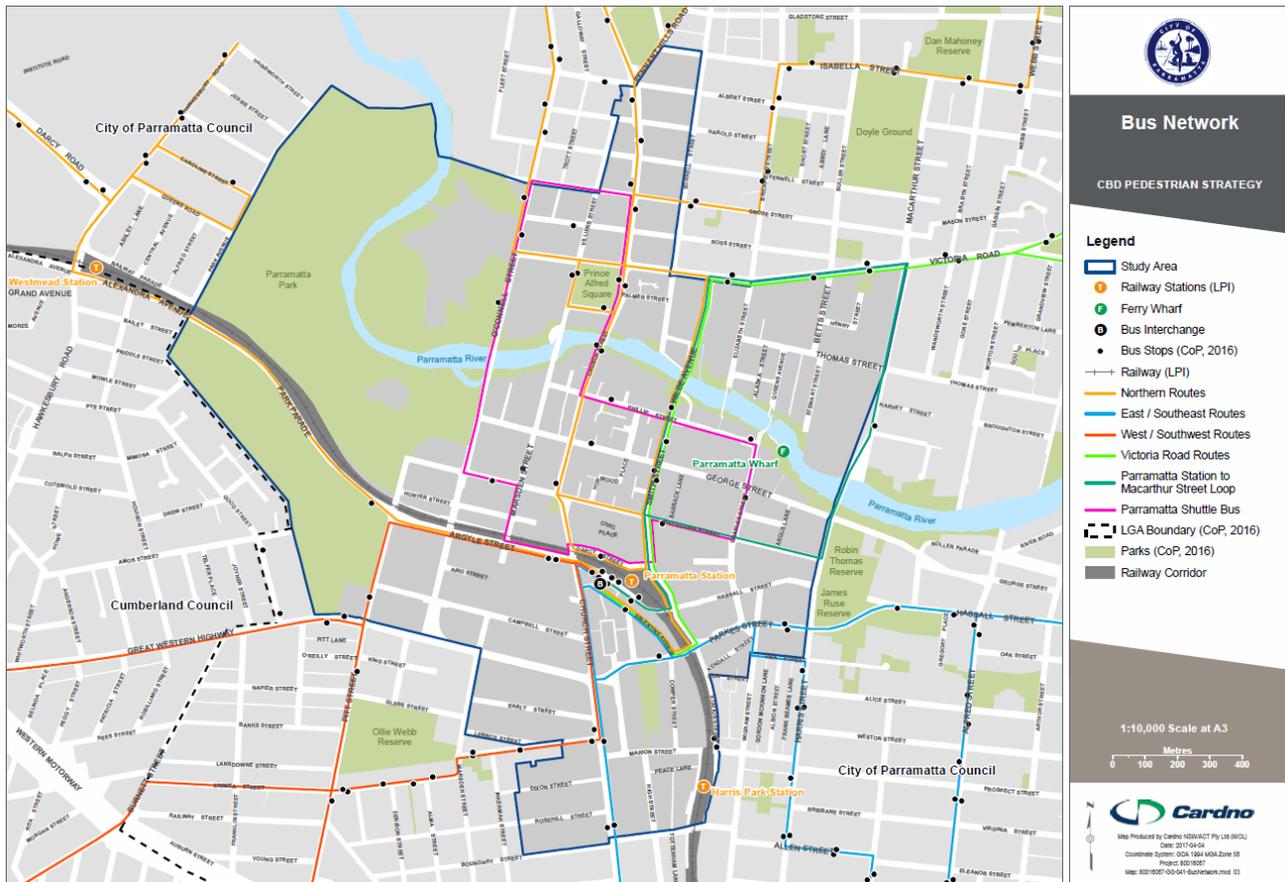
- > Parramatta Station recorded 34,960 In movements over 24 hours. Of these, 7,790 occurred in the AM peak, and 14,960 in the PM peak.
- > Parramatta Station recorded 34,960 Out movements over 24 hours. Of these, 13,700 occurred in the AM peak, and 8,660 in the PM peak.

Demand for train services will grow as more jobs are provided in the CBD. Free flowing entry and exit to and from the train station, clear wayfinding to major destinations and multiple entry points will be important to enhancing the walking component of the public transport experience.

### 3.6.4 Buses

Buses servicing the CBD provide connections to most areas in Metropolitan Sydney, including the north-west and south-west precincts, as well as the Sydney CBD, inner west and northern areas. Bus services are shown on **Figure 3-18**.

**Figure 3-18 CBD bus network**



Most bus activity is concentrated around the Parramatta Transport Interchange, with all buses utilising layover areas located off Station Street and shared with passenger stands along Argyle Street.

Transport for NSW Opal data for the Parramatta Transport Interchange from Thursday 17<sup>th</sup> March and Saturday 19<sup>th</sup> March 2016 recorded the following:

- > 9,173 tap-ons and 10,189 tap-offs were recorded at the stops with east/northbound services for the whole of Thursday;

- > 10,479 tap-ons and 7,581 tap-offs were recorded at the stops with west/southbound services for the whole of Thursday;
- > 3,926 tap-ons and 3,770 tap-offs were recorded at the stops with east/northbound services for the whole of Saturday; and
- > 3,854 tap-ons and 3,507 tap-offs were recorded at the stops with west/southbound services for the whole of Saturday.

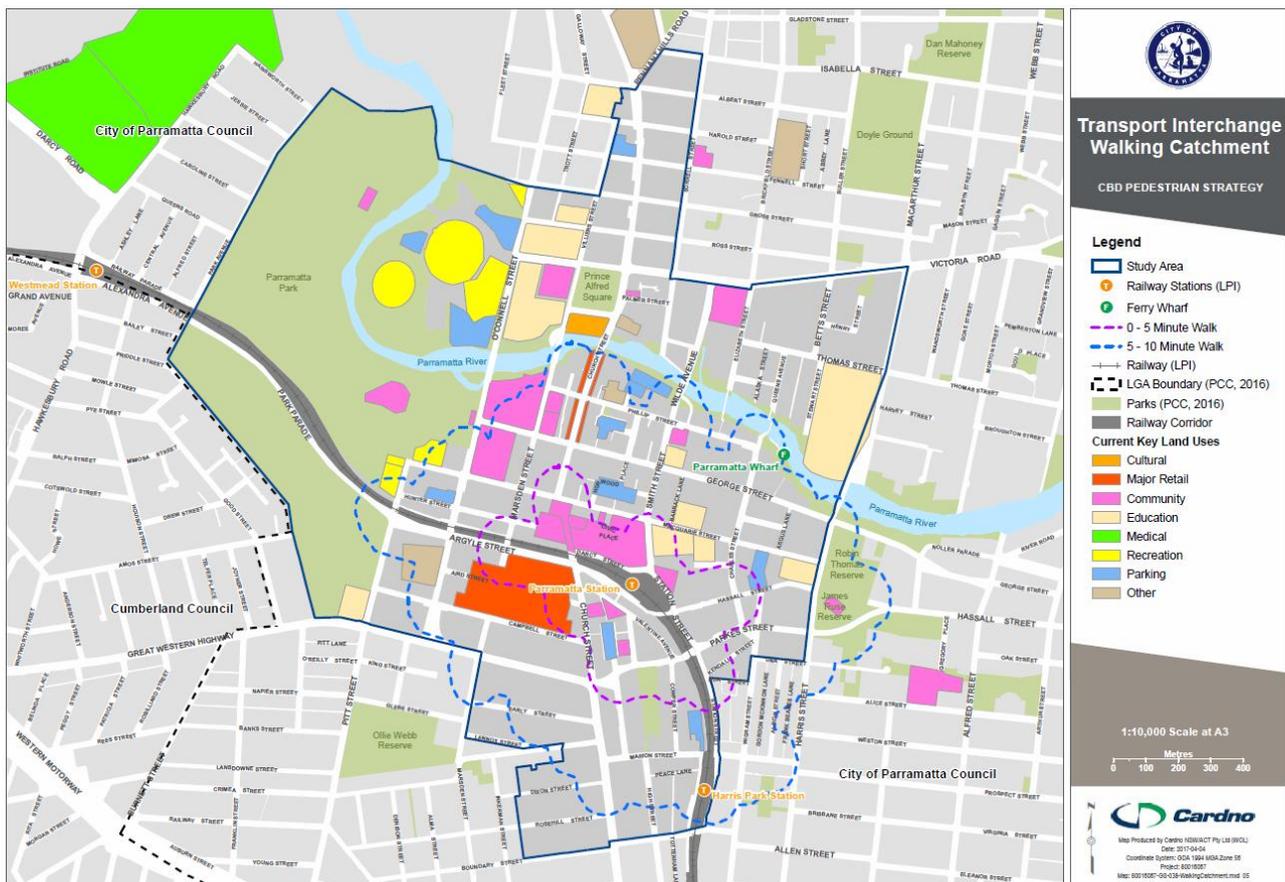
Outside of the interchange, there are nine bus stops located within the CBD, and these are primarily concentrated along the key inbound and outbound corridors including Smith Street/Wilde Avenue, Church and Argyle Streets.

A free shuttle bus currently operates within and around the CBD boundary, and includes stops at Parramatta train station and ferry wharf, the Westfield Shopping Centre, and along streets including O’Connell, Church and Phillip Streets.

The bus interchange is a key pedestrian trip generator, and footpath links are provided along all surrounding streets. Pedestrian access to the bus interchange should be direct, safe and legible. Clear wayfinding will support visitor bus access and appropriate footpath widths are required to cater for the peak afternoon demand which sees a burst of activity as schools finish for the day. Bus stops in other parts of the CBD should be weather protected, located outside of the pedestrian clear zone and easily identified.

The Parramatta Transport Interchange is well located close to the centre of the CBD. All key land uses south of the Parramatta River are within a five or ten minute walk of the interchange as shown on **Figure 3-19**.

**Figure 3-19 Transport interchange walking catchments**



### 3.6.5 Ferries

The CBD is currently serviced by ferries along the F3 Parramatta River Line, providing connections to wharfs along the Parramatta River corridor, Darling Harbour and Circular Quay. The Parramatta wharf is situated towards the north-east of the CBD, and is integrated with the southern shared pedestrian and bicycle

foreshore path. Access to the street network is available via Phillip and Charles Street, with footpath access provided on both sides. A bus stop serviced by the Parramatta Free Shuttle bus is also available on Phillip Street.

Ferry services arrive and depart the wharf approximately once every hour; in the 2014/15 financial year, 2,336,109 passengers travelled along the F3 Parramatta River Line. The most recent data obtained in May 2015 showed 1,523 entries and 1,469 exits were recorded at Parramatta wharf. Ferry load factors are generally higher on weekends compared to weekdays; during a typical Monday to Friday period in May 2015, the load factor was observed to be 7% in the off-peak, increasing to 11% on Saturday and 27% on Sunday.

Like the train station and the bus interchange, the ferry wharf should be supported by clear wayfinding to major destinations and appropriate path widths. The ferry caters for many visitors who are unfamiliar with the CBD and so will need highly legible routes and reassurance that they are heading in the right direction.

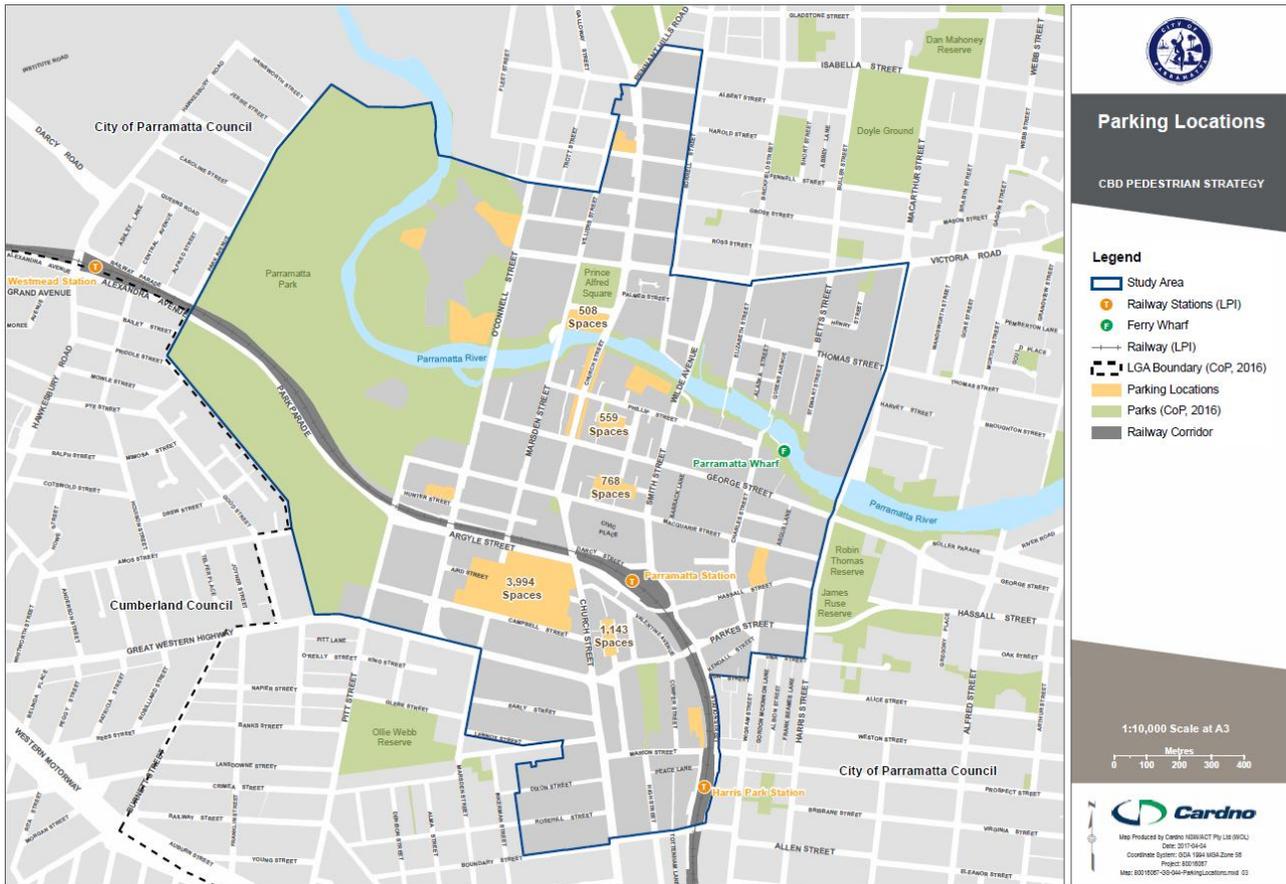
### **3.6.6      Vehicles and parking**

Private vehicular access is generally available throughout the CBD, with the exception of areas including the Church Street pedestrian zone and the bus stands and layovers in the Parramatta Transport Interchange. Footpath links are available along most streets in the CBD, with movements somewhat regulated by the movement of vehicles, particularly along smaller laneways and at intersections.

The CBD streets discourage through vehicular movements, vehicles are encouraged to use the city ring road for a faster route from north to south and from east to west. This reduces the volume of traffic in the centre of the CBD, particularly along Church Street. The reduced traffic means that pedestrian movements can be prioritised at some intersections and it improves amenity for people on foot as they are not confronted by large volumes of vehicles and queuing.

Parking in the CBD is available both on-street and via a number of off-street facilities available for use by the public. Currently, there are a total of 5,744 parking bays available in the wider Parramatta area, including 3,994 off-street (excluding the Westfield Shopping Centre) and 1,750 on-street spaces. Multi-storey parking locations are shown on **Figure 3-20**.

Figure 3-20 CBD multi-storey parking locations



Footpath links are available to off-street parking facilities; access is generally gained via smaller laneways where vehicular entry and exit points are also located. Car park access points are generally not provided along the major active CBD street frontages. There is a general lack of directional wayfinding, and lighting provisions are poor, yielding to safety and security concerns. There are no major freight routes that access the CBD although servicing is essential for all businesses.

### 3.7 Walking opportunities and issues

The strategic plans, planned redevelopment of the CBD and review of the current pedestrian experience present issues and opportunities to be addressed as part of the Pedestrian Strategy.

#### Opportunities and Issues Summary

The existing characteristics and planned transformation of Parramatta's CBD presents significant opportunities to create a compact, vibrant, accessible and walkable centre which supports a high proportion of walking trips. The transformation is already occurring and represents a key driver in the development and delivery of this Pedestrian Strategy. Implementing plans to prioritise pedestrians as city blocks are developed minimises construction impacts from future retrofitting and requires developers to contribute to the space, connections and infrastructure needed to create a more walkable CBD. Many of the existing issues will be addressed by new developments designed to make walking an easy choice.

#### 3.7.1 Walking opportunities

The investment in the CBD provides opportunities to support and promote walking as the major transport mode for trips within the CBD. Some of the opportunities include:

***Small CBD blocks in the city core and an easily navigable grid network*** – the grid structure of the CBD can define strong pedestrian connections that link current and future developments and key land uses, and facilitates the efficient movement of pedestrians.

***Strong lane and arcade network*** – Can provide an environment that is more conducive to pedestrian activities by implementing initiatives that emphasise pedestrian priority and restrict vehicle access. Maximising the use of these spaces for new retail, commercial and entertainment purposes also assist with activation of the wider CBD.

***Range of trip purposes including shopping, education, cultural and heritage visits and services as well as commuting*** – Different trip purposes will generate trips at different times of the day, and initiatives aimed at improving pedestrian facilities should consider the needs of all potential users.

***Five to ten minute walk from the train station to most CBD locations*** – Nearby access to transit stops is highly advantageous in encouraging walking as a viable option to access public transport services and CBD destinations.

***New public transport services reduce the need to drive to Parramatta*** – Initiatives including additional train, bus and ferry services, in addition to projects such as the Parramatta Light Rail will improve public transport coverage and encourage visitors to use public transport when accessing the CBD.

***Planned increases in residential, cultural land uses leads to growth in night time and weekend activity*** – the activation and growth of these new areas can assist with improving the perception of, and actual personal safety and security throughout the CBD.

***Proposed car-free link through Horwood Place*** – This creates a new north-south pedestrian route through the CBD, aligned with redevelopment sites and linking key land uses throughout the CBD, including the redeveloped river foreshore, transport interchange and future Parramatta Square.

***Access to Parramatta River*** – the construction of new pedestrian links to the Parramatta River foreshore will assist with improving pedestrian accessibility to heritage areas and new cultural and entertainment precincts and land uses.

***Relatively flat landscape*** – Parramatta's generally flat topography makes walking trips easy for people of all fitness levels.

#### 3.7.2 Walking issues

Some of the issues that affect the walking experience in the CBD include:

***Personal security*** – Different issues associated with personal security have been identified by Council. These include:

- > In the CBD, indecent assaults and fraud are the key crimes that have increased. 23.3% of indecent assaults and 3% of fraud cases reported in the Parramatta LGA occurred in outdoor and public spaces;
- > Lack of passive surveillance at off-street car parks, with reported increases in theft from motor cars; and
- > Moving through the CBD at night time between the main entertainment / restaurant area and the train station and bus interchange; and
- > Negative perceptions of people who may have physical or mental health issues, and utilise nearby social and government services.

**Dark walking routes** – Some parts of the CBD are poorly lit. This affects perceptions of personal security and discourage people from choosing to walk if travelling after dark. Reported crimes that occur at night include alcohol and non-alcohol related assaults, malicious damage and indecent assault, usually during weekend periods from Friday to Sunday, and primarily along the café/restaurant precinct along Church Street. Visitors have reported feeling unsafe when leaving these areas to access the transport interchange, as well as in car parks where sight lines and lighting is reduced.

**Heavy traffic on outer CBD roads** – there are eight key corridors which converge on the CBD and result in increased traffic congestion, reducing efficiency and pedestrian amenity while accessing the CBD.

**Lack of night time economy** - There are areas in the CBD that are old and not activated with points of visual interest and lighting to facilitate passive surveillance; this also impacts on the feeling of being unsafe.

**Delay at intersections** – There are currently six intersections that have pedestrian scramble facilities available, however most intersections prioritise vehicular movements and the majority of CBD streets have posted speed limits of 50 kilometres per hour.

**Lack of residential land uses in the CBD** – this can lead to a less sustained level of activity in the CBD outside of typical Monday to Friday work hours as workers leave the CBD at the end of the day and it is not viable for businesses to remain open.

**The railway line forms a barrier** – this has an impact on the free movement of pedestrians throughout the CBD as access between the northern and southern precincts is restricted to seven corridors, with one solely for pedestrian use only (the underpass of the Parramatta Transport Interchange).

**Blank facades** – Some CBD blocks, in particular around the Westfield Shopping Centre, have blank facades, limiting the pedestrian activity and experience in these areas. A lack of ground floor retail away from the CBD decreases opportunities for street activity as well.

