

FINAL DRAFT

City North Structure Plan 2011

PLANNING FOR FUTURE GROWTH

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Contents

00	Executive summary	4
01	Introduction	10
02	Activities and land use	16
03	Urban structure and built form	28
04	Transport and access	44
05	Public Realm	58
06	Community infrastructure	78
07	Sustainable infrastructure	90
	Appendix A - Street sections	105

00 Executive Summary

4 EXECUTIVE SUMMARY
 Melbourne today is an attractive and liveable place to live and work. It is an international hub for business, retail, education, medicine, arts and industry. Our city has emerged as a popular destination for local, interstate and international visitors, boasting world class events and attractions. Planning is essential to ensure our city maintains its high standards of liveability and that it remains welcoming and accessible for people of all walks of life as it continues to expand.

There is strong evidence that Melbourne will continue to experience sustained growth over the next 20 years, building upon a strong economy and increasing population. The City of Melbourne's *Municipal Strategic Statement* identified City North as an urban renewal area that would accommodate a significant part of this growth (see figure 0.1). Urban renewal is the transition of an existing underutilised area into a sustainable living and working environment. City North is underutilised considering its excellent proximity to the economic, social and cultural amenity of the Central City.

City North displays strong characteristics of a Central City environment, with a diverse mix of uses, including well-established industrial, commercial, retail and residential uses dispersed throughout the area, alongside major health, education and research institutions. The Queen Victoria Market is a major tourist destination and Melbourne icon. These factors, coupled with the area's current density, further its status within the Central City.

A large proportion of the area is underutilised and exhibits relatively low levels of activity between the existing Central



Figure 0.1 Study area.

- Existing open space
- City North study area
- Existing rail network
- Existing rail station
- Proposed Melbourne Metro alignment
- Proposed Melbourne Metro station

City and the world renowned knowledge precinct in South Parkville. However, significant change is underway. The University of Melbourne, RMIT University, hospitals and research institutions are investing in significant expansion and renewal of their facilities and the major redevelopment of the former Carlton United Brewery site is now underway.

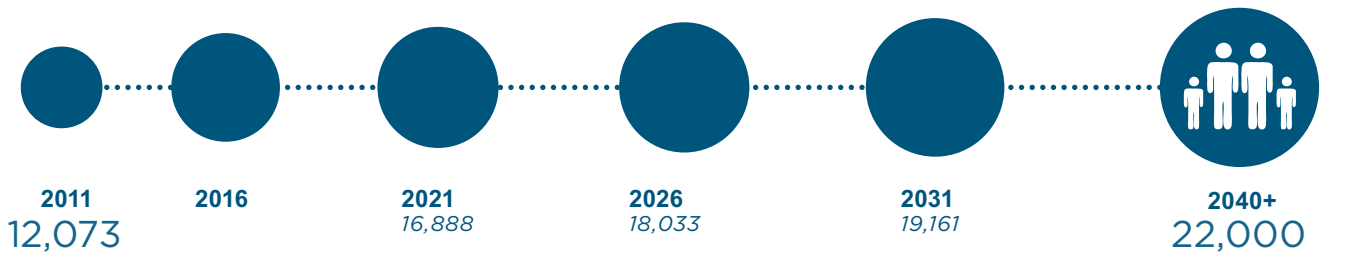
This draft structure plan provides a framework to guide the renewal of City North and to fulfill the precinct's potential as an extension of the Central City. The strategies and recommendations of the draft plan build on the existing strengths of the precinct, to ensure that as City North grows, it remains a great place to live, work, do business and visit.

Urban Renewal of City North: A Snapshot

2011 2040



Residents/ha Dwellings/ha Jobs/ha
Population densities

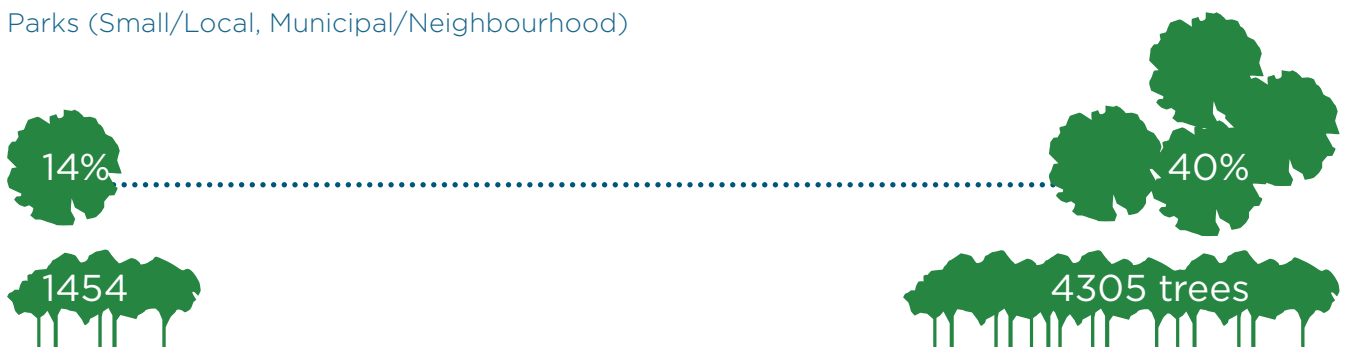


Projected residential population growth

2016-2031 estimated rate of population growth shown. 2040 estimate based on development



Parks (Small/Local, Municipal/Neighbourhood)



Urban Forest (Canopy Cover % and Trees)

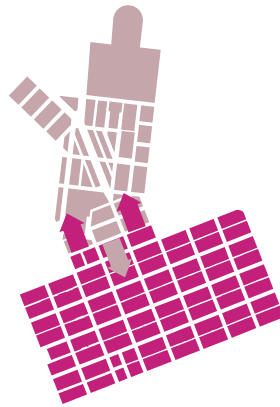
Principles of urban renewal in City North

Ten principles have been established to guide the urban renewal of City North.

These principles have been prepared through consultation with the community, with key stakeholders and through the application of good urban design and planning practice.

1 Cultivate a vibrant and distinct precinct connected to the Central City

City North has its own distinct character and appeal, while accommodating an expansion of Central City activity.



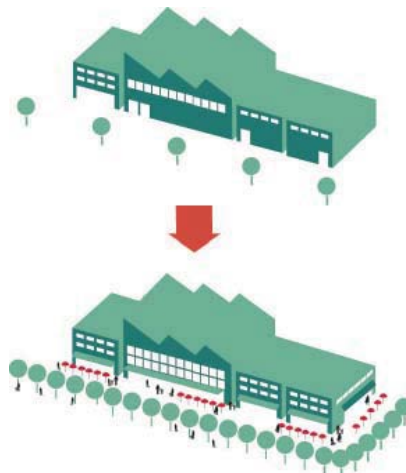
2 Create a liveable local neighbourhood

City North demonstrates the capacity for Melbourne Central City to accommodate population growth in liveable and sustainable environments.



6 Regenerate the area's public realm

The streets and open spaces are welcoming and attractive and provide places for people to meet each other and connect with nature.



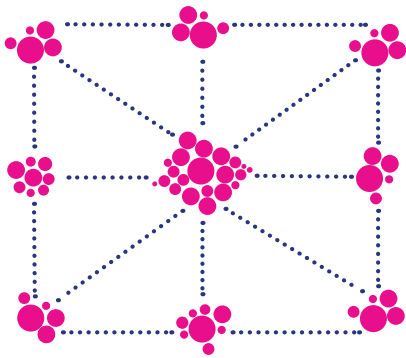
7 Develop liveable dwellings that house a diverse and inclusive community

New development adequately accommodates all members of the community in high quality housing.



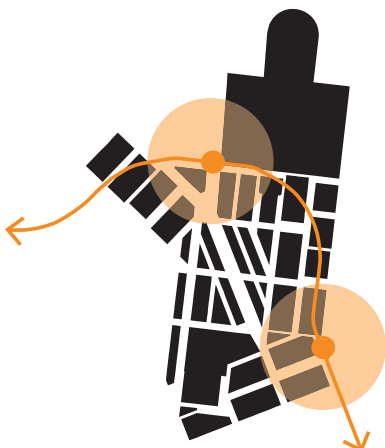
3 Strengthen the knowledge economies to cultivate prosperity and creativity

The existing knowledge institutions - the hospitals, universities and research facilities - expand their global reputation and bring the benefits of a knowledge and creative economy to the Central City.



8 Create a connected and accessible place

A compact walking environment that is well serviced by public transport ensures City North is accessible to all.



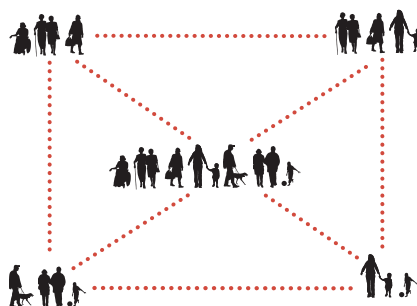
4 Retain the intimate precinct layered with charm

The intimate, intricate, charming and layered character of City North flourishes as the area grows.



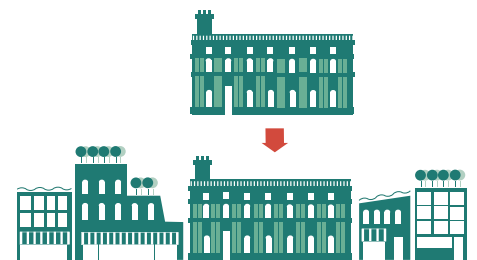
9 Support a culturally and socially engaged community

People are connected to each other and supported by the services and facilities they need to live a healthy and full life.



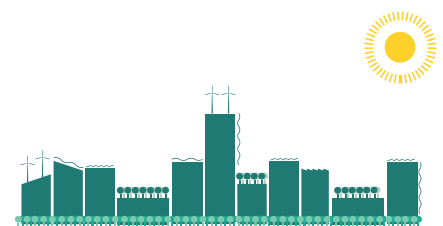
5 Integrate the area's heritage into urban renewal

New development respects and integrates with the existing urban heritage fabric and celebrates the stories of City North.



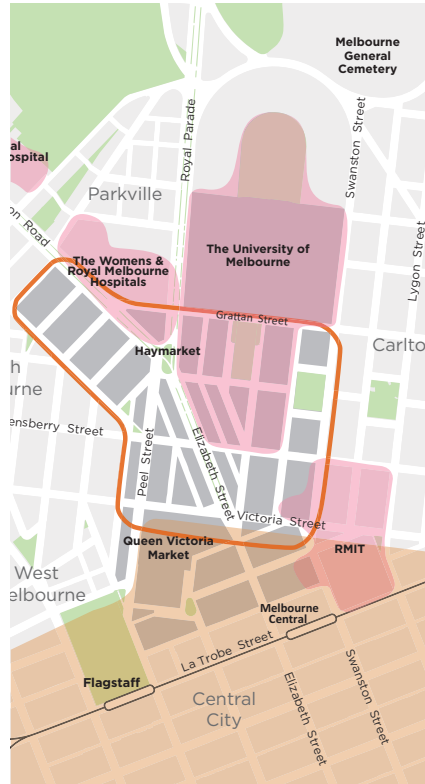
10 Grow a city that prospers within the earth's ecological limit

Urban renewal brings opportunities to mitigate climate change, reduce the urban heat island effect and reduce the impact on the environment.



Key directions

A number of key directions have been identified for the long term renewal of City North. These provide the overarching future direction for development and set out how its evolution is envisaged.



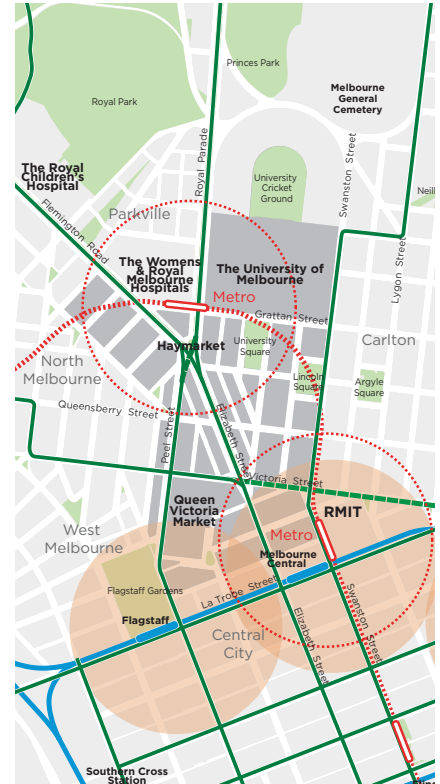
1

Integrate the knowledge cluster into the Central City

The success of the renewal of City North will be visible through the integration and prosperity of knowledge-based enterprises, set within a dense, vibrant urban culture. It will be a liveable precinct, distinct in its character, and underpinned by a mix of commerce, retail, residential and recreational activities.

City North contributes greatly to Melbourne's reputation as one of the world's great student cities. The thriving campus lives of the University of Melbourne and RMIT University have expanded and merged into one of the most vibrant and cosmopolitan Central City precincts.

Two new Melbourne Metro rail stations at either end of the precinct will provide high speed connection to the wider metropolitan knowledge network at the Alfred precinct, Monash University and Victoria University.



2

Boost transport infrastructure

The growth and development of City North as an extension of the Central City requires a boost in the mobility infrastructure. This includes high capacity public transport, accessible and reliable ways of moving within and around the central and inner city, and high connectivity to the surrounding metropolitan regions.

Two new Melbourne Metro rail stations at either end of the precinct will be central to this mobility. Rail will be integrated with new and upgraded tram and bus services throughout the area. There will be high quality, safe, pedestrian connections at all public transport interchanges.

The huge potential for bicycle use in this precinct (to meet the particular mobility needs of students) will be realised by a comprehensive network of safe and effective on- and off-road cycle-ways.

3

Create a compact, liveable precinct that builds on the existing urban heritage qualities

City North has a unique and distinct urban character. Wide streetscapes, simple architectural forms, a consistent and fine grained built form, an existing laneway network, charming parks and a number of heritage buildings distinguish the precinct. These characteristics are a valuable asset for City North, providing a platform for its renewal. They are to be preserved, protected and activated.

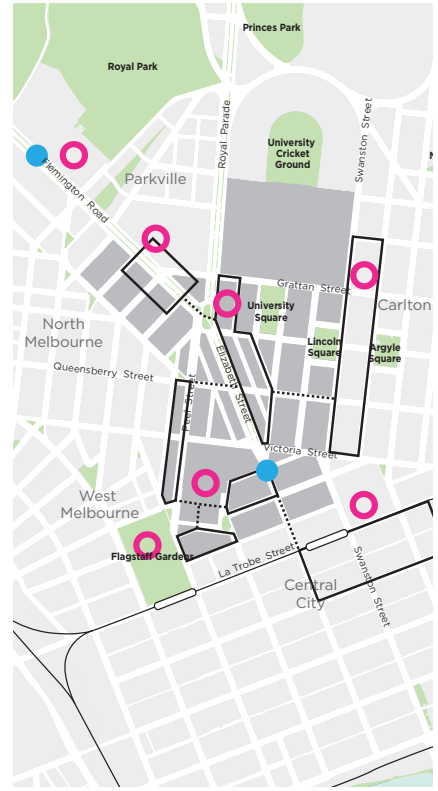
These neighbourhoods provide a quieter setting and opportunities for smaller, boutique retail and commercial uses which will underpin the precinct's liveability. Organisations associated with design, information technology and bio medicine may also locate in City North, adding to the prosperity of the knowledge precinct.



4

Develop four new major civic place

Extending the Central City into City North together with the boost to the quality of mobility in the precinct will be accompanied by a significant transformation of the public realm. This will be concentrated in four major civic places.



5

Make City North an energy, water and waste efficient precinct

City North will promote sustainability within the built form, open spaces, transport and in the delivery of utilities.

All new buildings within City North will respond to the challenges associated with a sustainable future. Buildings will be energy efficient, mitigate greenhouse gas emissions and be less resource intensive. The existing building stock will be retrofitted to ensure all buildings, new and old, within City North contribute to a sustainable future.

01 Introduction

INTRODUCTION 10

The need for a structure plan

The *City North Structure Plan* provides a long term vision and strategy for the area to the north of the Central City to become a sustainable urban renewal precinct.

Currently zoned for mixed and public use, the City North area is a diverse precinct characterised by retailing, residential, education and health services.

City North is already undergoing urban renewal, with catalysts for change including the redevelopment of the former Carlton and United Brewery site and significant government investment in the major hospitals in the north of the precinct.

The precinct is also well-served by existing public transport infrastructure. A proposal for a new metro-style underground passenger rail line between Footscray and Caulfield, with stations at Parkville and CBD North has the potential to further revitalise the area to the north of the precinct and provides the opportunity for an intensive, mixed use continuation of Melbourne's Central City.

In this context, the purpose of the structure plan is to help guide comprehensive change and development in City North.



Figure 0.1 Study area.

- Existing open space
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Planning for future growth

Melbourne's growth surge, which began in the late 1980s will see the number of residents and workers in the city double by 2030.

As cities grow, they have the potential to use resources more efficiently; their wealth, creativity and innovation increases, and, for businesses and residents alike, there are greater opportunities and improvements in the quality and range of services available. This growth must be carefully planned, designed and managed to ensure the future city will continue to be safe and enjoyable.

The Central City

Thirty years ago, Melbourne was a city of manufacturing. Today, Melbourne is a leading city in the knowledge economy. The dense and diverse Central City, where knowledge is created, exchanged and traded across Australia, and indeed the globe, is the base for this new economy. The continued growth and expansion of the Central City is important for the future prosperity of Melbourne.

Until the 1980s, Melbourne's traditional Central Business District (CBD) expanded and developed within the Hoddle Grid area and along St Kilda Road. After the 1980s, the old CBD was transformed by the introduction of a greater variety of uses including housing. It also expanded into Southbank making the Yarra River now a focus of city life.

This expanded area, which became known as the Central City, began to grow west into Docklands in the 1990s. Currently the Central City is consolidating in Southbank and Docklands and expanding north of the Hoddle Grid. Over the next 20 years, Central City growth and expansion

will continue, with extensions into the old rail yard areas in North Melbourne.

Keeping connected to stay prosperous

People in a dense, vibrant and prosperous city need convenient, effective and reliable ways of moving around, with good connections into surrounding metropolitan regions. Some 800,000 workers, students and visitors come into the City of Melbourne each day. This number will grow to 1.1 million by 2030. Since the 1960s, the private car has been the primary means of transport, but this is changing. City growth and intensification since the 1980s require greater capacity and efficiency that only good public transport, walking and cycling can provide. In 1990, 65 per cent of all trips into the city were by car. By 2007 the figure was 35 per cent. In 2030 perhaps only 10 per cent of trips will be by car, with 90 per cent by train, tram, bus, walking, cycling and taxi.

Urban renewal

The transition from manufacturing to a knowledge-based economy has left inner Melbourne with expanses of underutilised industrial land. This land, located adjacent to, and within the Central City, accounts for 13 per cent (476 hectares) of the municipal area and is available for Melbourne's future growth. Through urban renewal, there is the opportunity to accommodate an expanding Central City and to turn this into well-planned, well-serviced, high density residential and business neighbourhoods.

Resource efficient and climate change adapted

Experts predict that Melbourne's future climate will be hotter and

drier. The inner city is particularly vulnerable, with concentrations of buildings, roads, and other infrastructure, resulting in higher surface temperatures, known as the urban heat island effect. Experts also predict more rainfall and a rise in the sea level. Urban renewal areas need to be future-proofed against these climatic changes.

Urban renewal offers significant opportunity for the upgrading or wholesale replacement of existing energy, water and waste utilities. New, integrated, local systems can provide significantly more efficient services to homes and businesses, reducing the city's carbon footprint.

Project Timeline

The *City North Structure Plan* has been prepared in three stages. (See Figure 0.2)

Stage 01

A background report was prepared that provided an overview of the City North area from a policy and physical perspective. This review has informed the formation of the draft plan and provided an understanding of the key issues that informed the early consultation exercises.

During September and October, 2010, the City of Melbourne held discussions with businesses and major institutions in and around the area. A community forum was also held. These sessions focused on understanding the values and opportunities that should underpin the planning of the area. These values have informed the development of the ten key principles that lead the outcomes of the *Structure Plan*.

Stage 02

A draft version of the plan was prepared to articulate a vision and preferred framework for future growth. This draft was available for comment to the wider community in May-June 2011. The submissions received have informed the finalisation of the plan.

Stage 03

A final version of the plan has been prepared. This responds to the wider community feedback received during the consultation period and includes strategies and actions to deliver the plan.



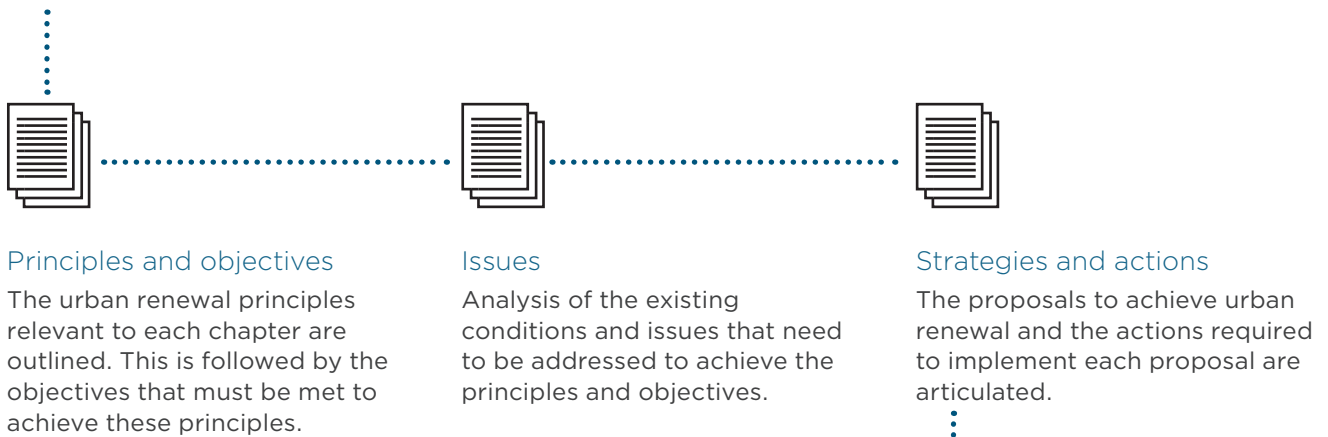
Figure 0.2: Structure Plan preparation timeline.

Document Structure

Each chapter is structured as follows.

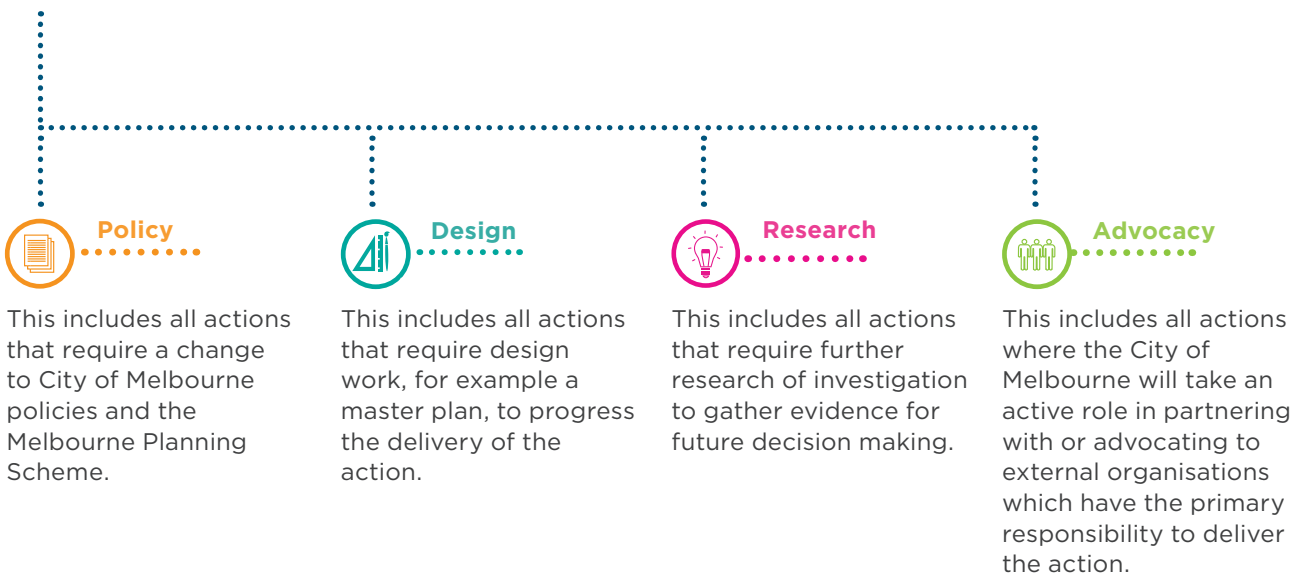
30-year vision

An overview of the long-term outcome for the area, supported by:



Implementation of the Plan

The *Structure Plan* will be implemented through a range of actions. These have been identified within the following categories. Each action is also nominated as high priority (1 year timeframe), medium priority (1-5 year timeframe) or as a low priority or longer term initiative (5+ years).



Policy context

Future Melbourne Community Plan (City of Melbourne, 2008)

Future Melbourne is a community plan for the City of Melbourne. It is a plan to grow Melbourne as a global city and as one of the top ten most liveable and sustainable cities in the world.

Its six goals are to make Melbourne:

- A city for people
- A creative city
- A prosperous city
- A city of knowledge
- An eco-city
- A connected city.

The Municipal Strategic Statement (City of Melbourne, 2010)

The City of Melbourne's draft *Municipal Strategic Statement* (MSS) defines how and where the long term growth and development of the city will occur. New development will be particularly focused in areas of the city that are currently degraded and underutilised, and this will repair and rejuvenate those areas. Other parts of the city, such as heritage protected residential areas, will remain relatively stable and maintain their existing character.

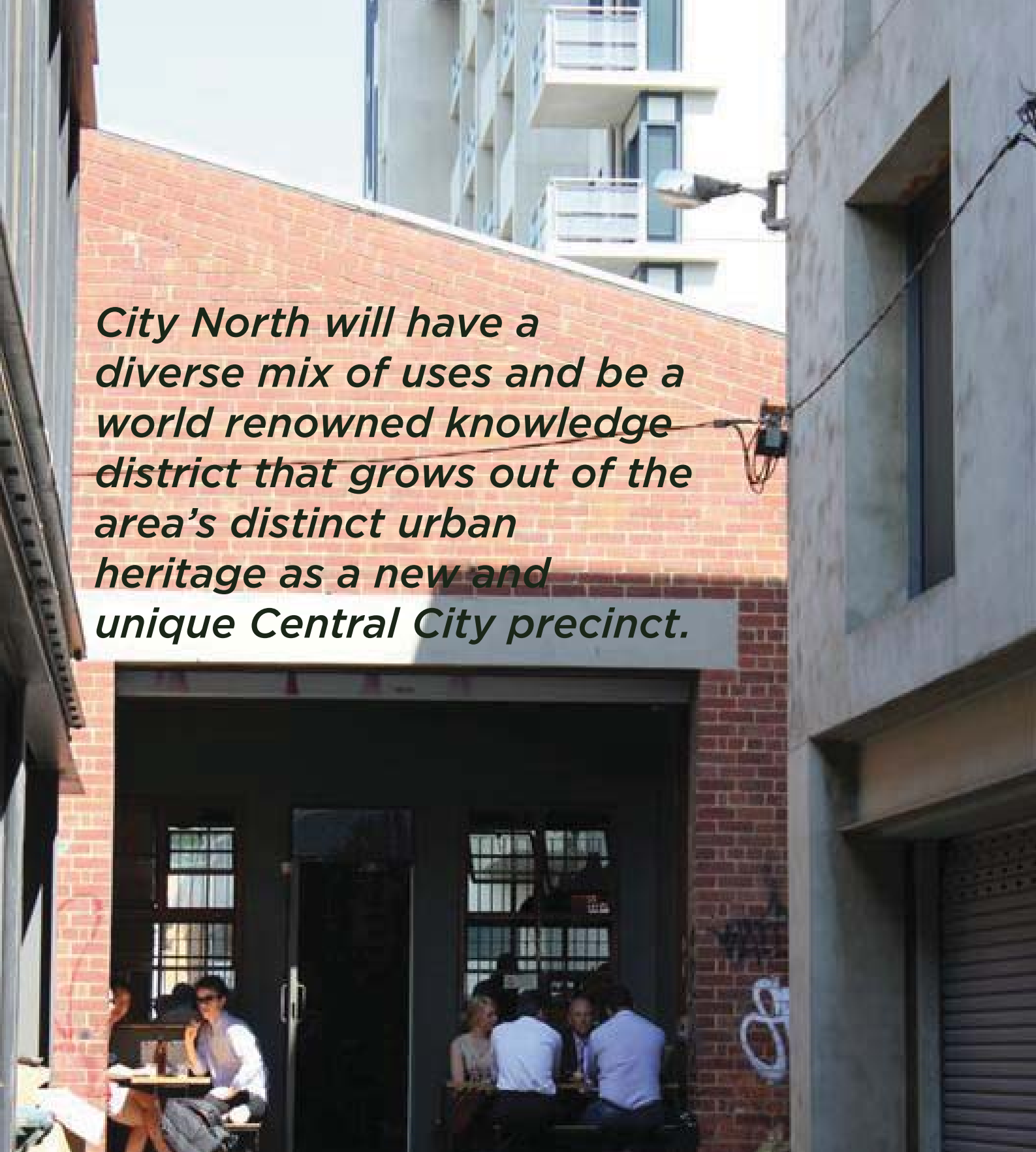
The draft MSS defines the three types of areas in the city, in terms of their capacity for growth and intensity of change, as 'stable areas', 'ongoing change areas' and 'urban renewal areas'.