**Large CBD blocks** – The larger CBD blocks, away from Church Street, require longer walking distances for pedestrians accessing some destinations than if blocks were smaller or through site links were provided.

## 4 Walkable city centres

Cities around the world have taken innovative approaches to planning and developing walking focused CBDs which place people, and their journeys on foot, above all other transport modes in the core areas. These cities and their strategies to prioritise pedestrians provide guidance for development of Parramatta's walkable city centre. The following sections summarise ideas, theories and practices in a set of walkable city principles to help guide the development of the walking experience in Parramatta and present examples from great walking cities.

### 4.1 Walkable city principles

Genuinely walkable city centres are more than wide footpaths and frequent road crossings. They support direct and safe journeys and provide public places to enjoy spending time in. These city streets provide frequent connections, pedestrian-only links and priority for people on foot. They have a diverse mix of land uses, people coming and going at different times of the day and night and they are attractive and interesting places to rest and wait, sheltered from weather elements.

Across Australia and the world, researchers, practitioners and city officials have investigated the principles and characteristics that make CBDs great places to be a person on foot. **Table 4-1** presents a summary of walkable city centre principles that are relevant for Parramatta as it transforms into Sydney's second CBD. The table provides detail for each principle and the research, theory or reference that it aligns with. The table also demonstrates which walkable cities have embraced each principle. Summaries of example walkable cities which are referenced are provided in **Section 4.2**.

**Table 4-1 Walkable city centre principles**

Principle	Characteristics	Reference
Amenity	<ul style="list-style-type: none"> <li>&gt; High quality pedestrian infrastructure is provided throughout the CBD.</li> <li>&gt; Walking is a pleasant experience with seats, shelter, and landscaping.</li> <li>&gt; Demand is catered for. Reallocate road space proportionally to the volume of demand, pedestrian demand on city centre streets can be many times more than the vehicle demand.</li> <li>&gt; Footpath space is planned and allocated for different uses:               <ul style="list-style-type: none"> <li>– Pedestrian zones – for movement.</li> <li>– Kerb zones – for street furniture, signage, utility poles.</li> <li>– Business zones – for outdoor dining, building frontages.</li> </ul> </li> <li>&gt; Wayfinding lets people know where they are and how they can get to their destination on foot.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; International Charter for Walking</li> <li>&gt; Streetfighter, Janette Sadik-Khan</li> <li>&gt; Jan Gehl's 10 Principles of Sustainable Transport</li> <li>&gt; Livability in Transportation Guidebook, U.S. Department of Transportation</li> <li>&gt; Copenhagen Walking Strategy: More People Walk More</li> <li>&gt; Liveable Green Network, City of Sydney</li> <li>&gt; Walkable city examples: Arlington, Newark, Austin, Florence, Melbourne</li> </ul>
Connectivity and destinations	<ul style="list-style-type: none"> <li>&gt; Walking routes connecting CBD destinations are direct and legible.</li> <li>&gt; The CBD is linked to open spaces and recreational routes.</li> <li>&gt; Walking routes integrate with public transport interchanges, stops, stations and wharves and support the beginning and end of trips made by other modes.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; International Charter for Walking</li> <li>&gt; Copenhagen Walking Strategy: More People Walk More</li> <li>&gt; Jan Gehl's 10 Principles of Sustainable Transport</li> <li>&gt; Walkable city examples: Jersey City, Madison, Barcelona, Portland</li> </ul>
Accessibility	<ul style="list-style-type: none"> <li>&gt; Streets are Disability Discrimination Act (DDA) compliant throughout the CBD.</li> <li>&gt; All people have equitable access to public transport.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; International Charter for Walking</li> </ul>

Principle	Characteristics	Reference
	<ul style="list-style-type: none"> <li>&gt; Public spaces cater for inclusive mobility.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Copenhagen Walking Strategy: More People Walk More</li> <li>&gt; Walkable city examples: Jersey City</li> </ul>
Partnering	<ul style="list-style-type: none"> <li>&gt; Integrated State and Council planning for transport infrastructure and major developments to deliver a consistent and optimum CBD walking environment.</li> <li>&gt; Working with retailers and building owners to encourage and support shop façade improvements and activation of streets.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Livability in Transportation Guidebook, U.S. Department of Transportation</li> <li>&gt; Walkable city examples: Arlington, Pittsburgh</li> </ul>
Vibrancy	<ul style="list-style-type: none"> <li>&gt; Plan a diverse mix of land uses close to each other so that people can walk to the majority of everyday services and facilities and reduce dependence on motor vehicles.</li> <li>&gt; Support street art and events, the night time and weekend economy and creative use of the city streets.</li> <li>&gt; Encourage walking, so more people use the city streets.</li> <li>&gt; Footpath design can create opportunities for things to do and see along the way.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; International Charter for Walking</li> <li>&gt; Jan Gehl's 10 Principles of Sustainable Transport</li> <li>&gt; Copenhagen Walking Strategy: More People Walk More</li> <li>&gt; Walkable city examples: Arlington, Pittsburgh, Munich, Barcelona, Paris, Melbourne</li> </ul>
Define Link and Place	<ul style="list-style-type: none"> <li>&gt; Streets functions of link and place are defined and supported.</li> <li>&gt; Right-size streets by matching land use and transportation contexts appropriately on existing streets.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Streetfighter, Janette Sadik-Khan</li> <li>&gt; NSW Roads Plan (Draft)</li> <li>&gt; Walkable city examples: Melbourne, Munich</li> </ul>
Pedestrian priority	<ul style="list-style-type: none"> <li>&gt; Pedestrian movements are prioritised over vehicles in the CBD:               <ul style="list-style-type: none"> <li>- Reduce waiting time</li> <li>- Reduce crossing distance</li> <li>- Increase crossing opportunity</li> <li>- Increase footpath space</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>&gt; Livability in Transportation Guidebook, U.S. Department of Transportation</li> <li>&gt; Streetfighter, Janette Sadik-Khan</li> <li>&gt; Walkable city examples: Arlington, Bendigo, Jersey City, Barcelona, Portland, Edinburgh, Munich, Florence, Paris</li> </ul>
Safety and security	<ul style="list-style-type: none"> <li>&gt; People choose to walk – day and night. Streets have passive and active surveillance, good lighting and they have pedestrian activity even at night time.</li> <li>&gt; Slower vehicle speeds, driver awareness and safe crossings reduce the number and severity of crashes involving pedestrians.</li> <li>&gt; The needs of all pedestrians are considered especially vulnerable road users such as children, the elderly and mobility impaired.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; International Charter for Walking</li> <li>&gt; Copenhagen Walking Strategy: More People Walk More</li> <li>&gt; Walkable city examples: Arlington, Newark, Austin, Edinburgh, Paris, Barcelona</li> </ul>
Communicate and promote walking and its benefits	<ul style="list-style-type: none"> <li>&gt; Walking has a positive image.</li> <li>&gt; Walking and walking safety is supported and encouraged.</li> <li>&gt; People are aware of the benefits of walking and are informed about how to choose to walk.</li> </ul>	<ul style="list-style-type: none"> <li>&gt; International Charter for Walking</li> <li>&gt; Copenhagen Walking Strategy: More People Walk More</li> <li>&gt; Walkable city examples: Newark, Portland, Austin, Edinburgh</li> </ul>

## 4.2 Great walking cities

The snapshots below present ideas and approaches from walking focused cities which are relevant in size and regional significance to Parramatta.

### Characteristics of Walking Cities Summary

The strategies used in each of these cities demonstrates that incremental changes can transform a city from one which prioritises cars, to one which prioritises the pedestrian experience. The focus on pedestrian priority, safety and amenity by each city demonstrates their alignment with the walkable city principles set out in **Section 4.1**. These principles have informed the walking objectives of this Pedestrian Strategy which aim to support the transformation of the CBD into a walkable city centre. A number of the actions adopted in these cities are highly relevant for the Parramatta CBD and have influenced the recommended actions for walking proposed in **Section 8**. In particular:

- > installation of permanent pedestrian counters (Arlington)
- > improvement of street lighting (Newark);
- > collaboration with schools to meet students' walking needs (Austin);
- > introduction of traffic calming measures and reduced speed limits (Barcelona, Edinburgh, Paris);
- > creation of a mobile website with walking information (Edinburgh);
- > trialling of road closures (Pittsburgh); and
- > use of walking routes for events (Melbourne).

Details of each city's support for walking is presented in **Appendix B**.

#### Bendigo, Victoria

**Relevant for** Pedestrian mall with vehicle restriction times, wide footpaths and weather protection.

#### Walkable features

- > The Hargreaves Street Pedestrian Mall runs for one block through the city's retail centre. Access to the area is restricted for vehicles between 10:00AM and 6:00PM, however outside of these times, the area acts as a shared zone, with alternate paving treatments denoting pedestrian priority at all times.
- > Most footpaths are wide, lined by street trees with weather protection provided by shop awnings.
- > The intersection of Hargreaves Street and Bull Street was converted into a shared zone to complement the adjacent Hargreaves Mall. Works included the installation of rumble strips, a mid-block crossing, street furniture, and footpath widening and kerb removal. The works resulted in a decrease in average vehicle speeds from 40 to 27 kilometres per hour.

#### Melbourne, Victoria

**Relevant for** Pedestrian access to light rail in a city centre and activation of city centre laneways

#### Walkable features

- > The city centre is structured in a grid layout, with equal sized blocks approximately 240 metres long and 115 metres wide.
- > The Bourke Street Mall is a 200 metre pedestrianised section of Bourke Street in the city centre, with access only available to trams. Street furniture and trees have been installed, and space is available for recreation or public events.
- > Many laneways in the city centre have been converted to shared zones or pedestrian only zones. These laneways are interesting and activated places for people to visit and pass through.
- > Melbourne has the highest proportion of street furniture in the world and the number of cafes has increased from 50 in 1990 to over 600.

**Arlington, Virginia**

**Relevant for** Implementing a broad program of initiatives aimed at improving pedestrian priority in the city.

**Walkable features**

- > WALKArlington: art, furniture and wayfinding, improved infrastructure including improved footpaths and crossings.
- > Beacons to provide signalised warnings to approaching vehicles at zebra crossings.
- > Pedestrian signal countdown timers at 50 intersections.
- > New developments must provide “pro-pedestrian zoning” initiatives which requires retail land uses to be located at ground floor level along key pedestrian routes.
- > Permanent pedestrian and bicycle movement counters.
- > Widened footpaths, new shared and bike paths, and pedestrian refuges and traffic calming measures.

**Austin, Texas**

**Relevant for** Safety for pedestrians crossing roads, low-cost measures to reduce vehicle speeds and shorten crossing distances and promotion of walking to city residents,

**Walkable features**

- > Pedestrian Hybrid Beacons (PHB) have been installed at 39 pedestrian crossings across the city as a series of warning lights activated by pedestrians.
- > A low-cost kerb extension solution, where the extension surface was painted with colourful polka dots, with traffic bollards reinforcing the area for use by pedestrians only.
- > GIS software was used to conduct a full audit of the existing pedestrian infrastructure in the city and beyond.
- > The Safe Routes to School program aims to educate school children about staying safe while using the road network as a pedestrian or cyclist.

**Barcelona, Catalonia**

**Relevant for** Reduced traffic speeds, support for a signature pedestrian mall and using shared zones as a strategy to prioritise pedestrian movements over the needs of vehicles.

**Walkable features**

- > The Las Ramblas pedestrian mall runs through the city, connecting the coast with Catalunya. The mall has one active traffic lane running in each direction, with stalls, retailers and restaurants set up on a pedestrian boulevard running down the middle.
- > A 30 kilometre per hour speed limit applies to all vehicles travelling through the city centre.
- > Most streets in the city centre are designated as pedestrian zones; whilst vehicles are permitted to use these streets, surfaces are paved, with line marking and signage in place to reinforce pedestrian priority.
- > The pedestrian zones are generally connected to one another, and provide uninterrupted access to pedestrians travelling through the city.
- > Most minor streets in the city centre that are not designated pedestrian zones are generally narrow and designated as one-way only.

**Edinburgh, Lothian**

**Relevant for** Speed reductions in the city centre, creating pedestrian-only zones where popular land uses are located, and integrating active transport routes with public transport services.

**Walkable features**

- > All streets in the city centre had the traffic speed limit reduced to 20 miles per hour (32 kilometres per hour) in January 2015.
- > Multiple car-free zones located throughout the city. These areas are characterised by alternating surface treatments and warning signage restricting vehicular access, except for deliveries and emergency vehicles.
- > Rose Street is a pedestrianised laneway which provides access to retailers, cafes and restaurants.
- > A smartphone application (WalkIt Edinburgh) is available to residents and visitors, and provides walking trip options, journey times and routes to assist with navigating around the city.

## Florence, Tuscany

**Relevant for** Restricting vehicle access to the city centre and implementing shared zones due to narrow footpath widths.

**Walkable features**

- > The city was declared the most polluted in Italy. This, combined with high pedestrian related injuries and fatalities resulted in the introduction of pedestrian zones in 2009, beginning with the circuit around the Duomo cathedral.
- > City centre access is permanently restricted to all vehicles except those of residents, taxis and buses. Entry points to the restricted areas are marked by signage and signals, with compliance to the restrictions enforced by cameras.
- > Streets and footpaths in the city are generally very narrow, requiring pedestrians to regularly step onto the road and share space with vehicles.
- > Pedestrian zones are characterised by alternating paving treatments, with signage and line marking reinforcing pedestrian priority.

## Jersey City, New Jersey

**Relevant for** Providing an integrated transport solution that combines multiple public transport options with walking and cycling networks.

**Walkable features**

- > The majority of the transit stops are fully accessible for mobility impaired passengers, and are linked to the surrounding pedestrian network.
- > A pedestrian walkway along the Hudson River shoreline links Jersey City with the major Hoboken transit terminal, businesses and recreational land uses.
- > A pedestrian only zone along a section of Newark Avenue, directly opposite the Grove Street PATH train station.
- > Proposal to construct a pedestrian bridge across the Hudson River from Jersey City to Manhattan, to provide an alternative means of commuting for residents and helping to resolve capacity constraints on the PATH train network and NJ/NY ferry service.

## Madison, Wisconsin

**Relevant for** Reducing vehicle space on city streets to provide wider footpaths

**Walkable features**

- > The city centre is primarily a grid layout, with diagonal connections to the Wisconsin State Capitol Building.
- > State Street, an east-west running road link, was converted to a shared pedestrian mall in 1974. An original four traffic lanes were reduced to two and reserved for public transport and emergency vehicles to be shared with pedestrians and cyclists.
- > The Southwest Commuter Path is a shared path that was converted from a disused railway line.
- > The University of Wisconsin, Madison is accessible through multiple pedestrian malls including the Bascom and East Campus Mall.
- > Intersection upgrades, including signal upgrades such as beacon fixtures and countdown timers.

## Munich, Bavaria

**Relevant for** Developing pedestrian malls and precincts within the city centre, connecting them directly to public transport services and prioritising city street space for pedestrians over vehicles.

**Walkable features**

- > Multiple pedestrian malls located throughout the city, and these are connected to key pedestrian and bicycle routes along streets which are open to private vehicles.
- > The Kaufingerstraße pedestrian only mall runs for approximately one kilometre between Marienplatz and Karlsplatz; it accommodates street events, retailers and historical sites aimed at tourists.
- > The Viktualienmarkt is a pedestrian and bicycle only precinct, which accommodates the local food market. It comprises a number of streets permanently closed to vehicles, and is characterised by alternating paver treatments to emphasise pedestrian and bicycle access only.
- > Where streets in the city centre are open to traffic, lane widths are generally narrower, with most of the space reserved for footpaths and pedestrian use.

## Newark, New Jersey

**Relevant for** Implementing initiatives that aim to improve pedestrian safety and minimise the risk of crashes resulting in injuries or fatalities.

**Walkable features**

- > The City of Newark Pedestrian and Bicycle Safety Action Plan aims to reduce pedestrian fatalities to zero by 2025.
- > The Be Street Smart NJ awareness program targets the behaviour of both pedestrians and vehicle drivers.
- > Addition of trees and vegetation, improved street lighting, and installing integrated bus stops at safer locations.
- > New kerb ramps, crossings, improved signalised and mid-block crossings, pedestrian refuges, as well as road treatments for vehicles including speed humps, rumble strips and centre medians.

## Paris, Île-de-France

**Relevant for** Allocating more space to pedestrians through changes to existing footpaths and reprioritisation of road space.

**Walkable features**

- > The Pedestrian Paris Initiative (PPI) implements facilities and policies that favour pedestrians and walking as a viable mode of transportation.
- > Almost 40% of the city has a posted traffic speed limit of 20 miles per hour (32 kilometres per hour) to ensure greater safety for pedestrians and cyclists.
- > Changes to the road rules require drivers to give way to pedestrians or cyclists if they are crossing a road at any point.
- > Expressways running along the bank of the Seine River were removed in favour of a mixed pedestrian and bicycle zone, combined with cafes and recreational space.
- > "Mixing Zones" reduce the traffic speed limit to 12 miles per hour (20 kilometres per hour) and pedestrians and cyclists are permitted to use the road space, regardless of whether footpaths are provided.

## Pittsburgh, Pennsylvania

**Relevant for** Retailer-led improvements to street facades and shop fronts to encourage shoppers and urban renewal of riverfront areas and trialling car-free zones.

**Walkable features**

- > The Streetface Program provides funding grants to businesses and building owners to conduct improvement works to facades to create a space that is more appealing to potential customers.
- > The Storefront Renovation Program (SRP) provides joint funding from government departments to businesses with the aim of improving the physical appearance of storefronts.
- > Car-free days have been trialled, and have become a yearly occurrence in the Strip District, the key shopping and market district in Pittsburgh. Activities and events are held in the closed thoroughfares (Penn Avenue), and visitors are likely to remain in the area longer compared to when the streets are open to traffic.

## Portland, Oregon

**Relevant for** Small blocks in the city centre, engaging with residents and visitors through providing useful, up-to-date resources (such as maps) for journey planning, and encouraging community involvement in pedestrian initiatives and strategies.

**Walkable features**

- > Compact grid layout, with blocks that are generally no longer than 80 metres in any direction.
- > Nine bridges connect the eastern and western city precincts, and pedestrian access is available along seven of these bridges.
- > The Tilikum Crossing Bridge opened in September 2015, accommodates only pedestrians, bicycles and public transport vehicles.
- > A city map outlines the current pedestrian and bicycle network across the city including shared zones, land uses and the expected typical traffic volumes (low or moderate) on routes.
- > Neighbourhood Greenways are designated streets where traffic volumes and speeds are reduced through calming devices and surface treatments.

## 5 Strategic walking objectives and indicators

### 5.1 Vision

City of Parramatta’s vision is to be Sydney’s Central City, sustainable, liveable, and productive – inspired by our communities. Parramatta’s CBD will be the walkable heart of a vibrant and healthy city. The CBD’s growth will be the stimulus to transform the streets into places that are accessible for all people, and that foster their safety, activity and diversity at all times of the day and week.

Street design will support and encourage residents, workers, students, shoppers and visitors to make safe, accessible and simple walking journeys to jobs, to schools, as well as to recreational, cultural and retail districts. They will enjoy the streets as public spaces to meet, wait and watch. People will be prioritised and therefore safer in the CBD, they will enjoy stronger community connections, opportunities to be healthy and active, and the CBD’s economy will benefit from increased numbers of people choosing to walk, shop and linger.

### 5.2 Strategic walking objectives

The strategic walking objectives developed for the CBD are presented in **Table 5-1**. These objectives align with State and Council strategies, address the CBD’s walking issues and opportunities and draw on the walkable city principles. Each strategic walking objective is accompanied by a statement describing what the objective aims to achieve.