The growth framework plan in the draft MSS describes City North as an urban renewal area. These are described in the MSS as areas which are currently underutilised and where there are

large sites and whole precincts which will undergo urban renewal. The MSS states that these areas will be planned and designed to provide optimal living and working environments. Together, these urban renewal areas will accommodate 110,000 jobs and 80,000 residents by 2030. Change will take place within the context of a well-developed structure plan that will be adopted by the City of Melbourne.

02 Activities and Land Uses

30-year vision



City North will have a diverse mix of uses and be a world renowned knowledge district that grows out of the area's distinct urban heritage as a new and unique Central City precinct.

Introduction

Overview

City North, like metropolitan Melbourne, has experienced a shift from a manufacturing economy to a knowledge economy. Historically the area was an edge-of-town district characterised by light industrial, warehousing, bulk goods retailing, hospitals, research, auto sales and services. The opening of the City Loop underground rail line and the associated development of Melbourne Central as a retail complex in the 1980s has seen intensive Central City development expand north of Victoria Street. Alongside this residential and commercial expansion, the University of Melbourne has been expanding its campus south of Grattan Street and RMIT has been expanding north, positioning Victoria Street at the centre of its campus.

City North is undergoing a transition to a high intensity mixed use area of residential, commercial, educational, research, industrial and retail activities. The large areas of land in light and small scale industry and business can be expected to relocate to more appropriate sites over time, freeing land for redevelopment.

Growth in the number of residents, workers and students in City North will drive demand for increased local services such as convenience retailing, shopping, entertainment, social venues and community services.

The former Carlton and United Brewery site at the corner of Swanston and Victoria is catalysing change in the area. The site is to undergo significant redevelopment, with high density residential, office, commercial and educational buildings, as well as central public open space.

Parkville bio-medical precinct

City North is home to a globally recognised bio-medical knowledge cluster. Here, collaboration between the University of Melbourne, the hospitals and independent research institutes has led to significant advances in the medical field. The cluster's newest additions will be the Peter Dougherty Research Centre and the Victorian Comprehensive Cancer Centre.

The cluster is linked to the wider metropolitan bio-medical knowledge network including the Western Hospital, Victorian University of Technology, St Vincent Hospital's Eastern Hill Precinct, the Peter MacCallum Cancer Centre, the Alfred precinct and Monash University. The proposed Footscray to Caulfield Melbourne Metro rail line will improve this wider network's connectivity.

Universities

The University of Melbourne is developing as an open campus

integrated as part of the city between Grattan and Queensberry Streets. RMIT University is continuing the expansion of its campus northwards. The Design Hub on the Carlton and United Brewery site will bring together advanced research and development in all of the design disciplines.

The teaching and research activities in City North are of state and national significance and have become a defining characteristic of City North.

Objectives

Principle 1

Cultivate a vibrant and distinct precinct connected to the Central City

1. A higher intensity and a greater mix of uses enrich and connect with the function of the capital city.
2. A greater mix and density of land uses is supported by the expansion of the public transport network, community services and facilities.
3. A vertical and horizontal mix of uses is created within buildings, including retail, office, health, personal services and institutional uses.
4. The Central City is seamlessly integrated with the growing knowledge precinct.
5. The activity hubs between Queen Victoria Market and Carlton and United Brewery are connected.

Principle 4

Retain the intimate precinct layered with charm

1. A unique sense of place builds on the area's special qualities that distinguish it from the capital city.
2. It develops a unique and distinct urban character with an eclectic mix of small scale activities and land uses, such as smaller boutique retail and commercial uses located within the quieter laneways.
3. Organisations associated with design, information technology and bio-medicines locate within the area.
4. The role of the Queen Victoria Market as a local and regional retail, entertainment and tourist location is enhanced.

Principle 2

Create a liveable local neighbourhood

1. City North becomes an active precinct with good, high quality public open spaces that cultivate active public life and support community wellbeing.
2. Increased residential density, with well designed, accessible and affordable housing, fosters a diverse and inclusive neighbourhood.
3. Local activity hubs strengthen the community life of the diverse and growing resident, visitor and employee population.
4. Streets are designed for activity and safety.
5. Higher density uses are in close proximity to existing and proposed public transport services.
6. There is good provision of community services and infrastructure for residents, students, workers and visitors to the precinct.

Principle 3

Strengthen the knowledge economies to cultivate prosperity and creativity

1. The area has an expanding reputation as a world class research and education centre for bio-medical, design and information technology institutions.
2. This rich cluster of knowledge institutions strengthens local and international synergies with other knowledge precincts.
3. The area's economic potential is capitalised through knowledge transfer, research clusters, innovation and commercialisation.
4. The integration and prosperity of knowledge based enterprises is set within a dense and vibrant urban culture.
5. Research and education uses are expanded.
6. There is clustering of scientific centres, hospitals and associated medical uses. Existing institutions thrive in their current locations.
7. The metropolitan wide reach of the universities and medical institutions is strengthened through the expansion of the Metro rail network.

Issues

Lack of community focal gathering space

The north of the City North currently lacks a community heart that meets local retail and servicing needs. The need for a heart is increasing as this area further intensifies in land uses and diversity. The heart should become the focal point for the local community to gather, shop, celebrate and engage in creative, cultural and leisure pursuits.

Lack of housing diversity

The proportion of residents in the precinct is low. An increased provision of housing would improve the safety and quality of the public realm, attract better local retailing, enable live/work opportunities within the area and complement the trip profile of public transport services. The area lacks housing choice, with student housing dominating the residential market.

Lack of community services

Community services and infrastructure are already limited within the area, with residents relying on services and facilities in adjoining suburbs or the Central City.

Underdeveloped sites

Many sites within City North remain underutilised despite their excellent proximity to the Central City, public transport and the university, research and medical institutions. The Queen Victoria Market is a cultural icon, which occupies a 7 hectare site including an expansive car park. To complement this key attraction, there is the opportunity to optimise use of the land.

Lack of contained activity

The Queen Victoria Market is only a part time hub of activity in City North. The limited opening hours and retail offer do not comprehensively service local retail needs and create a large activity void particularly when closed (two days a week). A denser population of residents and workers local to the market would strengthen its long term retail viability. The uses surrounding the Queen Victoria Market should complement the role of the market's unique retailing offer.

Lack of commercial development

Commercial office is a discretionary use (permit required) under the current zoning controls. Commercial development will become more attractive as the intensity of development proceeds northwards from the existing Central City. There is a need for increased provision of offices for institutional tenants (education, health and government service providers), research and teaching spaces associated with higher education and health, and small business.

Lack of mixed uses with a predominance of research and education facilities

There is a lack of land use diversity with a predominance of research and education facilities. The University of Melbourne is consolidating its campus south of Grattan Street. The educational, research and medical facilities developing in the area have not incorporated other service uses such as retail, particularly at street level. The precinct is at risk of being sterilised by institutions. This growth needs to be balanced with a range of other uses that provide activity over a 24-hour period to create a lively and integrated knowledge precinct.

Mixed Use zoning is not delivering desired outcomes

The existing zones in the Melbourne Planning Scheme do not support the land use development trends and potential of City North. The Mixed Use Zone has been unsuccessful in delivering land use diversity, as it is predominantly a residential zone. Pockets of land west of Peel Street have the potential to provide for other uses complementary to the market and the Central City which capitalises upon its prime location. The land is currently zoned Residential 1 Zone, which limits the use primarily to dwellings.

Strategies

Strategy 1

Develop City North as a new vibrant precinct within an expanded Central City

Through the diversification and intensification of land uses (includes residential accommodation), City North can develop into a lively precinct that serves the needs of its residents, workers, students and visitors.

The current zoning is inconsistent with the vision for urban renewal and objectives of this strategy for a mix of residential, commercial, retail, recreational, educational and research uses.

The Mixed Use Zone also does not reflect the trend in development of the area since it was applied. It is essentially a residential zone that does not meet these

objectives. This zone is ill suited to facilitating a rich Central City mix of residential, commercial, retail and recreational uses.

The primary purpose of the Residential 1 Zone (R1Z) is to provide for residential development with complementary land uses. The R1Z in the area fails to offer a true mix of land uses that encourage a vibrant and active environment.

To address the shortcomings of the zone/s in achieving the objectives of the *Structure Plan* a Capital City Zone (CCZ) is proposed north of Victoria Street to the Grattan Street. A CCZ supports a strong mix of residential, retail and commercial uses. The purpose of the CCZ is:

- To enhance the role of

Melbourne's Central City as the capital of Victoria and as an area of national and international importance.

- To recognise or provide for the use and development of land for specific purposes as identified in a schedule to this zone.
- To create, through good urban design, an attractive, pleasurable, safe and stimulating environment.

The CCZ gives equal weighting to residential, commercial and retail functions. This type of development can be found in the area south of Victoria Street, where the CCZ has enabled a vibrant, active and liveable environment that provides for a diverse residential, worker and visitor population.

(See Figures 2.1 - 2.3)

Actions

This strategy will be implemented through the following actions.



Strategy 2

Create three new local activity hubs

The significant growth in the number of residents, workers and students in City North will drive demand for increased local services such as convenience retailing, shopping, entertainment, social venues and community services. These services function best when clustered in a local hub where they also provide a local social and community focus.

There is currently no conveniently accessible service hub. Local service hubs are proposed, one around the Haymarket precinct, another at Queen Victoria Market and the Carlton and United Brewery site. These hubs will provide local services, amenity and a sense of local community. They will also service visitors and tourists and be part of the broader activity of the city.

Carlton United Brewery and Queen Victoria Market hub

Victoria Street is already emerging as a local hub. Improved pedestrian access between these two sites will enhance connectivity and the pedestrian experience. Retail activities at the Carlton and United Brewery site will be complemented by the unique food retailing at the Queen Victoria Market.

The Queen Victoria Market will continue to provide market style retailing, with a fresh food emphasis, and the Carlton and United Brewery redevelopment will provide a full line supermarket and extensive convenience retailing.

The Haymarket hub

The Haymarket precinct will provide convenience shopping, restaurants, cafes and entertainment to the large numbers of workers, students and visitors to the Royal Melbourne and The Women's hospitals, the Victorian Comprehensive Cancer Centre, the University of Melbourne and the numerous research institutes. The new Grattan (Melbourne Metro) rail station (which will have approximately 16,000 morning peak commuters) and the Haymarket transport interchange will make this a convenient location for commuters to do convenience shopping. The plan is to establish a large civic space to enhance the role of the Haymarket as a civic hub and Central City gateway. (See Figure 2.1)

Strategy 3

Support the continued development of City North as a Central City knowledge precinct

Melbourne has undergone a transformation over the last 30 years from a city of manufacturing to one of Australia’s most productive cities in the knowledge economy. The dense and diverse Central City is a key focus of this new economy, where knowledge is created, exchanged and traded across Australia and the globe.

In cities, knowledge sectors tend to cluster as local networks of institutions and organisations. These are known as knowledge precincts, where specialist employment and wealth creation through research and the

development of high value-added products and technologies are found. Knowledge precincts bring together advanced technological infrastructure and established networks of people and organisations involved in innovation.

The *Structure Plan* provides a framework for the long term development of City North that will support the development and operation of the knowledge activities by providing for:

- Excellent access and mobility to connect as an integral part of the Central City.
- Excellent access and mobility to connect with the wider metropolitan knowledge networks.

- The development locally of good quality housing, recreation, retail and business support services.
- The development of a public environment that is safe, attractive and culturally vibrant and has a distinctive Melbourne character and history.
- Accommodate the extension of the medical precinct, including the provision of increased bio-medical and related facilities on Flemington Road.

Actions

This strategy will be implemented through the following actions.



Policy

Provide zoning within the Melbourne Planning Scheme that supports and encourages the development and operation of the knowledge activities in City North and their integration into the precinct.

Zone the land adjoining the knowledge precinct CCZ to allow for land use mix intensity and encourage additional knowledge related land uses to locate within City North.



Advocacy

Support the development of the knowledge precinct (Parkville bio-medical and the universities).

Advocate for the extension to the Metro rail network which will enhance the connectivity of the knowledge precinct to institutions outside City North.



Design

Accommodate the extension of the medical precinct, including the provision of increased bio-medical facilities on Flemington Road.

1 year

1-5 years

5+ years



Strategy 4

Promote streets for vitality and activity

Royal Parade, Elizabeth Street, Flemington Road, Peel Street, Grattan Street, Swanston Street, Queensberry Street and Victoria Street have been optimised as transport corridors for vehicular traffic. This creates barriers to pedestrian movements through the area which disconnects activities from each other. The proposals in this strategy to upgrade these streets to prioritise public transport use, walking and cycling (see chapter 4) will be complemented by the development of intensive land uses along them. These streets will link the existing and proposed local activity hubs.

To ensure these streets are vibrant, interesting and safe, the land uses along these routes must have active ground floor uses and uses that enable passive surveillance from upper floors.

These primary activity connections need to incorporate the following characteristics:

Royal Parade, Elizabeth Street, Peel Street, Grattan Street and Victoria Street

- Promote more intensive retail, commercial and residential development.
- Encourage a greater array of local convenience and food dining establishments
- Provide active ground floor uses with residential or commercial uses above ground level.

In addition to the above, specific activities will be encouraged along the following streets.

Flemington Road

Accommodate the extension of the bio-medical precinct.

Victoria Street

Promote activities that complement the proposed activities within the Carlton and United Brewery site and the Queen Victoria Market.

City North will provide a defining connection to Arden-Macaulay to the west and Richmond to the east.

Grattan Street

Promote Grattan Street as the centre of the University of Melbourne.

Encourage fine grained mixed use at ground level, including cafes and social spaces.

To achieve this, these street are identified as primary active streets. Primary active streets will contain a minimum of 80 per cent active frontage at ground floor.

(See Figure 2.1)

Actions

This strategy will be implemented through the following actions.



Strategy 5

Increase the provision of affordable housing

Future Melbourne Community Plan established a goal for the provision of 20 per cent affordable housing in all new developments. Affordable housing for students is a priority and opportunity for City North. The City of Melbourne’s *Student Housing Policy* contained within the *Melbourne Planning Scheme* provides standards for achieving quality student accomodation.

The area will support a diverse residential population and ensure that students and key workers can live in proximity to the educational and medical institutions where they study or work.

City North should be contributing to this aspiration to improve opportunities for lower income earners to live within the Central City through the provision of social, cooperative housing that is owned and managed by registered housing associations.

Actions

This strategy will be implemented through the following actions.



Research

Investigate appropriate mechanisms to deliver 20 per cent affordable housing including the opportunity for the City of Melbourne to act as a broker between developers and registered housing associations in order to facilitate this outcome.



Strategy 5

Increase the provision of open space

See chapter 5, Open space.

Strategy 6

Increase the provision of community infrastructure

See chapter 6, Community infrastructure.

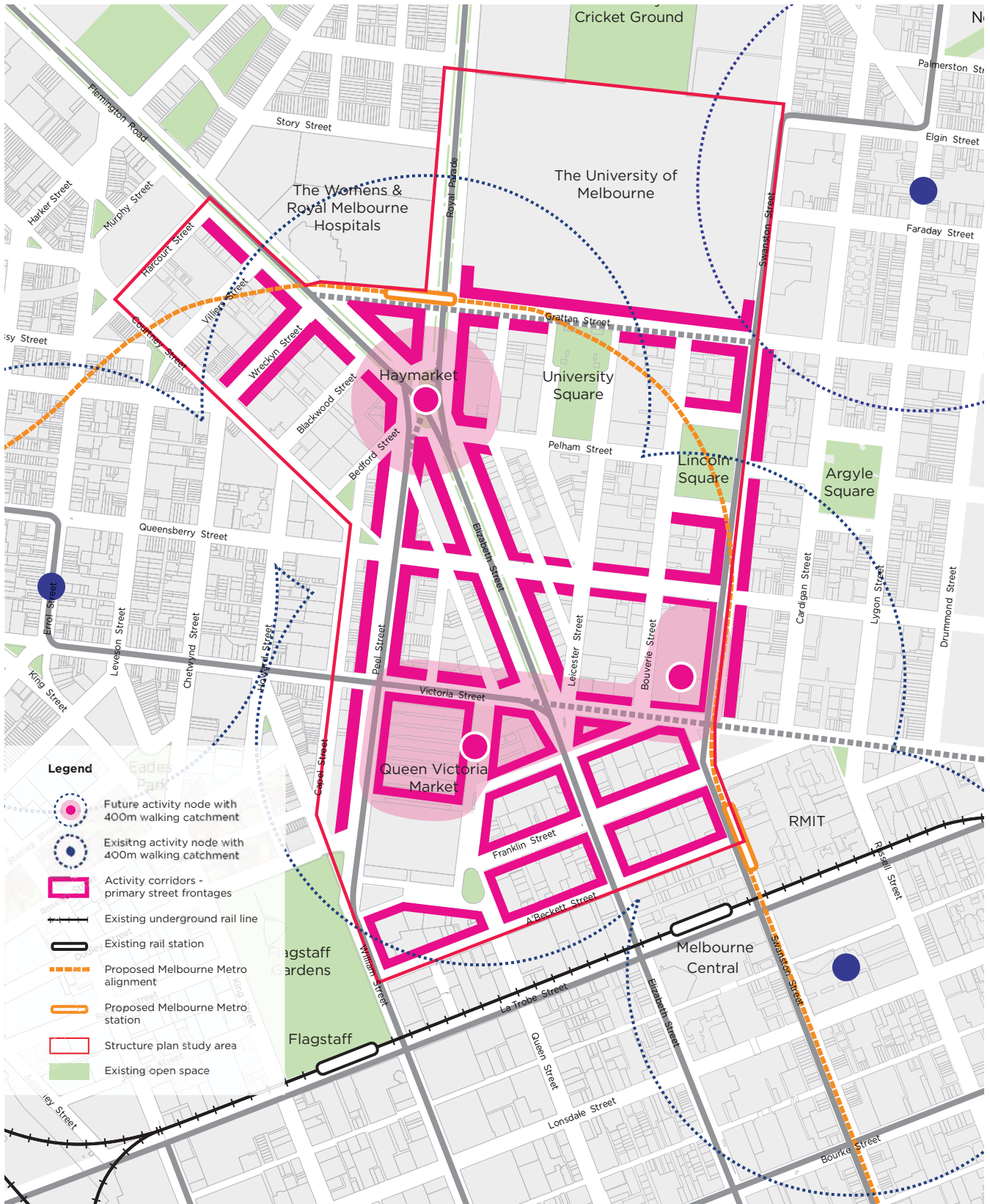
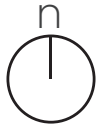


Figure 2.1 Land Use Strategy for City North

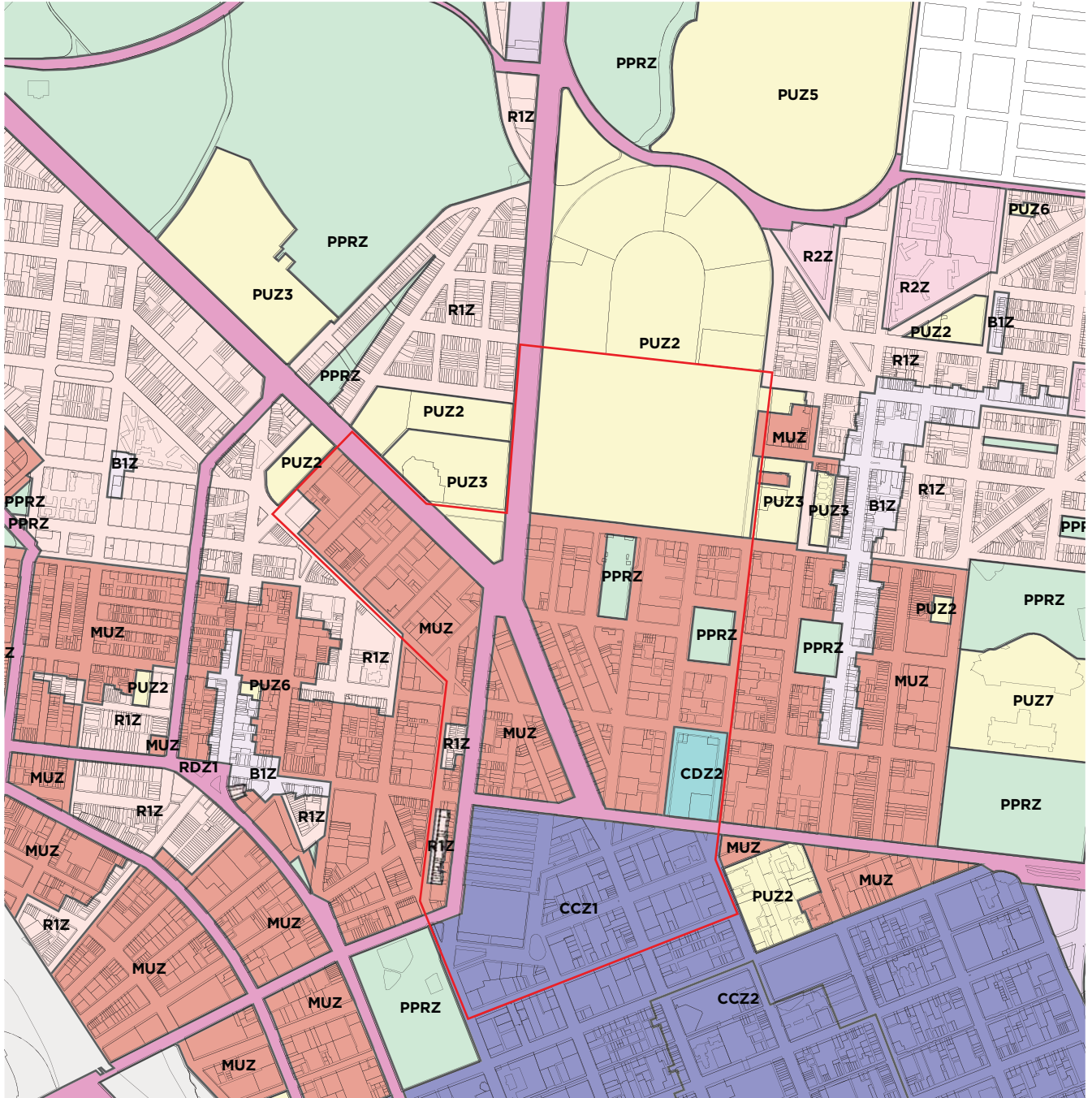


Figure 2.2 Existing land use zone (Melbourne Planning Scheme).

- | | | |
|---|---|---|
| <p>Public Land</p> <ul style="list-style-type: none"> Public Use Zone 2 - Education (PUZ2) Public Use Zone 3 - Health & Community (PUZ3) Public Use Zone 5 - Community Crematorium (PUZ6) Public Park & Recreation Zone (PPRZ) Public Use Zone 7 - Other Public Use (PUZ7) | <p>Road Zone</p> <ul style="list-style-type: none"> Road Zone Category 1 (RDZ1) <p>Residential</p> <ul style="list-style-type: none"> Mixed Use (MUZ) Residential 1 Zone (R1Z) Residential 2 Zone (R2Z) | <p>Business</p> <ul style="list-style-type: none"> Business 1 Zone (B1Z) <p>Special Purpose Zone</p> <ul style="list-style-type: none"> Capital City Zone 1 (CCZ1) Capital City Zone 2 (CCZ2) Comprehensive Development Zone (CDZ1) |
|---|---|---|

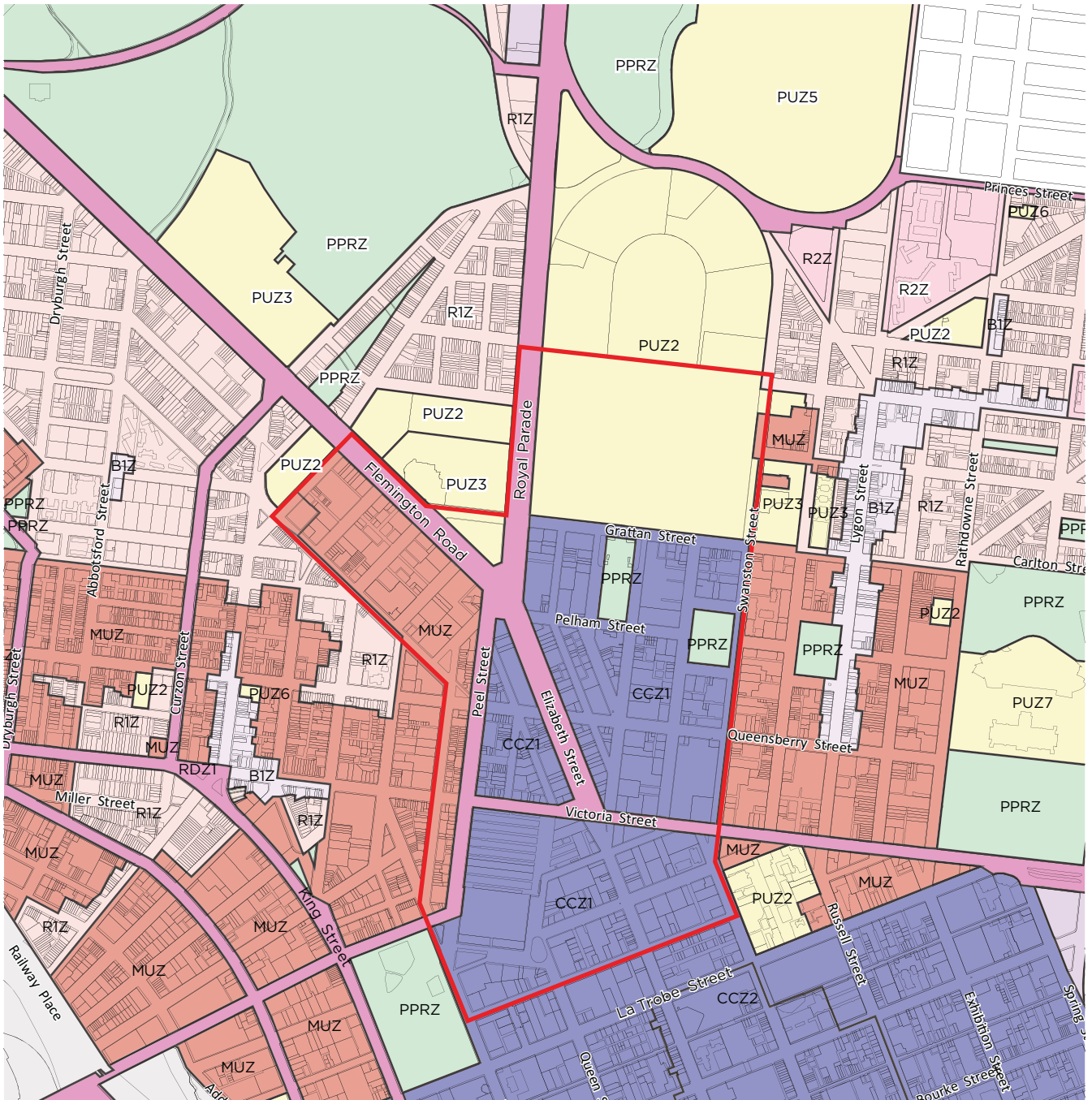


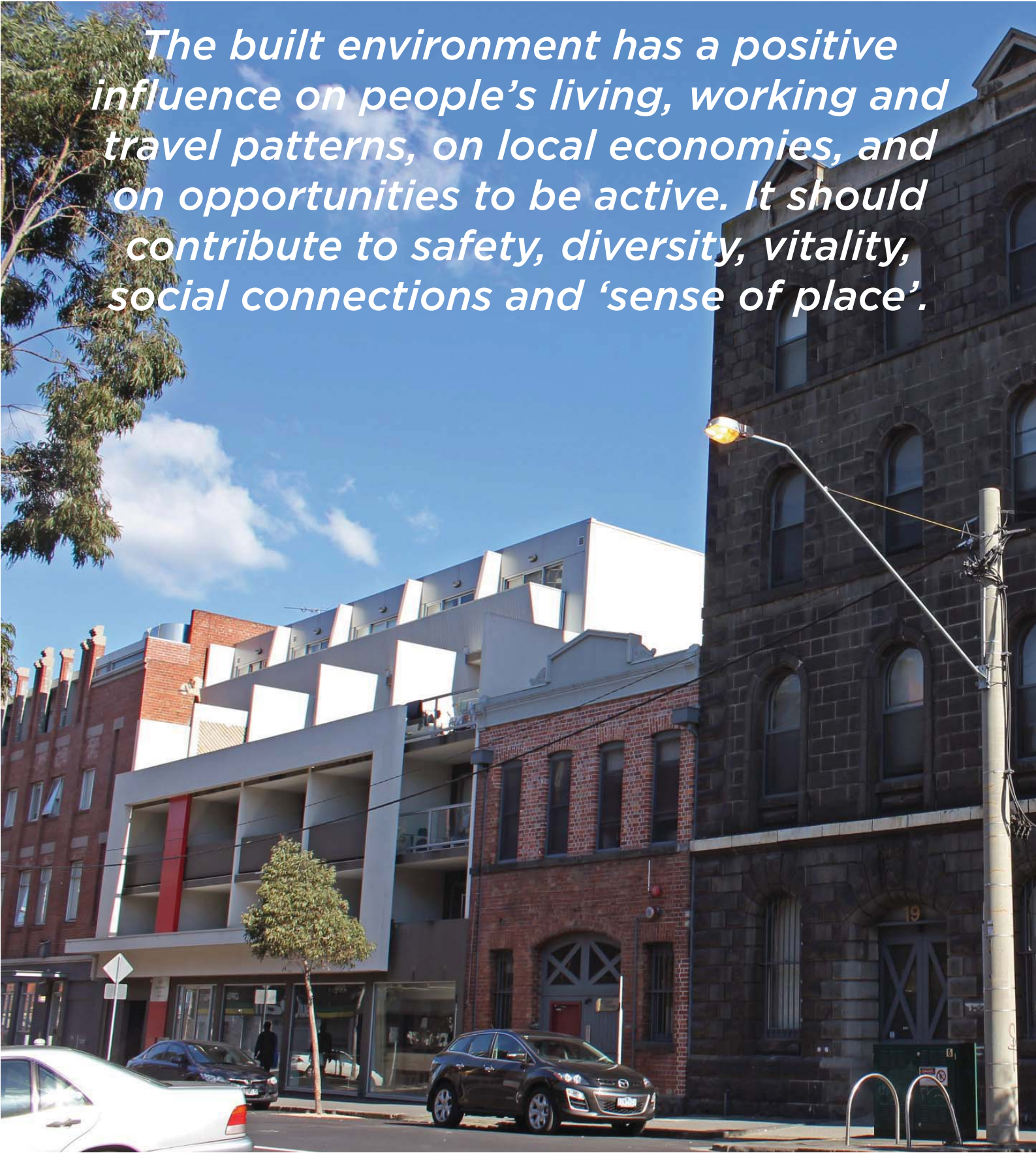
Figure 2.3 Proposed zoning plan - 30-year vision.