**Table 5-1 Strategic walking objectives**

#	Objective	Statement
1	Prioritise the time, safety and amenity of pedestrians	People, rather than vehicles, are prioritised within the CBD. It is faster, more comfortable and convenient to walk than drive between destinations in the CBD. Pedestrians feel safe, and are safe during their journey. Through traffic is diverted to the City Ring Road, and traffic speeds within the CBD are calmed.
2	Enhance and activate spaces and streets, supporting the CBD’s economy	People are attracted to walking in the CBD across the day and evening through quality design and activation, supporting Parramatta’s economy and local businesses with increased numbers of people who will visit, shop, meet and eat. Increased numbers of pedestrians on the street contribute to a sense of community, and contribute to the revitalisation and appreciation of streets and lanes within the CBD.
3	Capitalise on the transformation of the CBD to benefit pedestrians	Increasing density will require a greater percentage of recreational and transport trips to consist of, or incorporate walking. The public and private investment into the fabric of Parramatta will be focused to ensure best-practice outcomes for pedestrians and the walking network. The redevelopment of CBD blocks contribute to a permeable and connected network for all residents, workers and visitors.
4	Understand and improve the current and future pedestrian network	A high quality pedestrian environment is provided that is accessible for all people, and is at the heart of a walkable LGA and the Parramatta Ways network. Current and future pedestrian demand is monitored and catered for that builds on the existing street character and lanes network.
5	Grow walking mode share and support public transport	Walking in the CBD feels safe, regardless of the location or time of day and is the mode of choice. Access to and from existing and proposed public transport is comfortable, legible and direct. Council works with partners to deliver integrated door-to-door transport experiences for people travelling to, through and from Parramatta. Residents, workers and visitors include walking as part of their day, contributing to their health, well-being and sense of community.
6	Promote walking	As the population grows, new and existing residents, workers and visitors are encouraged and supported to choose walking as their preferred mode. They know it is healthy, safe, easy and free. The walking network is accurately identified, sign-posted and effectively communicated to ensure walking will be the default/straightforward/easy choice. A self-reinforcing culture of walking is established in Parramatta.

### 5.3 Walking indicators

To assess progress towards achieving the strategic walking objectives, a series of measurable walking indicators are proposed, as summarised in **Table 5-2**. At least one transport indicator is provided for each strategic walking objective. It will be important to monitor progress against these indicators through regular data collection, action should be taken if improvement does not occur over time. More detail on the approach to measuring each indicator, data collection and timeframes is provided in **Section 9**.

**Table 5-2 Strategic walking indicators**

#	Objective	Indicator
1	Prioritise the time, safety and amenity of pedestrians	Time taken to undertake different walking trips in the CBD
		Number of crashes involving pedestrians in the CBD, proportionate to the resident and worker population
		Number of reported crimes against pedestrians
		Number of trips through the CBD by private motor vehicles
		Street lighting levels
		Volume of footpath congestion at key intersections
		Number of missing pedestrian crossing legs at signalised intersections
		Satisfaction levels of pedestrians
2	Enhance and activate spaces and streets, supporting the CBD's economy	Café and restaurant opening hours
		Business owner satisfaction with pedestrian traffic
		Number of people in the CBD in the evening and on the weekend
		Proportion of empty shopfronts
		Number of street based events in the CBD and number of participating stalls
3	Capitalise on the transformation of the CBD to benefit pedestrians	Kilometres and type of footpath and laneway networks in the CBD
		Number of through site links in the CBD
4	Understand and improve the current and future pedestrian network	Number of complaints received about walking infrastructure and pedestrian safety
		Compliance with the Disability Discrimination Act
		Satisfaction of mobility-impaired and vision-impaired people
		Number of people walking, cycling and driving in the CBD
5	Grow walking mode share and support public transport	Walking mode share
		People's satisfaction with the walking environment in the CBD
		Demand for parking spaces
6	Promote walking	Number of Council led or supported events and promotions for walking
		Number of participants in walking events and activities

## 6 Current and future pedestrian demand

Cardno developed a spreadsheet based static pedestrian model for the CBD study area to identify pedestrian flows in the network peak hour in future design years.

The base CBD pedestrian demand model builds off the current peak hour period, identified from March and April 2016 surveys. The current peak period is on a Thursday between 12:30pm to 1:30pm; 81,701 pedestrian movements were recorded at count locations. A summary of the results of the pedestrian demand modelling results follows, the complete approach, assumptions and results provided in **Appendix C**.

### 6.1 Current peak hours

The peak hour on each day was determined through analysing the 15 minute interval data from every site across the CBD and calculating the hours with the most midblock movements recorded. The pedestrian movements during these peak hours were mapped to identify the areas of the observed highest pedestrian demand throughout the CBD. The pedestrian volume peak hours for the CBD were determined to be:

- > Thursday AM peak hour: 08:15-09:15.
- > Thursday PM peak hour: 12:30-13:30.
- > Friday PM peak hour: 18:30-19:30.
- > Saturday AM peak hour: 11:15-12:15.

The number of pedestrian movements counted during each of these peak hours across the count locations are shown in **Table 6-1**.

**Table 6-1 Pedestrian movements during peak hours**

Day	AM Peak	AM Peak Hour	PM Peak	PM Peak Hour
Thursday	69,733	8:15-9:15	81,400	12:30-13:30
Friday	n/a	n/a	28,991*	18:30-19:30
Saturday	45,295	11:15-12:15	22,362*	17:15-18:15

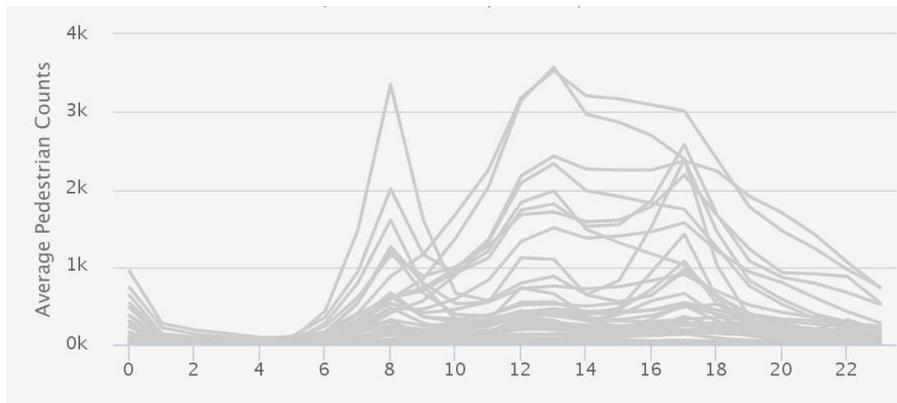
*\*13 count locations only*

The Friday peak hour counts were affected by a Wanderers games at the Parramatta Stadium on Friday evening. Control sites were tested the following week to factor the impact of the football crowd but the start time of 7:40pm may have led to a later than normal peak hour at the 13 key CBD sites.

#### 6.1.2 Lunch time peak hour

The busiest hour recorded across the pedestrian survey days was found to be on Thursday 12:30-13:30. The high volumes of pedestrians at lunch time are likely to be a combination of people who work in the CBD making lunch time trips, shoppers and people visiting for business or services. Higher than the morning or evening commuter peak periods, the lunch time peak hour includes walking trips by people who might have arrived at work in the morning by car but who choose to walk make their short trips at lunch time on foot.

The National Association of City Transportation Officials in the US notes that pedestrian peak hours often fall near lunchtime. The Melbourne CBD also experiences a lunch time peak period higher than the commuting peak periods as shown in Monash University's analysis of data from the CBD's permanent pedestrian counters over a five year period. This is presented on **Figure 6-1**.

**Figure 6-1 Melbourne CBD pedestrian volumes across the day**

Source: Monash University (<http://monash.edu/research/city-science/pedsafety/>)

## 6.2 Pedestrian volumes through the CBD

In general, pedestrian volumes through the CBD are heavier in the centre around the train station, bus interchange and Church Street, becoming lighter towards the CBD periphery. The pedestrian flows through the CBD in each of the assessed peak hours are presented in flow diagrams on the following figures:

- > Thursday AM peak hour: 08:15-09:15 - **Figure 6-2.**
- > Thursday PM peak hour: 12:30-13:30 - **Figure 6-3.**
- > Friday PM peak hour: 18:30-19:30 - **Figure 6-4.**
- > Saturday AM peak hour: 11:15-12:15 - **Figure 6-5.**

Pedestrian volumes are heavier south of the river where there is more diversity of land uses and more major destinations. During the Wanderers game during the Friday PM Peak Church Street pedestrian volumes north of the river were higher than during other peak periods; the sporting event at Parramatta Stadium, north of the river, having a clear impact on the distribution of pedestrians and extending the flows north.

Pedestrian volumes in specific parts of the CBD are discussed in the following sections.

### 6.2.1 Train station

The train station and bus interchange are key pedestrian trip generators in the CBD. All of the peak hour analysis demonstrated high pedestrian demand around the train station and bus interchange and along Darcy to Church Street. There was less pedestrian activity generated from the eastern end of the train station which connects to Smith Street.

### 6.2.2 Church Street

Church Street is a busy pedestrian street, with different parts of it busy at different times. The pedestrianised section of Church Street below Macquarie Street was busy in every peak hour, while the sections north and south, to Eat Street and Westfield were busier at lunchtime and on Saturday late morning than they were on Thursday morning as commuters were arriving to the CBD.

### 6.2.3 CBD East

There was a lot of pedestrian activity in the Thursday AM peak hour on Macquarie Street, Smith Street and Charles Street around the schools and commercial office blocks. This area was not as busy in the lunchtime peak on Thursday. Streets east of Charles Street were relatively quiet across every peak hour compared to other parts of the CBD.

### 6.2.4 CBD West

The Thursday PM peak hour has the most pedestrian activity in the CBD west with Macquarie Street accommodating more than 1,000 movements in the hour close to Church Street and George Street (west)

and Marsden Street near Macquarie Street also busy. Like the east, this part of the CBD was very quiet during the Saturday morning peak hour compared to the Church Street corridor.

#### **6.2.5      CBD North**

North of the river, pedestrian activity is reduced but more consistent between the weekday and weekend peak hours. Pedestrian activity is moderate around Victoria Street near Church Street and on Church Street around Grose Street. In the Thursday AM peak there is moderate pedestrian activity along Church Street until Pennant Hills Road. Streets around Parramatta Stadium were quiet in the Thursday and Saturday peak hours.

#### **6.2.6      River foreshore**

Across the peak hours the pedestrian activity was generally quiet compared to the CBD streets. Exceptions are the Macarthur Street Bridge and the Parramatta River Cycleway west of the bridge and access to the river from Phillip Street.

Figure 6-2 Current volumes - Thursday AM Peak

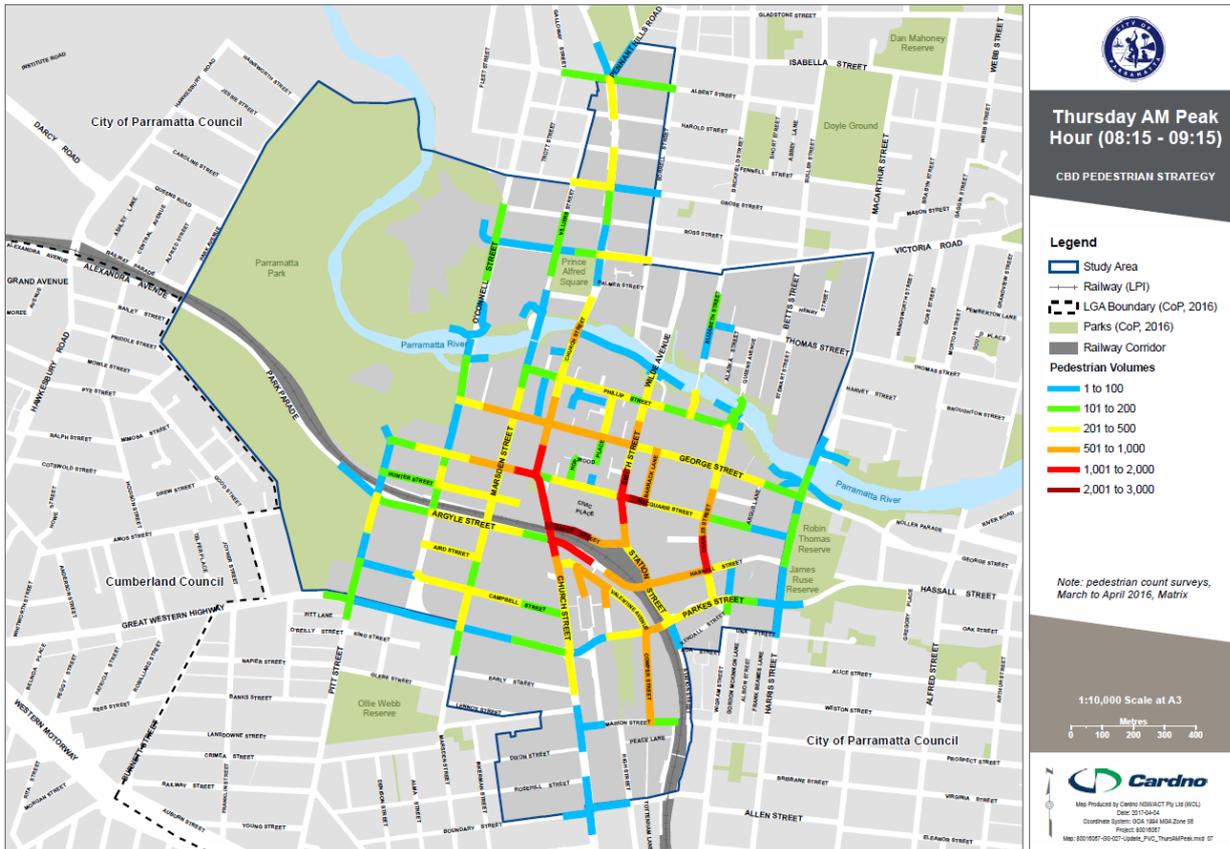


Figure 6-3 Current volumes - Thursday PM Peak

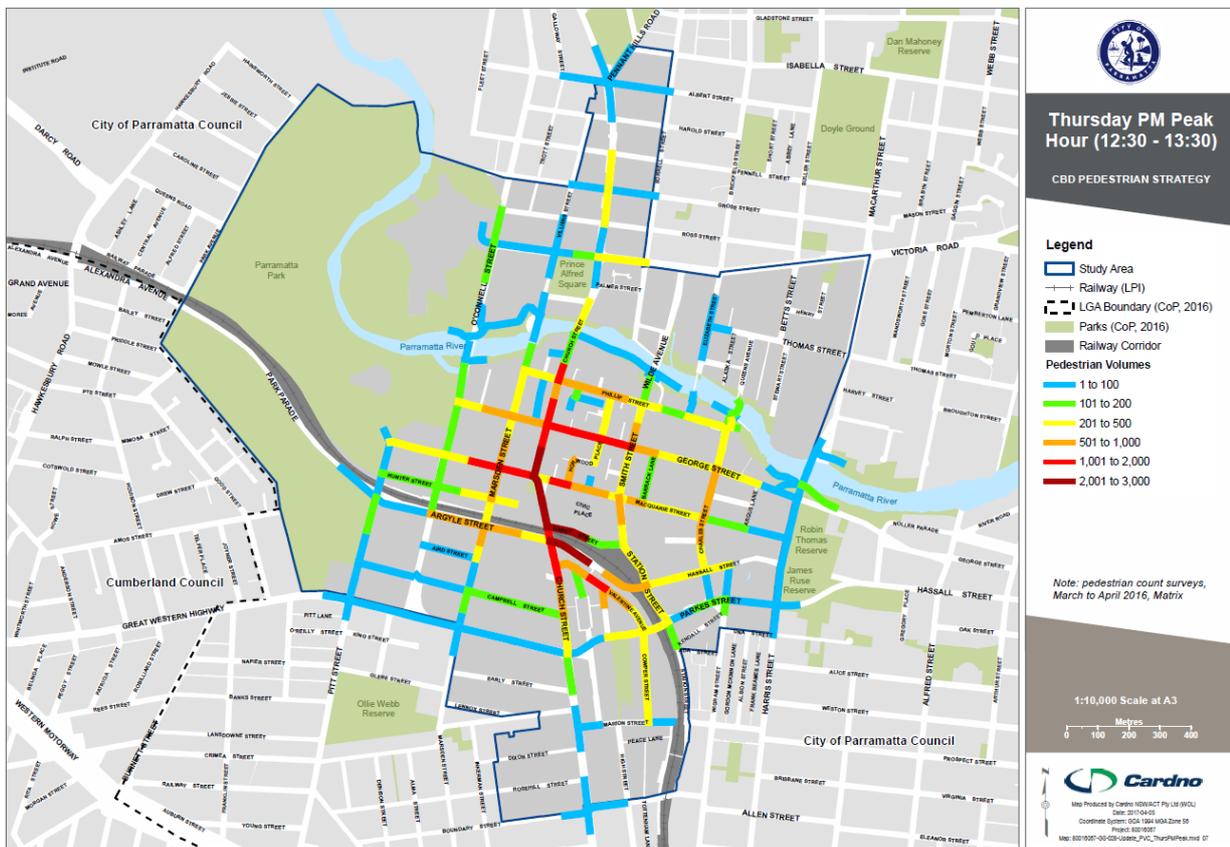


Figure 6-4 Current volumes - Friday PM Peak

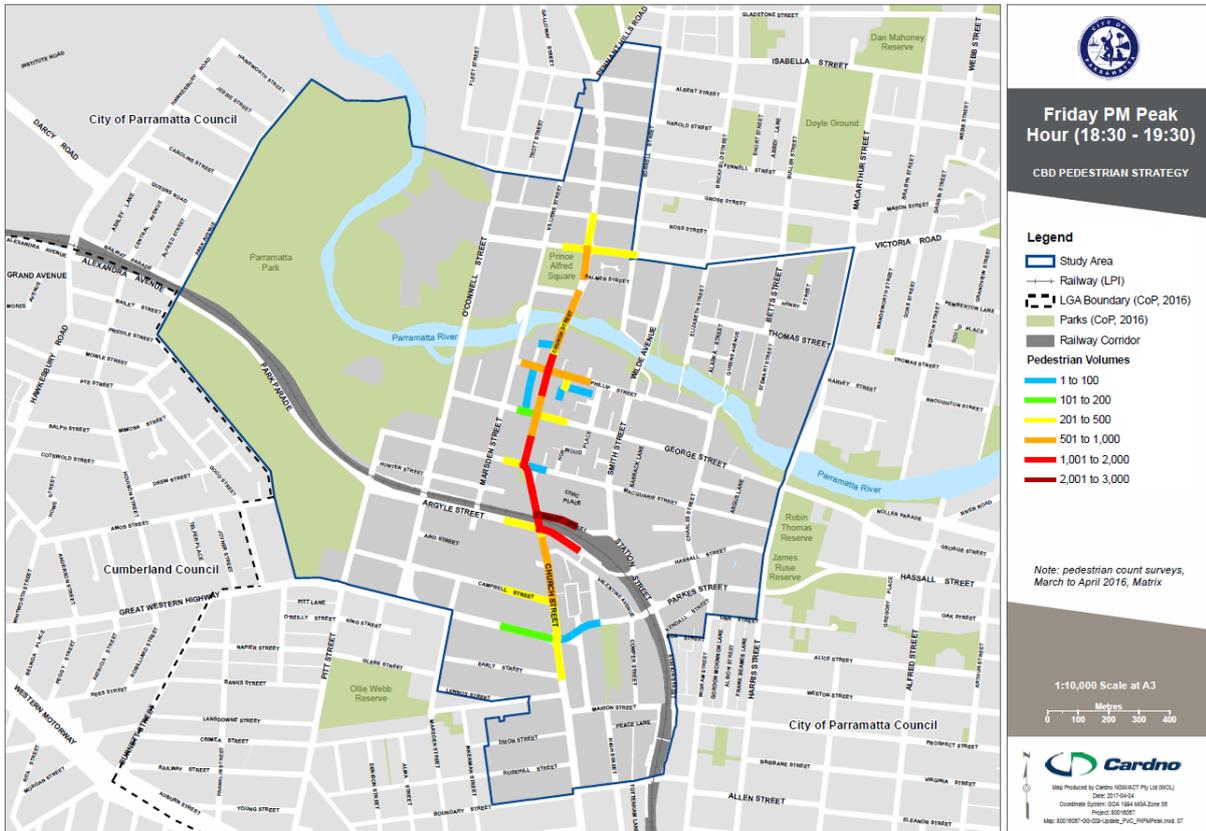
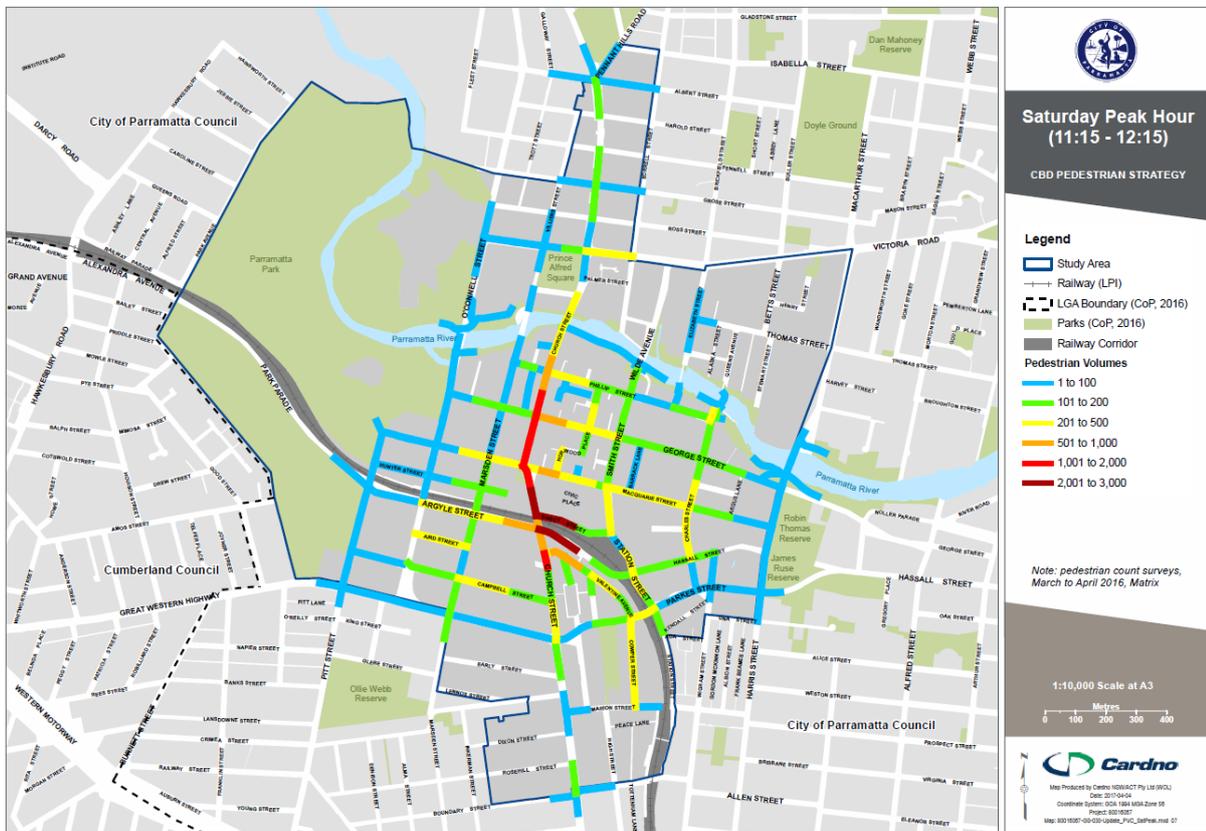


Figure 6-5 Current volumes - Saturday AM Peak



### 6.3 Pedestrian modelling

Cardno developed a spreadsheet based static pedestrian model for the CBD study area. The project scope of works was to identify pedestrian flows in the network peak hour in future design years.