- | | | | | | | | |
|---|--|---|--|---|--|--|--|
| Public Land
Public Use Zone 2 - Education (PUZ2)
Public Use Zone 3 - Health & Community (PUZ3)
Public Use Zone 5 - Community Crematorium (PUZ6) | | Public Use Zone 7 - Other Public Use (PUZ7)
Public Park & Recreation Zone (PPRZ) | | Road Zone
Road Zone Category 1 (RDZ1) | | Business
Business 1 Zone (B1Z) | |
| | | | | Residential
Mixed Use (MUZ)
Residential 1 Zone (R1Z)
Residential 2 Zone (R2Z) | | Special Purpose Zone
Capital City Zone 1 (CCZ1)
Capital City Zone 2 (CCZ2)
Comprehensive Development Zone (CDZ1) | |

03 Urban Structure and Built Form

30-year vision

The built environment has a positive influence on people's living, working and travel patterns, on local economies, and on opportunities to be active. It should contribute to safety, diversity, vitality, social connections and 'sense of place'.



Overview

The existing built form of City North is predominantly a low-mid scale. This includes dwellings, institutional buildings, offices and other uses. The area is generally underdeveloped considering its immediate proximity to the CBD. City North is therefore well-positioned to accommodate growth.

The area also contains a number of heritage buildings. Future development should respect this existing context.

Future development of the area will also include expansion of the universities and medical facilities. This should occur in an integrated manner that connects this area into the CBD.

Snapshot

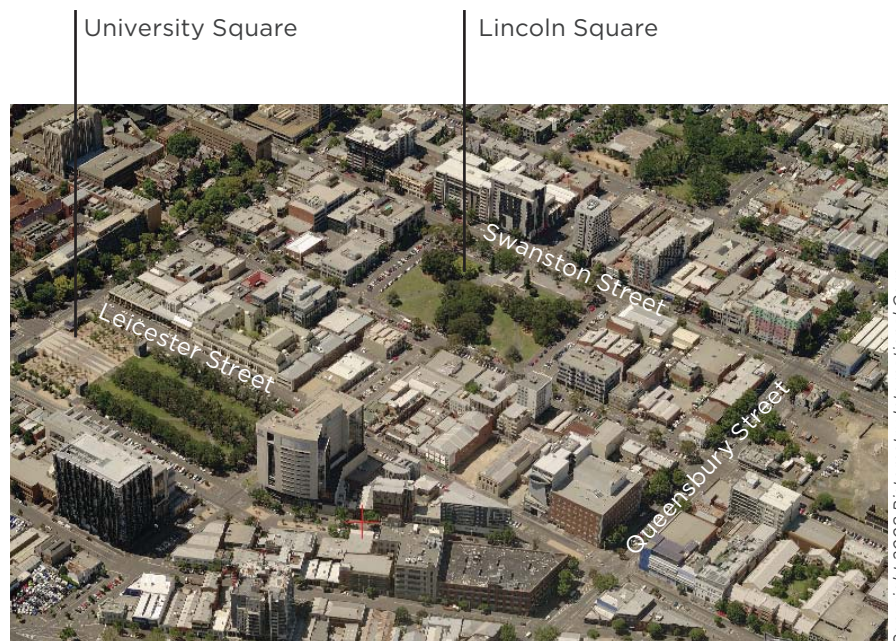


Figure 3.1 : Existing built form.

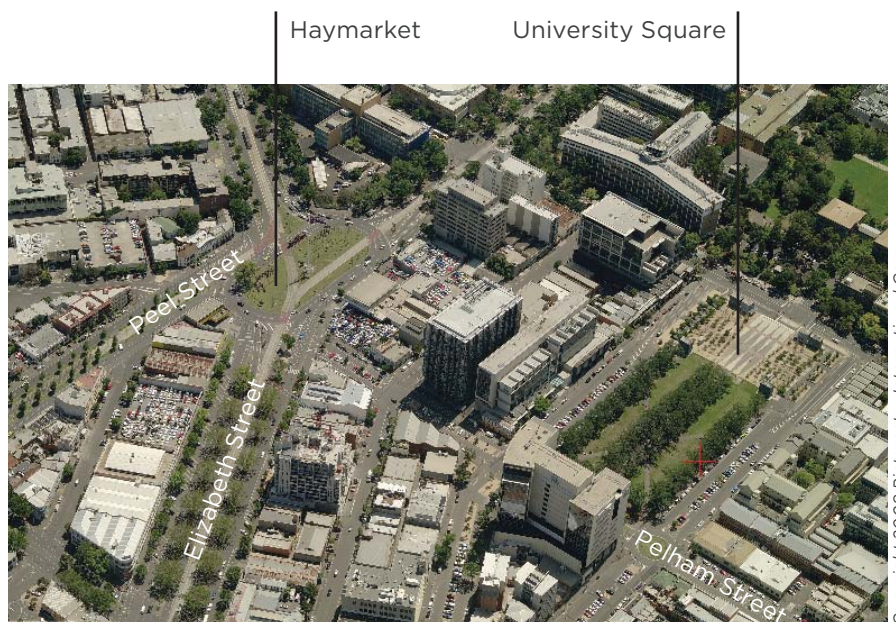


Figure 3.2 : Existing built form.

03 Urban Structure and Built Form

Melbourne Planning Scheme overlays

Heritage

Heritage controls cover much of the City North Structure Plan area. The relevant levels of control that exist under the Melbourne Planning Scheme are:

- Site specific Heritage Overlays (covering one or more lots); or
- Precinct Heritage Overlays (North and West Melbourne Precinct and the Carlton Precinct)

The existing controls are indicated in figure 3.3.

Design and Development Overlays

The Design and Development Overlay covers a large area of the North Melbourne, Melbourne and Carlton areas relevant to the study precinct. The main purpose of the design and development overlays is to protect the reasonable amenity expectations of new residential development and to control or guide building height. The relevant DDOs for the area are:

DDO1 – Active Street Frontages – Capital City Zone

The purpose of the overlay is to ensure that ground floor frontages are pedestrian oriented and add interest and vitality to city streets, to provide continuity of ground floor shops along streets and lanes within the retail core, and to ensure ground floor frontages contribute to city safety by providing lighting and activity.

This overlay is divided into two areas, retail core and major pedestrian areas, requiring that at least 5 metres or 80% of the street frontage be an entry or display window, or other uses, appropriate built scale to

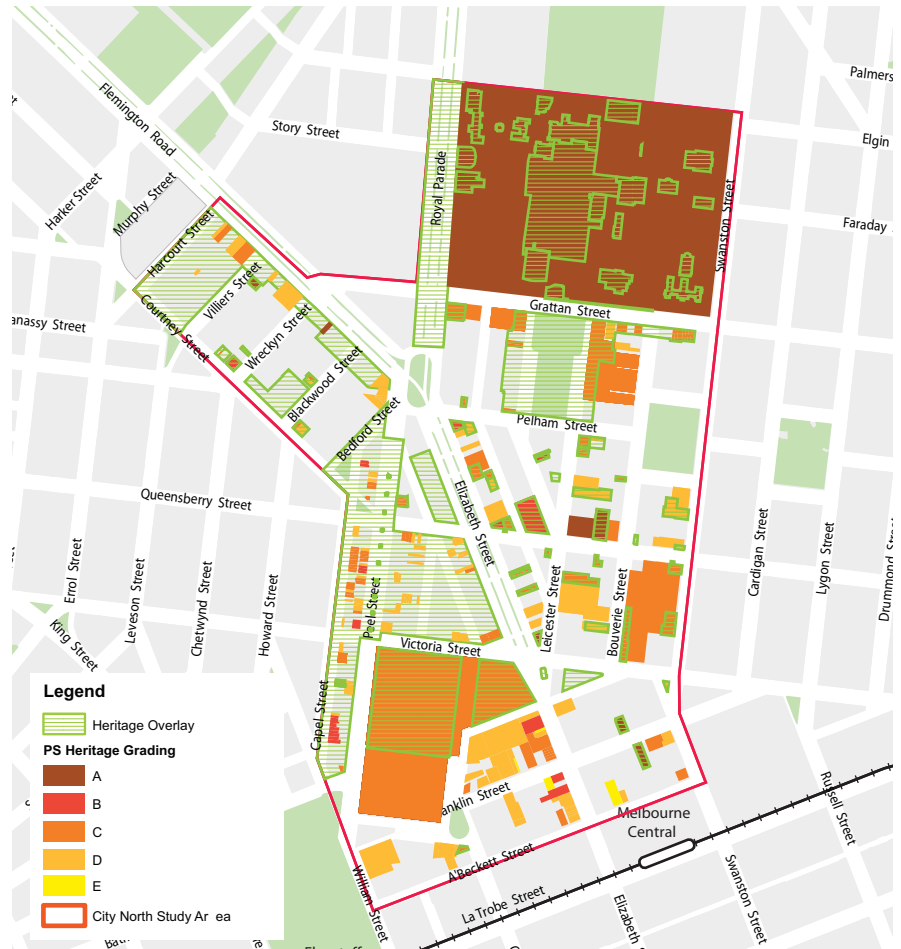


Figure 3.3 Existing heritage controls

pedestrians, and clear glazing.

DDO14 – Queen Victoria Market Area

The primary purpose of the overlay is to ensure that any development within the Queen Victoria Market is consistent with its Victorian character and low-scale. The overlay also seeks to ensure that development around the Market edges and within close proximity to the Market provides an appropriate scale transition from the low scale Market buildings towards the medium and high rise towers in the Central Business District.

Importantly, the DDO seeks to ensure that that any development

in close proximity to the Queen Victoria Market is compatible with the scale and character of the Market, surrounding residential developments and adjacent precincts.

The overlay imposes six discretionary height controls of between 7 and 60 metres. The purpose of these height controls is to provide a transition in height between the low scale of the Market and the higher development of the CBD grid.

DDO30 – Flemington Road South

The purpose of the schedule to the overlay is to provide opportunities for a consistent, higher built form at the western gateway

Objectives

Principle 1

Cultivate a vibrant and distinct precinct connected to the Central City

1. Encourage City North to develop as a Central City precinct with a distinctive character that builds on the existing urban character and heritage.
2. Increase building heights along the primary streets to enhance the stature of these streetscapes.

Principle 2

Create a liveable local neighbourhood

1. Facilitate the establishment of diverse communities and social interaction by creating compact, mixed use neighbourhoods.
2. The scale, height and setbacks of new buildings creates a liveable compact medium density residential and working environment.
3. Enable a local residential and working population that will use the expanded public transport network and community services and facilities.
4. Provide sufficient high quality public open space to meet the projected population growth.
5. Ensure the increased worker and resident population enriches the amenity of the area.
6. Introduce a finer grain network of laneways and through links

to better integrate with the scale of adjacent areas and maximise permeability for pedestrian movement.

Principle 3

Strengthen the knowledge economies to cultivate prosperity and creativity

1. Provide for the expansion of medical and educational activities.

Principle 4

Retain the intimate precinct layered with charm

2. Introduce suitable building scale, heights and setbacks taking into account the existing character, context and immediate amenity.
3. Protect and enhance the fine grain network of streets and laneways with an expanded laneway network.

Principle 5

Integrate the area's heritage into urban renewal

1. Encourage the reuse of existing building stock where feasible, including existing industrial buildings.
2. New building heights respect the rich heritage fabric of the area and new buildings that adjoin heritage buildings have regard to their height, scale, character and proportions.

Principle 6

Regenerate the area's public realm

1. Improve and develop City North's streets, parks and places to foster a vibrant, inclusive public life and community-wellbeing.
2. Create 'Great streets' for people by:
 - Designing streets to be places, not thoroughfares, that encourage walking and stationary activities.
 - Establishing built form controls that provide sunlight to the street in winter, shade in summer, and do not create windy conditions.
 - Establishing built form at street edge that creates a strong sense of definition and place by applying a maximum height limit at street edge determined by a 1:1 (height to width) ratio, with a minimum of 1:2 to create street definition.
 - Defining architectural outcomes to the street edge that respond to human scale.
 - Incorporating multiple doors and entranceways to apartments off the street to reduce the lengths of internal corridors, to improve activation of the street and to improve the sociability of the housing development, encouraging neighbourliness and creating opportunities to meet.

- Deliver a fine grain urban form by encouraging buildings with wide street frontages to be broken into smaller vertical sections of 4m to 10m in width.
- 3. Create walkable neighbourhoods through urban intensification by establishing an activated public realm that is stimulating and 'peopled'.
- 4. Establish safe streets through urban intensification and the design of buildings to provide passive surveillance and activation of ground floors addressing the street.
- 5. Ensure that public open spaces are sunny in winter, shaded in summer, sheltered, safe and welcoming.
- 6. Integrate built development with adjacent public open space by:
 - Orient the outlook of upper levels of buildings to provide passive surveillance to adjacent public open space.
 - Ensure new building developments have active frontages along their common boundary with a public open space.
 - Provide for walking, cycling and limited vehicular access along all edges of open spaces.

Principle 7

Develop liveable dwellings that house a diverse and inclusive community

1. Provide a mix of housing sizes, types and tenures at appropriate scales.
2. Provide dwellings that are accessible, easily adaptable and appropriate for all age groups.
3. Encourage development that increases the local density without compromising space standards and access to natural daylight and ventilation.
4. Provide good levels of private and communal amenity for building occupants in Arden-Macaulay's new homes.
5. Provide high quality private open space for all dwellings.
6. Include pervious ground area, which is as large as possible but no less than 30 per cent of the available ground area on site.
7. Protect existing trees and plant new trees to provide a large canopy cover.
8. Provide a microclimate where green roofs and green walls can flourish.
9. Protect private internal amenity from off-site impact of noise and light spill.

Principle 10

Grow a city that prospers within the earth's ecological limit

1. Provide high levels of energy, water and waste efficiency in new buildings.
2. Implement built form controls that:
 - Promote natural ventilation (cross ventilation) for all buildings, to reduce energy demands for cooling.
 - Allow daylight and sunlight to penetrate into lower building levels (particularly for residential development).
 - Allow the establishment of cool roofs to minimise the urban heat island effect.
 - Encourage flexible building types that are adaptable to the changing needs of future residents and workers.
3. Encourage developers to design the ground floor of buildings so that they can be converted to alternative uses in the future.
4. Reduce the car parking provision to levels conducive to inner city urban living that is well-supported by alternative transport networks (walking, cycling and public transport).
5. Maximise the provision of vegetation and water permeable surfaces in private and body corporate open space.

Issues

General

- There has been a trend in recent development permits to approve building heights several storeys above the recommended height limit.
- The medical and educational institutions within the precinct require floor to floor heights greater than those for residential and commercial development.
- The area is generally underdeveloped considering the proximity to the Central City.
- As development increases, small sites, which contribute to the fine grain of the area, may face pressure for consolidation which could erode the character of the area.
- A mix of building styles and sizes needs to be maintained to keep the existing fine grain and diverse character.
-

Central City built form

South of Victoria Street, with the Hoddle Grid, some very tall buildings being built on small sites.

The 35m to 40m maximum podium height and 10m minimum upper level setback is not consistently observed along streets, resulting in disparate and fragmented collections of buildings and a lack of cohesion in some streetscapes.

Some recent development have tall buildings built 'sheer' to the street edge (without a podium). This can have a detrimental impact on the quality of the public realm, through increased wind downdrafts.

Often, where the effect of wind has been considered in development, 'holes' have to be cut into buildings to control the effect of wind at street level, which in turn affects development viability and reduces visual cohesion along streetscapes.

Lack of lively streetscapes and amenity

Primary streets have very low levels of pedestrian activity because of the low density of activity. These streets, such as Elizabeth Street, Victoria Street, Peel Street, Grattan Street and Flemington Road also lack definition creating poorly framed streetscapes.

Car parking at ground floor and in podiums is detrimental to the street environment, creating dead facades and a lack of passive surveillance of the streetscape.

Heritage

Heritage-graded buildings do not always have heritage overlay protection, leading to uncertainty when developments are proposed. As a result, some heritage-graded buildings have been demolished.

Strategies

Strategy 1

Change building height controls to facilitate intensified development in the area that will create sustainable development patterns and provide a transition to existing low-scale suburbs

There are a number of distinct precincts within City North. (See Figure 3.5)

1 Hoddle Grid (south of Victoria Street)

The vision for the Central City is to create streets which are active, protected from the elements, provide a permeable pedestrian environment, provide appropriate vehicular access, and appropriately manage waste. There will be a strong distinction between the built form scale in the Hoddle Grid and the remainder of the City North precinct. The height controls south of Victoria Street have been determined by the *Central City Built Form Review (Planning Scheme Amendment C188)* which is currently in progress.

2 Queen Victoria Market

The area south of the Queen Victoria Market, is a strategic renewal opportunity, and intensification of development in the Queen Victoria Market is encouraged where appropriate. The built form in this area is subject to further review through a separate design and planning process.

3 Peel Street West (south of Queensberry Street)

This area has a large number of heritage buildings protected by a heritage overlay. Peel Street is also an important north-

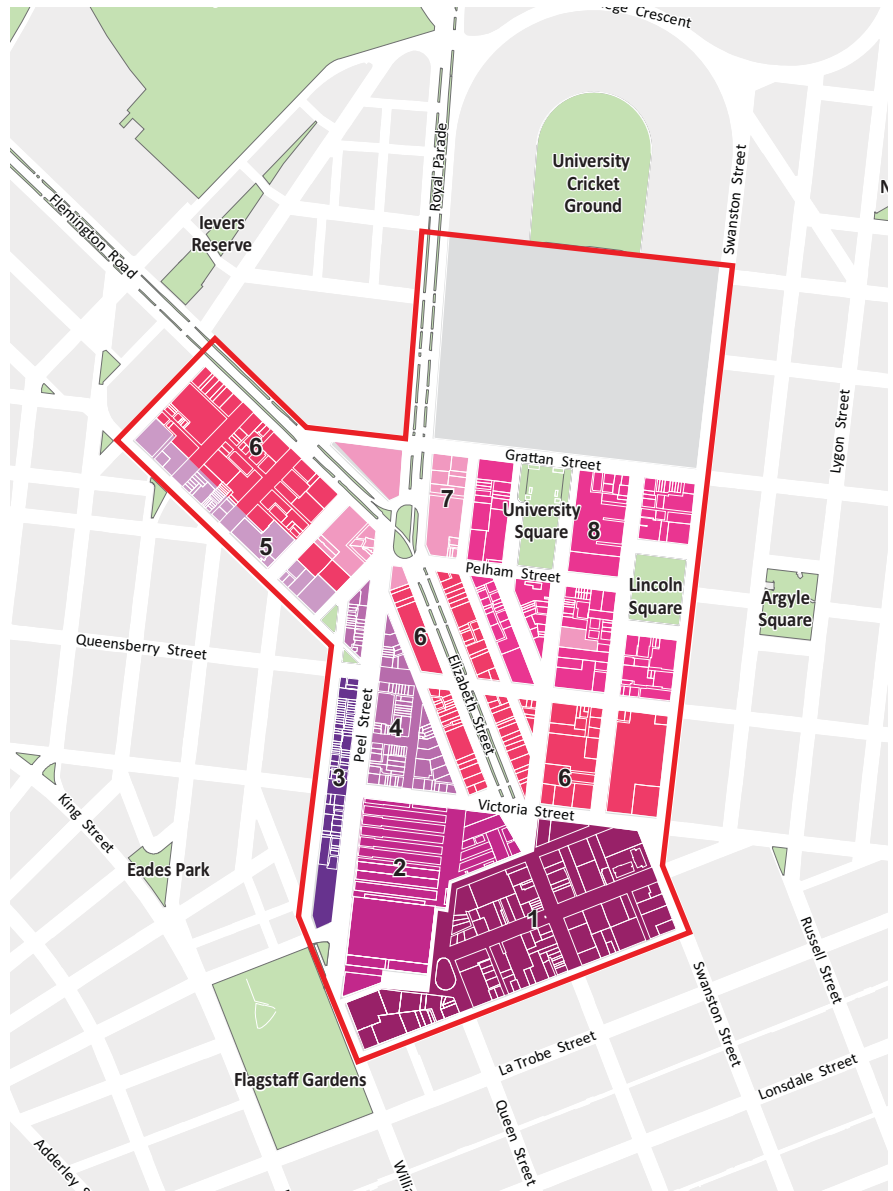


Figure 3.5- Built form precincts

- | | |
|---|--|
| 1 Hoddle Grid (South of Victoria Street) | 5 Courtney Street Precinct |
| 2 Queen Victoria Market Precinct | 6 Activity Corridors- Flemington Road, Elizabeth Street and Victoria Street |
| 3 Peel Street West (South of Queensberry) | 7 Haymarket Precinct and Leicestershire Street |
| 4 O'Connell, Peel and Victoria Street triangle and Peel Street West (north of Queensberry) | 8 Little Carlton |

87
Dwellings/ha**INKERMAN STREET** ST KILDA100
Dwellings/ha**RALEIGH STREET** WINDSOR116
Dwellings/ha**BARRY STREET** CARLTON*Figure 3.6 Melbourne examples of high density, mid-rise and mixed use development*

south transport link connecting northwest Melbourne to the western end of the Hoddle Grid. Its proximity to the Queen Victoria Market gives it an important role in establishing this precinct as an active, attractive and safe area. The existing 14m height control will remain, to preserve the existing fine grain structure of subdivision and to provide a transition from the Hoddle Grid heights to the low-scale North Melbourne area.

4. Victoria Street, Peel Street and O'Connell Street

The area encompassed by Victoria, Peel and O'Connell Streets has strong heritage character with a predominance of industrial/warehousing buildings. This area is also adjacent to the Victoria Street retail activity, the Queen Victoria Market and within easy walking distance of the Hoddle Grid. It is well-served by public transport, with three tram services within a five minute walk. The current design and development overlay height of 14m is considered inappropriate taking into account the existing amenity in this area.

It is recommended that the height within this precinct be

increased to 24m to increase the intensification of activity in the area and to provide a transition in scale from the 14m Peel Street/ North Melbourne height control to the 40m height limit of Elizabeth Street and the Hoddle Grid. A 24m height control is approximately equivalent to six storeys within a commercial building and seven storeys within a residential building.

At the street edge a 20m height limit should apply to provide a maximum streetscape ratio of 1:1. This will also ensure that sunlight reaches the lower floors of new development. A 4m setback to the upper floor should apply to maintain this objective.

Courtney Street

Courtney Street has a low-scale character and features a number of heritage buildings such as the Meat Market and, on the west side, rows of Victorian housing. This street is at the boundary of the stable low-scale residential areas in North Melbourne and the Flemington Road health precinct. For most of the street length there are compatible controls on either side of the street, with a 9m height control on the west, and 14m control on the east. This

has created a generally cohesive streetscape character which should be retained.

Behind the Courtney Street frontage an increase in height will allow for more people to live and work in close proximity to the existing tram network (Flemington Road) and within walking distance of the hospitals, universities, research institutes and the Hoddle Grid. An increase to a 24m height limit is considered appropriate to provide a transition from the 14m height limit of North Melbourne to the 40m height limit of Flemington Road. The streets in this precinct are all 30m wide streets and a 24m height limit will improve the pedestrian experience by creating a greater definition within these streetscapes. A number of existing residential developments have been built at the current 14m height control. A 24m height control will allow for an increase in density while also limiting any impact of the amenity of existing residential buildings in the area.

6. Elizabeth Street and Flemington Road

These two major boulevards are important civic spaces within the study area and, along with St Kilda Road, are historically the

120
Dwellings/ha



MACAULAY ROAD NTH MELB

139
Dwellings/ha



RATHDOWNE STREET CARLTON

194
Dwellings/ha



FRANKLIN STREET MELBOURNE



Figure 3.7 Perspective of potential built form in City North.

major historic spines bringing people into the Central City. This is evident in the 60m width of the street and the street design (including the dedicated tram lines). Locally, they play an important role in connecting key destinations such as the hospitals, universities, the Queen Victoria Market and the Hoddle Grid. The pedestrian quality of these streets, however, is compromised by the dominance of vehicular traffic and the lack of activity within the ground floors of the existing buildings. The low-scale of buildings on the south side of Flemington Road and within Elizabeth Street have contributed to a poorly defined street edge.

To accommodate additional residential and employment growth, to reinforce the role of these streets as civic spines, and to improve the pedestrian experience, an increased height limit of 40m is proposed, with zero setbacks. A 40m height limit will create a stronger definition to the streetscape, a greater intensity of activity, respect the scale of the existing heritage buildings and will not dominate the important landscape qualities of these boulevards.

7. Haymarket

Haymarket has the potential to be an iconic gateway to the Central City. The proposed Metro station in this location will create a precinct that is highly accessible

by public transport and within walking distance of the hospitals, universities, Queen Victoria Market and the Hoddle Grid.

The scale and design of the buildings in this precinct should complement the future function and amenity of the Haymarket as an active, vibrant precinct located on a major transport hub and interchange.

To achieve these objectives a 60m maximum height limit is recommended. A zero setback will apply up to 40m, with a 10m setback up to 60m. This setback will provide articulation to the façade on Haymarket and create a building form that integrates with the proposed 40m height limit on Flemington Road and Elizabeth Streets.

Any new development in this area must not compromise the helicopter flight path that provides access to the existing hospitals.

8. 'Little Carlton'

'Little Carlton' is characterised by a strong mix of heritage and contemporary buildings set within generous wide streets and intimate laneways. The proposed built form needs to conserve, enhance and maintain this significant small scale, heritage fabric, while accommodating residential and employment growth and the expansion of the

universities.

A current 32m height control is in place. This height limit is significantly higher than most of the heritage buildings, which are typically one to three storeys. Many of these are not included in the current heritage overlay. In order to allow for growth but preserve the existing heritage character a revised street edge height control of 24m is proposed. This will allow for better integration of new development into existing heritage streetscapes and maintain the existing character of openness and charm. Behind this street edge height limit a 40m height limit is proposed. This will allow for increased development capacity (above the existing 32m control), improve opportunities for expansion of the universities, reinforce the existing urban structure (fine grained streets and laneway network and small sites with multiple owners), and ensure that City North maintains a distinctly different character and feel to the Hoddle Grid. It will be important that the redevelopment of this area does not erode these qualities through the consolidation of site ownership and the development of larger footprint buildings.