The base CBD pedestrian demand model builds off the existing identified peak hour period identified during the March and April 2016 surveys which was on a Thursday between 12:30pm to 1:30pm where 81,701 pedestrian movements at count locations were recorded.

The methodology applied to the model draws guidance from relevant components of the approach detailed in the National Cooperative Highway Research Program, Report 684, Enhancing Internal Trip Capture Estimation for Mixed-Use Developments (2011).

The research report identifies the effects of proximity between interacting land uses to identify walking trip generation.

In order to model the potential future pedestrian demands in the CBD study area, a comprehensive understanding of existing demands is required. In establishing the existing dynamics of the CBD, the following key data was collated and/ or assumed/ estimated to build the model including:

- > Study area blocks;
- > Pedestrian network links (Pedestrian paths);
- > Origin – Destination Routes (Paths uses to travel between blocks);
- > Existing residential population by block;
- > Existing worker population by block;
- > Maximum walking distance assumption; and
- > Propensity to travel.

Each of these factors are discussed in more detail in **Appendix C**.

### 6.4 Future pedestrian demand

Demand on the pedestrian network in the 2056 modelled design year indicate that volumes will remain high along Church Street, however Horwood Place/Civic link will provide a key alternative parallel route to attract and redistribute a significant portion of the pedestrian flows. This is expected to be a particularly useful and direct route to the River foreshore area where the MAAS is anticipated to attract some one million visitors per annum.

During lunch time peaks, George Street and Macquarie Street volumes are anticipated to increase and these streets will remain some of the busier east-west links. In the peak period, George Street could accommodate between 3,000 – 6,000 pedestrians (1,500 – 3,000 per street side) during a peak hour, this being the highest modelled demands on the street level pedestrian network.

The development of Parramatta Square is expected to become a key convergence point for pedestrian movement through the CBD. The square will provide a new east-west link aligning with Hunter Street which could attract east-west volumes from Macquarie Street through the square. The proposed north-south link will align with Horwood Place which will undergo urban renewal. The north-south link is anticipated to draw some volumes from parallel routes along Church Street and Smith Street.

Church Street, south of the railway line, is expected to become a key pedestrian route, as the most direct connection to the CBD from “Auto Alley”. Volumes at street level surrounding the Westfield Shopping Centre are anticipated to remain moderate, with most movement associated with Westfield accommodated within the development.

As with most CBD environments, volumes are likely to remain substantially lower around the periphery of the CBD near undeveloped land and park land. Similar low proportions can be observed at the interface of the Sydney CBD and the botanical gardens and the same again in Melbourne.

The current pedestrian demand is shown on **Figure 6-6** future pedestrian demand is shown for 2026, 2036 and 2056 on **Figure 6-7**, **Figure 6-8** and **Figure 6-9**.





## 6.5 Path width considerations

Guidance and consideration for the recommendation of path widths and assessment of Level of Service has been sought from:

- > Pedestrian Comfort Guidance for London, Transport for London (TfL), 2010
- > Pedestrian planning and design, John Fruin, 1971
- > Public Domain Guidelines, City of Parramatta, 2016
- > Guide to Road Design Part 6A Pedestrian and Cyclist Paths, Austroads, 2009

These documents and information provide a comprehensive base to recommend appropriate paths widths and assess their suitability based on environmental context and pedestrian volumes. Of these, Fruin and TfL use a pedestrian density versus capacity calculation to determine the pedestrian level of service (Fruin) or comfort level (Transport for London). A brief summary and comparison follows, more detailed descriptions are provided in **Appendix E**.

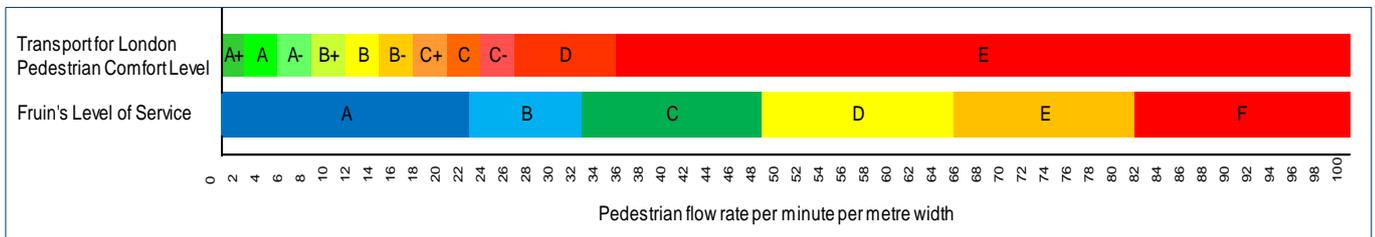
### 6.5.1 Level of Service versus Pedestrian Comfort Levels

Fruin’s Level of Service (LoS) is a series of density and flow rate bands that correspond to levels of service between A (highest) and F (lowest), depending on location. It was developed by John J Fruin PhD in the 1970’s, and is the accepted industry standard in Australia and many other international jurisdictions for analysing pedestrian congestion.

TfL have a comprehensive set of criteria that assesses pedestrian LoS based on Pedestrian Comfort Levels (PCL). The PCL aims to improve the planning and design of the pedestrian environment by providing a consistent approach for assessing and reviewing comfort on footpaths and crossings.

A comparison of TfL’s PCL and Fruin’s Level of Service is shown in **Figure 6-1**. TfL’s desirable comfort ratings, A+ to C- fall into Fruin’s LoS A and B only.

**Figure 6-1 Pedestrian service rating comparison**



Following a comparative analysis of both methods, PCL was determined to be more suitable for calculating clear path of travel recommendations in the Parramatta CBD as it provides a more nuanced assessment.

### 6.5.2 Clear path of travel

The TfL Pedestrian Comfort Guidance proposes typical clear path of travel widths (termed footway width in their guidance), outlined in **Table 6-2**. These path of travel recommendations allow for relatively unconstrained movement along paths based on the volume and width recommendations.

**Table 6-2 Transport for London total footway width recommendations**

Category	Low	Medium	High
Pedestrians per hour	<600	600 – 1,200	>1,200
Total width (metres)	2.9	3.3 – 4.2	5.3
Clear width (metres)	2.0	2.2	3.3

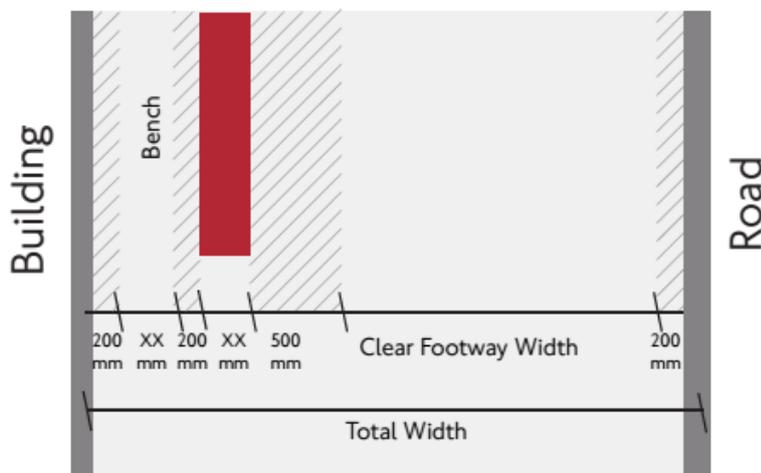
Within these total footway widths, TfL also allow for path buffer allowances. Buffer zones acknowledge and accommodate the way in which people generally walk, which is to leave a space between themselves and street furniture, walls and doorways. Buffers zones include areas adjacent to building frontages, fences, kerbs and other street furniture and installations.

Guidance sought from TfL indicate that 0.2 metre buffers be applied to building facades, kerbs, dining areas, bike parking, rows of poles and 0.5 metre be provided in front of street benches. For a two metre wide footpath located with a building on one side and a row of benches on the other, the clear path of travel width would be 1.3 metres (two metres minus 0.2 metres on the building side and minus 0.5 metres on the bench side).

Minor obstructions such as single street poles, while creating a pinch point, generally have a negligible impact on pedestrian capacity on footpaths. Installations such as bus stops and ATMs require further consideration as they can significantly impede the capacity of a footpath due to queuing customers.

An example of TfL’s approach to providing buffer zones on either side of a clear path of travel is provided in **Figure 6-10**.

**Figure 6-10 London clear footway width (clear path of travel width)**



Source: *Pedestrian Comfort Guidelines for London, Transport for London, 2010*

## 6.6 Pedestrian Comfort Level in lunch time peak

Using the forecast pedestrian volumes to 2056, an assessment was made using TfL’s Pedestrian Comfort Level to assess what clear path of travel width would be required to have a "high street feel" or rating of "B" during this lunch time peak that allows for some restriction on movement, but without feeling uncomfortable and wanting to seek an alternative route.

Two scenarios were assessed; 1.8 metre clear path of travel width and a 2.2 metre clear path of travel width. The PCL across the CBD for 2056 based on these widths is shown in **Figure 6-11** and **Figure 6-12**. A 1.8 metre clear path of travel is likely to be very uncomfortable for pedestrians in the Inner CBD (approximately bounded by the River, Charles St, Marsden St and Parkes St). There will be additional pressure on George St and Church St.

It is recognised that in the AM and PM peaks space is likely to be more restrictive as there will be larger volumes of walking commuters, but this is more likely to be in single directions and therefore have less impact on comfort levels.

### 6.6.1 Recommendation

Based on this analysis, clear path of travel width requirements for two wheelchairs to pass and buffer zone considerations, it is recommended that the minimum clear path of travel designed for Parramatta is 2.2 metres wide within the Inner CBD identified in **Figure 6-13**. George St and Church St will be subject to detailed investigation to increase this width beyond 2.2 metres where possible. On streets in the CBD outside of these areas, the minimum clear path of travel width will be 1.8 metres. These minimum clear path of travel width recommendations do not include buffer zones. It is recommended at the detailed design stage that buffer zones of 0.2 metres – 0.5 metres are included in the total path width against building facades, seating and kerbs to acknowledge the way in which people walk.

Figure 6-11 Pedestrian Comfort Levels 1.8 metre footpaths 2056

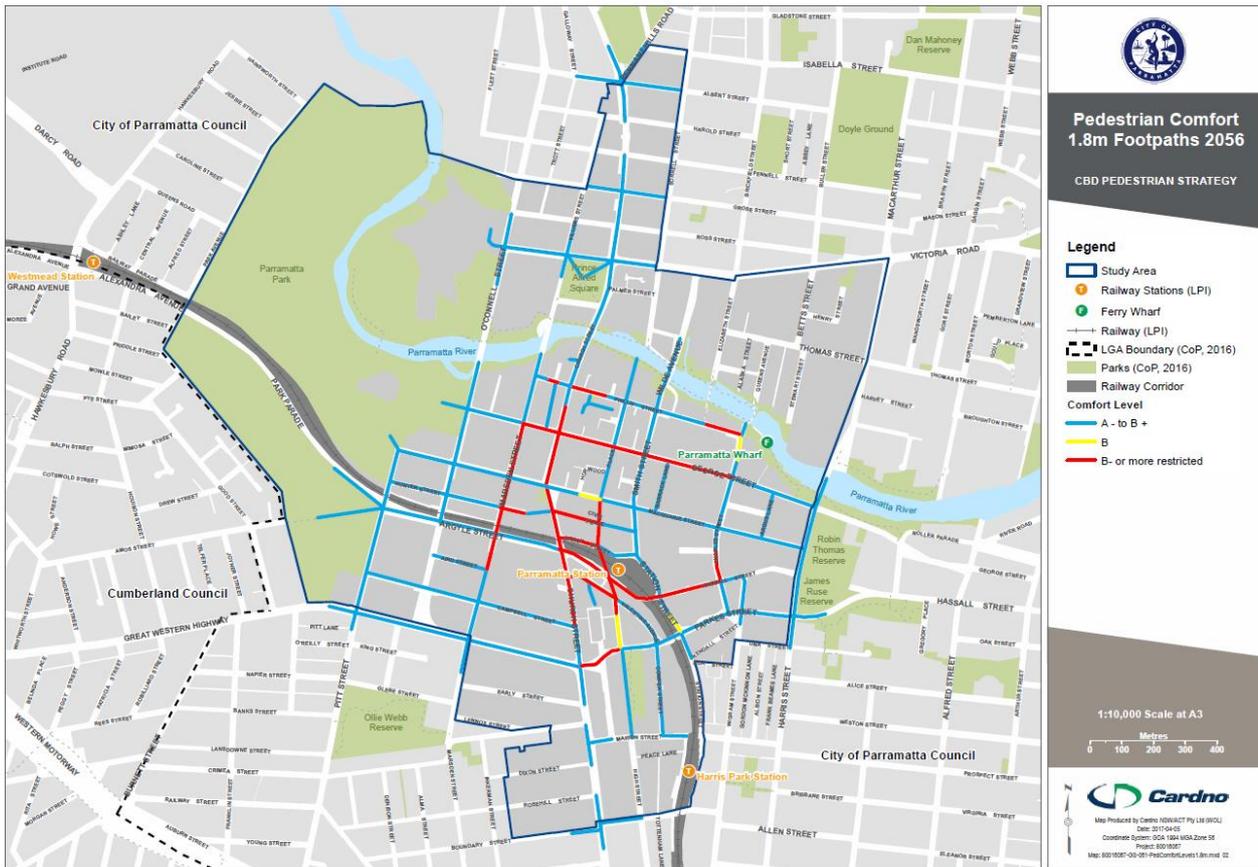


Figure 6-12 Pedestrian Comfort Levels 2.2 metre footpaths 2056

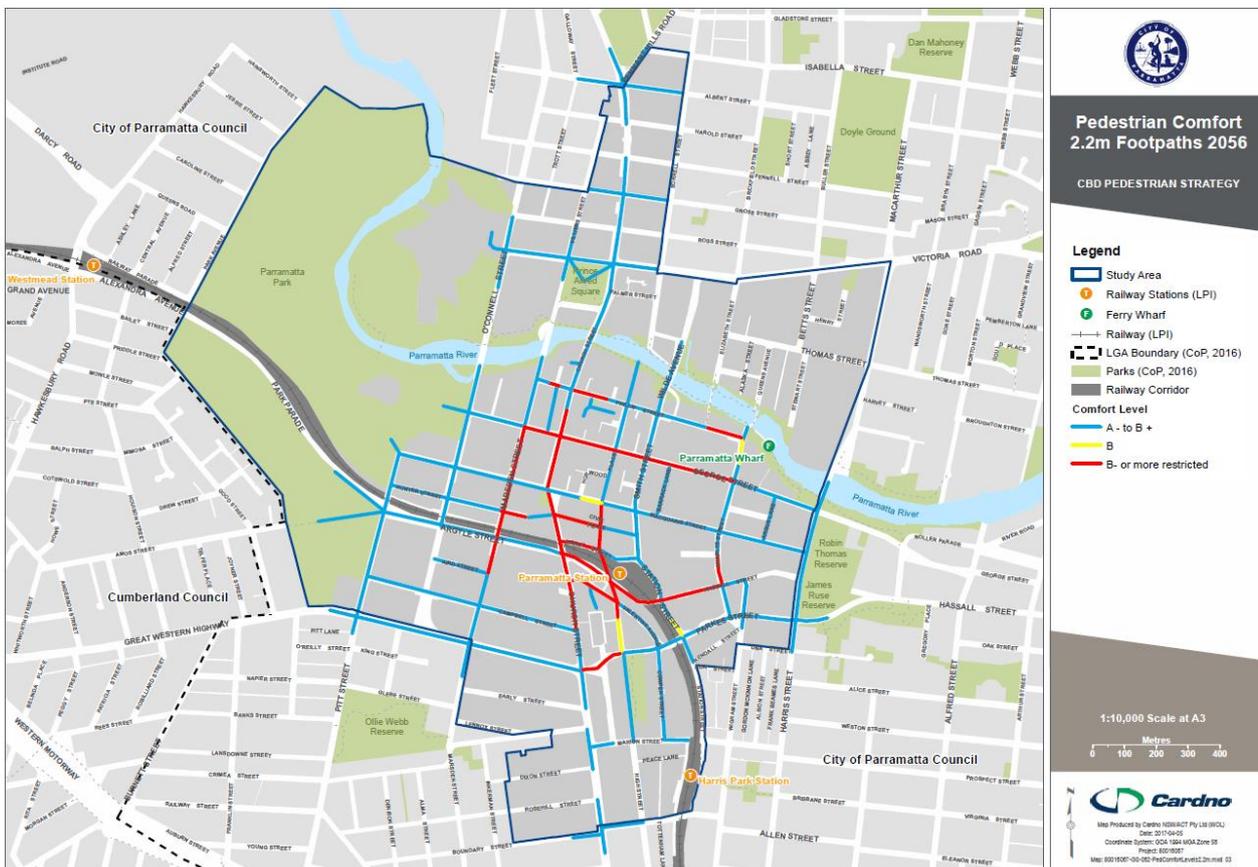
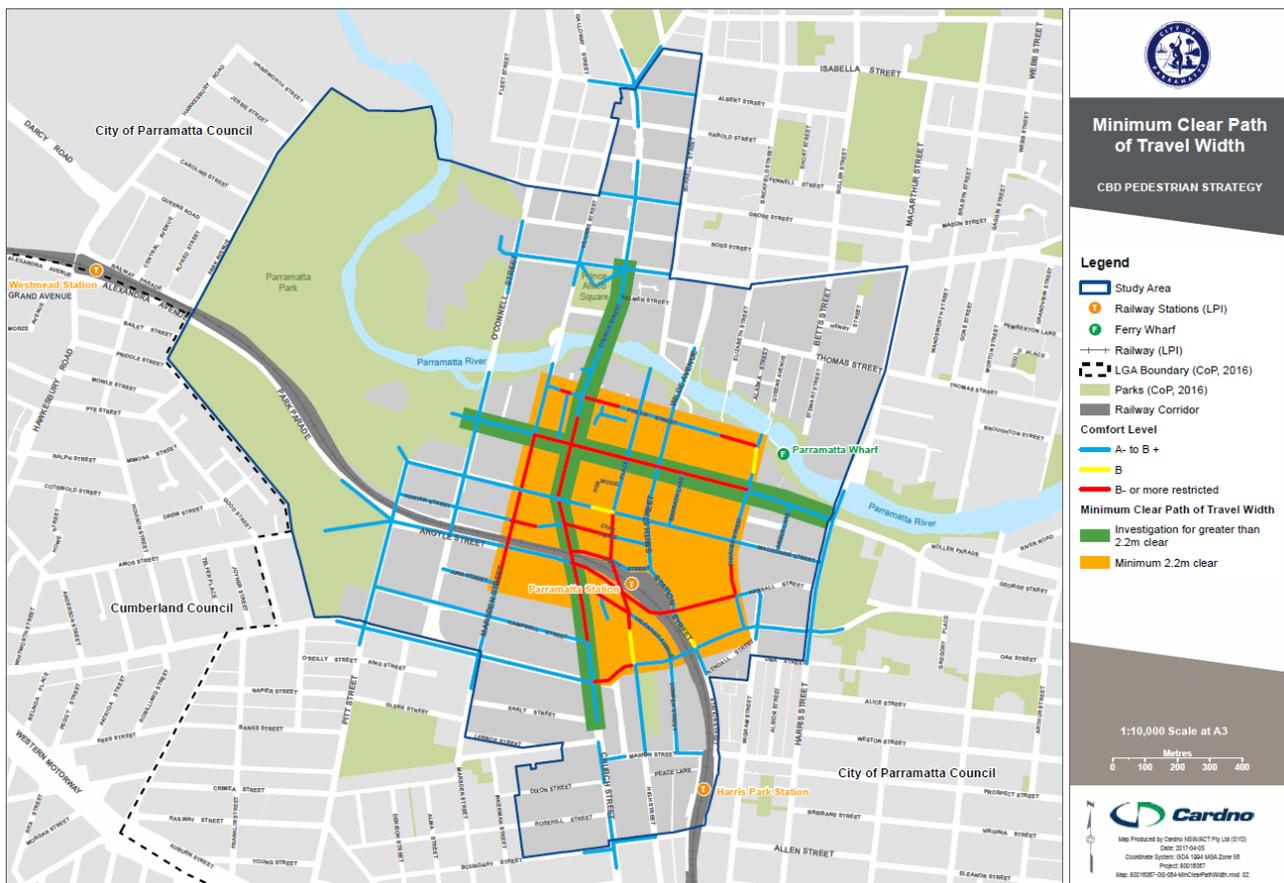


Figure 6-13 Minimum clear path of travel width



## 6.7 Street corner queue space

Queue space is often integrated into general walkway areas, reducing the capacity of the footpath network. Pedestrian networks generally experience the greatest queuing at intersection corners, often where space is most limited as corners are rounded to facilitate vehicle movements.