A height limit of 24m will apply to development on new laneways. Above 24m a setback of 4m to the 40m height limit is proposed. This will ensure that adequate natural light penetrates to the lower levels of development.

See Figure 3.8 for all proposed height controls.



Policy

- Prepare a planning scheme amendment to implement the proposed built form controls.

1 year



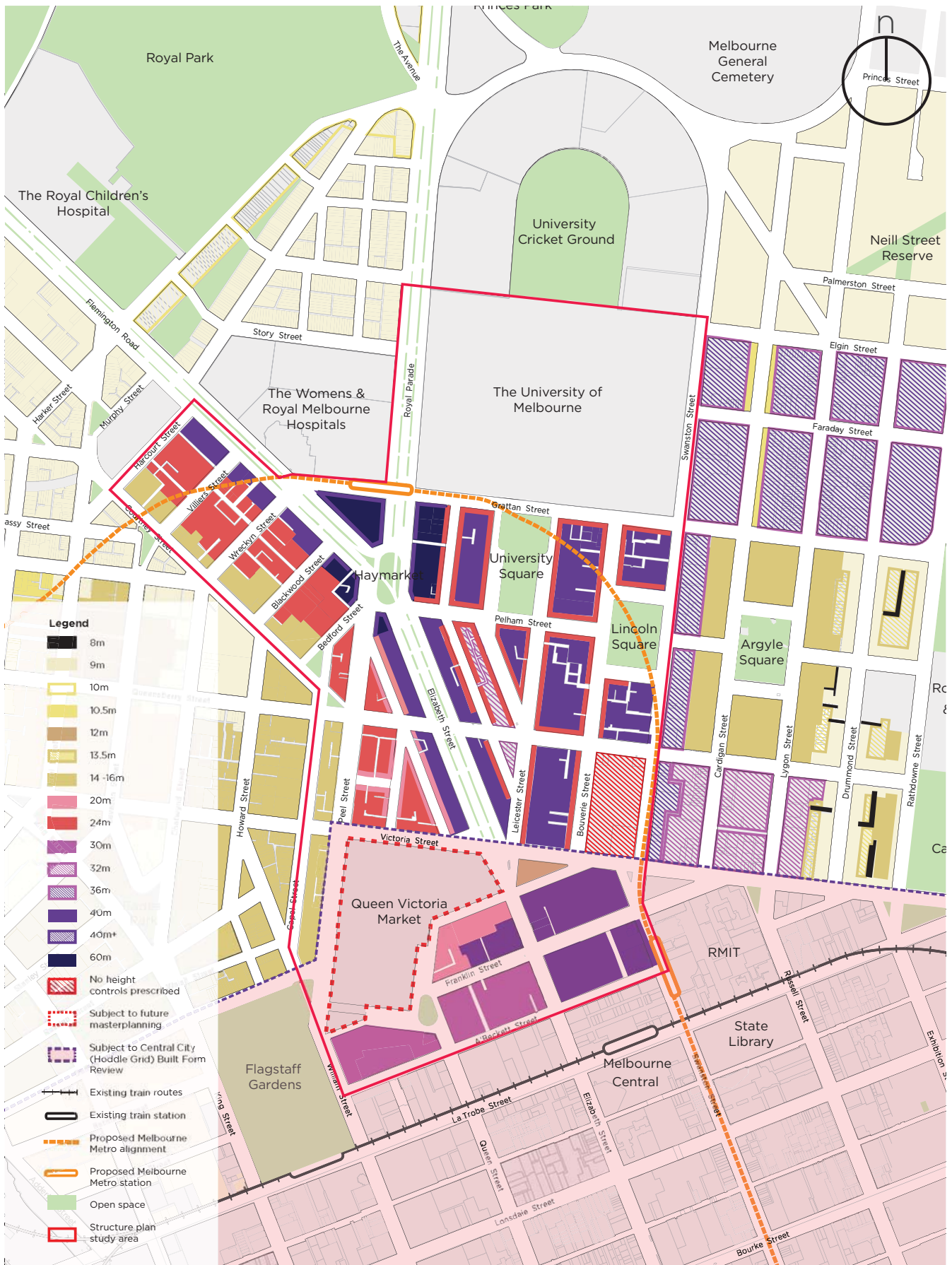


Figure 3.8 Proposed built form controls:

Strategy 2

Integrate the heritage of City North with the redevelopment potential of the precinct

The retention of valued heritage buildings is an important part of the urban renewal of City North. The existing heritage overlay and gradings identify a number of buildings with heritage qualities. Some sites may have previously been overlooked for inclusion

in a heritage grading or overlay. To ensure the protection of these potentially important buildings an update of the overlay and gradings will be prepared.

New development adjoining existing heritage buildings and within existing heritage precincts must also be respectful of the existing fabric. New buildings must be designed to be appropriately scaled and set back to ensure any heritage significance is not sacrificed by inappropriate

adjoining development (See Urban Structure and Built Form, Strategy 1).



Policy

Undertake a review of the existing heritage overlay and gradings to ensure that heritage qualities of City North are identified and protected.



Strategy 3

Enhance the laneway network

‘Little Carlton’ offers the City North precinct a network of laneways and streets which ensure the City North precinct is permeable for all residents and workers. The urban structure of this area provides a positive base for the redevelopment of this precinct into a vibrant, mixed use area that includes smaller

premises and builds on the distinct urban character.

The existing laneways should be protected and enhanced.

An expansion of the laneway network is outlined in chapter 5, Public Realm. All new laneways should have the following characteristics:

- Laneways to be a minimum width of 6m and to be designed to facilitate and prioritise pedestrian and

cycling access, and where appropriate, vehicular access.

- Laneways to be accessible by the public 24 hours a day.
- Laneways to be open to the sky.



Policy

Prepare a planning scheme amendment to implement the new laneway network.



Strategy 4

Create streets which are filled with activity and vitality

'Great streets' are those where the buildings have a positive relationship with people. People in City North will be happy to wander around the streets, shopping, playing and participating in an active neighbourhood.

The fronts of buildings will be pleasing and will provide interesting rooflines. The backs of buildings can provide parking and service areas, while allowing private spaces for residents. Corners are landmarks and need to be interesting and memorable.

Development should interact with, and contribute positively to, the surroundings at street level.

To address the current predominance of inactive street frontages and create a liveable, vibrant and social City North all buildings on primary streets should deliver an active frontage of 80 per cent consistent with Central City planning controls (see *figure 3.6*). This includes Elizabeth, Peel, Queensbury, Flemington, Grattan and Swanston. This will reinforce the important local shopping, entertaining, socialising and 'getting around' role of these streets.

Other streets within the area will feature a mix of uses, including residential at ground floor. It is important that buildings within these streets are designed to activate, overlook and engage with the street to promote pedestrian safety and attractive, interesting and inviting streets. These streets should include multiple doorways, entranceways and windows that front the street. Entrances to car parks, services (for example,

ventilation, air conditioning) should be avoided on these street frontages.

In line with crime prevention through environmental design principles, all buildings at upper levels must provide passive surveillance over the street by locating habitable rooms or commercial spaces to the street frontage. This will restrict the development of car parks at the street façade. Car parking will be internalised away from street frontages or preferably underground.

Car parking at a rate of a maximum of one car per dwelling will provide the opportunity to reduce the impact of car parking on the public realm. With City North's proximity to the Central City and extensive public transport services, it may be possible to further reduce this ratio in City North to 0.5 car spaces per dwelling.

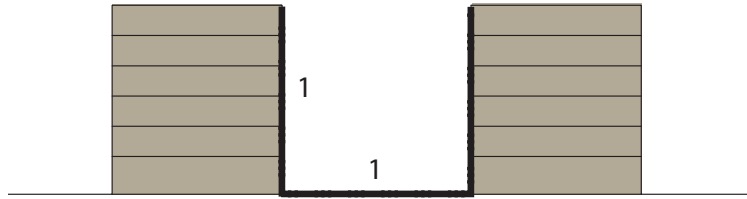
To create 'great streets' the following design performance criteria have been established:

1. A minimum of five hours of sunlight is provided to ground floors within streets that have residential uses at ground floor.
2. A comfortable wind speed is created at ground floor.
3. A minimum building height at the street edge, that is half the street width and a maximum height equal to the street width, is established on all streets.
4. Zero metre setbacks at ground floor level to provide a clearly delineated and fronted public realm.
5. All visible sides of a building should be fully designed.
6. Blank building walls that are visible from streets and public

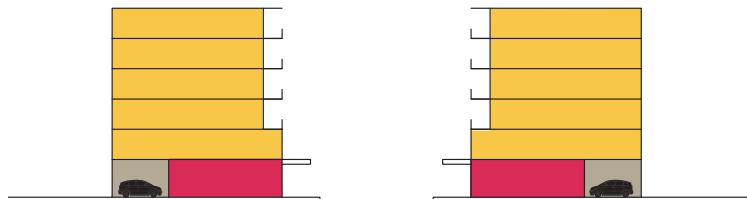
spaces should be avoided.

7. Buildings should address both street frontages on corner sites.
8. Visible service areas (and other utility requirements) should be treated as an integral part of the overall design and fully screened from public areas.
9. Façades should make provision for the location of external lighting for public safety purposes and to give interest to streetscapes at night.
10. The façade of buildings with wide street frontages should be broken into smaller vertical sections of 4m to 10m in width.
11. Active ground floors are designated within local activity centres and within City North.
12. At least five lower floors to have habitable uses (commercial or residential) to street frontages (including laneways).
13. No car parking at the street edge.
14. Balconies and private open spaces above ground floor should face the street.
15. Street façades to be highly articulated and visually interesting.
16. A complementary height limit is applied on both sides of the street.
17. Pedestrian weather protection is provided to all primary streets.
18. Maximum of one car space per dwelling.

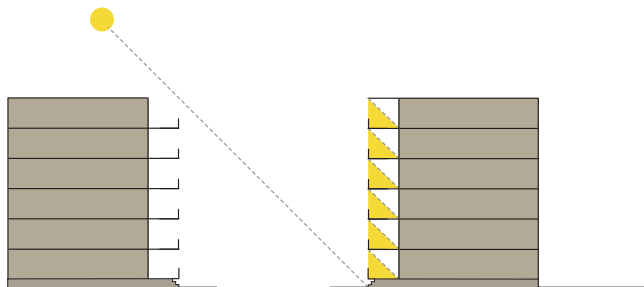
With the exception of residential car parking rates, car parking provision to be in accordance with Schedule to Clause 52.06-6 in the Melbourne Planning Scheme.



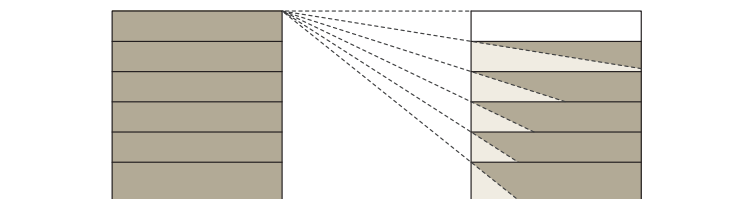
Street Enclosure and definition achieved through a building height to street edge ratio between 1:2 (above) and 1:1 (below)



Activated Streets with services/car parking from rear



Solar access provided to ground levels on non-primary fronted streets



Natural light penetrating to ground floor levels
Figure 3.9 Principles of good street design



Policy

Prepare a planning scheme amendment to implement the new laneway network.

1 year

1 - 5 years

5 + years





Figure 3.10: Elizabeth Street (existing).



Figure 3.11: Proposed Elizabeth Street built form outcomes (Note, potential street redesign not shown).

Strategy 7

Create high quality, liveable dwellings that include housing choice

Housing development should enhance the existing character of the area whilst contributing positively to streets and public spaces. Buildings should achieve higher densities through a mix of housing sizes, types and tenures at appropriate scales, without compromising space standards and access to natural daylight and ventilation.

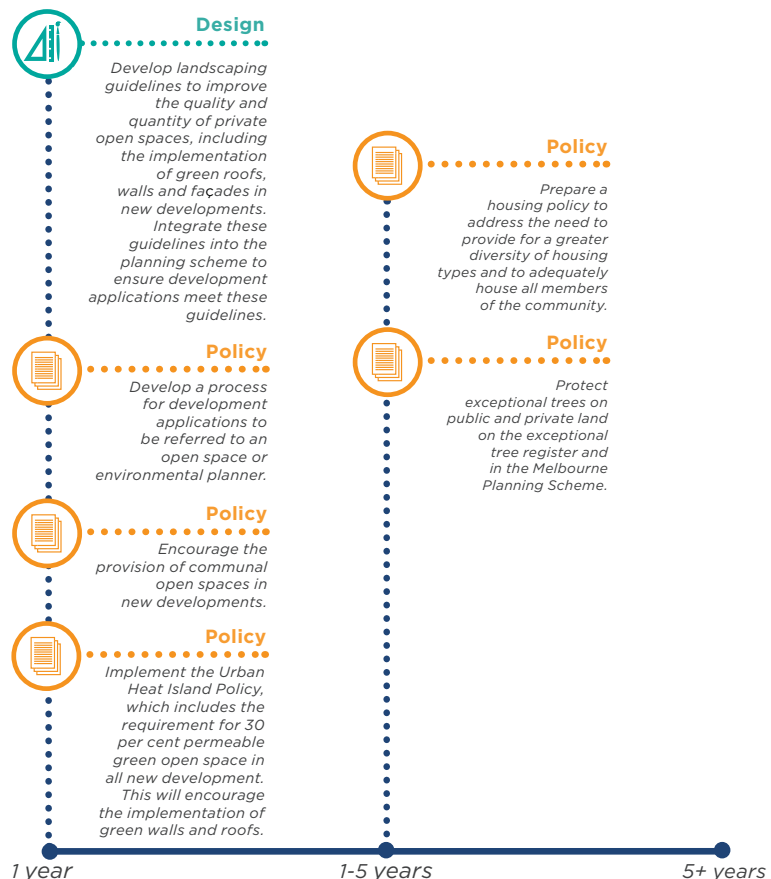
The quality of housing provision across all tenures will ensure lower energy consumption, adequate private open space and communal areas and will ensure that all households are accessible, easily adaptable and age friendly.

Private open space should be provided for all dwellings. This should be green permeable open space. This can be on structure or on ground but should include a minimum of 30 per cent of the site. Encourage green roofs and infrastructure to achieve this aim.

Vegetation in urban landscapes delivers multiple benefits including improved air quality, enhanced wildlife habitat, mitigation against the effects of urban heat island, the reduction of stormwater runoff and opportunities for local food cultivation.

Green roofs and walls are an opportunity to increase the provision of vegetated spaces in City North. In addition to the above benefits, green roofs improve visual amenity through considered design of the ‘fifth façade’ (the roof) and the creation of additional recreational space.

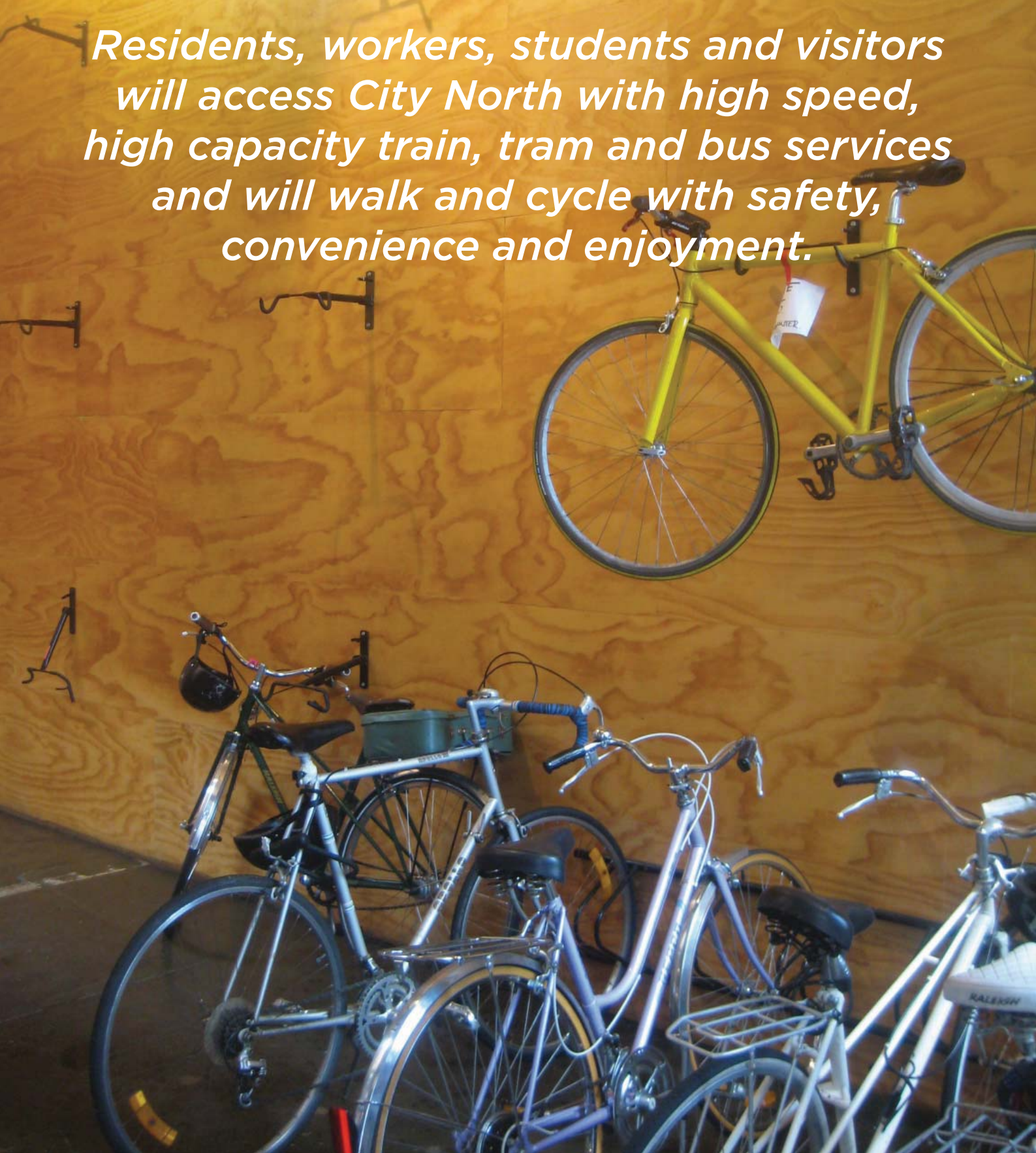
Green roofs can also improve the performance of rooftop photovoltaic systems (see chapter 7, Sustainable infrastructure).



04 Transport and Access

30-year vision

Residents, workers, students and visitors will access City North with high speed, high capacity train, tram and bus services and will walk and cycle with safety, convenience and enjoyment.



Introduction

Overview

City North will enjoy an integrated and affordable network of public transport, with well-planned, well-maintained streets and pathways for pedestrians, cyclists and drivers.

City North is well-served by existing public transport, with two train stations on the periphery, and major tram spines running north-south. Melbourne Central, to the south of City North is also a major metropolitan bus portal. The existing services will be bolstered by the development of Melbourne Metro, a proposal to link Footscray to Caulfield providing two underground Metro stations within the City North precinct (at Parkville and CBD North).

A new street priority for high-mobility pedestrian and public transport streets is set out in the City of Melbourne's *Transport Strategy Planning for Future Growth (draft 2011)*. It proposes a shift in transport priorities on the road network, through a long term program of upgrading the municipality's streets to create high-mobility streets. These streets will provide excellent conditions for higher numbers of pedestrians (of all ages and abilities), faster and more frequent trams and buses, safe and attractive cycling, and easy use of taxis and car share. Access for service and delivery vehicles and private cars will be maintained in ways which are compatible with the priority modes.

The *Transport Strategy (draft 2011)* also outlines improved connections to and from City North and the surrounding area, including the Central City.

This plan prioritises the attractiveness and effectiveness of the public transport system to ensure residents, workers and visitors can move easily within and to City North. It also encourages walking and cycling as key travel modes, through a range of measures including the introduction of a street hierarchy that promotes active frontages, cycle lanes and a high level of pedestrian activity in primary streets. (See chapter 2, *Activities and land use*, and 3, *Urban structure and built form*).

Principles

Principle 8

Create a connected and accessible place

Objectives

1. An integrated transport network prioritises and encourages walking, cycling, and public transport use.
2. A safe and highly accessible transport network is developed, with high quality new and improved infrastructure, commensurate with projected growth.
3. An increased number and frequency of public transport services support the community, visitors and workers.
4. Vibrant activity occurs around existing and planned public transport infrastructure.
5. People who are walking, cycling and using public transport are given priority
6. Efficient management of freight and deliveries support key activities and local businesses, without compromising amenity and liveability.
7. Car dependency is minimised by provision of sustainable alternatives.
8. A permeable street and laneway network reflects the historic subdivision pattern of the area and is attractive, well-designed and legible, with a high level of amenity.
9. The local street network provides safe, continuous, direct, inviting and attractive pedestrian, cycle and local vehicular links to key activity centres, public transport nodes and open spaces.
10. Sustainable transport modes grow, and parking provision is contained within that context.
11. Pedestrian and cycling paths and public transport provide safe and direct access to community facilities, activity centres and open space.
12. High quality streets support incidental meetings and provide spaces to connect.
13. Pedestrian and cycling paths provide safe and attractive connections to surrounding areas.
14. Connections with local and regional destinations are strengthened by improved public transport.
15. Emergency service access is prioritised.
16. Connections to public transport interchanges are enhanced.
17. Connections with the Central City are reinforced.

Issues

Public transport

Although City North is well serviced by trams, buses and Flagstaff and Melbourne Central stations to the south, growth in the number of residents, workers, students in, and visitors to City North will put pressure on the public transport system. At present, the reliability of tram and bus services is impacted by delays caused by traffic congestion and insufficient priority at intersections.

There are limited east-west public transport options in City North. Twenty-four hour activity in City North, particularly at the hospitals, requires reliable and safe inter-peak transport options particularly for workers and visitors. There is currently a gap in the hours of operation of

the tram, bus and train services. There are also limited public transport routes linking the City North knowledge precinct with other knowledge clusters across the metropolitan region. To meet future demand in City North, the capacity of the public transport system and streets in City North will need significant upgrades. The State Government is primarily responsible for running much of the public transport system. The Melbourne Metro rail tunnel proposes a new passenger route between Footscray and Caulfield. The proposed integration of two new stations in City North will relieve pressure on existing public transport services, create additional capacity for new services and link Melbourne's knowledge precinct.

Barriers to walking and cycling

There is a high level of pedestrian and cyclist activity in City North given the location of major educational institutions and visitor destinations. Some streets in City North currently provide an uninviting environment for pedestrians and cyclists, due to the width and level of traffic along the wide arterial roads which dissect the area. Peel Street, Elizabeth Street, Royal Parade and Flemington Road, are all major roads, providing access between the Central City, City North and the north and west of Melbourne. The significant traffic volumes and carriageway widths impede movement. The Haymarket roundabout is located at the convergence of all these roads and creates a significant obstacle in the broader road network. VicRoads has put signals on the Haymarket roundabout, providing a short term solution to this significant network barrier. There

is potential to develop a longer term solution. Franklin Street does not provide a direct pedestrian link to the Flagstaff Gardens. The poor quality of the public realm in City North undermines the pedestrian and cycling network. The historic subdivision pattern includes several large blocks which limits permeability. Cycling is an extremely space efficient mode of transport, however, there are gaps in the provision of safe cycling paths in City North.

Dominance of traffic and parking

The main streets within City North are currently dominated by private motor vehicles. The majority of vehicles in City North are traversing through into the Central City, and up to 20 per cent of vehicles use City North's streets to bypass the CBD. City North contains several roundabouts which are not efficient in their use of land, and struggle to prioritise flows in this part of the city. The Haymarket roundabout is dominated by high traffic volumes and wide carriageways. The large open space in the centre of the roundabout is unusable at the centre of a busy intersection. The design of the Haymarket roundabout, and the low height of surrounding buildings, does not capitalise on its role as a gateway to the Central City and its proximity to Melbourne's internationally recognised research precinct.

Strategy 1

Enhance the public transport network

Improving the efficiency of the existing public transport will ensure people can easily move within and access City North. The transition of City North's streets into high-mobility streets will ensure a shift in transport priorities.

High-mobility streets are designed to provide high frequency tram and priority bus services, in addition to excellent pedestrian access to and around stops. The design of these streets and signalling will enable pedestrians to move safely and seamlessly from footpaths to public transport stops. These will be high quality streetscapes which include shade trees, good pedestrian lighting, street furniture and materials and are fully Disability and Discrimination Act compliant.

Flemington Road, Elizabeth Street, Grattan Street, Peel Street, Swanston Street and Victoria Street will be designed as high-mobility streets. These streets will be designed to facilitate faster and more frequent tram and bus movements and accommodate safe and accessible stops and interchanges, which will be upgraded to be Disability and Discrimination Act compliant. Generous pedestrian and cycling paths and regular crossing points will create an inviting environment for people of all ages to access stops safely by walking or cycling. Streets will also provide for the use of taxis and car share to support safe inter-peak access to and from City North for workers and visitors. Access for service and delivery vehicles and private cars will be maintained, however it will be achieved in a manner

which prioritises public transport, walking and cycling.

An expansion to the public transport network will ensure City North continues to be serviced by an effective, efficient and integrated public transport system. The following key initiatives will support the renewal of City North.

Melbourne Metro

The Melbourne Metro rail tunnel, initially proposed by the Victorian Government's East West Link Needs Assessment, would provide a high-capacity underground train running from Footscray, via new stations at Arden-Macaulay, Parkville, City North and City South, to a new station at Domain in St Kilda Road. Stage two would link the line to Caulfield Station. This initiative would enhance Melbourne's strengths as a knowledge city by creating an important strategic link between the knowledge precinct in City North and the Monash Medical Precinct, the Alfred Precinct and Victoria University in Footscray to support synergies between these complementary research clusters. This will also improve connectivity to and from Melbourne's inner west. The Metro would act as a catalyst for significant investment in City North's specialised activity centre by attracting a greater mix of uses and activities of a Central City nature and scale.

Tram

An extension to the tram lines along Victoria Street, linking Elizabeth and Spring Streets, will enable a new east-west tram route to be created. This will strengthen public transport connections with medical, research and education facilities which are clustered along Victoria Street in East Melbourne, including St Vincent's Hospital,

the Eye and Ear Hospital, Peter MacCallum Cancer Institute, St Vincent's and Mercy Private Hospital, Epworth Freemasons and the Australian Catholic University. This has potential to strengthen synergies with institutions in City North, as well as enhance the catchment of the City North Metro station. This will also improve connectivity to numerous tram lines which run along the Victoria Street tram route, connecting to Melbourne's northern and eastern suburbs.

A north-south tram route through the Haymarket roundabout will link the Royal Parade corridor with the Peel-William Street tram lines. This will enhance connections between the knowledge precinct and the southern end of the Central City and the Queen Victoria Market.

Bus

The efficiency of existing bus services in City North will be improved by establishing priority along high-mobility streets. Grattan Street will be upgraded as a high-mobility street to support the reliability and frequency of east-west bus connections. This will improve connectivity between the knowledge precinct and North Melbourne station in the west, the proposed Parkville Metro and improved tram interchange at the Haymarket, and the Clifton Hill rail group in the east.

Actions

This strategy will be implemented through the following actions:



Design

Prepare master plans for high-mobility streets including Flemington Road, Elizabeth Street, Grattan Street, Peel Street, Swanston Street and Victoria Street, which improve efficiency and frequency of trams and buses and provide for safe pedestrian access.



Advocacy

Continue to advocate for the Melbourne Metro rail project linking Footscray to the Domain at St Kilda Road and a new station at Parkville and CBD North. Work with the State Government in the detailed design of new stations in City North.

Advocate for an extension of the east-west tram route along Victoria Street between Elizabeth and Spring Streets.

Advocate for the development of a new north-south tram link between Royal Parade and Peel Street.

Advocate for all tram stops in City North to be Disability and Discrimination Act compliant.

Advocate for better inter-peak public transport services for shift workers, hospital visitors and students.



Research

Investigate ways to optimise the role of taxis and car share in City North.

1 year

1 - 5 years

5 + years

Strategy 2

Expand and upgrade cycling networks

City North's street network will be safe and attractive for cyclists of all ages and abilities. The large student population living and accessing City North on a daily basis provides a strong foundation for investment in cycling in this precinct. New cycling lanes will enhance the east-west connectivity of City North with adjoining areas. City North will provide safe and connected on- and off-street facilities for cycling.