Kerb buildouts can assist to provide additional space for pedestrian queuing and assist to reserve walkway space for pedestrians moving around corners.

It is recommended that corner buildings are designed to provide additional space at the intersection commensurate with the street hierarchy and that addresses all four corners of the intersection. The amount of queuing space required will depend upon the volume of pedestrians and delay experienced by people queuing to cross the road. It is generally accepted that queuing to a Fruin LoS C, >0.65 – 0.93sq.m per person is acceptable. This allows for people to both queue and move through the queue. If there is not sufficient space at a street corner, pedestrians will generally queue further away from the crossing point which can increase the time required to facilitate pedestrian crossing movements at intersections.

## 7 The pedestrian network

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### 7.1 Function of streets

Streets support a wide range of functions in city centres. They are places for people and they also support movement, access to buildings and spaces, parking and provide space for utilities, drainage, signage and street lighting. Of these functions, 'place' and 'movement' are considered the most important for assessing a street's character and role within a network. Movement is also sometimes referred to as 'link'. Professor Peter Jones from the University College of London notes in *Link and Place: A New Approach to Street Planning and Design* (2009) that the purpose of the movement function is to *save* time while the purpose of the place function is to *spend* time. An ideal street supports both to some degree.

A street's movement function supports through movement as part of a trip. The street is part of a route connecting someone or something from their origin to their destination in a seamless journey. A street's place function acknowledges that streets can be end destinations themselves. Activities such as shopping, sitting, eating and meeting people can occur on or adjacent to the street.

The function of streets can apply to all transport modes. Movement addresses the movement of people, vehicles and goods by walking, bike, transit and in private vehicles. While place is typically associated with people, it also includes parking and picking up and setting down transit customers. Movement and place are often looked at on a two-dimension chart, with different types of streets sitting along the spectrums of each.

In busy centres with a range of land uses and travel demands, a single street can support both movement and place functions. Main Streets in cities often have a high place function as well as a medium to high movement function but a motorway would have a very low place function and high movement function.

A street's functions can change along its length, as the land uses and travel demands along it change. It can even change across a day or week as people use the street for different purposes at different times. Furthermore, and importantly as the CBD transforms, street functions can transition over time. As CBD blocks are redeveloped they can be designed to address the movement and place functions of their surrounding streets.

### 7.2 Categories of CBD streets

To apply the movement and place street functions specifically for the Pedestrian Strategy, streets across the CBD are considered in terms of the movement and place needs of pedestrians and categories of streets are proposed to address this.

The following categories of streets were identified and applied across the CBD with consideration of their current function, pedestrian demand and land uses. The categories of streets for the Parramatta CBD are:

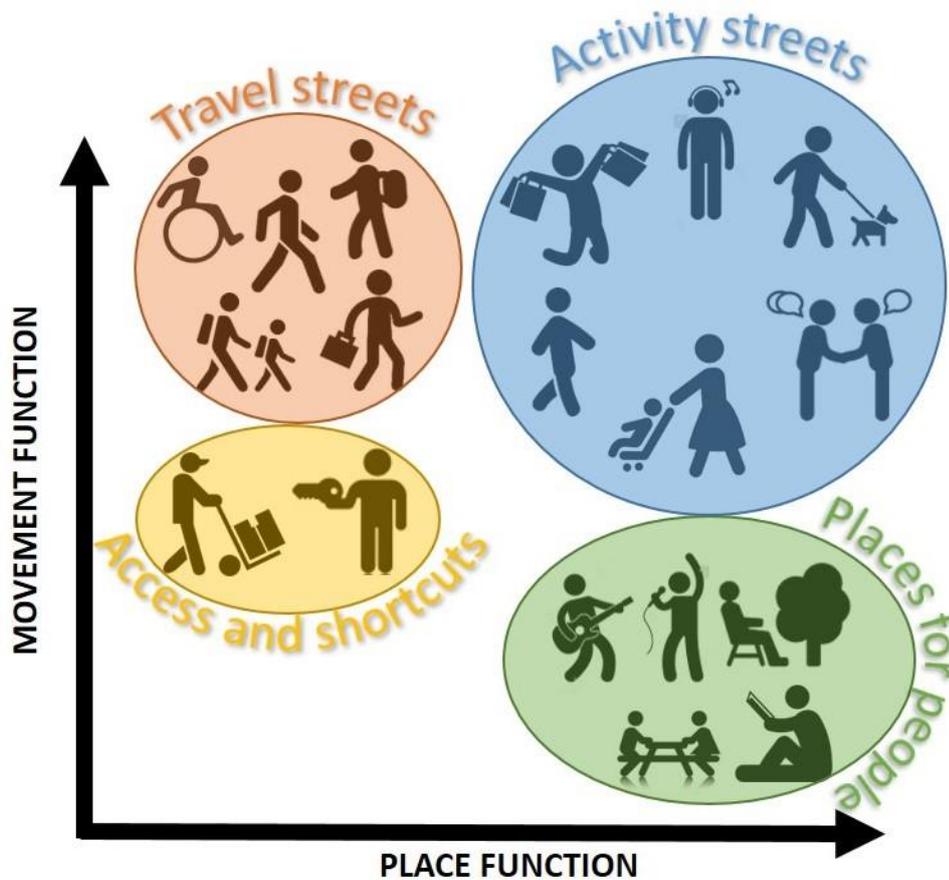
- > Travel streets (primarily movement)
- > Activity streets (balance between movement and place)
- > Places for people (primarily place)
- > Access and shortcuts (minor, with movement and servicing)

These categories are shown on a chart with movement and place axes on **Figure 7-1**.

Some streets will have sections nominated as one category and other sections nominated as another. Similarly, some street sections do not fall neatly into on category only. In these cases the primary category is applied. Regardless of their category, all streets in the CBD should be safe, accessible and well-lit for pedestrians.

Each category of street is described in the following sections along with its desirable characteristics. The application of the categories of streets to the CBD is shown on **Figure 7-2**. While many of the streets are nominated as a particular category now, the street hierarchy is evolving and the future fabric of the city will affect how streets behave, look and feel. The desirable characteristics for streets should be considered as CBD blocks are redeveloped.

Figure 7-1 CBD street categories



**7.2.2 Travel streets**

Travel Streets in the CBD provide great connectivity between major destinations including public transport and large workplaces. Routes are legible, direct and intuitive and desire lines are accommodated with uninterrupted paths.

Movement is prioritised on these streets; people know where they want to go and they want to get there fast. Travel Streets in the centre of the CBD are busy streets with many pedestrians. They are often subject to one directional flows in peak hours; away from the train station in the morning and towards it in the evening. These Travel Streets need wide, clear footpaths to accommodate the high pedestrian demand.

Travel Streets towards the edges of the CBD have lower pedestrian volumes. As there may be fewer landmarks and pedestrian activity on these outer streets, people on foot will want reassurance from wayfinding signage that they are heading in the right direction.

Travel Streets should have active street frontages along their length but outdoor café seating should not obstruct the path of pedestrians. The main entrances to key destinations will also front onto Travel Streets. They should have safe and controlled pedestrian crossings at intersections with major roads and direct and unobstructed visual lines along the length of the connection.

The desirable characteristics of Travel Streets for the CBD are presented in **Table 7-1**.

**Table 7-1 Travel Streets - desirable characteristics**

Criteria	Travel Street characteristic
Minimum footpath width	High pedestrian volumes - 4 metres Medium volumes – 3 metres Low pedestrian volumes – 3 metres
Minimum clear path of travel	High volumes – 2.2 metres Medium – 1.8 metres Low volumes – 1.8 metres
Pedestrian crossings	Controlled and at road intersections. Pedestrian priority through extended green signal time on streets with high pedestrian volumes. Pedestrian refuges on streets with low vehicle volumes Kerb buildouts to provide more waiting space at intersections and better visibility for pedestrians about to cross and approaching drivers (high pedestrian volumes only)
Amenity, street furniture and landscaping	Continuous weather protection along high and medium volume streets Wayfinding signage Seating on each block Bus stops with shelters that aren't located in the pedestrian clear zone Landscaping and trees along the carriageway edge of the footpath along roads with high traffic volumes to act as a buffer Water bubblers
Connectivity and access	Access between major CBD destinations such large commercial offices Access to civic spaces Access to major public transport Access to recreational areas and parks Connects residential to other land uses
Street frontages	Front entrances and lobbies Shops and services
Business use of street space	Minimal and not located in the pedestrian clear zone
Examples of streets	Smith Street Fitzwilliam Street Marsden Street Charles Street Argyle Street

### 7.2.3 Activity Streets

Activity Streets in the CBD are many things to many people. They have activity at all times of the day, varied destinations along their length and a range of different people there for different reasons. The buildings along Activity Streets have active frontages day and night, providing good surveillance of people on the street. The Activity Streets are what people most associate with an image of a CBD street.

There is a lot to do on these streets and so they are busy places with lots of people walking, shopping and meeting. Land uses vary in size and type along Activity Streets, there may be small bars, services like the post office or the entrance to a shopping arcade. They are often also important routes to key destinations in the CBD.

Activity Streets need wide footpaths that can accommodate street furniture for sitting and waiting, a clear pedestrian zone for those people on their way somewhere and business furniture like outdoor café seating. Activity Streets need many crossing opportunities for pedestrians as there is so much to see and do on both sides of the street, people will want to cross often.

The desirable characteristics of Activity Streets for the CBD are presented in **Table 7-2**.

**Table 7-2 Activity Streets - desirable characteristics**

Criteria	Activity Street characteristic
Minimum footpath width	5 metres (includes space for outdoor dining)
Minimum clear path of travel	2.2 metres
Pedestrian crossings	At mid-blocks as well as road intersections Pedestrian priority through raised zebra crossings and extended green signal time. Kerb buildouts to shorten crossing distance and provide better visibility for pedestrians about to cross and approaching drivers Reduced, calmed or removed vehicle presence
Amenity, street furniture and landscaping	Continuous weather protection Wayfinding signage Frequent seating Water bubblers Trees and attractive landscaping
Connectivity and access	Access between major CBD destinations such large commercial offices and Westfield Access to civic spaces Access to major public transport
Street frontages	Restaurants, cafes and bars Shops and services Open retail frontages Front entrances and lobbies
Business use of street space	Outdoor seating for restaurants, cafes and bars
Example streets	Church Street between Campbell Street and Grose Street George Street Macquarie Street between Marsden Street and Smith Street

#### 7.2.4 **Places for People**

Places for People are where you can take a break in the CBD. The people on these streets are in less of a rush to get where they are going, often the street is actually their destination. Places for People should have fewer motor vehicles, more landscaping, interesting things to look at, and benches, tables and spaces to meet friends, have lunch, walk the dog and read.

Places for People should prioritise pedestrians above other transport modes, recognising that they are social locations in the CBD where people are not necessarily moving on but spending time. Places for People have more trees and shade than other parts of the CBD, they are cooler in summer but also provide some access to sun on winter days.

There should be high levels of active and passive surveillance in Places for People and activity at all times of the day so that anti-social behaviour is discouraged. Places for People are attractive outdoor areas which can be used for diverse community activities like markets, performances, art classes and study groups. Places for People could be used by different people at different times. While midday might draw a lunchtime office crowd, night-time could see skateboarders wanting to practice their skills. Street furniture materials and design should acknowledge the different types of uses it might be subject to.

The desirable characteristics of Places for People for the CBD are presented in **Table 7-3**.

**Table 7-3 Places for People - desirable characteristics**

Criteria	Places for People characteristic
Minimum footpath width	4 metres
Minimum clear path of travel	2.2 metres
Pedestrian crossings	Controlled where they intersect with motor vehicles: signalised or zebra crossings Kerb buildouts to shorten crossing distance and provide better visibility for pedestrians about to cross and approaching drivers Minimal, calmed or removed vehicle presence
Amenity, street furniture and landscaping	Wayfinding signage Range of seating and tables Varied spaces Trees, grass and attractive landscaping Water bubblers
Connectivity and access	Connects to Travel Streets and Activity Streets
Street frontages	Restaurants, cafes and bars Entrances to heritage and cultural buildings Civic space Green space
Business use of street space	Outdoor seating for restaurants, cafes and bars Markets Performances and one-off events
Example streets	Civic Link Church Street between Darcy Street and Macquarie Street (either side of the through movements) Parramatta River foreshore

### 7.2.5 **Access and Shortcuts**

Access and Shortcuts in the CBD support the higher order Travel Streets. They provide access to building servicing and car parks. Some of them allow faster routes to your destination than walking on the busier Travel Streets and Activity Streets as they can provide through site links to shorten your walking distance. Access and Shortcuts have lower volumes of pedestrians as they typically provide access to only a few destinations compared to the major CBD streets. Space may be shared with low speed vehicles including cars accessing car parks and service and delivery vehicles. While Access and Shortcuts have less active street frontage and pedestrian priority, they still require good lighting, passive surveillance and legible routes.

The characteristics of Access and Shortcuts for the CBD are presented in **Table 7-4**.

**Table 7-4 Access and Shortcuts - desirable characteristics**

Criteria	Access and Shortcuts characteristic
Footpath width	Varies, or a shared zone
Clear pedestrian zone	Varies, or a shared zone
Pedestrian crossings	Generally uncontrolled informal crossings at entrances to laneways Shared zone if used by both vehicles and pedestrians
Relationship to buildings and public spaces	Access to destinations
Amenity, street furniture and landscaping	Minimal street furniture Wayfinding signage
Connectivity and access	Servicing access to buildings Arcades Car parks Civic spaces
Street frontages	Servicing access to buildings Secondary entrances to buildings
Business use of street space	Servicing access to buildings Driveways
Example streets	Lanes to access car parks throughout the CBD

### 7.2.6 Other considerations

Other transport modes are considered in the categories of streets only in terms of the relationship and impact on the pedestrian experience but the designation of street functions for pedestrians will not necessarily apply for other modes. Should an overarching street network plan be developed for the CBD that references movement and place functions, the categories of streets designated in the Pedestrian Strategy should be referenced for pedestrian requirements.

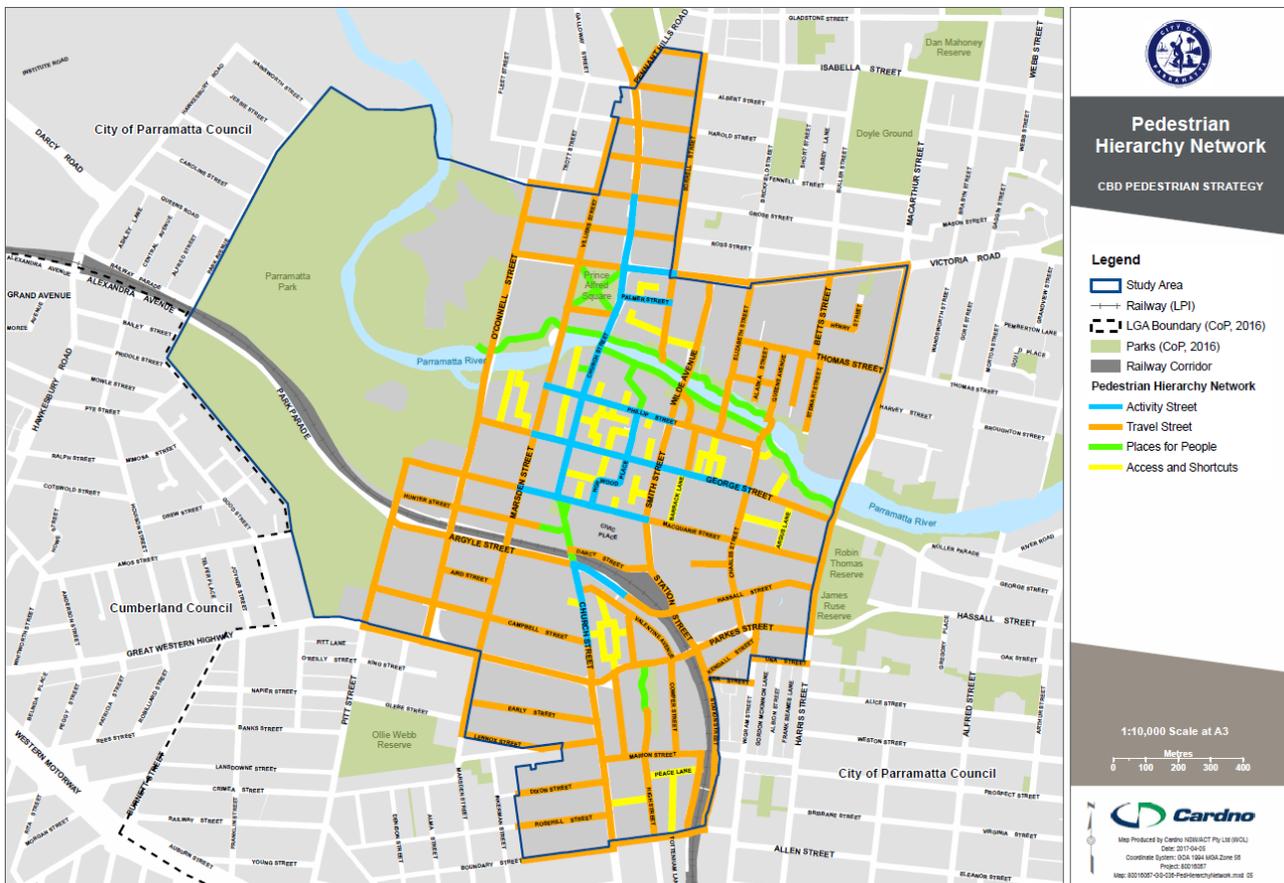
There are also a number of other considerations that must be layered onto the movement and place functions of the designated categories of street. These include consideration of the environment, heritage, existing and future development, the introduction of the light rail and traffic volumes.

These considerations must be considered by Council, along with the movement and place functions in the future definition of the CBD streets. This Pedestrian Strategy's acknowledgement that city streets do much more for people than just move them from A to B is one of the important steps in creating a vibrant, diverse and attractive CBD that people want to spend time in.

### 7.3 Current pedestrian network

The categories of streets applied to the current pedestrian network are presented on **Figure 7-2**. It is anticipated that as the city changes, the network will evolve as it is subject to further investigation.

**Figure 7-2 Current pedestrian network - categories of streets**



### 7.4 Regional connections

In addition to the nominated categories of streets within the CBD, regional connections from surrounding areas should be recognised and supported. These connections are considered in two ways, CBD entry points and connecting to Parramatta Ways. To access the CBD, the key entry points and corridors should include:

- > To the north-west, an entry point at the corner of Pitt and Macquarie Streets, accessed via Railway Parade at Westmead Station and through Parramatta Park on the northern side of the rail corridor;
- > To the north; **three entry points** with corridor links as follows:
  - Corner of O’Connell and George Streets, accessed via Fleet, Fennell and O’Connell streets;
  - Corner of Pennant Hills Road and Church Street, accessed via Church Street north of the intersection; and
  - Corner of Buller Street and Victoria Road, accessed via Buller Street north of the intersection.
- > To the east, **four entry points** with corridor links as follows:
  - Corner of Buller Street and Victoria Road, accessed via Victoria Road east of the intersection;
  - At Macarthur Street north of the Parramatta River, with access via the Parramatta Valley Cycleway to the east;
  - Corner of Hassall and Harris Streets, accessed via Hassall Street east of the intersection; and
  - Corner of Station Street East and Kendall Street, accessed via Crown and Marion Streets.

- > To the south, **three entry points** with corridor links as follows:
  - Corner of Station Street East and Kendall Street, accessed via Wigram and Station Street East;
  - Corner of Church and Boundary Streets, accessed via Church Street south of the intersection; and
  - Corner of Great Western Highway and Marsden Street, accessed via Marsden, Crimea and Pitt Streets.
- > To the west; a gateway at the corner of Pitt and Argyle Streets, accessed via Amos Street and through Parramatta Park.

The proposed CBD entry points are shown on **Figure 7-3**. Infrastructure to support the entry points is recommended as one of the Infrastructure and Operations actions in **Section 8.2**.

**Figure 7-3 Proposed CBD entry points**



## 8 Actions for walking

### 8.1 Summary of actions for walking

To address the walking issues and opportunities, align with the walkable city centre principles and achieve the strategic walking objectives, a range of actions for walking are recommended. These actions are presented in three groups:

- > Infrastructure and operations actions (**Table 8-1**).
- > Policy and development actions (**Table 8-2**).
- > Behaviour change actions (**Table 8-3**).

More detail on each of the actions including the relevant Pedestrian Strategy objective/s, the rationale and the implementation approach is provided in **Sections 8.2, 8.3 and 8.4**.

**Table 8-1 Infrastructure and operations actions**

#	Infrastructure and operations actions	Timeframe
IO1	The Integrated Transport Plan is to implement 40 kilometre per hour (and advocate for 30 kilometre per hour) speed zones throughout CBD	Short term
IO2	Undertake an audit of all footpaths to identify and prioritise infrastructure upgrades	Short term
IO3	Implement traffic calming measures on city streets to support IO1	Medium term
IO4	Where possible, new driveways should not be planned on main streets	Medium term
IO5	Review and improve street and public place lighting throughout CBD. Develop a CBD lighting strategy that supports safety, amenity, activity and economic development in the CBD.	Short term
IO6	Continue the implementation of the Pedestrian Amenity Zone	Ongoing
IO7	Review count down timers at intersections on key movement streets	Short term
IO8	Provide additional crossing legs at signalised intersections	Medium term
IO9	Update the Wayfinding Strategy with changes to the CBD's key destinations and routes	Short term
IO10	Trial temporary pedestrian improvements – road closures, widened walkways, shorter crossings, extra seating	Short term
IO11	Develop key CBD entry points for access to the CBD from surrounding areas	Medium term
IO12	Assess crashes involving pedestrians throughout the CBD and undertake Road Safety Audits at crash cluster locations to determine issues and solutions.	Ongoing
IO13	Rubbish and graffiti to be removed quickly	Ongoing
IO14	Create spaces that can be used for formal and informal meetings throughout the CBD.	Medium term
IO15	Work with Urban Designers to define the future street network hierarchy	Short term
IO16	Implement a minimum width for clear path of travel on both sides of all streets	Ongoing
IO17	All zebra crossings throughout the CBD should be raised	Medium term
IO18	Provide shared zones in lanes used by both pedestrians and vehicles	Long term
IO19	Investigate the provision of midblock road crossings in locations where blocks are over 200m in length	Short term
IO20	Provide shading/shelter (weather protection) along key routes and at key intersections	Ongoing
IO21	Investigate auto pedestrian phase signals	Short term
IO22	Place green landscaping between vehicles and pedestrians along roads with high vehicle volumes	Ongoing
IO23	Repair street lighting as soon as issues are identified	Ongoing

#	Infrastructure and operations actions	Timeframe
IO24	Enhance connections to the green spaces and recreation areas surrounding the CBD	Ongoing
IO25	Install water bubblers	Ongoing
IO26	Understand and provide for pedestrian storage at intersections	Medium term
IO27	Update Parramatta River Walk and investigate other opportunities for themed walks	Short term
IO28	Identify opportunities to declutter the streetscape and improve sight lines	Short term
IO29	Manage pedestrians effectively during construction activity	Ongoing

**Table 8-2 Policy and development actions**

#	Policy and development actions	Timeframe
PD1	Plan movement and place functions for CBD streets considering all transport modes	Short term
PD2	Develop pedestrian design guidelines for new developments	Short term
PD3	Amend DCP for permeable city blocks, active street frontages and high quality pedestrian infrastructure	Short term
PD4	Amend Public Domain Guidelines to reflect the street network hierarchy for pedestrian infrastructure	Short term
PD5	Work collaboratively with shop and café owners to allocate footpath space for seating, signage and other business users	Ongoing
PD6	Run competitions and award business owners for beautiful shop fronts and facades. Promote interesting, attractive and unique shopping precincts	Ongoing
PD7	Encourage pop-up shops in empty retail spaces.	Ongoing
PD8	Advocate for free bus and light rail within the CBD	Short term
PD9	Install permanent pedestrian counters	Short term
PD10	Coordinate with State Government to prepare pedestrian accessibility plans for public transport stations, stops and wharves throughout the CBD	Ongoing
PD11	Review and update Parramatta City Centre Lanes Strategy	Short term

**Table 8-3 Behaviour change actions**

#	Behaviour change actions	Timeframe
BC1	Require developers to prepare Green Travel Plans with clear pedestrian objectives and actions	Ongoing
BC2	Implement the education, communication and behaviour change toolkit	Short term
BC3	Keep pedestrians informed about construction impacts in the CBD	Ongoing
BC4	Create an online presence with Parramatta Walking information.	Short term
BC5	Work with schools and key partners to understand and cater for their students' needs	Short term
BC6	Plan events and art alongside pedestrian routes	Ongoing
BC7	Promote the walking access to new city destinations as they are developed	Ongoing
BC8	Work with key stakeholders to promote Walk to work day with events and campaigns	Ongoing
BC9	Encourage organisations to promote and support employee walking trips	TBC
BC10	Identify, signpost and promote a city circuit walk	Short term
BC11	Promote CBD destinations through walking tours	Ongoing

## 8.2 Infrastructure and operations actions

Each of the infrastructure and operations actions for walking are presented below.

Action IO1	Implement 40 kilometre per hour (and advocate for 30 kilometre per hour) speed zones throughout CBD
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>The NSW Speed Zoning Guidelines note that 40 kilometre per hour speed zones are used in high pedestrian activity areas.</p> <p>Reducing vehicle speeds within the CBD will reduce the likelihood and severity of crashes, including those involving pedestrians. Vehicle drivers will be reminded that they are in a busy pedestrian environment.</p> <p>Reduced vehicle speeds in the CBD will also help to discourage through traffic as the low speed environment will be a disincentive to travel through the CBD.</p>
Implementation	Investigate the impact on traffic using microsimulation modelling.
Reference	NSW Speed Zoning Guidelines

Action IO2	Undertake an audit of all footpaths to identify and prioritise infrastructure upgrades
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians 4. Improve the current and future pedestrian network
Rationale	<p>A comprehensive audit of the CBD's footpath network will identify issues affecting pedestrian safety, amenity and accessibility. The audit will assess the network against a high standard of infrastructure and can be used to prioritise upgrade works to areas where they are needed most.</p> <p>The program of proposed prioritised works can be submitted for consideration of funding eligibility by RMS.</p>
Implementation	<p>Develop a framework outlining the scope of the footpath audits (including reference to relevant standards and minimum footpath widths). Audits can be undertaken using mobile hardware (i.e. tablet computers) and linked to a GIS database, which allows for the fast-tracking of data collection on-site and simplifies the analysis and mapping of the audit results.</p> <p>The key deliverables should include a list of costed and prioritised works.</p> <p>The audit can be incorporated as part of a Pedestrian Access and Mobility Plan (PAMP) developed for the CBD area.</p>
Reference	<p>How to prepare a Pedestrian Access and Mobility Plan (PAMP) – RMS</p> <p>Integrated Transport Plan for Parramatta City Centre – 2009/10 – 2014/15</p> <p>Public Domain Guidelines (Parramatta City Council UDU) – January 2016</p>

Action IO3	Implement traffic calming measures on city streets to support IO1
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>Traffic calming measures aim to mitigate the risks associated with conflicts between vehicles and pedestrians, particularly in environments characterised by higher pedestrian densities, such as within CBD and local traffic areas. This is achieved primarily by implementing initiatives that seek to alter the behaviour of vehicle drivers, such as through the regulation of speed or route selection so as to shift the focus to improving priority and amenity for pedestrians.</p> <p>The Austroads Guide to Local Area Traffic Management advocate for the implementation of different traffic calming measures in local areas, with the key outcomes including improvements in traffic safety and security, as well as improved liveability and reduced impacts on the urban domain, characterised by improved accessibility to land uses and the links between these for pedestrians and cyclists.</p>
Implementation	Various mitigation measures are available for implementation; each fulfils a different role in the wider pedestrian network. Particular measures to consider in the context of the CBD include narrowing of road lanes, reduction of speed limits and designation of shared zones.
Reference	Austrroads Guide to Traffic Management Part 8: Local Area Traffic Management

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Action IO4	Where possible, new driveways should not be planned on main streets
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	The presence of vehicular access and egress points to car parking in the CBD is undesirable along high pedestrian volume streets as the associated vehicular movements, present a continual interruption to the free flow of pedestrians. The risk of conflict between vehicles and pedestrians is also increased, particularly if sightlines are poor due to the positioning of building features such as walls, or if there is confusion as to which user group has priority.
Implementation	Where possible, driveways should not be planned on main streets; it is instead desirable to locate access and egress points along minor streets or laneways, away from high pedestrian volumes.  The Council Public Domain Guidelines provide standards regarding the design of driveways, and include recommendations on surface treatments that communicate pedestrian priority.
Reference	Australian Standards AS2890.1 – 2004 Public Domain Guidelines (Parramatta City Council UDU) – January 2016

Action IO5	Review and improve street and public place lighting throughout CBD. Develop a CBD lighting strategy that supports safety, amenity, activity and economic development in the CBD.
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians 2. Enhance and activate spaces and streets, supporting the CBD's economy
Rationale	Effective and attractive lighting along streets and within public spaces acts to support a pleasant evening experience for pedestrians and it also promotes pedestrian safety and sense of personal security. Streets throughout the CBD should be well-lit, and users should be able to clearly see the direction of the path, and any obstructions.
Implementation	The choice of light fixtures should take into consideration the illumination levels, measured as lux levels. Recommended lux levels are provided by Australian Standards AS1158, and these depend on the role of the area under consideration, and the anticipated volumes of traffic (vehicular or pedestrian) in the area. Consideration should also be given to the impact on the appearance of the public domain (with the aim to reduce unnecessary clutter) as well as ease of access for periodic maintenance.  An audit of the existing lux levels should be undertaken within the Parramatta CBD, identifying areas of poor or non-existent lighting facilities. This should guide the development of a lighting strategy and implementation plan, with focus on ensuring the provision of attractive and high-quality facilities across the CBD.
Reference	Australian Standards AS1158.3.1 – 2005 Public Domain Guidelines (Parramatta City Council UDU) – January 2016

Action IO6	Continue the implementation of the Pedestrian Amenity Zone
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	The Pedestrian Amenity Zone was first developed in 2007 as part of the Parramatta City Centre Plan, and aimed to prioritise works that reduced traffic speeds in the CBD whilst also improving pedestrian and cyclist road safety and accessibility. The key recommendations of the Zone included the reduction of the vehicle speed limit to 40 kilometres per hour for the entire CBD, in addition to new or improved pedestrian facilities throughout and outside the CBD areas, encompassing signals, crossings and access paths.  A review of the progress of the Pedestrian Amenity Zone indicated that most of the recommendations remained outstanding, including the designation of the 40 kilometre per hour CBD speed limits.
Implementation	The recommendations of the Pedestrian Amenity Zone should be implemented where possible; either as a standalone program of works or incorporated as part of other scheduled

Action IO6	Continue the implementation of the Pedestrian Amenity Zone programs. Particular focus should be given to expanding the 40 kilometre per hour CBD speed limits and completing the upgrades to controlled crossings in the CBD area.
Reference	Parramatta City Council Pedestrian and Cyclist Amenity Zone – 2007

Action IO7	Implement count down timers at intersections on key movement streets
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>Transport for NSW's Centre for Road Safety has undertaken a trial of pedestrian count down timers at specific signalised intersections in the Sydney CBD, Chatswood and Parramatta. In Parramatta, these are located at the intersections of Campbell Street and Marsden Street, and Parkes Street and Station Street.</p> <p>The aim of the countdown timers is to provide an additional level of mitigation to the risk of pedestrian and vehicle conflict, through allowing for pedestrians to make a better judgement of the safety risks associated with a crossing movement when given the exact amount of time left to complete a crossing.</p> <p>Transport for NSW has completed the trial, and concluded that the timers perform best when located at intersections where pedestrians are the only users on the road when given green light authority, such as scramble crossings.</p>
Implementation	<p>Transport for NSW has already identified a further five intersections in the Parramatta CBD that are earmarked for the upgrade to include count down timers following the success of the trial; these include:</p> <ul style="list-style-type: none"> <li>▪ George and Church Streets</li> <li>▪ Macquarie and Church Streets</li> <li>▪ Church and Phillip Streets</li> <li>▪ Smith and George Streets</li> <li>▪ Smith and Macquarie Streets</li> </ul> <p>Through analysis of CBD crash data and pedestrian volumes, additional locations can be identified that would benefit further from the installation of the countdown timers.</p>
Reference	Transport for NSW Centre for Road Safety – Pedestrian countdown timers

Action IO8	Provide additional crossing legs at signalised intersections
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>The Austroads Guide to Traffic Management recommends that marked pedestrian crossing facilities are provided across all approaches at a signalised intersection.</p> <p>The provision of crossing legs facilitate the safe and efficient movement of pedestrians, and assist with direct lines of travel through the CBD. Missing crossing legs will act as a hindrance to pedestrian movements, and could discourage walking at these locations or instigate dangerous crossing attempts.</p>
Implementation	<p>The majority of intersections in the CBD have signalised crossing legs provided on all approaches. Consideration should be given to providing facilities at the following locations where links are missing in the CBD walking network, in line with the objectives of the Integrated Transport Plan for Parramatta City Centre:</p> <ul style="list-style-type: none"> <li>▪ George Street and Macarthur Street</li> <li>▪ Church Street / Great Western Highway / Parkes Street</li> <li>▪ Great Western Highway and Marsden Street</li> <li>▪ Aird Street and O'Connell Street</li> </ul>
Reference	Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Integrated Transport Plan for Parramatta City Centre – 2009/10 – 2014/15

Action IO9	Update the Wayfinding Strategy with changes to the CBD's key destinations and routes
Relevant objective/s	4. Improve the current and future pedestrian network 6. Promote walking
Rationale	<p>A successful wayfinding strategy implemented across the CBD communicates correct and concise information to visitors by way of promoting an intuitive and familiar environment to allow for ease of journey planning and navigation.</p> <p>Visitors to the CBD will be more inclined to walk to their destination when effective journey time and map information is provided at convenient locations.</p>
Implementation	<p>The revised wayfinding strategy should consider appropriate design elements and their place in the urban domain. The development of a consistent brand is important, and should be incorporated as part of a communications strategy to ensure awareness is maximised among visitors. Wayfinding should direct people to access:</p> <ul style="list-style-type: none"> <li>▪ Public transport</li> <li>▪ Civic space</li> <li>▪ Public administration buildings</li> <li>▪ Arts and cultural destinations</li> <li>▪ Eating and retail destinations like Eat Street and arcades</li> <li>▪ Active and passive recreation spaces, parks and reserves</li> </ul> <p>Liaison with Transport for NSW is encouraged to ensure a consistent rollout of the design at transport interchanges and stops. Consistency should be maintained with Transport for NSW's new wayfinding guidelines when providing information on access to public transport services; in particular mode identifiers T, B, F and L representing train, bus, ferry and light rail modes respectively.</p> <p>Include walking times and clear information on wayfinding signage. Signage should also be provided in multiple languages to acknowledge and support Parramatta's culturally and linguistically diverse communities.</p>
Reference	Transport for NSW – Wayfinding Program Parramatta Preliminary Wayfinding Strategy – 2008

Action IO10	Trial temporary pedestrian improvements – road closures, widened walkways, shorter crossings, extra seating
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>Additional and improved pedestrian facilities in the CBD assist with developing more pedestrian friendly spaces, as well as move people through the CBD more efficiently and safely. Measures such as widened walkways help encourage walking in the CBD by providing enhanced facilities that promote efficient walking journeys, as well as emphasise pedestrian priority in an area where reduced vehicle speeds and volumes is desirable and crucial to the future liveability of the area.</p> <p>Shorter crossings aim to improve pedestrian safety by improving sight distances for pedestrians through minimising the effective road width for approaching vehicles.</p> <p>Features such as additional seating and pop up spaces assist with precinct activation through creating and promoting points of interest and encouraging enjoyment of public spaces. The trial treatments must be accessible for all.</p> <p>The temporary nature of the changes means that any opposition to the plans can be reassured that if not successful, the street can be restored to its original condition. Cities as varied as New York, London, Austin and Bondi Junction has successfully trialled street improvements.</p>
Implementation	<p>Path widening can be targeted along key pedestrian routes characterised by congestion. Consider temporary installation of interesting improvements to encourage people to think differently about the street layout. Kerbside car parking could be converted to outdoor café seating, kerb extensions could be painted onto a road to reduce traffic speeds or a street could be converted to 'no through road' with a pocket park installed at the end. These improvements should be designed outside of the clear path of travel.</p>
Reference	Integrated Transport Plan for Parramatta City Centre – 2009/10 – 2014/15 Complete Streets

Action IO11	Develop key CBD entry points for access to the CBD from surrounding areas
Relevant objective/s	4. Improve the current and future pedestrian network
Rationale	The role of key CBD entry points is to provide direct pedestrian connections to the CBD from surrounding areas to support walking trips and increase mode share. There are several areas within two kilometres of the CBD earmarked for growth and redevelopment, they represent an excellent opportunity to encourage people to travel to the CBD on foot rather than drive for such a short trip
Implementation	Key CBD entry points should connect to the CBD from major desire lines to maximise efficiency in navigation and travel time. When arriving at a gateway, a pedestrian should have clear wayfinding signage directing them to major destinations throughout the CBD. Routes connecting to the entry points should have clear sightlines, reassurance wayfinding signage, good lighting and the opportunity for active and passive surveillance. The locations of the key CBD entry points are shown on <b>Table 7-3</b> .
Reference	NA

Action IO12	Assess crashes involving pedestrians throughout the CBD and undertake Road Safety Audits at crash cluster locations to determine issues and solutions.
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	The identification of crash black spots in the CBD allows for the targeting of mitigation measures to locations where they are needed most. A Road Safety Audit can then identify deficiencies with the existing infrastructure at these locations and propose recommendations to mitigate the risks of conflict between vehicles and pedestrians.
Implementation	Undertake analysis and mapping of historical crash data for the CBD area to identify key crash locations. Undertake a Road Safety Audit at these locations, and adopt the recommendations.
Reference	Crash data for Parramatta CBD – Transport for NSW Centre for Road Safety