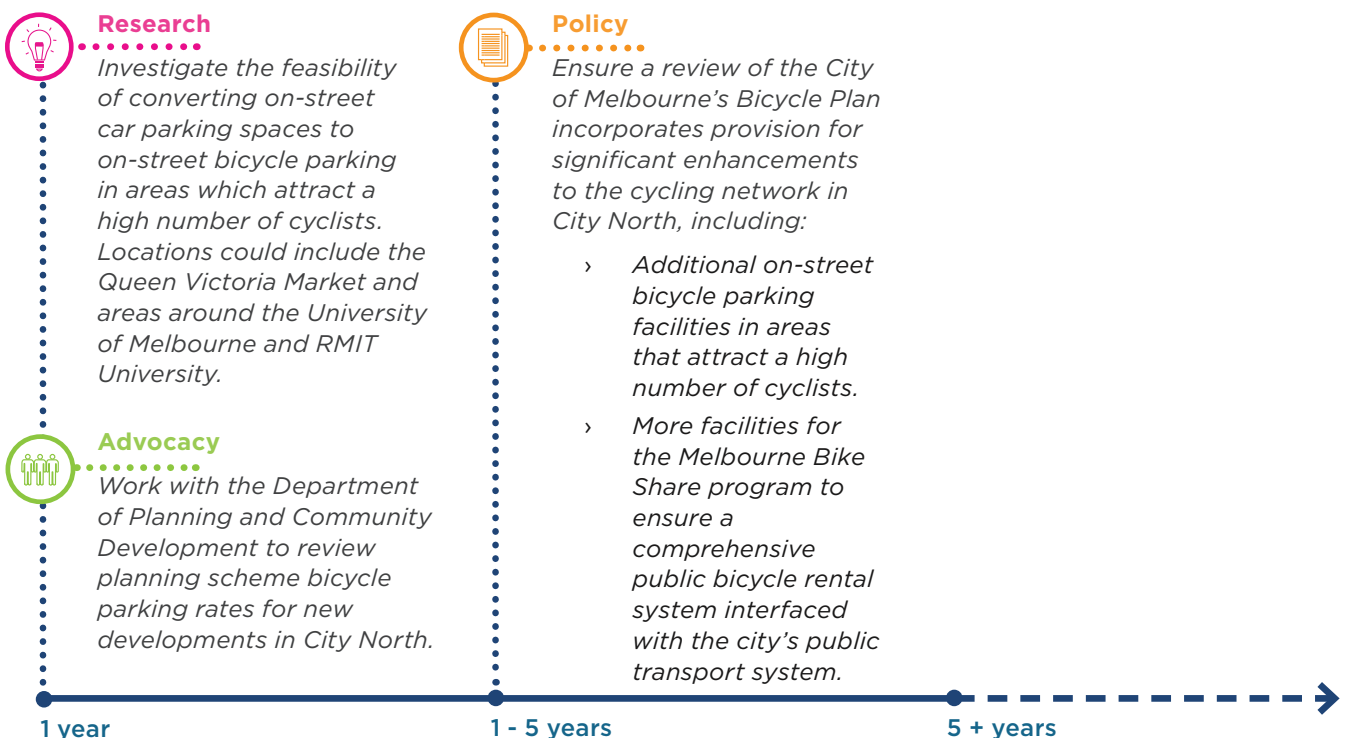
Safe cycling paths will be integrated into high-mobility streets, with a combination of separated lanes, early starts at signals and low speed mixed

traffic zones. On-street bike parking, which is easy to find and use, needs to be provided in City North. Secure bike parking should be provided in residential developments, workplaces and educational institutions.

Bicycle network improvements in the City North area will be undertaken in conjunction with a review of the City of Melbourne's *Bicycle Plan 2007-2011*, which details projects, cost and timeframe.

Actions

This strategy will be implemented through the following actions:



Strategy 3

Promote a walking city

Melbourne's international reputation, its liveability and ability to attract businesses, visitors and shoppers, depends to a significant degree on the quality of its pedestrian environment. Most trips taken in the inner city include a walking component.

This aspect of the City North experience must be enhanced to reflect the precinct's position as a world renowned knowledge district.

Streets will be upgraded to include generous, connected and safe pedestrian paths which improve permeability. Safe, clear, enhanced pedestrian crossings and links between public transport interchanges and key destinations will contribute to the delivery of a high quality integrated network. Large canopy trees will provide

shading and cooling for pedestrian comfort. The intricate laneways in City North will be enhanced and activated to improve the permeability and experience of the area.

Streets should be designed to provide:

- New pedestrian crossings and wider pedestrian crossings at signals along key pedestrian corridors.
- Footpaths of a minimum of 3m wide.
- Large canopy trees for passive shading and cooling.
- Water sensitive urban design.
- Links to open space, urban plazas, community and cultural facilities.
- Traffic calming treatments and lower speed limits.

- Signage to key destinations and attractions including the Queen Victoria Market, the hospitals, the universities, local activity centres, and the Meat Market.

All existing laneways must be retained. Upgraded and new laneways should be designed to be a minimum width of 8m to provide vehicular access for service vehicles, in addition to landscaping.

The City of Melbourne's *Transport Strategy 2011* supports the development of a municipal pedestrian plan to identify, cost and prioritise the City of Melbourne's work in improving the pedestrian network.

Pelham Street – a green spine

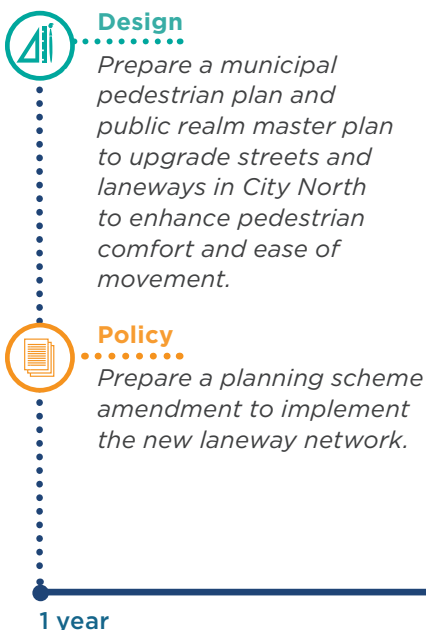
The amount of space presently dedicated to cars along Pelham Street will be transformed to provide a 'green spine' that provides an enhanced pedestrian link between the new Haymarket civic space, University Square, Lincoln Square and Argyle Square through to Carlton Gardens. (See chapter 5, *Open space*).

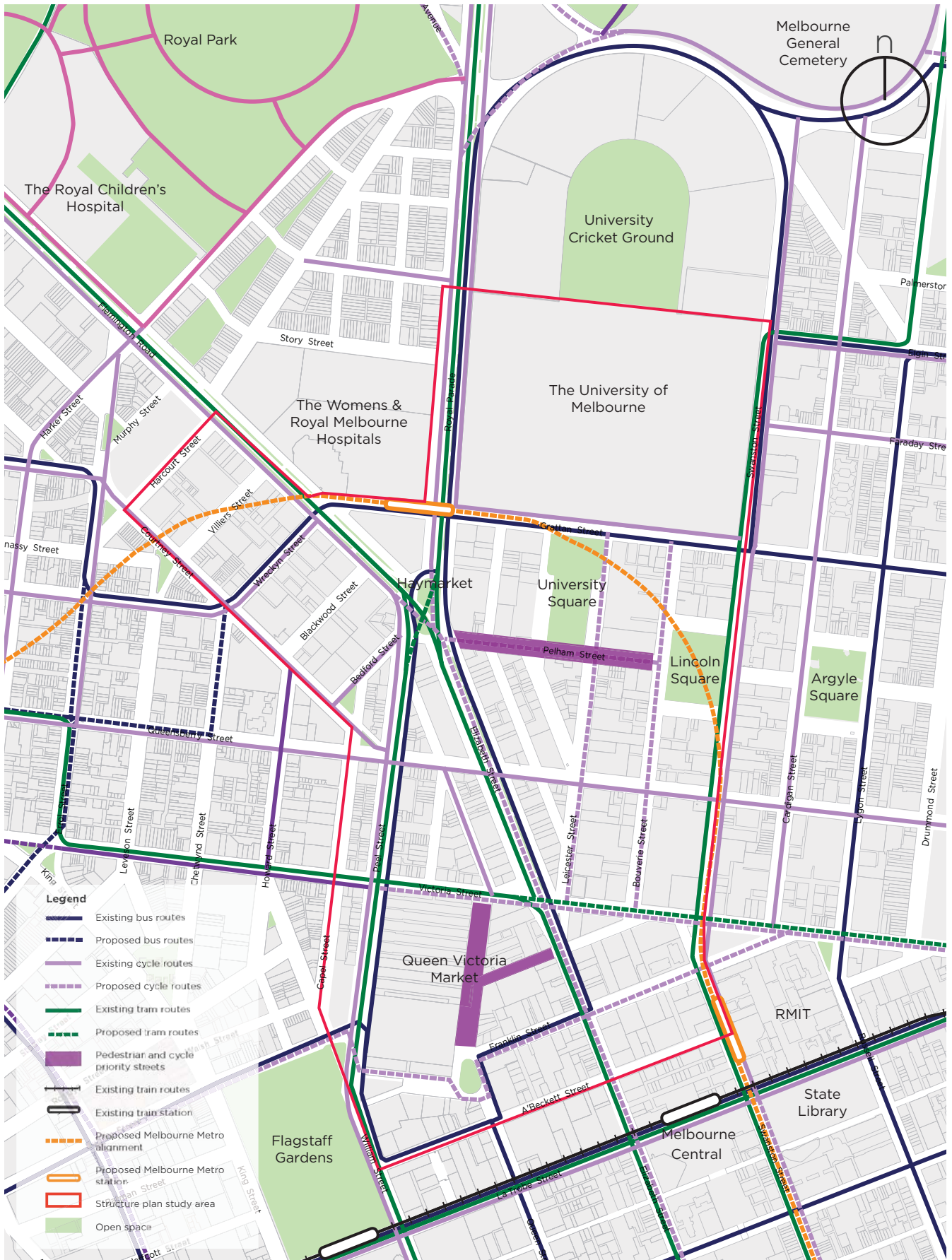
Pedestrian priority within the Queen Victoria Market vicinity

To improve pedestrian access through the Queen Victoria Market precinct, Queen Street and Therry Street will incorporate wider pedestrian pavements and a generous space for landscaping. The southern end of the Queen Victoria Market will benefit from improvements to pedestrian links to provide enhanced access to the Flagstaff Gardens.

Actions

This strategy will be implemented through the following actions:

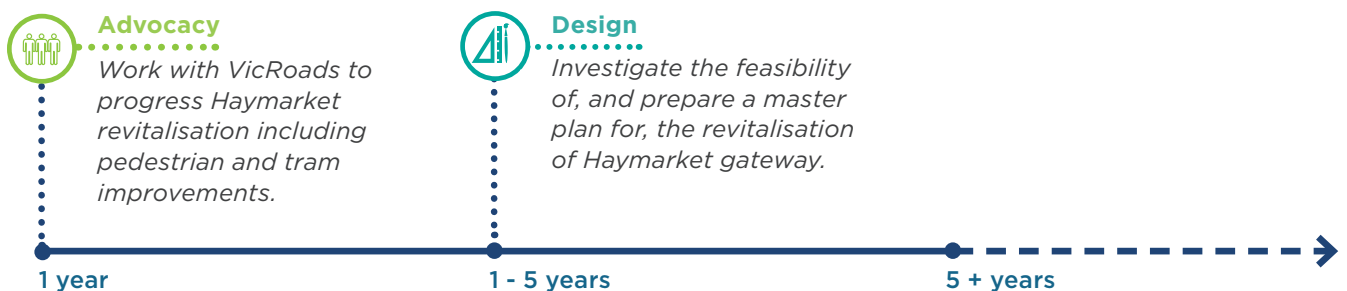




Strategy 4

Revitalise Haymarket as a vibrant public space and sustainable transport gateway

The historic boulevards of Royal Parade and Flemington Road are major routes to the Central City which converge with Elizabeth Street and Peel Street at the Haymarket roundabout. There is potential for this large intersection, located in the heart of Melbourne's world renowned knowledge precinct, to be transformed into a beautiful gateway to the Central City which is well integrated with the proposed Metro station in Grattan Street. The efficiency of Haymarket's public transport interchange function will be improved and will be complemented by a vibrant public space which capitalises on the expansive view corridors available. for the enjoyment of residents, workers, students and visitors.



54

TRANSPORT AND ACCESS

Strategy 5

Efficient delivery of goods and services

The cluster of hospitals, major tertiary education institutions and businesses in City North has particular service delivery requirements. The Queen Victoria Market hosts a rich concentration of 820 businesses which rely on the delivery of fresh produce and other goods. The hospitals, research laboratories, educational institutions, commercial and retail businesses also have specialised freight and service needs. Mechanisms to minimise the impact of freight and service delivery on traffic congestion and amenity in City North will be implemented. Due to the concentration of major hospitals in City North, safe access for emergency services along major streets will be provided in any design treatment.

Actions

This strategy will be implemented through the following actions:



Advocacy

Work with the State Government, key stakeholders and the major institutions to develop a strategy for low impact, efficient freight servicing of City North.

Work with the State Government and major hospitals in the preparation of the public realm master plan to ensure high priority access is retained for emergency services vehicles.



Policy

Implement the City of Melbourne's integrated waste management program.

1 year

1 - 5 years

5 + years



Strategy 6

City driving

To optimise access to and within City North and minimise congestion, streets will be designed as high-mobility streets. This will prioritise space efficient modes of transport such as trams, buses, walking and cycling, and will capitalise on the space currently designated for cars. Streets in City North need to be redesigned to provide new level-access tram stops, bus priority lanes, safe city taxi ranks, car share parking, bike share parking, dedicated bicycle lanes, and footpath widening. Traffic will be calmed to provide a safe environment for pedestrians and cyclists. Roundabouts in City North have the potential to be redesigned as less space hungry intersections which improve traffic flows. The public transport network will be complemented by the provision of taxis and car sharing.

Actions

This strategy will be implemented through the following actions:



Research

Prepare an integrated access and mobility plan for City North which addresses the needs of key institutions and destinations, including Queen Victoria Market, medical facilities and the universities.

1 year



Policy

Review on-street parking provisions and convert existing on-street long term parking into affordable short stay parking or other uses (which support sustainable transport and public realm improvements), where practical.



Design

Develop a strategy to reduce congestion on City North streets by redirecting through traffic to by-pass routes outside the Central City area (including City North). Ensure emergency service vehicle access is maintained at all times.



Advocacy

Work with the Department of Transport to introduce speed limits of 40km per hour on all roads in City North.

Encourage the expansion of car sharing through the provision of additional on-street spaces and encourage the provision of off-street shared spaces within private developments.



Research

Investigate new design solutions to improve traffic flow and accessibility for all modes at major traffic barriers, including Haymarket, the roundabout joining Peel and Dudley Streets, and along Victoria Street.

1 - 5 years

5 + years

Road space allocated for parking in City North is an extremely valuable resource and alternate uses need to be explored as the area develops further. For example, on-street parking spaces can be used for short and long term parking, special needs parking and car sharing, or converted for footpaths, trees, public art, trading, dining, bicycle lanes, public transport lanes, tram stop platforms or taxi ranks. In streets with established dwellings that have limited or no option for on-site parking (such as restrictive heritage controls and an established history of permit restricted parking on their local street), the City of Melbourne will provide a well managed resident only parking scheme that matches the number of available parking spaces in the street with the number of dwellings. The scheme will prevent over-subscription and remove access to the scheme for new, additional dwellings which increase the site density.

Strategy 7

Regional transport connections

City North attracts regional and global visitors to central Melbourne due to the presence of the Royal Melbourne, Royal Children’s and Royal Women’s Hospitals. The Victorian Comprehensive Cancer Centre will also attract people from across the state. In addition to the major hospitals, City North is also home to the University of Melbourne and RMIT University, both of which attract a large number of daily visitors from outside the municipality, including regional Victoria and interstate and international visitors. The Queen Victoria Market is also a major attraction for both a regional and international audience. Through key upgrades to public transport infrastructure and improved efficiency, access to City North from regional areas will be improved.

Actions

This strategy will be implemented through the following actions:



Advocacy

Advocate for improvements to the efficiency of the entire transport network, through the implementation of the City of Melbourne’s Transport Strategy (draft 2011) to improve regional access.

Advocate for improved transport links to Melbourne’s airports and regional traffic management, to reduce through traffic in the City North precinct.

Work with the State Government in the planning and design of the Melbourne Metro rail line linking Footscray to Caulfield. This will allow for greater connectivity to the City North precinct for regional visitors and it will enhance access between knowledge clusters.

1 year

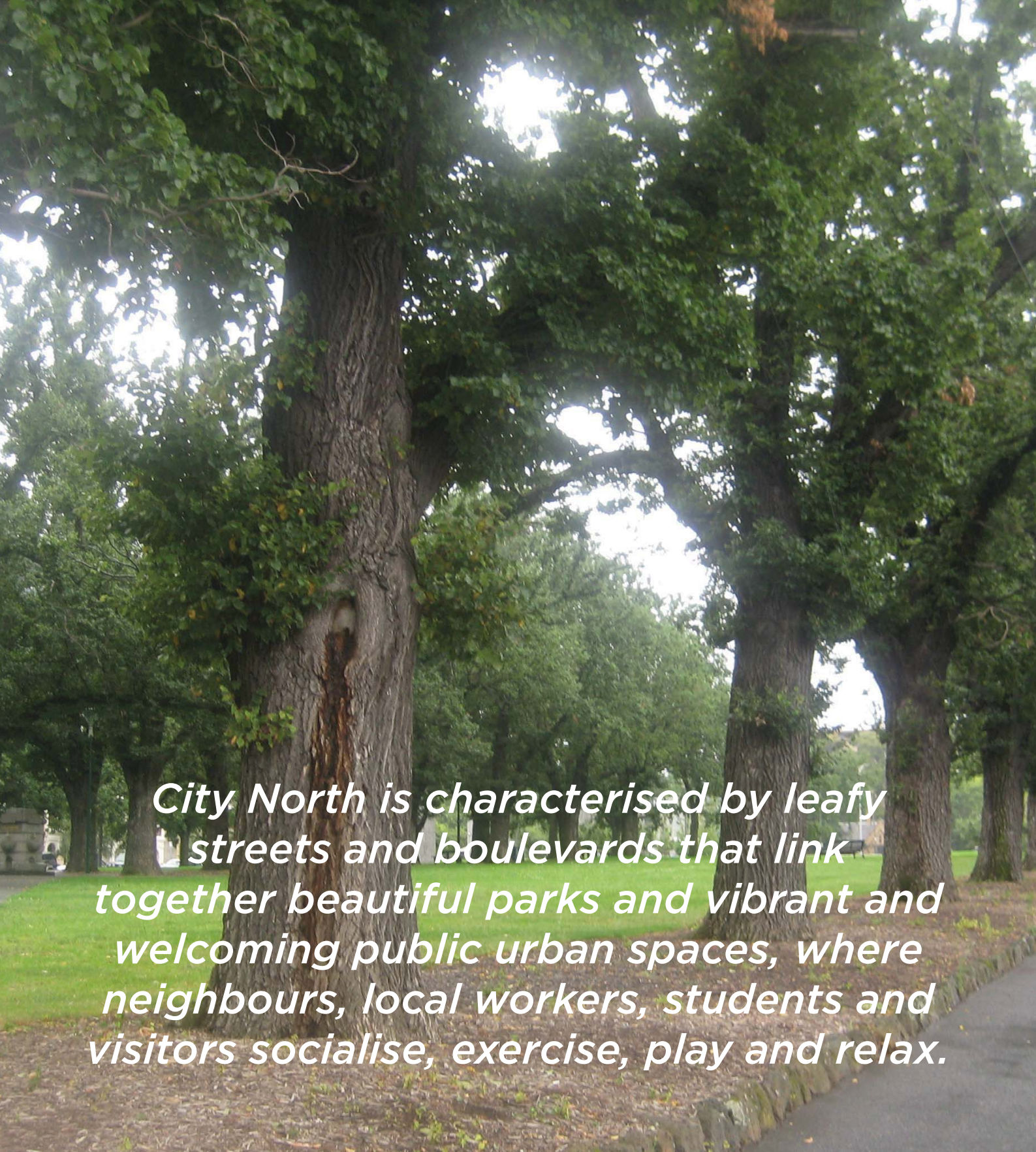
1 - 5 years

5 + years



05 Public Realm

30-year vision



City North is characterised by leafy streets and boulevards that link together beautiful parks and vibrant and welcoming public urban spaces, where neighbours, local workers, students and visitors socialise, exercise, play and relax.

Introduction

Overview

The public realm within City North includes all the public space between buildings – the open spaces (public parks, squares) and the streets and laneways. This accounts for 30 per cent of all the land area in City North.

There are 4.7 hectares of public open space in City North distributed across four parks. Two of these parks, University Square and Lincoln Square, are part of an historical arrangement of nineteenth century formal parks connected by Pelham Street. Bedford Reserve and Courtney Street Reserve are small, attractive local parks. All four parks are primarily used for passive recreation – relaxing, picnicking, with some opportunities for play.

The City of Melbourne's *Open Space Strategy (draft 2011)* indicates that the growing community in City North will require additional and a more diverse range of open spaces. Opportunities to meet this need exist at Queen Victoria Market, at Haymarket and within the streets.

Principles

Principle 2

Create a liveable local neighbourhood

Objectives

1. Ample green, public open space is equitably distributed across the neighbourhood for the community to enjoy.
2. A diversity of public open spaces are provided, for people to relax, recreate, play and meet.
3. Public open spaces are located and designed to be sunny in winter and shaded in summer, to maximise comfort and enjoyment.

Principle 5

Integrate the area's heritage into urban renewal

Objectives

1. Structures, artefacts and landscaping that reflect the natural and cultural heritage are retained and integrated into open spaces and streets.
2. Design and layout of open space appropriately interprets the heritage of the area.

Principle 6

Regenerate the area's public realm

Objectives

1. Well-connected, inviting and safe streets prioritise walking and cycling and connect parks together into an integrated green open space network.
2. Streets facilitate social interaction and enable children to be independently mobile.
3. Open spaces, streets and laneways enhance the existing character and contribute to the creation of a distinctive landscape.
4. Public open spaces are fronted by buildings to activate the space and facilitate natural surveillance.
5. Public open spaces are beautiful, replenishing, and provide opportunities to connect with nature.

Principle 10

Grow a city that prospers within the earth's ecological limit

Objectives

1. Public open spaces, streets and laneways are designed to provide passive cooling and shading, decreasing the urban heat island effect.
2. Healthy, large canopy trees are provided and protected.
3. Stormwater is harvested and reused to irrigate landscaped areas, mitigating the effects of drought conditions and maximise tree health.
4. The extent of permeable surfaces within open spaces and streets is maximised.
5. Biodiversity is enhanced in all open spaces.
6. Stormwater run-off is minimised and the quality of water entering waterways is improved.
7. Soil moisture levels are maintained to provide healthy growth of vegetation.

Issues

Opportunity for generous landscaped streetscapes

Streets make up a large area of the public realm in City North, comprising approximately 44 hectares. Around 37 per cent of the land area in City North is streets, compared with 33 per cent within the Hoddle Grid. Several of the streets within City North, such as Elizabeth Street, Flemington Road, Peel Street and Royal Parade are very wide. The current design of these streets prioritises car movements and car parking. Streets are the spaces that connect people together. In City North, streets are simultaneously:

- Transport routes for pedestrians, bikes and vehicles.
- Social spaces for people to meet, gather and interact.
- Ecological corridors to support biodiversity – plants and animals.
- Drainage networks to manage stormwater.
- Utilities service networks – electricity, water, gas and others.

There is a significant opportunity to upgrade City North’s streets for people to enjoy. City North’s wide streets have the potential to provide gathering and activity spaces.



Figure 5.1 : Streetscapes.



Figure 5.2 : Streetscapes.

Queen Victoria Market

The Queen Victoria Market (QVM) is a Melbourne cultural icon and key attractor in City North, with ten million visitors a year. At present, the seven hectare QVM site accommodates few trees and landscaped areas to contribute to the experience of shoppers and visitors. The QVM has expansive areas of asphalt which create an impervious surface. There is a high level of pedestrian activity in the QVM precinct. However, several streets in the vicinity have a lack of trees to enhance pedestrian comfort. There is significant potential to improve the provision of trees and open spaces which are complementary to the QVM’s heritage to strengthen the visitor experience.

Intrusive through traffic

City North is divided by major through-traffic routes - Victoria Street, Flemington Road, Elizabeth Street and Peel Street. The high vehicle numbers and speed are a barrier to pedestrian movement and discourage walking and cycling trips. Bedford Reserve is surrounded by wide streets which carry minimal traffic. On-road car parking (central median and parallel parking) takes up a significant area within many streets, limiting space for landscaping and pedestrian-based activities (for example, on-street dining or public seating areas).

Haymarket roundabout

Two of the main boulevards leading into the Central City are Royal Parade and Flemington Road. They meet at the Haymarket roundabout. This is a gateway to the Central City and at 0.5 hectares, it is a major public realm area. With the current and proposed developments around it (the Victorian Comprehensive Cancer Centre, the Peter Dougherty Institute and School of Medicine), it is becoming the public realm heart of the bio-medical knowledge cluster, but the intersection is totally dominated by traffic because of its roundabout format. Recent signalling upgrades have improved its safety but it remains an unattractive, space hungry traffic circus. Haymarket roundabout

Provision of public open space

The public open space in City North is distributed across four parks which are primarily used for passive recreation such as relaxing, picnicking and play. Although the space within the Haymarket roundabout is 30 per cent larger than City Square, it is not available to the public for recreational purposes. This isolated, grassed traffic island has a singular role in facilitating vehicular and tram movements through this busy intersection. (See Figure 5.3).

Due to the size of the parks in City North, there is limited opportunity for diverse activities such as community sport and recreation. Improving access to major open spaces located north of the study area (Princes Park and Royal Park) and improving access to private open spaces within the University of Melbourne may begin to address this deficiency.

As the City North community



Figure 5.3

should instead be an iconic gateway, an activity hub and be optimised for pedestrians, cyclists and trams.

grows, additional open spaces will be required. Apartment developments provide only small private open spaces, generating additional demand for high quality parks and recreational spaces.

The Melbourne *Open Space Strategy (draft 2011)* identifies the following spaces will be required to respond to City North’s growing population:

- Two local open spaces of between 0.26 and 0.9 hectares.
- Three small local open space of between 0.03 and 0.25 hectares.

These spaces will provide for a diversity of community recreation and informal activities, and will be located within an easy and safe walking distance of the majority of the community.

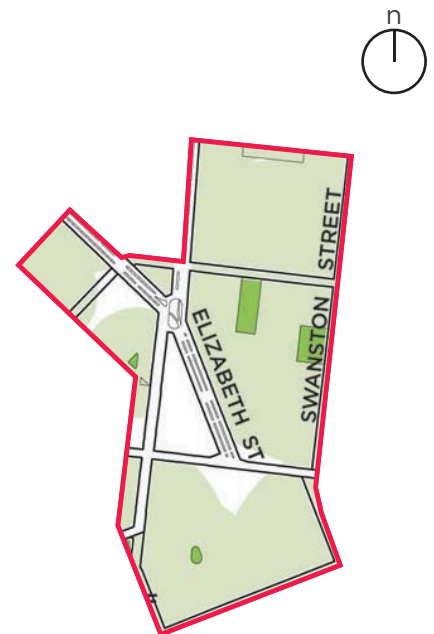


Figure 5.4: Gap analysis - walking distance access to existing open space (gaps shown in white).

Issues

Low level of street tree coverage

Although around 37 per cent of the area of City North is made up of streets, the area has a tree canopy cover of only 14 per cent. The urban heat island effect is caused by:

- The removal of vegetation and introduction of hard impervious surfaces including buildings, roads and footpaths, which increases the extent of thermal mass which retains heat.
- Low tree canopy coverage, which decreases natural cooling that occurs from the shading of impervious surfaces and through evapotranspiration.

Although the majority of streets within City North have some trees, the tree canopy cover is low. The trees are small size of species which are unsuitable and sparsely planted. There are some key areas in City North where there are few or no trees. Despite the size of the Queen Victoria Market precinct, there are very few trees, particularly in the expansive car park which also creates an impervious surface. Victoria Street, adjacent to the Queen Victoria Market has no trees. In addition, no streets in City North contain water sensitive urban design or storm water harvesting systems to irrigate trees. Space to retain and plant large trees with integrated water sensitive urban design systems must be included in the street design.

The City of Melbourne's *Urban Forest Strategy (draft 2011)* identifies opportunities to strengthen the urban forest - the sum of all trees, vegetation, soil and water that supports

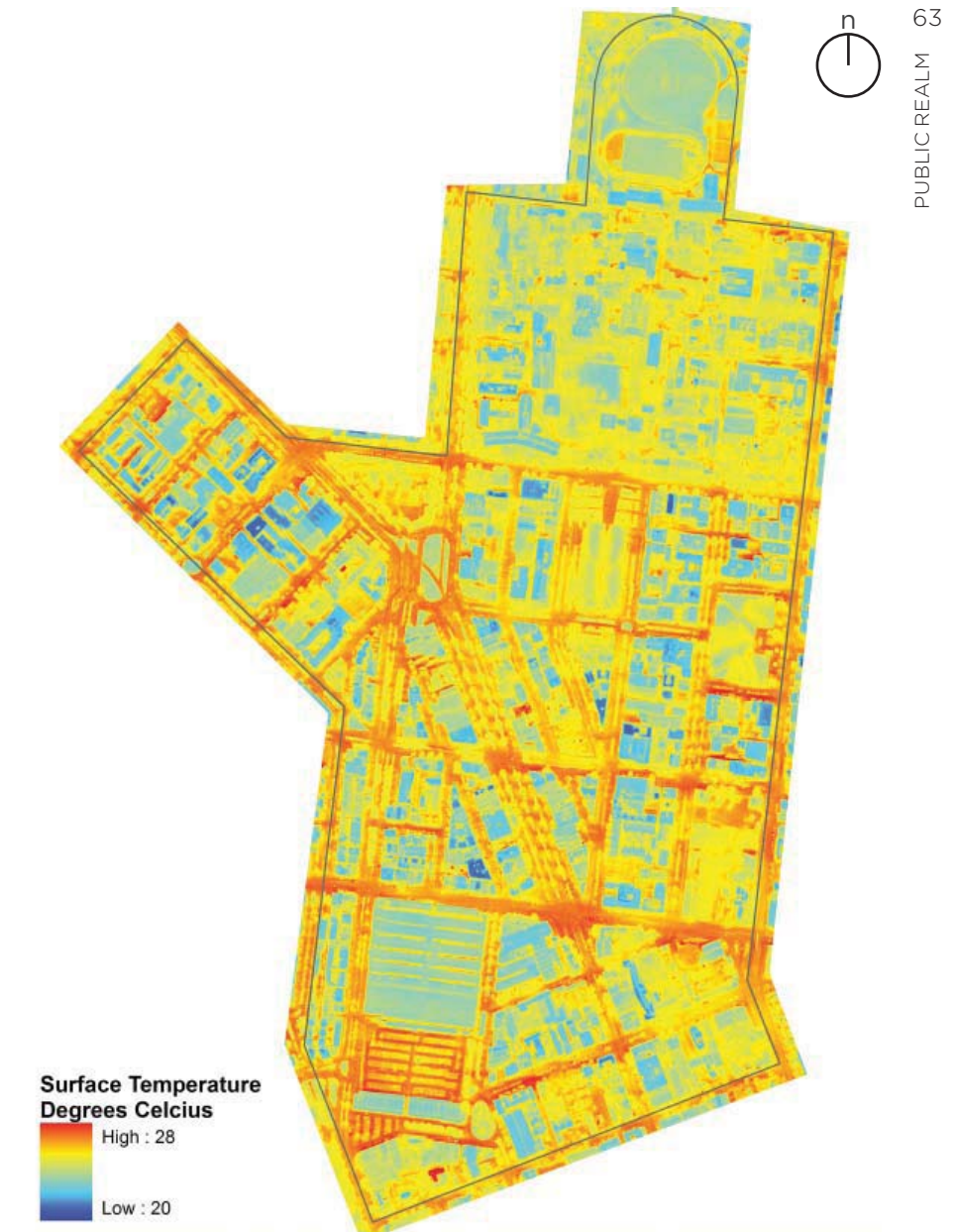


Figure 5.5 : Urban Heat Island (UHI) Effect

the ecosystem. This will play a critical role in enhancing livability. The urban forest can mitigate hot summer temperatures by providing shade and cooling. Increased tree canopy cover will minimise the discomfort of hot summer nights (the urban heat island effect) and improve day time thermal comfort at street level for pedestrians.

Strategies

Strategy 1

Deliver an expanded public open space network

There are five opportunity sites where new public open spaces can be created to meet the social, health and wellbeing needs of a growing community. Each site and the opportunities it presents are highlighted below.

1. Queen Victoria Market vicinity

The Queen Victoria Market is a key attractor for tourists in Melbourne. It is also a local activity hub, where the local community shops and socialises. As the local population grows around the market, a significant opportunity exists to build on this vitality, through the provision of improved landscaping and new public open space in this vicinity. These spaces could be designed for a range of community events and leisure activities that are complementary to the market's role. Incorporating open spaces and large canopy trees in the market precinct would improve the environmental performance by enhancing permeability and reducing the urban heat island effect. This new space could become a significant civic and meeting space for the northern end of the Central City, complementary to Federation Square in the south.

On the east of the market, Victoria Square is an existing small open space co-located with the City of Melbourne's Multicultural Hub. A redesign of the tram stop connected to improvements to Victoria Square could also increase the provision of public open space in the market's vicinity.

A redesign of Victoria Street (see *strategy 2*) would provide further opportunities to enhance

the character and amenity of this precinct.

2. Haymarket - from roundabout to place

The Haymarket is co-located with the proposed Metro station, the Victorian Comprehensive Cancer Centre, the Peter Dougherty Institute and the Melbourne Medical School. It is currently a missed opportunity to create a significant civic gathering space within the centre of this knowledge precinct and at an important gateway to the Central City.

The Haymarket roundabout can be transformed into a new, accessible public open space co-located with a transport interchange and activity hub. This will provide a focal point as a gathering space for workers, residents, students and visitors and become the iconic public space of the bio-medical knowledge cluster. It would also extend the Pelham Street open space spine. Indicative design options for the Haymarket are illustrated in figures 5.6-5.9.

An integrated transport hub the Haymarket will provide an intermodal public transport hub connecting existing and proposed tram routes to the proposed Parkville Metro station with a high quality safe and attractive pedestrian priority public place.

The structure of Haymarket will be legible, safe and accessible for all modes of mobility with dedicated lanes for cyclists. Cars and trucks will continue to move into and through the Haymarket but without compromising the role and function of other transport modes.

The Haymarket will provide a significant and animated open space area for residents, workers

and visitors. Connected by shared paths, landscaped with large canopy trees and activated by adjacent buildings, the open space will create a green public place for the northern end of the Central City.

A prominent and iconic gateway will be developed, to link the Central City, the Queen Victoria Market and knowledge precinct along a 'densified' corridor. Higher buildings, which enhance view corridors, will contribute to the prominence of the area and create a sense of address.

As an open space, transport hub, with enhanced pedestrian and cyclist linkages to the area, it will create a destination and become a draw-card for the development of Melbourne's Central City extension and knowledge precinct.

The transformation of the Haymarket roundabout into a hub of activity and an iconic gathering space should provide:







- Direct and prioritised tram movements through the intersection.
- Direct pedestrian access to tram stops and across each side of the junction.
- Shared paths for safe pedestrian access along major streets which lead to small pockets of open space located adjacent to the intersection.
- Dedicated bicycle paths and intersection waiting areas to enhance efficient and safe movement.
- Traffic signals to enhance safety and efficiency of car movements.
- Creation of significant corridors of shared spaces.
- Protection of vista corridors.
- Shared paths along major

streets and back streets to provide for safe pedestrian access throughout the precinct. These would be integrated with generously expanded footpaths that could be used by ground floor activities such as cafes, bars and restaurants.

- Iconic gateway and built form to relate to public open space areas.
- Designated bicycle paths along major roads, with minimal crossing of tram routes or major roads.



Figure 5.6.

	Bicycle Lane		Pedestrian Zone
	Tram Route		Future Metro Station
	Pedestrian Crossing		Proposed Building

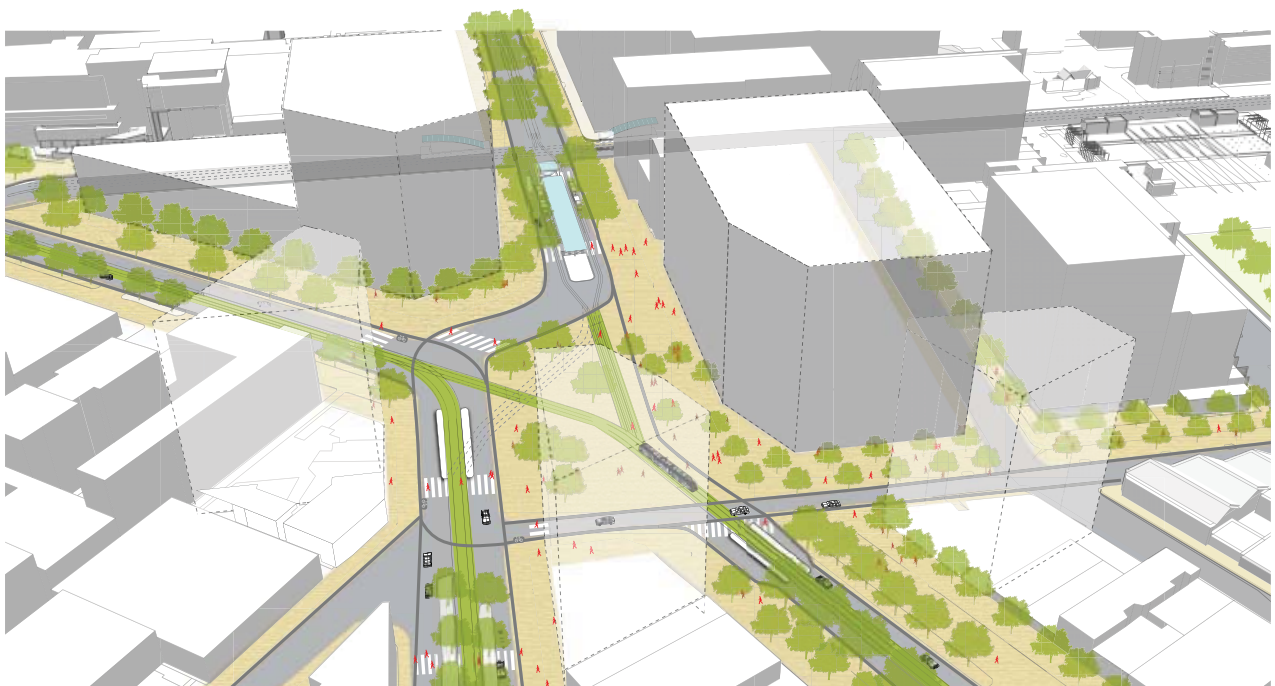


Figure 5.7

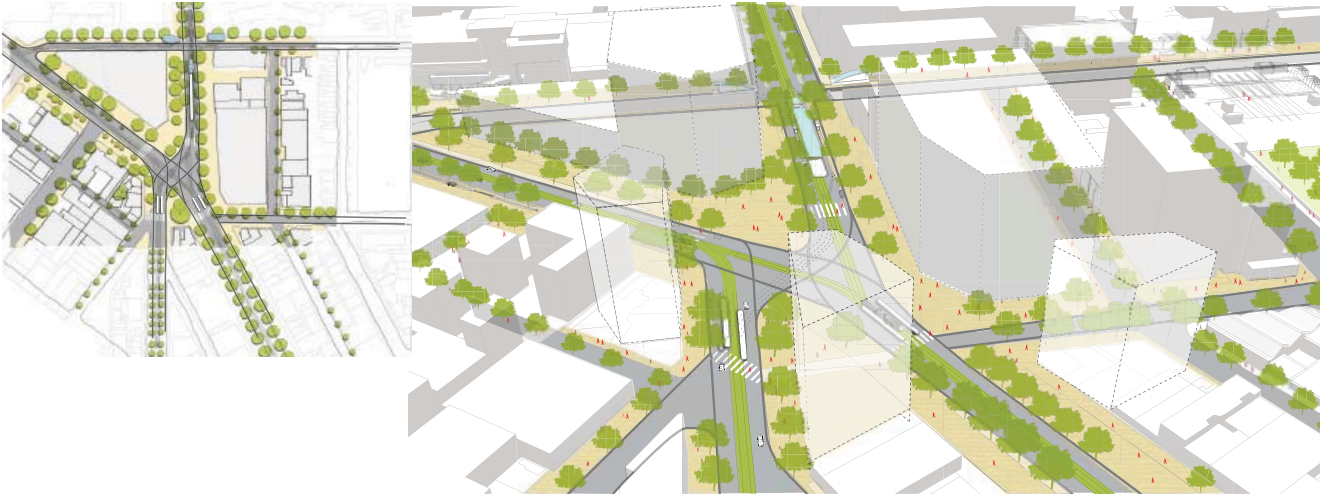


Figure 5.8

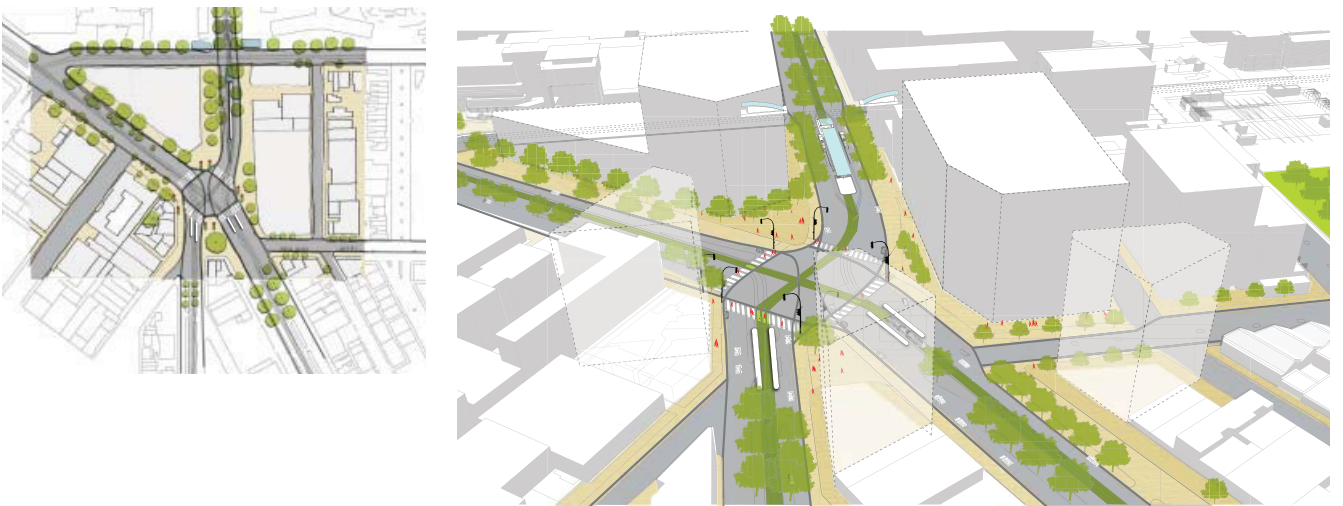


Figure 5.9



3. Elizabeth Street


Elizabeth Street is one of Melbourne’s prominent boulevards and a historic route into the Central City. Over half of the 60m width is road carriageway and parking. A redesign of this boulevard could reprioritise the way the street is used to redistribute over the width to pedestrian activity and enhance the provision of large canopy trees. Opportunities for small local open spaces could be integrated into this redesign.

The existing trees that define the character of the boulevard are over 120 years old and in poor condition. Replacement of these trees will be needed within the next ten years to ensure Melbourne’s urban forest is managed appropriately for the next century.


Actions

This Strategy will be implemented through the following actions:

-  **Policy**
Implement the Open Space Strategy in City North.
-  **Design**
Prepare a master plan for the Queen Victoria Market precinct to investigate new open space in the vicinity of the market, including a redesign of Victoria Square.

-  **Policy**
Prepare and implement a Development Contributions Plan to contribute funds to the redevelopment of Haymarket roundabout, Elizabeth Street and Bedford Reserve.
Implement a rate in Clause 52.01 of the Melbourne Planning Scheme which specifies open space required – policy to take land in lieu of a cash contribution to contribute funds to the redevelopment of Haymarket roundabout, Elizabeth Street and Bedford Reserve.
Implement the Public Park and Recreation Zone over Haymarket to re-designate this area from a road use to public open space.

-  **Design**
Prepare a public realm master plan that will address the redesign of Haymarket, in partnership with VicRoads, and the expansion of Bedford Reserve.

-  **Advocacy**
Advocate for the public space within the Carlton United Brewery site to be secured by the City of Melbourne to own and manage.

4. Bedford Reserve and Courtney Street Reserve

The small, local park at Bedford Reserve could be expanded and connected to Courtney Street Reserve to create one larger park. The surrounding streets carry minimal traffic, offering an opportunity to incorporate some of the street space into this consolidated park area.

5. Carlton United Brewery site

A privately owned, publicly accessible open space is being developed as part of the Carlton and United Brewery redevelopment. The handover of this open space to the City of Melbourne would secure it as a long term public open space owned and managed for the enjoyment of the broad community.











Legend

-  Primary streets
-  Pelham Street spine
-  New public space within QVM vicinity
-  Existing open space
-  Open space
-  Open space expansion
-  Existing rail line
-  Existing rail station
-  Proposed Melbourne Metro alignment
-  Proposed Melbourne Metro alignment
-  Structure plan study area

Key public spaces

-  1. QVM
-  2. Haymarket
-  3. Elizabeth Street
-  4. Bedford and Courtney Street Reserve
-  5. CUB
-  6. Increased access to UoM public space

Strategy 2

Enhance the role of City North's streets in the public realm network

City North's wide streets will be upgraded to create an attractive and accessible network of connections that link people to each other and to new and proposed open spaces. The existing street space dedicated to traffic lanes and parking will be reduced, so that the streets can perform as places for people and as ecosystems.

Streets as places for people

Streets should be designed as places, not just as thoroughfares, to encourage social interactions and to create distinct and inviting spaces that people choose to be in. They should be places to walk, shop, play, relax, sit and talk.

Footpaths will be widened to allow for a more active and diverse use of streets including on-street dining, seating and informal recreational or play spaces, local public art and, where appropriate, bike paths and facilities will be installed.

Streets as ecosystems – expanding the urban forest

Together, street trees form part of the urban forest. The urban forest is the sum of all trees, vegetation, soil and water that provides numerous environmental and social benefits as identified in the *Urban Forest Strategy (draft 2011)*, including:

- Shading of the hard surfaces of the city (streets and buildings), and improved thermal comfort at street level for pedestrians.
- Improved air quality.
- Enhanced biodiversity and wildlife habitats.
- Ambient cooling (mitigating

the urban heat island effect).

- Improved stormwater quality entering water ways.
- Landscape beauty.
- Enhanced surface permeability.

To achieve this, new large canopy street trees will be planted and watered by locally captured stormwater.

Key opportunities

Refer also to 'great streets' panel at figure 3.9.

Pelham Street – a green spine

Strengthen the role of Pelham Street as a 'green spine' linking the Haymarket civic space, University Square, Lincoln Square and Argyle Square through to Carlton Gardens. Maximise the amount of road reserve dedicated to pedestrians and landscaping to create a pleasant and inviting pedestrian and cycling link. See *figure x.x*.

The Queen Victoria Market

To support the large number of visitors to the Queen Victoria Market and minimise hard surfacing, to mitigate the urban heat island effect, some streets will be redesigned as 'green links'. In these streets, space will be dedicated for wide pedestrian paths and street trees.

Victoria Street

The function and character of Victoria Street will change considerably with the completion of the Carlton and United Brewery site. Victoria Street will become a pedestrian connection between the Carlton and United Brewery hub and the Queen Victoria Market. This must be designed for pedestrian comfort and accessibility. A new tram line on

this section of the street would improve east-west connections across the Central City (see *chapter 4, Transport and access*). This will create a new character for this precinct and establish Victoria Street as one of Melbourne primary civic streets. (See *figure 2.1*).

Flemington Road, Peel Street, Royal Parade, Swanston Street, Grattan Street and Queensbury Street

These streets are designated as primary streets that will function as important activity corridors, serviced by new and existing public transport routes (see *chapter 2, Activities and land use, strategy 4; for Elizabeth Street, see strategy 1 above, and see figure 2.1*).

Other City North streets

All streets in City North will be reviewed for an upgrade to achieve this strategy. Proposed street designs are illustrated in Appendix A.

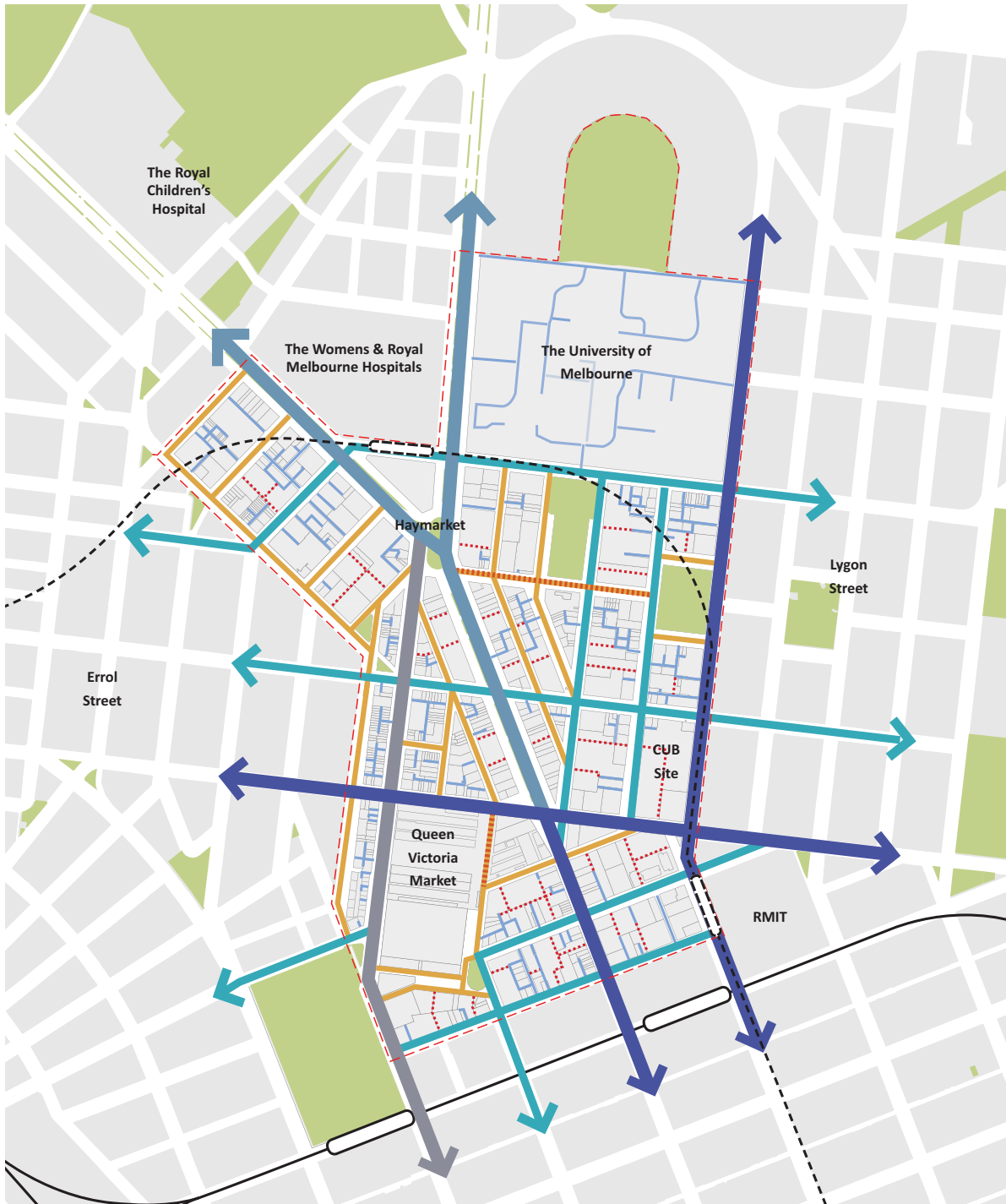


Figure 5.11: City North proposed street hierarchy.

REPRESENTATIVE STREET SECTION - GREENWAYS



① FOOTPATHS

- Pedestrian paths designed to provide a high level of accessibility and to support onstreet activities such as outdoor cafes.
- Street furniture to optimise accessibility for all pedestrians and cyclists, including seats, bicycle hoops and high quality pedestrian lighting.

② BIKE LANES

- Where possible, bicycle lanes separated from vehicular traffic.

③ CARS

- Car lanes set at minimum widths according to a 40km/h speed limit.
- Onstreet car parking provided on at least one side of the street.

④ TREES

- Large canopy street trees to provide shade and cooling, mitigate wind exposure and offer habitat.
- Trees planted in pits designed for optimal growing conditions and WSUD.

⑤ LOCAL OPEN SPACE

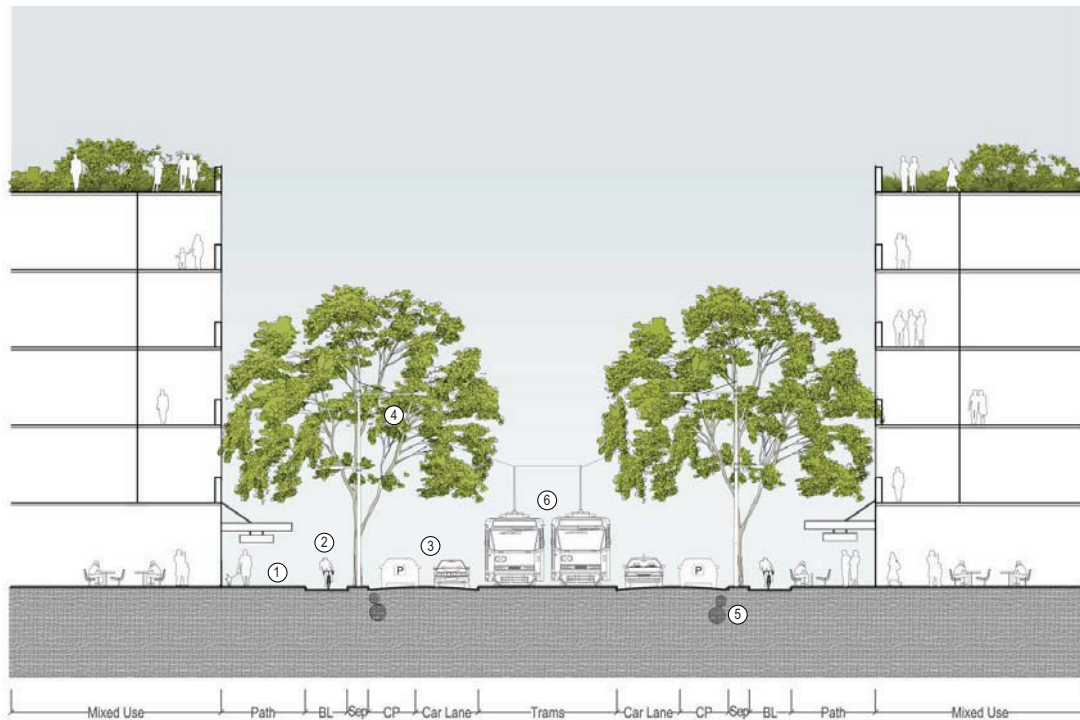
- Landscaping to create attractive neighbourhood spaces, located for optimum solar access and designed in response to local interests and needs (e.g. productive gardens, social and play spaces etc).
- Landscaping designed for diverse environmental functions including stormwater absorption and habitat.

⑥ CIVIL INFRASTRUCTURE

- Upgraded drainage systems (e.g. pipe network, pits, gross pollutant traps and pumps).
- Street furniture (e.g. street lights and parking meters) converted to alternative power sources such as locally-generated solar power.
- Where appropriate, install facade-mounted pedestrian lighting.
- Existing overhead powerlines to be relocated underground.

Figure 5.12

REPRESENTATIVE STREET SECTION - LOCAL CENTRES + CONNECTORS



① FOOTPATHS

- Pedestrian paths designed to provide a high level of accessibility and to support onstreet activities such as outdoor cafes.
- Weather protection over footpaths in local centres.
- Street furniture to optimise accessibility for all pedestrians and cyclists, including seats, bicycle hoops and high quality pedestrian lighting.

② BIKE LANES

- Where possible, bicycle lanes separated from vehicular traffic.

③ CARS

- Car lanes set at minimum widths according to a 40km/h speed limit.
- Onstreet car parking provided on at least one side of the street in local streets and both sides of the street in local centres.

④ TREES

- Large canopy street trees to provide shade and cooling, mitigate wind exposure and offer habitat.
- Trees planted in pits designed for optimal growing conditions and WSUD.

⑤ CIVIL INFRASTRUCTURE

- Upgraded drainage systems (e.g. pipe network, pits, gross pollutant traps and pumps).
- Street furniture (e.g. street lights and parking meters) converted to alternative power sources such as locally-generated solar power.
- Existing overhead powerlines to be relocated underground.