Action IO13	Rubbish and graffiti to be removed quickly
Relevant objective/s	2. Enhance and activate spaces and streets, supporting the CBD's economy
Rationale	The presence of rubbish and graffiti along CBD streets creates a negative perception of the area among visitors, and communicates a sense of neglect for the public domain. This can impact on the attractiveness of the area and success of activation strategies. Excessive rubbish and graffiti can also affect perceptions of personal security by discouraging visitors from spending time in the area.
Implementation	Ensuring the timely removal of rubbish should be incorporated into regular council maintenance schedules. The key actions from the Parramatta Safety Plan should be implemented: Continuing to implement a fast graffiti removal system Identify graffiti hot spots from historical data, and implement preventative measures Communicate the availability of vandalism and graffiti reporting tools to be used by the public
Reference	Parramatta Safety Plan 2014 – 2018 – Parramatta City Council

Action IO14	Create spaces that can be used for formal and informal meetings throughout the CBD
Relevant objective/s	2. Enhance and activate spaces and streets, supporting the CBD's economy
Rationale	<p>The provision of pedestrian spaces for purposes other than transport and connectivity are vital to of the vibrancy of the CBD. Opportunities should be provided in the public domain for visitors to stay and engage with elements including outdoor public space, activities and events for social interaction and recreation.</p> <p>Design elements including open spaces, public art, as well as revitalised laneways in the CBD provide variety in the points of interest throughout the public domain, and support the growth of the local economy.</p>
Implementation	The planned precinct works including Parramatta Square, Parramatta Riverbank and the Horwood Place Civic Link will provide opportunities to incorporate elements such as open spaces, seating and natural shading. These will encourage visitors and promote use of the space for both formal community events, as well as for informal social interaction and meetings.
Reference	<p>Parramatta City Centre Public Domain Framework Plan – 2012</p> <p>Public Domain Guidelines (Parramatta City Council UDU) – January 2016</p>

Action IO15	Work with Urban Designers to define the future street network hierarchy
Relevant objective/s	<ol style="list-style-type: none"> <li>1. Prioritise the time, safety and amenity of pedestrians</li> <li>2. Enhance and activate spaces and streets, supporting the CBD's economy</li> <li>3. Capitalise on the transformation of the CBD to benefit pedestrians</li> <li>4. Improve the current and future pedestrian network</li> </ol>
Rationale	Two of the most important street functions are movement and place. The street hierarchy and categories of streets for the CBD acknowledge both functions and seek to identify the streets that have predominantly one of the functions and those that have both.
Implementation	<p>As the CBD transforms, consider the balance between the different functions that each street needs to perform and plan accordingly to support the functions with the desirable characteristics set out in the Pedestrian Strategy.</p> <p>Organise a multi-disciplinary approach to planning the CBD streets with consideration of movement and place needs as well as environment, heritage and urban design factors.</p>
Reference	<p>Parramatta City Centre Public Domain Framework Plan – 2012</p> <p>Department for Transport, Manual for Streets</p> <p>Link and Place: A new approach to street planning and design – 2009</p>

Action IO16	Implement a minimum width for clear path of travel on both sides of all streets
Relevant objective/s	<ol style="list-style-type: none"> <li>1. Prioritise the time, safety and amenity of pedestrians</li> <li>4. Improve the current and future pedestrian network</li> </ol>
Rationale	Pedestrians need a clear path of travel when they are moving along a footpath. A mandatory minimum clear path of travel width will ensure that street furniture, outdoor dining areas and other obstructions do not hinder pedestrian movement.
Implementation	<p>As streets and CBD blocks are redeveloped, ensure that street furniture, outdoor dining seating, signage and utilities are designed to be located outside of a minimum clear path width;</p> <ul style="list-style-type: none"> <li>&gt; 2.2 metres excluding buffer zones for the core part of the CBD (shown on <b>Figure 6-11</b>) and</li> <li>&gt; 1.8 metres excluding buffer zones for outer areas (shown on <b>Figure 6-12</b>).</li> </ul> <p>George Street and Church Street require more detailed assessment to determine the minimum clear path width.</p> <p>Update the Public Domain Guidelines, Outdoor Dining Policy and the Development Control Plan (DCP) to reflect this design standard.</p>
Reference	<b>Appendix D</b> – Review of Pedestrian Considerations in the DCP 2011.

Action IO17	All zebra crossings throughout the CBD should be raised
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>Zebra crossings provide pedestrians with prioritised road crossing opportunities, vehicles must give way to pedestrians who are walking across a zebra crossing and also slow down. Raised crossings also provide a more accessible crossing facility for people who are using wheelchairs or prams.</p> <p>Raised zebra crossings are more visible to motorists and have the added effect of slowing traffic. Where a speed hump could be confused for a zebra crossing, barriers or landscaping should be provided along the footpath to prevent pedestrians from crossing, noting that speed humps should not be located along a pedestrian desire line.</p>
Implementation	Replace all zebra crossings with raised zebra crossings, designed to AustRoads Standards.
Reference	<p>AustRoads Standards Pedestrian Infrastructure AS1742.10</p> <p>RMS Technical Direction TDT 2001/04a – May 2011</p>

Action IO18	Provide shared zones in lanes used by both pedestrians and vehicles
Relevant objective/s	<p>1. Prioritise the time, safety and amenity of pedestrians</p> <p>2. Enhance and activate spaces and streets, supporting the CBD's economy</p>
Rationale	<p>Shared zones are characterised as sections of the road network that can be used by both vehicles and pedestrians, with the latter's movements receiving priority. The main objective is to prioritise pedestrian movements and improve their walking experience. Shared zones are usually identifiable by all, or a combination of regulatory signage indicating a reduced speed environment, alternate surface treatments or raised thresholds and removed kerbs.</p> <p>Shared zones best benefit environments where pedestrian volumes are generally higher than those of vehicles, where the space for walking is limited due to narrow footpaths, and where the provision of a shared facility will provide an appealing point of interest within the local precinct.</p>
Implementation	<p>Shared zones provide an excellent opportunity to activate the laneway networks in the CBD. RMS provides guidance on the design of shared zones, and these follow two different categories (Category 1 and 2).</p> <p>Category 1 shared zones are implemented as part of new or recent developments, and include surface treatments that extend across the entire area. They do not incorporate kerbs, thus providing a continuous and uninterrupted walking environment for pedestrians. It is recommended that where CBD blocks are being redeveloped, all incorporated laneways are designed to Category 1 standards.</p> <p>Category 2 shared zones are implemented on existing roads, and only require a combination of surface treatments and traffic calming devices on entry to and exit from the designated zone. Where existing kerbs are provided, approval from RMS is required to retain these as part of the designation. It is recommended that, in the short-term, existing laneways can be designed to Category 2 standards, with potential for conversion to Category 1 in the longer-term.</p> <p>There may be some cases where the laneway does not meet RMS requirements and implementation of a shared zone is not possible.</p>
Reference	RMS Technical Direction TTD 2-14/003 – July 2014

Action IO19	Investigate the provision of midblock road crossings in locations where blocks are over 200m in length
Relevant objective/s	<p>1. Prioritise the time, safety and amenity of pedestrians</p> <p>4. Improve the current and future pedestrian network</p>
Rationale	<p>Mid-block crossings enhance access along streets, encouraging walking to access key land uses in the CBD. Extended blocks that provide no designated crossing facility can discourage walking in the area, unnecessarily increase trip times and lengths for pedestrians, and increase the risk of jaywalking and potential conflicts with vehicles, particularly if popular land uses or transport services are located on each side of a road corridor.</p> <p>Depending on the layout of the subject road corridor, mid-block crossings can be designed as zebra crossings, signalised facilities and/or incorporate kerb extensions and refuges.</p>

Action IO19	Investigate the provision of midblock road crossings in locations where blocks are over 200m in length
Implementation	<p>It is recommended that in the CBD, all blocks that are longer than 200 metres in length must have a formalised crossing facility at the mid-block. The type of facility to be provided (signalised, zebra, refuge) is at the discretion of Council.</p> <p>The facility should be designed such that the crossing length is minimised where possible, appropriate surface treatments are selected and applied, adequate sight distances are available to crossing pedestrians and approaching vehicles, and the width of the crossing is no less than three metres.</p>
Reference	Austrroads Guide to Road Design Part 4: Intersections and Crossings

Action IO20	Provide shading/shelter (weather protection) along key routes and at key intersections
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	Continuous weather protection on CBD streets is desirable to encourage people to continue to take walking trips, even in poor weather. Shade from trees makes walking a more pleasant experience in summer months.
Implementation	<p>Street trees are recommended initiative to be implemented across the CBD to provide shade on warm days and provide a pleasant walking and rest environment for pedestrians. In addition, they would act as a buffer to reduce the impact of wind tunnels in the CBD and would cool streets, reducing the Urban Heat Island effect.</p> <p>Awnings are preferred along high volume routes across the CBD to improve the comfort level of pedestrians when there is rain. They are not required for laneways; retractable awning are preferred if awnings are to be provided. Transparent awnings should be used where possible to allow for light exposure along the footpath.</p> <p>Awnings may not be feasible at some locations. The application of awnings should be considered on a site by site basis and with detailed design work undertaken by urban designers.</p>
Reference	<b>Appendix E</b> – Pedestrian Design Guidelines

Action IO21	Install auto pedestrian phase signals
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	<p>Automatic pedestrian signal phases involve a modification made to the existing signal network which results in the activation of the green walking phase for pedestrians in parallel with the adjacent traffic intersection leg, without the need for a pedestrian to manually press the activation button.</p> <p>This initiative is beneficial particularly in dense urban environments as it enhances the movement of pedestrians through the area by activating the green signal at every available opportunity, thus reducing the presence of crowding at key intersections.</p> <p>The initiative has been successfully trailed in the Melbourne CBD, with the focus now on expanding the changes to the surrounding inner suburban areas over a four year period from 2014 to 2017.</p>
Implementation	The pedestrian signals in the CBD are operated by Roads and Maritime Services. It is recommended that Council undertakes discussions with them to ensure the automatic activation function is programmed into each CBD intersection.
Reference	City of Melbourne Walking Plan 2014 – 2017

Action IO22	Place green landscaping between vehicles and pedestrians along roads with high vehicle volumes
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians 4. Improve the current and future pedestrian network
Rationale	Landscaping on streets with high vehicles volumes will help to provide a physical and visual buffer between pedestrians and vehicles, enhancing the pedestrian experiences on these streets. It will also discourage pedestrians from attempting to cross the road at uncontrolled

	midblock locations. In addition, landscaping could act as a buffer to reduce the impact of wind tunnels in the CBD and would cool streets, reducing the Urban Heat Island effect.
Implementation	Plan greenery and landscaping on streets with higher traffic volumes, such as Smith Street, Church Street south of The Great Western Highway, Parkes Street and The Great Western Highway. Include those streets that make up the city ring road. The greenery and landscaping should be provided at the edge of the kerb line and not impose on the pedestrian clear zone. Access from cars parked along the street must still be provided to the footpath.
Reference	NA

<b>Action IO23</b>	<b>Repair street lighting as soon as issues are identified</b>
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	Fixing poor quality and broken street lights across the CBD will contribute to improving perceptions of personal security.
Implementation	As soon as a lighting issue is raised with Council by a community member, or identified through Council asset reviews, ensure it is addressed immediately. Include information on Council's website letting people know how they can report poor quality and broken street lights. Ensure all new lights are provided in accordance with latest design standards.
Reference	NA

<b>Action IO24</b>	<b>Enhance connections to the green spaces and recreation areas surrounding the CBD</b>
Relevant objective/s	4. Improve the current and future pedestrian network
Rationale	The CBD is surrounded by high quality open public space and recreational areas including Parramatta Park, Parramatta River, Queens Wharf Reserve and Stewart Street Reserve. The growing population will need direct and safe access to these areas from their homes and workplaces in the CBD. This is especially important where these public spaces and recreational areas are accessed by crossing the ring road network.
Implementation	Review the access to each of the public open spaces surrounding the CBD and audit these routes for: safe road crossings (also able to accommodate bicycles), good quality lighting, wayfinding signage, benches and water bubblers. Provide missing infrastructure.
Reference	Parramatta Open Space Plan – 2003

<b>Action IO25</b>	<b>Install water bubblers</b>
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	Water bubblers are a desirable characteristic for Travel Streets, Activity Streets, and Places for People in the CBD. Providing water bubblers will increase convenience and amenity for pedestrians in the CBD, and encourage sustainable practices such as carrying a water bottle rather than buying a plastic bottle.
Implementation	Install water bubblers on key Activity Streets, Travel Streets, and Places for People in the CBD. Consider partnering with Sydney Water to assist with funding.
Reference	VicHealth, Provision of drinking water fountains in public areas A local government action guide – September 2016

<b>Action IO26</b>	<b>Understand and provide for pedestrian storage at intersections</b>
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	Intersections in the CBD should provide sufficient capacity to safely store pedestrians. This is particularly important close to construction sites, where path widths may be impacted.
Implementation	Review capacity at intersections within the CBD, with particular focus on intersections close to construction sites. Ensure intersections comply with minimum path width standards.

Reference	NA
<b>Action IO27</b>	Update Parramatta River Walk and investigate other opportunities for themed walks
Relevant objective/s	2. Enhance and activate spaces and streets, supporting the CBD's economy 4. Improve the current and future pedestrian network 6. Promote walking
Rationale	The Parramatta River Walk and other themed walks offer the chance to support the walking economy in the CBD, by enhancing the amenity and attractiveness of the walking experience for locals and visitors. This could include a walking loop which includes the river foreshore, Parramatta Park, and Parramatta Stadium. Opportunities to use these walking routes for events, as has been done in Melbourne, should also be investigated.
Implementation	Review the existing Parramatta Walk to determine whether it can be enhanced, and whether other similar themed walks could be developed in and around the Parramatta CBD.
Reference	City of Melbourne Walking Plan 2014 – 2017

<b>Action IO28</b>	Identify opportunities to declutter the streetscape and improve sight lines
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians 4. Improve the current and future pedestrian network
Rationale	Pedestrians may not feel important if they have to walk around street clutter such as signage, street furniture and other small barriers. Street clutter may also impede sight lines which are important to pedestrian safety and amenity.
Implementation	Review existing street furniture and remove excessive clutter. All street signage and furniture should be placed outside of the minimum clear path of travel on CBD streets, set out in <b>Section 6.5</b> . Ensure all new arcades and lanes have a clear line of sight.
Reference	NA

<b>Action IO29</b>	Manage pedestrians effectively during construction activity
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	Pedestrians may encounter multiple construction sites whilst travelling within the CBD. Consideration must be given to pedestrian safety and amenity during the ongoing development of the CBD, to support walking trips during construction periods.
Implementation	Construction Traffic Management Plans must include clear provisions for pedestrians where construction activity impedes footpath access. Footpath closures must be managed effectively to ensure that alternative, direct, and safe access is provided. This includes accessibility for people with mobility impairments, such as Disability Discrimination Act compliant grades and widths. Desire lines should be maintained, and detours minimised. Crossing opportunities and connectivity to nearby streets should also be retained.
Reference	NA

### 8.3 Policy and development actions

Each of the policy and development actions for walking are presented below.

Action PD1	Plan movement and place functions for CBD streets considering all transport modes
Relevant objective/s	2. Enhance and activate spaces and streets, supporting the CBD's economy 4. Improve the current and future pedestrian network
Rationale	The identified street hierarchy for the CBD in the Pedestrian Strategy only considers the movement and place functions for pedestrians. For an integrated approach to street planning and design, a street hierarchy network should be developed which considers all transport modes together. This would allow a holistic view of the movement and place functions of each street.
Implementation	As part of the new Integrated Transport Plan, consider developing an approach to planning movement and place street functions which considers all transport modes. This could result in revisions to some of the recommendations for pedestrian infrastructure as the streets need to accommodate and be designed for all modes.  If available, the new Integrated Transport Plan should also align with the draft NSW Road Planning Framework.
Reference	Link and Place: A new approach to street planning and design – 2009

Action PD2	Develop pedestrian design guidelines for new developments
Relevant objective/s	3. Capitalise on the transformation of the CBD to benefit pedestrians 4. Improve the current and future pedestrian network
Rationale	As CBD blocks are redeveloped they should prioritise pedestrian safety and movements. A set of pedestrian design guidelines will help to ensure sites across the CBD accommodate and support walking trips.
Implementation	<b>Appendix E</b> includes a set of that address the following key pedestrian design requirements for new developments in the CBD: <ul style="list-style-type: none"> <li>▪ Footpaths;</li> <li>▪ Access and egress points, and associated pedestrian crossings;</li> <li>▪ Building frontages, facades and accessibility;</li> <li>▪ Personal safety, security and CPTED principles;</li> <li>▪ Weather protection;</li> <li>▪ Through site links; and</li> <li>▪ Construction impacts.</li> </ul> Compliance with these pedestrian design guidelines should be mandatory for all new developments in the CBD.
Reference	<b>Appendix E</b> – Pedestrian Design Guidelines

Action PD3	Amend DCP for permeable city blocks, active street frontages and high quality pedestrian infrastructure
Relevant objective/s	3. Capitalise on the transformation of the CBD to benefit pedestrians 4. Improve the current and future pedestrian network
Rationale	The Parramatta Development Control Plan 2011 (DCP) sets out Council's expectation for the development throughout the local government area. It is an important tool for shaping the design and layout of new developments and supports the planning controls in the Local Environmental Plan. Updating the DCP's Special Precincts Section 2 – The City Centre to reflect the required pedestrian footpath widths and pedestrian clear zones required to accommodate future pedestrian flows.  Recommended updates to the DCP are proposed in <b>Appendix D</b> .
Implementation	Make the proposed amendments to the DCP set out in <b>Appendix D</b> .
Reference	Parramatta Development Control Plan – 2011 <b>Appendix D</b> – Review of Pedestrian Considerations in the DCP 2011

Action PD4	Amend Public Domain Guidelines to reflect the street network hierarchy for pedestrian infrastructure
Relevant objective/s	3. Capitalise on the transformation of the CBD to benefit pedestrians 4. Improve the current and future pedestrian network
Rationale	The Public Domain Guidelines should reflect the proposed pedestrian network hierarchy's desirable characteristics for pedestrian infrastructure
Implementation	Review and revise the Public Domain Guidelines to acknowledge the movement and place functions of streets for all transport modes and update the guidelines to reflect the desirable street characteristics for pedestrians including minimum footpath width, minimum clear pedestrian zone and wayfinding signage. Consider amendments to weather protection, street furniture, and landscaping and street frontages guidelines where appropriate.
Reference	Public Domain Guidelines (Parramatta City Council UDU) – January 2016

Action PD5	Work collaboratively with shop and café owners to allocate footpath space for seating, signage and other business users
Relevant objective/s	2. Enhance and activate spaces and streets, supporting the CBD's economy
Rationale	Outdoor dining is an important feature of activated and populated city streets. It does however need to be balanced with allowing enough clear space on footpaths to support through movement of pedestrians. Council's current Outdoor Dining Policy sets out clear instructions on the positioning and space required for outdoor dining furniture. There is opportunity to review the policy to ensure a flexible approach to on-street dining.
Implementation	Consult with the food industry in the CBD on potential changes to the Outdoor Dining Policy to allow flexible spaces that still support through movements without conflict. One area of change could be the requirement that all outdoor dining furniture must be located away from the building. Changing the policy to allow tables and chairs up against the building in some locations will allow varied use of footpath space and make streets more interest and less uniform. Business seating and signage should be positioned outside of the clear path of travel.
Reference	Parramatta City Council's Outdoor Dining Policy City of Sydney Outdoor Café Policy

Action PD6	Run competitions and award business owners for beautiful shop fronts and facades. Promote interesting, attractive and unique shopping precincts
Relevant objective/s	2. Enhance and activate spaces and street, supporting the CBD's economy
Rationale	Incentivising street facing businesses to create attractive and inviting shop fronts and spaces will enhance the pedestrian experience and attract more people to the CBD street on foot because it is an enjoyable and interesting place to be.
Implementation	Reward and acknowledge businesses which have inviting, attractive and unique shop fronts through an annual competition and promoting those that are recently opened. Provide rewards for individual businesses but also for small precincts to encourage groups of businesses to work together to beautify their section of the streetscape. This will encourage competition and collaboration.  Promote the businesses and the interesting, attractive and unique shopping precincts through business awards, the Walk Parramatta app and Council's other media channels.
Reference	NA

<b>Action PD7</b>	<b>Encourage pop-up shops in empty retail spaces</b>
Relevant objective/s	2. Enhance and activate spaces and streets supporting the CBD's economy
Rationale	Empty shopfronts are unattractive and boring, encouraging popup shops in empty retail spaces will reactivate the street, engage pedestrians and encourage other businesses to consider moving there permanently because of increased activity.
Implementation	Incentivise retail space owners and real estate agents to allow popup shops in empty shopfronts throughout the CBD. These popup shops and events organised around them. Consider sponsoring artists and designers to hold exhibitions and popup galleries in these spaces as well.
Reference	NA