⑥ PUBLIC TRANSPORT

- Public transport routes designed for optimum service provision, including dedicated tram / bus lanes and fully accessible tram / bus stops.

Figure 5.13

Strategy 3

Improve access to existing open spaces

The connectivity to and from open spaces will be improved to ensure safe and direct access for all pedestrians and cyclists. This will be achieved through a redesign of the streets to provide generous footpaths, dedicated bicycle lanes, street lighting, seating, and large canopy trees. Streets will be designed to calm traffic movements and prioritise pedestrian and cycling movement.

Publicly accessible private open space

There are a number of open spaces within the University of Melbourne campus, north of Grattan Street, including dedicated sports fields, grassed areas for relaxing and small courtyard spaces which provide for active and informal recreation needs. Many of these spaces are underutilised during university semester breaks and access to these spaces for the general community could be encouraged. Access to open spaces within the campus could be improved through:

- Directional signage to address current wayfinding issues.
- Improved pedestrian and cycling linkages.

Greater access to existing public open space.

Access to public space on the periphery of City North, including Flagstaff Gardens, Royal Park, and Princes Park, should be increased by improving pedestrian and cycling access across busy thoroughfares including the Haymarket roundabout, Elizabeth Street, Victoria Street, Flemington Road and Peel Street. This will be considered in the enhancements of these streets (*see strategy 2*) and through the prioritisation of pedestrians and cyclists at intersections with signals.

Actions

This strategy will be implemented through the following actions:



Design

Prepare a public realm master plan that will include new street designs for all City North streets.

Prepare a civil infrastructure plan to identify key opportunities to improve pedestrian and cycling priority on all streets and at key intersections.



Advocacy

Advocate for the University of Melbourne to ensure that access into and through the campus is easy and legible to encourage public access to open spaces including the System Garden and North Court.

Advocate for the City of Melbourne to have input into the design of any new buildings on the main Parkville campus to ensure pedestrian and cycling linkages to open spaces are enhanced.

Advocate for VicRoads to provide pedestrian priority on all roads to ensure safe access to open spaces.



Policy

Prepare and implement a Development Contributions Plan to contribute funds to the upgrade of City North streets.

1 year

1 - 5 years

5 + years

76

PUBLIC REALM

Strategy 4

Enhance the laneway network

Melbourne’s laneways are internationally recognised as contributing to the livelihood and appeal of the city. They are intimate, pedestrian friendly environments that give Melbourne much of its character – cafes, bars, shops, galleries, studios and public artworks set within intricate, bluestone lined lanes that lie behind the main street activity. Laneways also maximise pedestrian access through an area by establishing a finer network of street connections and shorter walking distances (‘shortcuts’) between destinations.

City North has many laneways that have the heritage character and quality of the city laneways and an increasing number of residential developments and businesses are locating within them. An upgrade of the condition of existing laneways and an expansion of the laneway network through the introduction of new laneways will ensure that this unique aspect of inner Melbourne is protected and encouraged to flourish.

Actions

This strategy will be implemented through the following actions.



Policy

Protect and identify new lanes in City North in the Melbourne Planning Scheme.

1 year

1 - 5 years

5 + years



Strategy 5

Protect and enhance the quality existing open spaces (Lincoln and University Squares)

Lincoln Square and University Square will be upgraded to improve the amenity of these spaces for recreational enjoyment and improved ecological performance.

Activate the edges

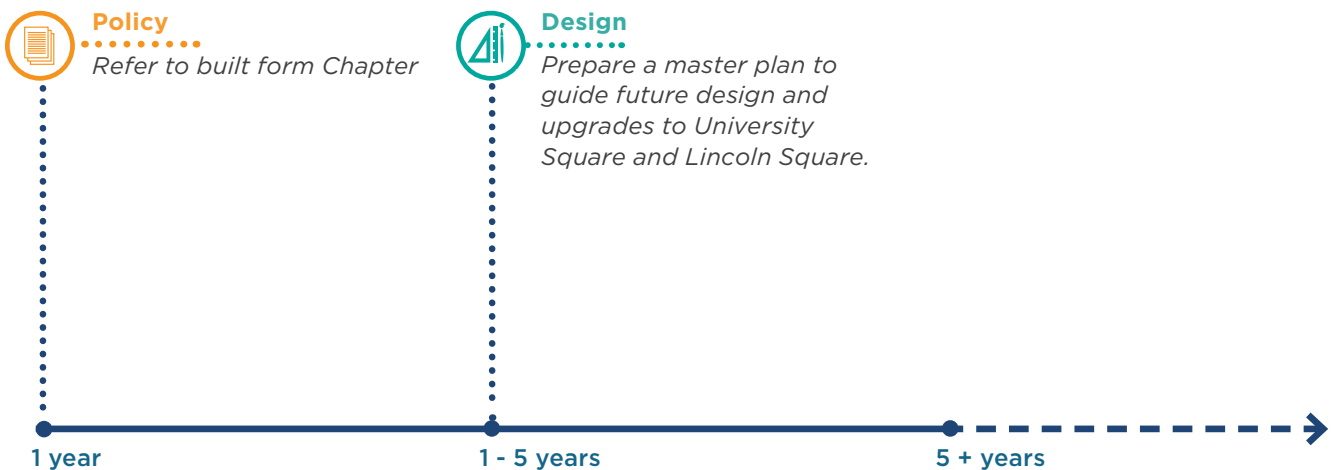
Parks are welcoming and safe when they are activated by people. To encourage this activation, buildings that front parkland should have uses that attract activity – including retail shops and cafes. Above ground floor, a mix of uses including commercial or residential uses will provide passive surveillance of the park throughout the day and night. (See also chapter 3, *Urban structure and built form, strategy 4*).

Maintain solar access

Lincoln Square and University Square are important public spaces and should provide a sunny, welcoming space in the cooler months. To ensure this, the parks should have continuous solar access for a minimum of two hours during the winter solstice (the shortest day). This solar access should also be provided for in all new open spaces. (See also chapter 3, *Urban structure and built form, strategy 4*).

Actions

This strategy will be implemented through the following actions:



30-year vision

City North will support a high quality of life to all generations. People of all life-stages and abilities will feel healthy, safe and connected through a public realm that contributes to sense of place and belonging.



Introduction

Overview

Social infrastructure and community facilities in City North must meet the diverse needs of the community including primary healthcare facilities, children's play and recreation facilities, services for young people, older people and people with disabilities as well as libraries, sports and recreation facilities, open space, schools and arts related activities. The built environment influences people's living, working and travel patterns, local economies and opportunities to access local food and be active. Diverse communities have a range of housing types and tenures, well-designed public transport, walkways and cycle routes, streets and open spaces that support opportunities for physical activity and local social connection. People of all life-stages and abilities in City North will feel healthy, safe and connected through a high quality public realm that supports community and belonging, mixed use, connectivity, local character and adaptability. New and upgraded community and cultural facilities and services will need to be provided in City North to support the health and wellbeing of the growing community. New community infrastructure will be delivered in City North, which strengthens community values and builds upon existing community and cultural assets, in particular the Queen Victoria Market and the cluster of medical and educational facilities in the area.

Principle 2

Create a liveable neighbourhood

Objectives

1. Community and cultural facilities and services support the health and wellbeing of the community.
2. People's everyday needs are met through the provision of diverse local services and amenities.
3. Community and cultural facilities are adaptable to provide for a range of functions.
4. Local services and jobs are retained and created.

Principle 7

Develop dwellings that house a diverse and inclusive community

Objectives

1. A variety of accommodation types and sizes is provided. These are adaptable for different lifestyles, life-stages and households.
2. Short and long term public, private and student accommodation is well-integrated and well-designed.

Principle 8

Create a connected and accessible place

Objectives

1. Community facilities are integrated with local centres and conveniently clustered with complementary services that the community uses regularly.
2. Community facilities are located within walking distance of homes.
3. Community and cultural facilities are connected by safe streets which are designed for universal access.
4. Community facilities are visually prominent and clearly signposted.
5. Community and cultural facilities and services are accessible by good public transport, day and night.

Principle 9

Support a culturally and socially engaged community

Objectives

1. The community cares for young and old and supports families and individuals to achieve their optimal health and wellbeing.
2. Public spaces and activity are a focus for community life and interaction.
3. Education and cultural activities are accessible to all.
4. Community and cultural facilities include diverse spaces for use by all of the community.
5. People of diverse backgrounds and experiences are supported through programs and services.

Issues

Existing provision of community infrastructure

City North accommodates some of the state's primary health facilities, including the Royal Melbourne Hospital, Royal Women's Hospital, Melbourne Sexual Health Clinic and the Centre for Cultural Ethnicity and Health. These facilities are co-located in this area with the University of Melbourne and RMIT. The area, however, has minimal local level community services and facilities, creating a reliance on those provided in adjacent suburbs, particularly the Central City, North Melbourne, Carlton and Parkville. Anticipated future demand for services cannot be met by existing services in City North and the broader area.

The existing provision of services is as follows:

- There are few childcare facilities and preschools in City North and adjacent suburbs.
- Maternal and child health services in Carlton and North Melbourne are operating at capacity.
- There are currently no aged services or senior citizen's centres within City North. This reflects the small population of older residents.
- There are no youth services in the area, although around half of the current population residing in City North is between 15 and 24 years old.
- Existing community health services, particularly counselling services, are experiencing high demand from tertiary students.
- Community health centres and aged and disability facilities in the broader area are outdated and require upgrading.

To cater for a growing residential and working population, in addition to large daily influxes of students and visitors, the provision of local services and facilities in City North will need to be improved and increased.

Provision of arts and cultural facilities

Within and around City North, there is a wealth of regionally and internationally valued arts and cultural facilities including the Melbourne Museum, Royal Exhibition Building, the Trades Hall, the State Library of Victoria, La Mama Courthouse Theatre, the Melbourne Meat Market, the Little Errol Street Studio, the Multicultural Hub, Queen Victoria Market and the galleries, libraries and theatres at the University of Melbourne and RMIT. These are major attractors to City North and the broader area. Arts and cultural facilities play a significant role in engaging and connecting the community and are imperative for supporting the innovation inherent in the knowledge precinct. Artists have been occupying vacant, underutilised, warehouse and storage spaces as studios in City North. Retaining live music and performance venues will provide vibrancy and activation during the evenings and strengthen the cultural life of City North. These creative spaces have the potential to further activate City North and contribute to the area's character and identity.

Responding to increasing demand for community facilities

As the demographic profile changes, and the community grows, more community and cultural facilities and services will need to be provided. The proposed Parkville and CBD Metro stations will impact on the demand for community and cultural services in City North. In addition, there is potential for workers to generate additional demand for services such as childcare and healthcare. Responding to increasing demand will need to take into account legislative and regulatory changes, which may require new models of service delivery and new or additional community infrastructure. Existing community facilities may need to be upgraded, or more appropriately located to respond to community demand. New community facilities will be

integrated into a community hub within local activity areas. This hub may be a single building or incorporate several buildings within close proximity to form an accessible service. The level of development and value of land within City North impacts on the opportunities to integrate new community and cultural facilities, particularly where these require a lot of land. Therefore it is important to capitalise on existing assets such as the Queen Victoria Market, the Multicultural Hub, the Carlton Baths and the cluster of hospitals and institutions in the area. The Kathleen Syme Centre, located to the east of City North, offers a strategic opportunity to deliver another community hub.

Education facilities

The Victorian Government’s Department of Education and Early Childhood Development is responsible for the management, design and development of schools. There are no schools in City North. There are several schools located in close proximity, including North Melbourne Primary School, Carlton Gardens Primary School, Carlton Primary School and University High. According to the Department of Education, the North Melbourne Primary School is currently at capacity; however, there is some capacity at primary schools in Carlton. The Department of Education has identified the need for new schools in inner Melbourne. The Government is committed to promoting schools as community hubs through the co-location an integration of

services (Blueprint for Education and Early Childhood Development 2008). The City of Melbourne will advocate for the Department to identify and deliver new schools to service inner Melbourne and will advocate for the co-location of complementary services.

From 2013, the Federal Government is committed to providing 15 hours of kindergarten per week for children in the year before they commence primary education. This has implications for the provision of kindergarten services across the municipality. The City of Melbourne will need to advocate for the provision of kindergartens to be integrated within community hubs or proposed school sites, to provide a high level of accessibility and convenience.

Diverse community

To support a diverse community, there is need for a range of housing options in terms of style, size, tenure and affordability. Housing must be accessible for people of all ages and abilities.

Strategies

Strategy 1

Establish integrated and accessible community hubs

A range of community facilities and services will be integrated into accessible community hubs in City North.

These hubs will provide the opportunity for the expansion of many services to meet community need. The City of Melbourne's *Community Infrastructure Plan* will consider and determine the appropriate location and specific delivery of services within each hub. Consideration should be given to providing space for delivery of the following services:

- Family services
- Childcare facilities
- Preschool education facilities
- Aged services
- Playgroups
- Planned activity group
- Community art activities
- Youth support services
- Neighbourhood house programs
- Community and mental health services
- Allied health services
- Library.

The integration of complementary commercial and social enterprise uses should also be considered where appropriate.

These proposed hubs will be located to strengthen City North's existing activity nodes and capitalise on key community local service destinations and attractions.

Community hubs will be considered for incorporation in the proposed local centres at the Queen Victoria Market precinct,

the Haymarket (hospital) vicinity, and the Carlton United Brewery site, in addition to the Kathleen Symes building which is located to the immediate east of City North.

These hubs will be clustered with complementary services and community cultural and health anchors including public spaces, retail and education activities, to provide a high level of convenience and accessibility for residents, workers, visitors and students. A variety of activities, shops and services will be clustered to gain benefits from association and multi-purpose trips. These community hubs will be walkable, accessible for all and integrated with public space and streets.

For additional information on local centres see chapter 2, Activities and land use.

Queen Victoria Market precinct

The Queen Victoria Market is a key focus for the local community and a key cultural and tourist attraction which is located on a 7 hectare site in the heart of the growing City North.

There is a significant opportunity to enhance the Queen Victoria Market's role as a local centre and destination by enhancing the provision of community, cultural and social activities in the vicinity. These functions will complement the operations of the market and support the needs of the growing local community.

The integration of community facilities and services within the Queen Victoria Market should focus on enhancing its significant role as a market for fresh produce and community gathering and event space in the northern end of the city. This has potential to build on the capacity of the market as a centre for locally produced food

and education, including cooking and nutrition, and sustainable resource consumption. This also has the potential to strengthen the facilities and services provided in proximity at the Multicultural Hub.

Haymarket

Community facilities will be integrated into the new local centre in the vicinity of the Haymarket. This will consolidate community services with the existing health services provided at the Royal Melbourne and Royal Womens' Hospitals, in addition to the Victorian Comprehensive Cancer Centre which is under development, providing the opportunity for cross referral among service providers. This hub will provide convenient services to the large number of workers, students and visitors to the hospitals, the University of Melbourne and the research institutes, as part of an active 'main street'. The hub in this vicinity will be highly accessible by trams and the proposed Metro. The community hub will be complemented by a civic space integrated into the redesign of the Haymarket roundabout, which will enable opportunities for social interaction and play.

Carlton and United Brewery site

The Carlton and United Brewery redevelopment site is subject to a separate master plan. Any opportunities to integrate community uses will be investigated by the City of Melbourne.

Kathleen Symes building

A community hub is being developed at the Kathleen Syme Centre, located to the east of City North on Faraday Street in Carlton. It is anticipated that this hub will be functional by 2013.

Actions

This strategy will be implemented through the following actions:



Strategy 2

Enhance access to education facilities

It is imperative that access to schools is enhanced in City North to support a diverse and growing community. The State Government's Department of Education and Early Childhood Development (DEECD) is responsible for building and funding schools. The DEECD has identified the need for new primary schools in inner Melbourne. The City of Melbourne will continue to support the DEECD to identify an appropriate site for a new primary school.

Actions

This strategy will be implemented through the following actions:



Advocacy

Continue to work with the Department of Education and Early Childhood Development to identify sites which are appropriate for schools.

Continue to advocate to the Department of Education and Early Childhood Development for the development of a new school to be integrated into the Victorian Archives site, located to the west of City North, to improve capacity of North Melbourne Primary School.

Advocate for the co-location and integration early years services, arts programming and indoor recreation facilities within any proposed schools in the vicinity of City North.

The DEECD will ultimately determine where a new primary school will be delivered to service inner Melbourne, however, the City of Melbourne will continue to advocate for a new primary school in the vicinity of City North. The development of a new school in the vicinity will alleviate pressure on North Melbourne Primary School to provide additional capacity for students in City North.

The City of Melbourne considers that the Victorian Archives site located to the west of City North, in Shiel Street, North Melbourne, which is owned by the State Government, offers a suitable site for a potential school, as it is:

- › Located centrally to local catchment in growing community
- › Located in proximity to public transport including train and bus to provide access to a larger catchment
- › A large site which is underutilised as an expansive open air car park. This site has potential to be developed over in a manner which supports the Government's Blueprint for Education and Early Childhood Development (2008) which promotes schools as community hubs through the co-location and integration of services
- › Located in proximity to several existing recreational areas.
- › Located in proximity to the proposed activity centre and community hub along Macaulay Road - Canning Street to provide a high level of convenience to families

The City of Melbourne will continue to advocate to DEECD for a new school to be developed at this site and the potential co-location of early years services, integrated arts programming, open space and indoor recreation facilities to support and connect the broader community.

1 year

1 - 5 years

5 + years

Strategy 4

Encourage shared use of facilities and resources

There is a rich supply of regionally and internationally valued arts and cultural amenities, tertiary institutions and major hospitals located in or near City North. There is potential for enhanced community access to facilities of major institutions, particularly the the University of Melbourne and RMIT.

There is also an opportunity to work with these institutions to expand existing services and facilities to cater for the needs of the growing student, visitor, resident and worker population in the area and to share and co-locate them to ensure efficient and effective service delivery.

Actions

This strategy will be implemented through the following actions:



Advocacy

Continue to work with RMIT and the University of Melbourne, to increase and encourage the provision of community and cultural spaces. Advocate for increased community access to these campuses and building resources, such as libraries, galleries, meeting rooms and recreation facilities.

Continue to work with the Royal Melbourne Hospital, the Royal Women's Hospital and the Royal Children's Hospital, located to the north of City North, to increase and encourage the provision of community and cultural services.

Continue to develop partnernships with medical institutions and other organisations for shared provision of community health services.

1 year

1 - 5 years

5 + years



Strategy 5

Provision of affordable, accessible and diverse housing

It is important that housing in City North is designed to accommodate a diverse population. New housing will be supported by amenities such as public transport, local services and local employment opportunities.

Future Melbourne established a goal for the provision of 20 per cent affordable housing in all new developments.

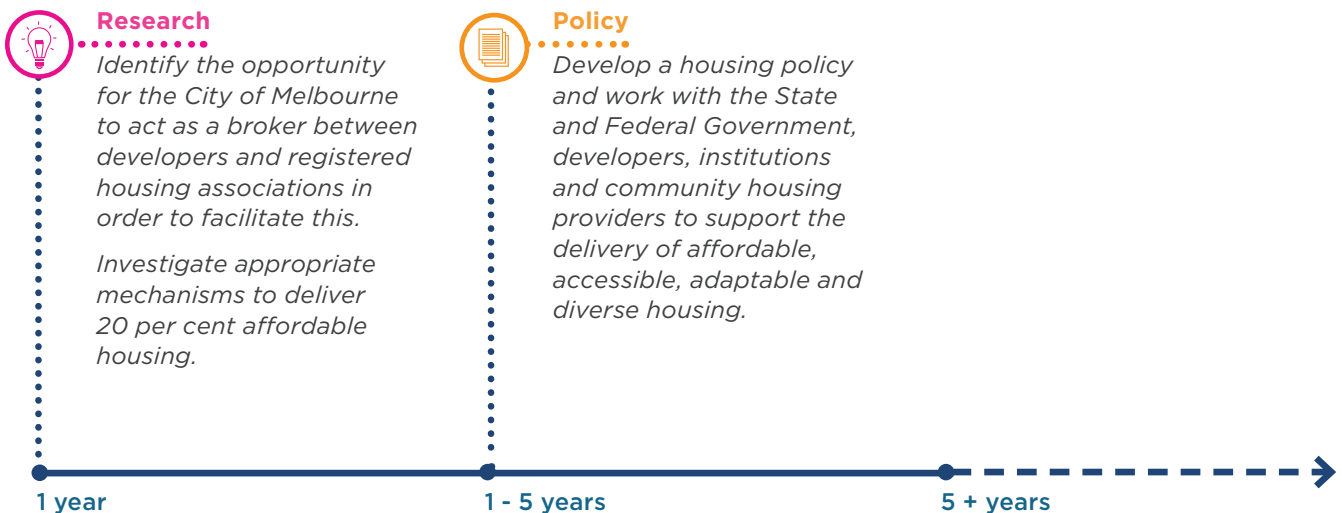
The City of Melbourne will develop a housing policy and work with the State and Federal Government, developers, institutions and community housing providers to support the delivery of affordable, accessible, adaptable and diverse housing options to ensure an inclusive community.

The policy can assist in delivering affordability by ensuring diversity in size, storeys, number of bedrooms, density, accessibility, style, and so on.

The built form controls in City North will support the delivery of a range of housing options and enable buildings to be adapted in the future. A high quality of life will be supported by well designed public transport, walkways and cycle routes, streets and open spaces that enhance opportunities for physical activity and local social connection. Housing will be designed to engage with the street and have a positive interface with the public realm. To support an inclusive and diverse community it is important that these are designed to be accessible for people of all ages and abilities.

Actions

This strategy will be implemented through the following actions:



Strategy 6

Enhance the Meat Market as an arts hub

The Arts House at the Meat Market will be reinvigorated as an arts hub, building upon the area’s creative talent and strengthening opportunities for the development of independent arts production and presentation. The arts and cultural programming at the Meat Market will be an arts and cultural anchor which engages the growing community of City North. The City of Melbourne.

The City of Melbourne presents a

curated program of contemporary art including performances, exhibitions, live art, installations and cultural events at the Meat Market. However, the Meat Market is currently owned by the Victorian Government.

As the Meat Market is an important cultural and community asset, there is an opportunity to investigate the opportunity for the City of Melbourne to acquire this venue from the Victorian Government. This would enable the City of Melbourne to strengthen the use of the diverse gallery, workshop and rehearsal spaces within the Meat Market for creative development and enhance participation and engagement with the arts.

Actions

These strategies will be implemented through the following actions:



Research

Investigate opportunities for the City of Melbourne to acquire the Meat Market to secure this arts hub as an important cultural and community asset.



Advocacy

Continue to support an engaging arts and cultural program at the Meat Market.



Strategy 7

Provision of creative and cultural spaces

Spaces for the development, production and presentation of arts based creative work will complement and strengthen the knowledge precinct's identity. Some buildings may offer the opportunity for the integration of creative spaces to support local artists and designers. These studios and workspaces will be designed to support local enterprise and productivity. Strengthening the role of creative

spaces in City North will offer numerous benefits including:

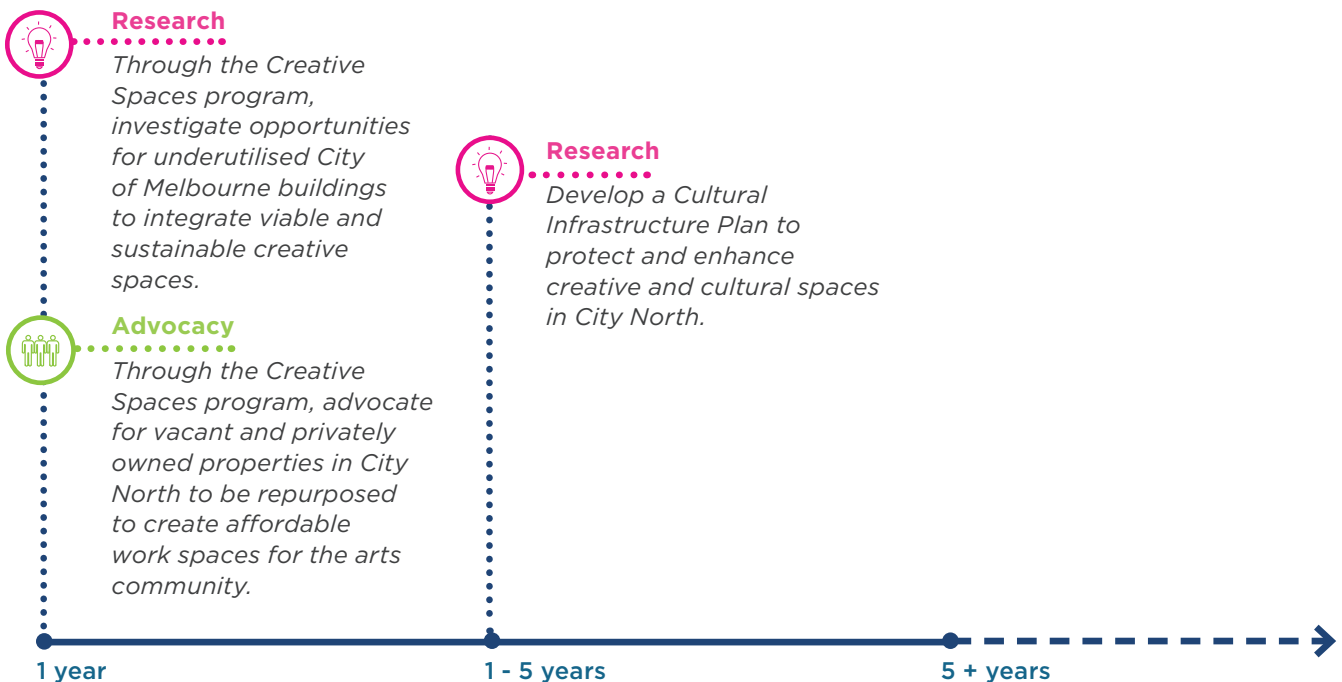
- Activating underutilised buildings
- Supporting local employment
- Contributing to the reputation and identity of the area.

The development of a Cultural Infrastructure Plan has potential to investigate the opportunities in City North to protect and enhance:

- Live/work artist studios
- Theatres
- Independent cinemas
- Rehearsal spaces
- Creative workshops
- Live music venues.

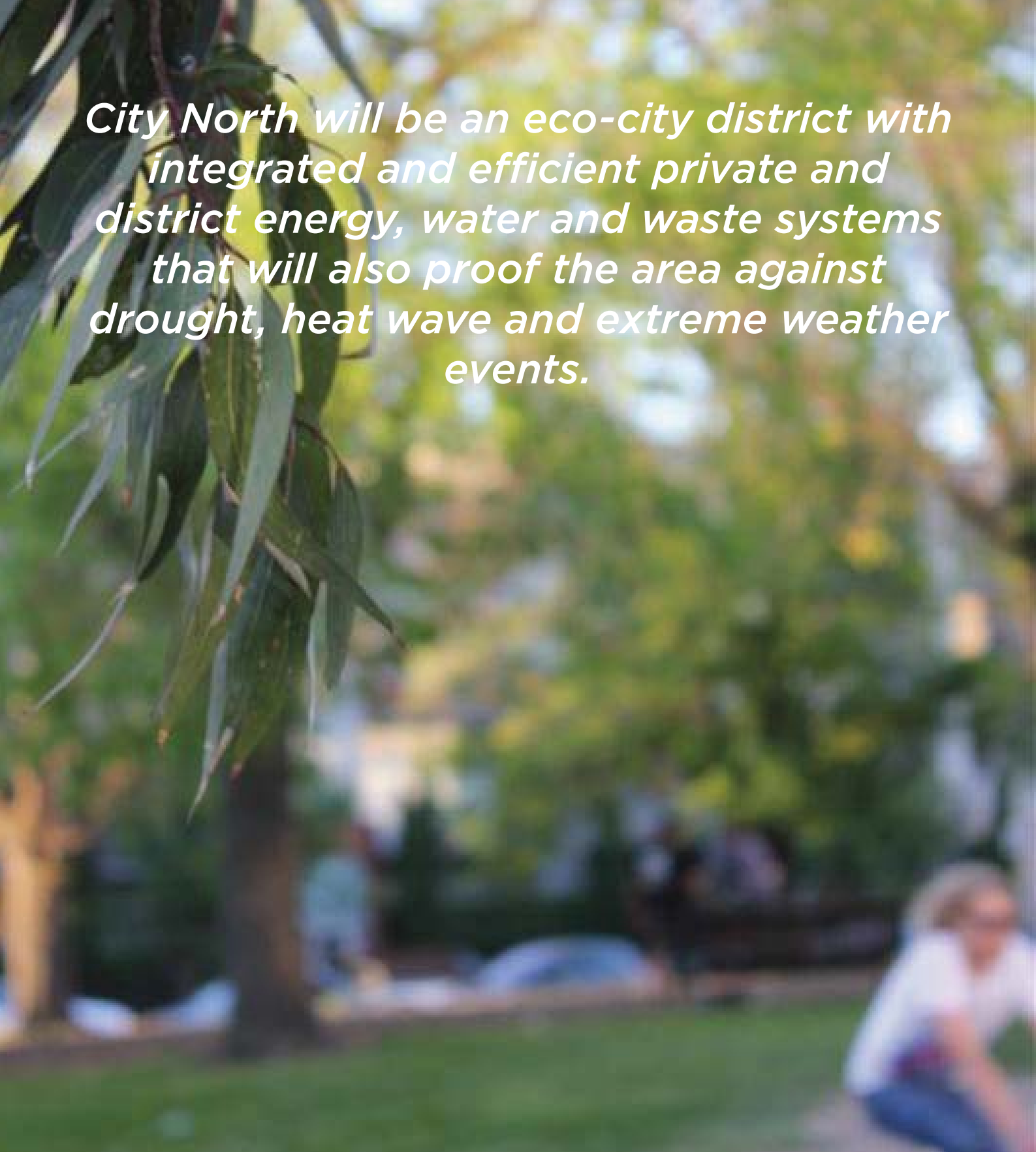
Actions

These strategies will be implemented through the following actions:



30-year vision

City North will be an eco-city district with integrated and efficient private and district energy, water and waste systems that will also proof the area against drought, heat wave and extreme weather events.