<b>Action PD8</b>	<b>Advocate for free bus and light rail within the CBD</b>
Relevant objective/s	3. Capitalise on the transformation of the CBD to benefit pedestrians 5. Grow walking mode share and support public transport
Rationale	Free public transport in the CBD will encourage people to make trips within the CBD without their car. It will also encourage people travelling into the CBD to leave their car at a public transport stop.
Implementation	Consult with Yarra Trams on the success of the free public transport offering in the Melbourne CBD. Commence discussions with transport providers to consider providing bus and light rail trips within the CBD at no cost.
Reference	Yarra Trams ( <a href="http://www.yarratrams.com.au/media-centre/news/articles/2014/free-cbd-tram-zone-from-1-january-2015/">http://www.yarratrams.com.au/media-centre/news/articles/2014/free-cbd-tram-zone-from-1-january-2015/</a> )

<b>Action PD9</b>	<b>Install permanent pedestrian counts</b>
Relevant objective/s	5. Grow walking mode share and support public transport
Rationale	Collecting regular and high quality pedestrian data will help to track the growth in pedestrian volumes, the changing role of CBD streets and the successful implementation of the Pedestrian Strategy.
Implementation	Install high quality pedestrian counters at key locations throughout the CBD. This could include along Church Street, Macquarie Street, George Street, and Smith Street, in new areas like Civic Link and Parramatta Square and at access points to public transport. Provide updates to the data on an attractive and accessible website to keep community members informed about their city's data. This data can be used to demonstrate the need for improvements, advocate for policies and for prioritising upgrade works.
Reference	City of Melbourne: <a href="http://www.pedestrian.melbourne.vic.gov.au/">http://www.pedestrian.melbourne.vic.gov.au/</a>

<b>Action PD10</b>	<b>Coordinate with State Government to prepare pedestrian accessibility plans for public transport stations, stops and wharves throughout the CBD</b>
Relevant objective/s	4. Improve the current and future pedestrian network 5. Grow walking mode share and support public transport
Rationale	Auditing and upgrading the pedestrian network to ensure accessibility to public transport will support the growth of walking to at the beginning and end of trips. Pedestrian accessibility plans improve the network as it will address any gaps in the network and also infrastructure is not at current standards which needs to be updated.
Implementation	Undertake pedestrian accessibility plans across the city and specifically around public transport interchanges include bus stops, the train station and ferry terminal.
Reference	Sydney's Walking Future – 2013

Action PD11	Review and update Parramatta City Centre Lanes Strategy
Relevant objective/s	2. Enhance and activate spaces and street, supporting the CBD's economy 4. Improve the current and future pedestrian network
Rationale	Revisit the 2010 Parramatta City Centre Lanes Strategy and review the status of the lane improvement pilot program. The Lanes Strategy provides an important framework to transform existing service lanes into shared spaces which provide missing links in the pedestrian network, as well as attractive spaces for a variety of small businesses and cultural activities.
Implementation	Review all actions from the Lane's Framework Plan to assess the impact they have had in activating the lanes and improving the CBD's pedestrian network.
Reference	Parramatta City Centre Lanes Strategy – 2010

## 8.4 Behaviour change actions

Each of the behaviour change actions for walking are presented below.

Action BC1	Require developers to prepare Green Travel Plans with clear pedestrian objectives and actions
Relevant objective/s	3. Capitalise on the transformation of the CBD to benefit pedestrians 6. Promote walking
Rationale	A Green Travel Plan (GTP) is an important tool used in delivering accessible and sustainable communities and workplaces. As well as the need for developments to be well connected, with facilities that promote safe with easy access to public transport, and local destinations, steps need to be taken to ensure that future mode choice is reflective of sustainable travel behaviour. GTPs aim to increase active transport and public transport mode share of all trips, promote higher car occupancies and reduce the number of overall trips due to trip containment.
Implementation	GTP's should be a requirement for all new residential and workplace developments in the CBD. They should set objectives, propose a mode share target and list actions for supporting walking, cycling and public transport choices. GTPs should include the requirement to provide Travel Guide Information Packages to all residents and employees of the new developments. These should include maps which clearly identify the pedestrian pathways and the estimate distance and travel time between the destinations.  Specific inclusions for walking in GTPs are proposed in the Walking Guidelines for Green Travel Plans in <b>Appendix F</b> .
Reference	<b>Appendix F</b> – Walking Guidelines for Green Travel Plans.

Action BC2	Implement the education, communication and behaviour change toolkit
Relevant objective/s	6. Promote walking
Rationale	Changing habits and educating people about sustainable transport choices is an important component of growing walking mode share. Along with infrastructure improvements, investment in information and promotion can help to achieve transport behaviour change.
Implementation	Invest in targeting education, information and promotions towards people who can convert short private vehicle trips to walking. Specifically target new residents and workers in the CBD and work closely with organisations to support their employees and students to choose to walk. Specific ideas on targeting workers and residents in the CBD are set out in the Education, Communication and Behaviour Change Toolkit in <b>Appendix G</b> .
Reference	<b>Appendix G</b> – Approach to behaviour change communication

Action BC3	Keep pedestrians informed about construction impacts in the CBD
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians
Rationale	Construction has negative impacts on the surrounding environment and can disrupt and hinder pedestrian movements in the area. It is important that during construction there is clear

	communication on what routes are closed, how people can still access destinations and what the path detours are. There should be no loss of pedestrian safety and amenity during construction periods in the CBD, and people should still be encouraged to walk.
Implementation	Measures should be implemented to minimise confusion and support and prioritise pedestrians through the CBD when construction is underway. Signage should warn pedestrians of upcoming construction works in the area and the detours should be clearly signposted on attractive maps with enough warning that pedestrians do not need to double back to reach their destination. Pedestrians should be kept informed about the length of the construction period and when facilities will be open and accessible again.
Reference	NA

<b>Action BC4</b>	<b>Create an online presence with Parramatta Walking information</b>
Relevant objective/s	6. Promote walking
Rationale	An attractive mobile friendly website with easily accessed walking information will support visitors and new residents and workers to explore the CBD and surrounds while they are out and about. Promoting walking times, nearby attractions and different routes will help to familiarise people and give them confidence to choose to walk.
Implementation	<p>Develop and promote a user friendly app which is updated regularly with walking information and ideas. The app could let people know what attractions, public transport and food and drink options there are within a five minute or ten minute walk of their current location. Work closely with mapping providers such as Google Maps to supply updates on changes to pedestrian routes and current construction activity.</p> <p>It could also be used to let people know of changes to the walking environment such as construction works and when events will be on in the city.</p> <p>The website could even be used to provide health information and messaging, track kilometres walked and calories burned, or used as a loyalty program by local businesses.</p>
Reference	NA

<b>Action BC5</b>	<b>Work with schools and key partners to understand and cater for their students' needs</b>
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians 5. Grow walking mode share and support public transport
Rationale	Parents are often concerned that children are less aware of their surroundings and less familiar with road rules and so might be reluctant to let them walk to school. It is important to understand the existing and perceived barriers and opportunities related to walking to school.
Implementation	Obtain community feedback from schools and parents in Parramatta about the barriers to walking and the specific walking facilities that need to improve around their schools. Receive comment on ideas related to walking buses and safe school routes and plan and implement with the school community as a key stakeholder.
Reference	<p>NSW Health Active Travel Charter for Children: <a href="http://www.preventivehealth.net.au/childrens-active-travel.html">http://www.preventivehealth.net.au/childrens-active-travel.html</a></p> <p>NSW Department of Education Live Life Well @ School: <a href="https://www.healthykids.nsw.gov.au/teachers-childcare/live-life-well-@-school.aspx">https://www.healthykids.nsw.gov.au/teachers-childcare/live-life-well-@-school.aspx</a></p> <p>Walk Safely to School Day: <a href="http://www.walk.com.au/wstsd/">http://www.walk.com.au/wstsd/</a></p>

<b>Action BC6</b>	<b>Plan events and art alongside pedestrian routes</b>
Relevant objective/s	2. Enhance and activate spaces and streets supporting the CBD's economy
Rationale	<p>Markets, outdoor concerts and street art provide entertainment and engage pedestrians. Events such as Parramatta Farmer Markets and Parramatta Lanes festival attract high volumes of people to the streets and create a vibrant and activated environment throughout the pedestrian network.</p> <p>Placing street art and statues along the CBD streets also provides interest and small attractions which will engage people as they walk along the street.</p>

Implementation	<p>Continue to host a range of community events in the CBD to support local businesses and increase use of streets as public spaces.</p> <p>Encourage schools and artists to take ownership of a part of the city streets. Both permanent and temporary installations should be encouraged so that people continue to be surprised, engaged and experience the city streets in new ways.</p>
Reference	<p>Parramatta Lanes Festival</p> <p>Parramatta Events: <a href="http://www.parracity.nsw.gov.au/play/whats_on/events_calendar">http://www.parracity.nsw.gov.au/play/whats_on/events_calendar</a></p>

<b>Action BC7</b>	<b>Promote the walking access to new city destinations as they are developed</b>
Relevant objective/s	3. Capitalise on the transformation of the CBD to benefit pedestrians
Rationale	When new developments are completed, their open status and the walking access to them should be promoted and encouraged. Marketing the access to new developments will encourage walking to the new destinations. This is particularly important if a route or access has been closed or obstructed during construction.
Implementation	Promote walking access early on in the opening of the development as once a routine travel behaviour has been established it will be difficult to change. Consider holding lunchtime events, walking tours and distributing flyers to demonstrate access to the new destination.
Reference	NA

<b>Action BC8</b>	<b>Work with key stakeholders to promote Walk to work day with events and campaigns</b>
Relevant objective/s	6. Promote walking
Rationale	People who walk before or during work are generally healthier, more productive and less likely to be sick or absent. Walk to work day and similar events encourage employees to reconsider their daily travel patterns and try walking to work. This can be the whole journey if they live within a short walking distance or by incorporating more walking into their daily commute through getting off the bus or train a stop early and walking the rest of the journey.
Implementation	All workplaces should promote and encourage employees to participate in Walk to Work day or similar events. Incentives such as prizes for longest distance walked and free breakfast for employees who participated can help to increase involvement.
Reference	<p>Diabetes Australia Walk to Work day: <a href="http://www.walk.com.au/wtw/homepage.asp">http://www.walk.com.au/wtw/homepage.asp</a></p> <p>NSW Ministry of Health Get Healthy at Work: <a href="http://www.gethealthyatwork.com.au/">http://www.gethealthyatwork.com.au/</a></p>

<b>Action BC9</b>	<b>Encourage organisations to promote and support employee walking trips</b>
Relevant objective/s	5. Grow walking mode share and support public transport 6. Promote walking
Rationale	It is important for companies to recognise the importance of walking for their employees and promote employees to take walking breaks. It has shown to improve productivity in the workplace.
Implementation	Promotional material should be displayed around the offices which encourage walking.
Reference	NSW Ministry of Health Get Healthy at Work: <a href="http://www.gethealthyatwork.com.au/">http://www.gethealthyatwork.com.au/</a>

<b>Action BC10</b>	<b>Identify signpost and promote a city circuit walk</b>
Relevant objective/s	1. Prioritise the time, safety and amenity of pedestrians 6. Promote walking
Rationale	<p>Promoting a city circuit is a way to encourage office workers, hotel visitors and residents to walk around the city. The circuit should include information on the route, time, distance, calories burned, and any attractions along the way.</p> <p>Routes that are 30 minute, 45 minute or 60 minute walk around the city are suitable for office workers in their lunch break.</p>

	<p>The circuit route should be planned away from intersections where pedestrians will experience delay and an incorporate green space and interesting outlooks.</p> <p>Clear signage detailing walk times will encourage people to participate in the walk as it eliminates the fears of getting lost walking and also the ambiguity of not knowing how long the walk will be.</p>
Implementation	<p>Clear wayfinding should be established for a city circuit route. These signs should include times until next attraction, destination or facility. This circuit should be promoted through Council's media channels and to organisations with employees. There could be an event at lunch-time for the opening of the circuit that will encourage workers and visitors to get involved.</p>
Reference	NA

<b>Action BC11</b>	<b>Promote CBD destinations through walking tours</b>
Relevant objective/s	<p>2. Enhance and activate spaces and streets, supporting the CBD's economy</p> <p>6. Promote walking</p>
Rationale	<p>Walking tours which highlight destinations and attractions within the CBD can help simulate and encourage people to explore by foot. These tours will help support local businesses and promote different parts of the city.</p>
Implementation	<p>Plan and implement walking tours that introduce visitors to the CBD's attractions. This could include coffee tours, street art tours and wine bar tours.</p>
Reference	NA

## 8.5 Implementation of the walking actions

All interventions to improve walking in the CBD should be considered as part of a holistic spatial master plan. Adopting this approach means that pedestrian needs will be considered relative to other needs as well as the various other impacts that affect street functionality and comfort. The majority of the Pedestrian Strategy's actions require financial support and implementation will be subject to funding, integration with other CBD works and stakeholder priorities. Implementation will require consideration of:

- > **Budget:** Prepare a cost estimate for each action and identify potential funding sources from within and external to Council.
- > **Timeframes:** Develop a program to align with redevelopment and funding.
- > **Stakeholders:** Identify and engage with the relevant stakeholders on each action.

## 9 Monitoring and reporting framework

The implementation, monitoring and review of the Pedestrian Strategy actions and reporting against its objectives is a crucial part in creating a walkable CBD. The following sections set out the:

- > Approach to reviewing the walking actions implementation plan;
- > Measuring performance against the walking indicators;
- > Measuring the economic benefits of a walkable CBD; and
- > Regular reviews and updates to the Pedestrian Strategy.

### 9.1 Review of walking actions implementation plan

The walking action implementation plan should be reviewed quarterly to track progress against implementation. Prepare an Annual Progress Review Report to review and provide feedback on progress against the strategic walking objectives, implementation of the actions for walking, and achievement against the walking indicators. These actions could be incorporated into Council's Integrated Planning and Reporting Framework to formalise the monitoring and reporting process.

### 9.2 Measuring performance against the walking indicators

To assess progress towards achieving the strategic walking objectives, a series of measurable walking indicators are proposed. **Table 9-1** sets out each indicator, the data type to be measured and the timeframe for monitoring the indicator.

**Table 9-1 Measuring performance against the walking indicators**

#	Objective	Indicator	Data type	Monitoring
1	Prioritise the time, safety and amenity of pedestrians	Time taken to undertaken different walking trips in the CBD	Trip time measurement between destinations	Ongoing
		Number of crashes involving pedestrians in the CBD, proportionate to the resident and worker population	RMS crash data	Annual
		Number of reported crimes against pedestrians	Bureau of Crime Statistics and Research: CBD reported crime statistics	Ongoing
		Number of trips through the CBD by private motor vehicles	Origin-destination vehicle surveys	Ongoing
		Street lighting levels	Lux level measurements	Annual
		Volume of footpath congestion at key intersections	Level of Service assessment using pedestrian counts	Annual
		Number of missing pedestrian crossing legs at signalised intersections	Audit of intersection crossing legs	Annual
2	Enhance and activate spaces and streets,	Café and restaurant opening hours	Survey of opening hours	Ongoing
		Business owner satisfaction with pedestrian traffic	Survey of convenience store, restaurant and café owners	Annual

#	Objective	Indicator	Data type	Monitoring
	supporting the CBD's economy	Number of people in the CBD in the evening and on the weekend	Pedestrian counts Pedestrian counters	Annual
		Proportion of empty shopfronts	Audit of street facing retail spaces	Annual
		Number of street based events in the CBD and number of participating stalls	Record number of events and stall holders.	Annual
3	Capitalise on the transformation of the CBD to benefit pedestrians	Kilometres and type of footpath and laneway networks in the CBD	Measurement of length of footpath network	Annual
		Number of through site links in the CBD	Audit of number through site links	Annual
4	Improve the current and future pedestrian network	Number of complaints received about walking infrastructure and pedestrian safety	Council footpath maintenance complaints register Number of complaints to Council about pedestrian safety issues	Ongoing
		Compliance with the Disability Discrimination Act	Audit of the footpath network	Annual
		Satisfaction of mobility-impaired and vision-impaired people	Questions included in Council's annual satisfaction survey	Annual
5	Grow walking mode share and support public transport	Walking mode share	Journey to Work, Household Travel Survey	Annual
		People's satisfaction with the walking environment in the CBD	Questions included in Council's annual satisfaction survey	Annual
		Demand for parking spaces	Parking survey	Ongoing
6	Promote walking	Number of Council led or supported events and promotions for walking	Records of number and content of events and activities to promote walking	Ongoing
		Number of participants in walking events and activities	Attendance and registration records	Ongoing

### 9.3 Economic benefits evaluation strategy

In addition to monitoring against the walking indicators presented in **Section 9.2**, it will be useful for Council to track the economic benefits associated with a walkable CBD that attracts and supports walking trips. A proposed methodology for tracking the walkable economy is provided in **Appendix H**. The Strategy sets out the types of economic benefits and the methods for collecting information for evaluation. The types of economic benefits include:

- > Financial or commercial gain to businesses;
  - Retail and commercial sales of goods and services
  - Commercial footprint and number of establishments
  - Commercial property values
  - The 24 hour economy
- > Benefits to pedestrians and society;
- > Increased Council rates collections;
- > Equity issues; and
- > Safety aspects.

## 9.4 Tracking population growth

As the CBD's residential and worker population grows through the planning and delivery of new developments, tracking the locations of population growth will help to inform future pedestrian modelling and implementation of the Pedestrian Strategy actions. Geospatial Information Systems (GIS) could be used to collect population data at specific development sites across the CBD. This will provide accurate information to use in forecasting population growth, pedestrian modelling, and planning infrastructure staging and communication activities.

## 9.5 Review of the Pedestrian Strategy

To ensure the Pedestrian Strategy remains current as the CBD continues to transform, it should be reviewed every three to five years. The review of the Pedestrian Strategy should include:

- Review of the study area boundary and need to expand it;
- Updated pedestrian counts using a similar methodology;
- Updated pedestrian modelling based on the most recent residential and worker population forecasts;
- Updated mapping to include new destinations, lanes, streets and public spaces;
- Review of Strategic Walking Objectives;
- Review of the application of the categories of streets;
- Consideration of recent changes in the CBD and to transport networks;
- Reporting against the walking indicators; and
- Stakeholder consultation.

The review of the Pedestrian Strategy is an opportunity to refine and focus the approach to a walkable CBD as more certainty around the timing and future development in the CBD occurs. The review should consider:

- > What is the complete transport network including all public transport routes and services. How do they connect to key destinations?
- > How do people feel about walking in the CBD? Has this changed?
- > Are there information gaps?
- > What actions have been implemented? What difference have they made?
- > What elements are not succeeding or have not been implemented, and why?
- > What new innovations could be developed to help improve the use of sustainable modes?

## 10 Summary

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As the Parramatta CBD transforms into Sydney's Central City, more people will need to travel to, from and within the CBD for a range of different trips. This will create an opportunity to improve the vibrancy of streets, make short walking trips easy and safe and create direct connections between the different precincts through development of an amenable and attractive pedestrian network. Changing the CBD's blocks and streets to support walking can be the driver for changing the travel choices that people make. A CBD where walking movements are prioritised and a relatively compact CBD footprint will help the city minimise transport-generated pollution and promote health benefits for its workers, visitors and residents.

This Pedestrian Strategy aligns with Council and State Government vision for integrated and sustainable transport choices. It will support Council's aim to promote active and public transport modes and reduce the current reliance on the private motor vehicle. The Pedestrian Strategy:

- > Sets out the development context;
- > Presents the current and future pedestrian demand;
- > Proposes strategic walking objectives and indicators for measuring success;
- > Plans a proposed street hierarchy that acknowledges the shared street functions of movement and place; and
- > Proposes over 40 actions for walking to improve the pedestrian experience, now and as the CBD transforms.

Implementation of the Pedestrian Strategy will require commitment, collaboration and fortitude. The recommendations are ambitious and will require acceptance that pedestrian movements and space are to be more important than private vehicles throughout the CBD.

### 10.1 Next steps

The next steps for implementing the Pedestrian Strategy should include:

- > Setting a mode share target for walking;
- > Prioritise the recommended walking actions to align with other Council works, available budget and the redevelopment of city blocks;
- > Use the new information within the CBD Pedestrian Strategy to organise a multi-disciplinary approach to planning the CBD streets, that incorporates the principles of movement and place in the current design framework;
- > Review the Parramatta Light Rail alignment through the CBD and the implications for the pedestrian network on an ongoing basis, and identify opportunities to improve access for all pedestrians; and
- > Continue to engage with stakeholders on the recommended walking actions that will need their involvement.