Introduction

Overview

Cities consume significant quantities of resources and have a major impact on the environment that extends well beyond what can be managed within their borders (Melbourne Principles for Sustainable Cities, DSE, 2002). This trend is unsustainable. It needs to be halted and then reversed. Future cities must reduce demand on the finite resources available, be smarter about how they reuse resources and, ultimately, become self-sustaining.

Australia has approximately 0.3 per cent of the world's population, but contributes approximately 1.5 per cent of total greenhouse gas emissions. This puts Australians among the highest per capita emitters (Garnaut, 2008). Reducing greenhouse gas emissions is necessary to mitigate human-induced climate change.

Over 90 per cent of Australia's electricity is generated by burning fossil fuels, with coal contributing 76 per cent (ABARE, 2008). Given that 37 per cent of Australia's greenhouse gas emissions (GHG) result from the generation of electricity (DCCEE, 2011), if energy generation and supply is to meet the challenges of reducing greenhouse gas emissions, cities must reduce their reliance on fossil fuels. A shift away from solutions involving large, centralised generation systems to smaller decentralised systems is likely to be an important part of the response.

Australia has one of the highest per capita water consumption rates in the world (Melbourne Water, 2009). While two thirds of all the people on Earth use less

than 60 litres of water a day, the average Australian uses more than twice that amount during a single shower (Melbourne Water, 2011). In an average year, metropolitan Melbourne consumes approximately 500GL of water (Melbourne Water, 2009).

While water storage supplies in Melbourne have steadily declined over the last decade, water consumption has been steadily increasing. Over the past 100 years Melbourne's total water consumption has increased from 50,000ML per year to over 550,000ML per year. While largely attributable to Melbourne's growth in population, the available water supply in Melbourne is finite – it is not a growing resource. As the City North precinct grows, it is important to find ways to ensure that water consumption does not grow with it.

With climate change and global warming expecting to reduce future rainfall and hence Melbourne's water supply (DSE, 2008), reduced water storage coupled with future population growth will lead to water scarcity. Through initiatives such as the re-use, recycling, and conservation of water, water sensitive urban design (WSUD), sewer mining and stormwater harvesting, new and better ways of managing water resources can be implemented.

The significant increase forecast for City North's residential and worker population will require a considerable level of investment in new infrastructure to meet future increases in demand. In order to assess the capacity of City North to accommodate this growth, a comprehensive analysis of the current infrastructure provision will need to be undertaken.

The current provision of energy

and water services adequately meets existing levels of demand, however the way the City North precinct is developed now and into the future presents significant opportunity to plan for and identify mechanisms for the delivery of these services in a more sustainable form, to reduce the environmental impacts generated in urban environments, and to embed and deliver City of Melbourne Future Melbourne Eco-City goals through Zero Net Emissions by 2020, Climate Change Adaptation and Total WaterMark strategies. It is an opportunity to demonstrate that a more sustainable future for the City North precinct is achievable.

Principles

Principle 1

A sustainable precinct that prospers within the earth's ecological limit

Objectives

1. City North is established as a vibrant, attractive and self sustaining precinct, which better services the community through an urban and built form that is energy efficient and adapted to climate change.
2. Energy and water services are constructed and supplied sustainably.
3. An integrated concept supports and informs the development and delivery of services in City North.
4. The City of Melbourne looks beyond the boundaries of City North for opportunities involving neighbouring precincts.

Issues

1. Utility Infrastructure

Unsustainable infrastructure

Existing infrastructure in City North is unsustainable and ageing. Infrastructure will need to be updated to accommodate increased residential, worker and visitor population numbers. City North is generally regarded as a high cost construction zone due to the high costs of reinstatement and traffic management and other asset congestion in the ground.

Existing services for electricity, water supply, gas, sewerage and drainage have major trunk pipelines traversing the precinct. An overview of the current method for the delivery and management of each of these services is outlined below.

Electricity

CitiPower is the responsible authority for maintaining and operating the electricity distribution and subtransmission network within City North.

These systems transfer power from the high voltage transmission network (operated by SP AusNet) to the major load centres via terminal stations and zone substations. The distribution system then accepts power from the zone substations and distributes it to consumers.

The existing electricity supply infrastructure uses ageing technology and has insufficient capacity to meet the potential increase in demand. Two electricity zone substations are located just outside the boundary of the City North precinct, at the Queen Victoria Market and Bouverie Street.

The major constraint with the current electricity infrastructure

is that it is not designed for distributed energy generation.

Gas

Gas is distributed to most consumers from a high pressured transmission pipe through a reticulated network which operates at lower pressures. The responsible authority is APA Group, as the owner of the high pressured network. There is a gas reticulation system within the precinct, however, the exact location of the gas trunk infrastructure will need to be sourced.

Water supply

City West Water manages an extensive potable water main network. There are several water mains in and near the City North precinct, including water mains that run east-west under Queensberry and Victoria Streets and another running north-south under William Street and Royal Parade. These require further investigation.

Sewerage

City West Water manages and maintains an extensive sewer pipe network which extends along most roads in City North (with occasional pumping stations), servicing the City North precinct. The network requires further investigation, however it discharges to Melbourne Water's sewage treatment plant. A sewerage mains is located along Gatehouse and Harker Streets, south of the Royal Children's Hospital.

Drainage (stormwater)

The existing drainage trunk infrastructure relies on overland flow paths to accommodate part of the flows resulting from rainfall

events, with a 100-year annual recurrence interval frequency. Several large stormwater drains converge at the intersection of Therry and Elizabeth Streets. Climate change is expected to impact adversely on drainage outfall arrangements through both sea level rise and increases to peak flows.

2. Natural Resources

Unpredictable Rainfall

Climate change is expected to increase the severity of flooding, while reducing the long term average annual rainfall. Reduced water supplies, coupled with future population growth, are likely to lead to greater water scarcity so there will be a benefit in having a range of water supply options. A water balance for City North has not been developed and catchment flows have not been modelled to date. Seasons are a critical factor, as periods of peak demand (summer) and peak supply (winter) are not synchronised. Consideration needs to be given to how alternative water supplies will be collected, treated, stored and distributed. Other considerations include likely energy demand when evaluating the benefits of wastewater treatment.

3. Access to solar

Solar radiation can be converted into energy, using photovoltaics to generate electricity, and solar hot water units to generate hot water. The generation of energy is affected by the availability of sunlight. The height of existing and future building structures in City North will need to give consideration to access to sunlight.

4. Protecting the urban forest

94 The City of Melbourne has an existing 'urban forest' which insulates the city against heatwaves, winds and heavy rain events. City North's tree cover currently stands at 14 per cent. Increasing this cover to 50 per cent can reduce peak summer temperatures by 7 degrees Celsius, which will significantly reduce the energy load of air conditioners.

SUSTAINABLE INFRASTRUCTURE

5. Land supply

Distributed energy and water supply systems will require a significant amount of space to house plant and equipment. Land ownership is also a significant obstacle in reducing the environmental impact of the precinct. In general, sustainability initiatives will not provide a high commercial return for existing private land owners, so it is likely that the location of the initiatives that require a significant parcel of land, such as distributed energy generation, may be limited to government-owned or low value land.

6. Regulatory barriers

At present, the regulatory barriers governing the supply and distribution of utility services do not support the implementation of the proposed distributed servicing study. The City of Melbourne needs to take on a stewardship role to drive the realisation of the sustainable infrastructure servicing concept.

Strategies

Strategy 1

Establish central services hubs (CSHs)

City North is well positioned to realise new ways of providing energy and water that are less resource intensive. Several interconnected central services hubs (CSH) could be located within the area to meet City North's energy and water needs.

A CSH is a large area that can store wastewater and house plant and equipment that generates recycled water and energy.

CSHs provide an efficient method of generating and managing resources as they take advantage of the cross-benefits between the different systems. For example, the generation of electricity creates heat as a by-product that can be used to treat captured stormwater. Excess heat can be circulated through the area and used to heat or cool buildings, or for other applications such as heating swimming pools, or industrial applications.

Actions

These strategies will be implemented through the following actions.

Locations for the CSHs have been identified, based on the location of, and proximity to, existing services and the space opportunities proposed redevelopments present. Following consultation with several stakeholders, and consideration of these issues, seven sites have been nominated for further investigation as a CSH. The chilled, heated and recycled water generated within the CSHs will be distributed across the precinct via the combined services tunnel for consumption by individual buildings (see strategy 4). Energy will be generated in CSH 1, 2, 4, 5 and 6 (see figure 7.1). For CSH 2, 4 and 5 electricity will be fed into the electricity substations, and for CSH 1 and 6 all generated electricity will be consumed on site. Stormwater will be harvested from the existing stormwater pipes and stored and recycled in CSH 2, 3 and 7.

The CSHs will:

- House the plant and equipment required to generate energy and water resources.

- Avoid the loss of electricity in transmission and distribution from the generator to the end user.
- Reduce refrigerant pollutants by reducing the need for building air conditioning.
- Offer greater efficiency than a building by building approach to the generation of energy and water.

District scale combined heat and power systems are proven technologies which have been in operation in other parts of the world for many decades. District cooling systems have also been developed and proven overseas. Combining these energy systems with water treatment plants is an innovative concept however the technologies proposed are proven and operate in various developments in Australia and internationally.

In selecting an appropriate area within City North to locate the CSHs the following factors need to be considered:

- Access to services, including electrical, heating and fuel supplies.
- Noise emissions.
- Exhaust emissions.
- Ventilation and air quality requirements.
- Delivery, access and positioning of the system.
- Maintenance requirements.
- Land area relative to system size.

As far as possible, the plant building should be screened from the public, preferably by other land use, for example commercial premises. Locating these sites early on will ensure that future



Advocacy

Continue consulting with key stakeholders on being involved with a district energy and recycled water network and the potential to house a CSH.



Research

Undertake a feasibility assessment to further explore the potential of CSHs. This should also consider emissions, noise, vibrations, access issues and the capacity of the existing services infrastructure.

1 year

1 - 5 years

5 + years

07 Sustainable Infrastructure

96
SUSTAINABLE INFRASTRUCTURE

Strategy 2

Generate non-potable water

Existing water supplies on site include mains water (a potable supply), rain water, stormwater and waste water. Reducing the demand on the potable supply would require an increase in the use of one of these alternate sources.

Treating stormwater or waste water to drinking quality would be difficult to justify economically with an existing potable supply system in place. Providing Class A water to the area, however, would provide an alternate and more affordable water supply that could be used for:

- Toilet flushing and laundry

Actions

These strategies will be implemented through the following actions.

- use.
- Heat rejection (in cooling towers which can be up to 50 per cent of on-site water demand).
- Irrigation for public and private open space, green roofs or green walls. This would significantly reduce the urban heat island effect.
- Redistribution through the area as hot and chilled water (heated within the tri-generation plant).

Stormwater is proposed to be collected, treated, stored and distributed across the precinct as non-potable water. Such a system will significantly reduce potable water consumption by substituting

potable water used for irrigation, in cooling towers, laundries and toilets with non-potable water.

The treatment and harvesting of stormwater will also reduce energy consumption and greenhouse gas emissions, through pumping water and sewerage to and from centralised treatment plants. Through these initiatives up to 80 per cent of the local stormwater run-off and up to 50 per cent of the external run-off from the main stormwater drains could be harvested.

Stormwater is proposed to be collected from underground stormwater pipes located at the intersection of Therry and Elizabeth Streets and Flemington Road near the Royal Children's Hospital. The stormwater would then be sent for storage to the CSH located at either the Queen Victoria Market, the Flagstaff Gardens, an aquifer or the underground car park at the old Royal Children's Hospital. Within the CSH the stormwater would be treated and then discharged across the precinct for use via the central services tunnel. (See strategy 4).



Research

Investigate the technical feasibility of treating and storing stormwater in a public open space - aquifers, the Flagstaff Gardens, the old Royal Childrens Hospital underground car park or the Queen Victoria Market.

Undertake a water balance to determine seasonal non-potable water demand, volumes of stormwater that can be harvested and the potential sizing requirements of a system to store and treat the stormwater.



Advocacy

Liaise with the water authority (City West Water) to ensure a sustainable stormwater outcome can be achieved for City North.

1 year

1 - 5 years

5 + years



Strategy 3

Generating energy (distributed energy systems)

Distributed energy systems draw on local resources, for example natural gas, to generate electricity and, as a by-product, heat.

Co-generation is the generation of both electricity and heat at or near the point of use, most commonly using natural gas as fuel. Electricity generators fuelled by natural gas are less greenhouse gas (GHG) intensive than those which are fuelled by coal, which is the feedstock used for the majority of Victoria's grid electricity. Although biomass and biogas fuelled generators are even less GHG intensive, it is extremely difficult to guarantee a sufficient, secure supply of biomass and biogas, and the generation technology which use these feedstocks is less mature and reliable.

A tri-generation system is created by adding an absorption chiller to a co-generation system to provide cooling. Absorption chillers provide a way of using thermal energy to deliver cooling to buildings, as an alternative to conventional electrically driven refrigeration. By using the heat stream from a cogeneration system as the thermal energy source, absorption cooling offers the potential to expand the range of co-generation's applications.

The key benefits of tri-generation for the City North precinct include:

- Reduced electricity and heating costs for energy customers.
- A 30 - 40 per cent overall improvement in energy generation efficiency through the avoidance of transmission losses (typically 7 - 11 per cent)

and by using waste heat.

- A significant and cost effective reduction in GHG emissions, as tri-generation is widely acknowledged as one of the most cost effective carbon abatement technologies available.
- In-built redundancy through the establishment of multiple plants - if one system is down (due to failure or routine maintenance) other adjacent local systems can provide the shortfall supply.

Gas fired tri- or co-generation plants are proposed within the CSHs to help meet the City North precinct's future energy needs (see *figure 7.1*). The hot and chilled water generated at these hubs would be distributed across the precinct in pipes via a central service tunnel.

As a technology co-generation is considered to be a reliable and mature. Tri-generation technology, while not as mature, is becoming increasingly utilised globally.

Whilst this technology is less greenhouse gas intensive the increased energy demands within this precinct will lead to increased emissions for the municipality. Investment in co-generation and tri-generation plant sites will need to be considered alongside lower and zero emission technologies in the next ten years.

07 Sustainable Infrastructure

98 Actions

SUSTAINABLE INFRASTRUCTURE

This strategy will be implemented through the following actions:



Advocacy

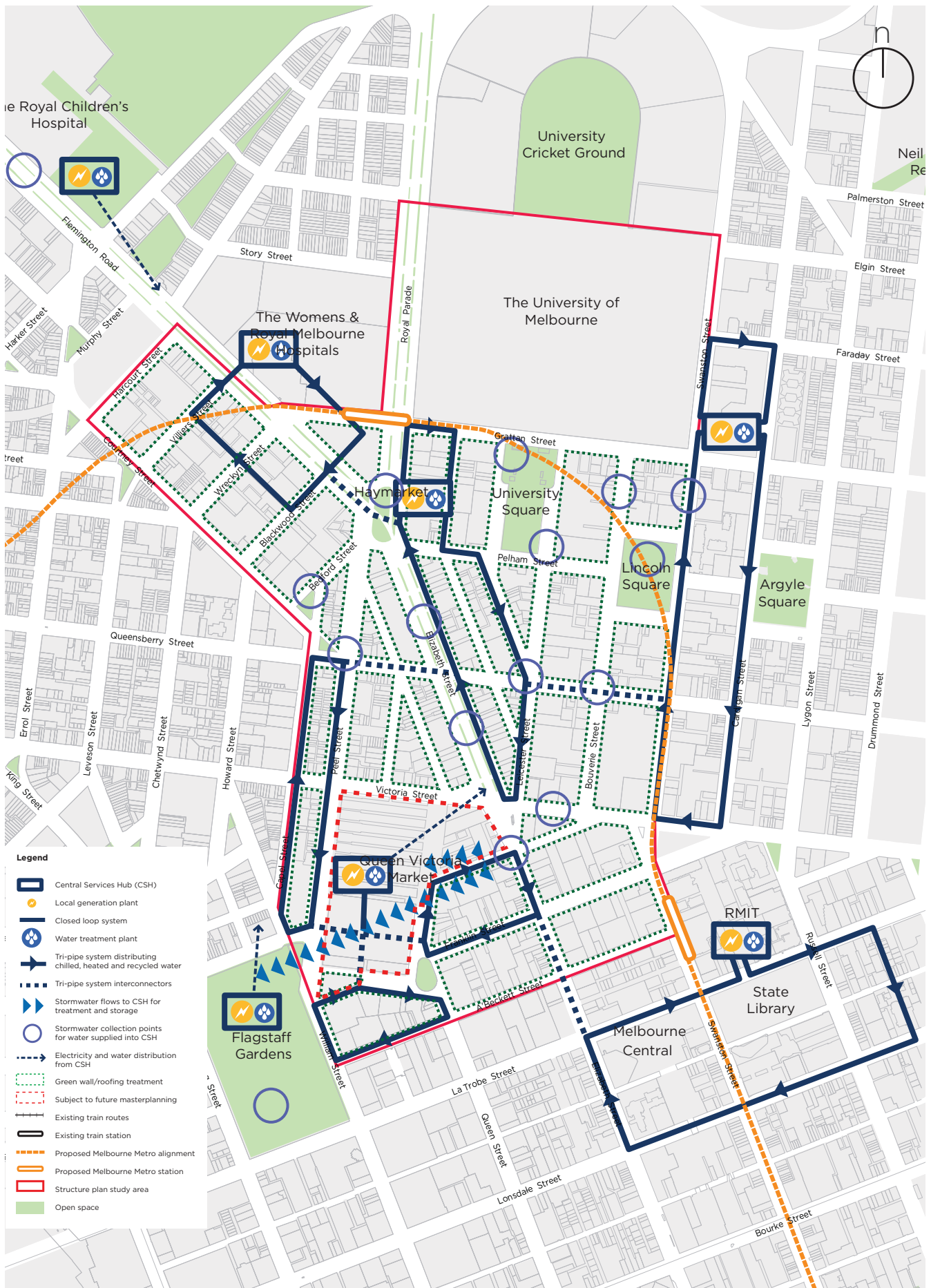
Consult with utility companies to determine the future planned upgrade of their infrastructure and how this could align with and influence the development of a sustainable infrastructure servicing scenario.



Research

Undertake a feasibility study to determine the precinct's energy load demands to determine whether a tri or co-generation plant will have the greatest benefit and the optimum capacity of such a plant. This should be a quantitative assessment exploring water demand, seasonal energy demand (thermal and electric) and the capacity of infrastructure to meet peak demand (a peak energy demand load analysis).





07 Sustainable Infrastructure

100 SUSTAINABLE INFRASTRUCTURE

Strategy 4

Distribution of resources via a Combined Services Tunnel

The construction of a combined services tunnel is proposed for the City North precinct. It would be approximately 3m in width and breadth and be constructed as a trench under the road network across the precinct to distribute the energy and water resources created within the CSHs. Three separate water pipes, containing chilled, hot and non-potable water would be housed in the tunnel.

An initial capital investment will be required to construct the tunnel and install the pipes so that the resources created within the CSH can be distributed. Installation of the pipes should be aligned with any future upgrade of services to reduce installation costs, such as the electricity infrastructure. Financial returns will only

Actions

This strategy will be implemented through the following actions:

commence once customers (or buildings) connect into and draw from the distributed resources contained in the pipes. Existing utility services such as gas, electricity, communications and potable water could be co-located in the tunnel.

The advantages of a combined services tunnel include ensuring that pipes are easily accessed for maintenance and upgrades,

providing easy accessibility for future network infrastructure roll-outs, and minimising precinct disruption in future.

Combined services tunnels exist across Australia and internationally. The technologies involved are mature and reliable and this is considered appropriate for the unique context of the City North precinct.



Advocacy

The City of Melbourne takes on a stewardship role to drive the realisation of this concept.

Consult with the utility companies to ascertain the future planned services infrastructure and how this could align with installing the combined service tunnel and distribution pipes to reduce costs and create synergies. In particular it is recommended that this includes CitiPower, City West Water and the APA Group.



Research

Undertake a detailed design study to determine the implications of installing a combined services tunnel and a distribution pipe network under the existing network of roads (for example disruptions, easements and existing infrastructure).



Strategies

Strategy 5

Construct Efficient buildings

A significant proportion of a building's performance is determined in the early stage of the design process, with residential and commercial buildings being responsible for 23 per cent of Australia's total greenhouse gas emissions (Australian Sustainable Build Environment Council, 2010). There is an opportunity for the City of Melbourne to mandate the delivery of higher environmental performance in buildings in the City North precinct.

This involves mandating building efficiency standards above the Building Code of Australia standards for new and existing buildings, and the potential adoption of energy generation technologies, such as photo voltaic cells and solar hot water units.

Efficient buildings consume fewer resources, minimise adverse impacts on the built and natural environment, save money, increase worker productivity and create healthier environments for people to live and work in. By mandating that all new buildings meet minimum levels of performance the resources consumed by buildings will decrease.

There are barriers within the property industry that prevent efficient building measures being adopted, despite a strong business case for their implementation often existing. These barriers relate to the owner/tenant and developer/contractor/owner divisions, or 'split incentives', that result in the benefits of energy efficiency measures not accruing to the party that funded their costs.

The City of Melbourne has developed a policy for inclusion in the *Melbourne Planning Scheme* that will ensure all new buildings have higher environmental credentials. This will drive improvements in line with current best practice, in the energy, water and waste efficiency of new urban development.

Melbourne Planning Scheme Amendment C187 seeks to incorporate the new energy waste and water efficiency policy into the *Melbourne Planning Scheme*. It will apply to buildings used for office, retail, education, research and accommodation purposes.

The new policy will ensure that future development across the city will:

- Achieve a high level of environmental design, construction and operation.

- Minimise the city's contribution to climate change impacts by reducing greenhouse gas emissions.
- Improve water efficiency of buildings and encourage the reuse of mains water.

Melbourne Planning Scheme Amendment C187 proposes specific standards for energy, water and waste efficiency depending on use and the size of the proposed building. The measures/rating tools are industry accepted and recognised.

On top of the efficiencies of individual buildings, *Melbourne Planning Scheme Amendment C187* also recognises additional efficiency contributions that could come from district based energy, water and waste systems within urban renewal areas defined in the new *Municipal Strategic Statement*. The policy encourages new buildings in urban renewal areas to be capable of connecting to planned or established alternative district water supply, energy supply, waste collection and waste treatment systems. The introduction into the *Melbourne Planning Scheme* of new built form controls that target overall environmental performance would provide a mechanism to influence sustainability outcomes within City North.

07

Sustainable Infrastructure

102

Actions

SUSTAINABLE INFRASTRUCTURE

This strategy will be implemented through the following actions:



Policy

Mandate improved environmental performance on the redevelopment of new and existing buildings when a planning permit is triggered through the implementation of the Energy Water Waste Policy (C187).



Research

Investigate the introduction of and mandate building efficiency standards in the planning scheme that go beyond current regulations.

1 year

1 - 5 years

5 + years



Strategy 6

Implement water sensitive urban design (WSUD)

The application of water sensitive urban design (WSUD) principles within the streetscape and landscape of open spaces provides the opportunity to harvest run-off for irrigation that would otherwise be lost to the stormwater drainage system. The implementation of WSUD measures would also improve the quality of collected stormwater through the filtration of pollutants.

As the precinct develops, it is proposed that WSUD is delivered by taking land from roads and redesigning active recreation areas. WSUD within the City North precinct can be used to replace between 2 - 3 per cent of the impervious surface area of the precinct with porous and permeable pavers.

When implementing WSUD features, there needs to be a

balance between WSUD and the provision of active and useable community open space. Seasonal influences are also a critical factor. Periods of peak demand in summer and peak supply in winter are not synchronised. As a result, some proportion of irrigation is likely to be required during summer when rainfall is low and temperatures are high. This need can be met through the supply of recycled water generated within the CSHs, and from the stormwater collected in the distributed stormwater collection points (small underground tanks).

This approach supports the delivery of the integrated water management requirements of Clause 56 of the *Victoria Planning Provisions* (VPPs). Clause 56 is the residential subdivisions component of the VPP and the basis for all local council planning schemes in Victoria.

The benefits of WSUD are that it:

- Reduces pollutant loadings in stormwater and downstream receiving waters.
- Helps mitigate against flash flooding by reducing flow rates.
- Provides vegetated public spaces with the interrelated benefit of shade, air quality, habitat and visual amenity.

For further information on designing WSUD landscapes refer to the City of Melbourne's WSUD guidelines.

Actions

These strategies will be implemented through the following actions.



Research

Develop a WSUD concept for the City North precinct that considers the yearly water balance requirements of the system, the location and size of the distributed stormwater collection points and does not reduce public open space.

1 year

1 - 5 years

5 + years

07 Sustainable Infrastructure

104
SUSTAINABLE INFRASTRUCTURE

Strategy 7

Incorporate a vehicle-to-grid system

In City North it is proposed that a vehicle-to-grid (V2G) system could be implemented in car parks to generate electricity. This involves electric drive vehicles (EDV) plugging into the electricity network to feed electricity back into the grid during peaks in demand and charge when electricity demand is low. This increases the efficiency of the electricity grid by reducing troughs in demand and reducing the need for back-up. The main examples of potential applications include converting commercial fleets, car rental companies and parking lots into 'car parking power plants'.

EDV technology is likely to play an important role in the future of motor vehicles in Australia. EDVs may reduce greenhouse gas emissions and ambient air pollution, while reducing energy

consumption and thus Australia's exposure to crude oil prices and oil import dependency. Importantly, the emissions reduction potential of EDV technology depends on the carbon intensity of electric power generation and the size of the vehicle fleet. Currently implementation of this system would lead to greater greenhouse emissions in the absence of low or zero carbon electricity generation availability.

Strategy 8

Incorporate opportunities for sustainable infrastructure into any street upgrades.

Refer Strategy 2 Chapter 5 Pulic Realm.



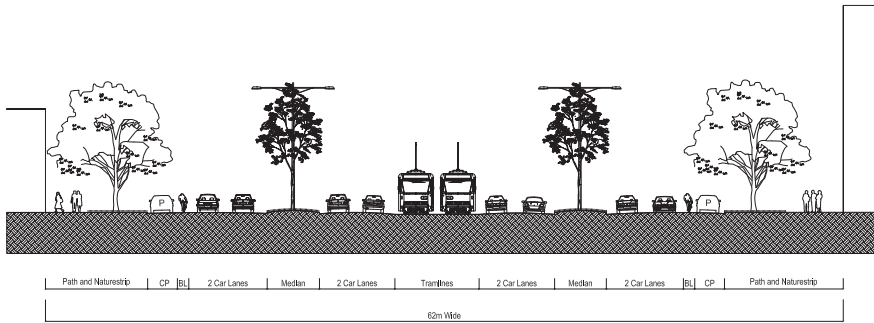
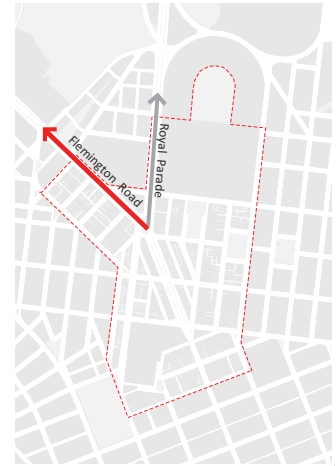
Research

Work needs to be undertaken to determine the merits of an electric vehicle-to-grid (V2G) system and whether such an approach is consistent with the City of Melbourne's emissions reduction strategy. This needs to address the greenhouse intensity of grid powered electricity, the potential demands on the electricity network, the ability to generate renewable energy and other relevant considerations.

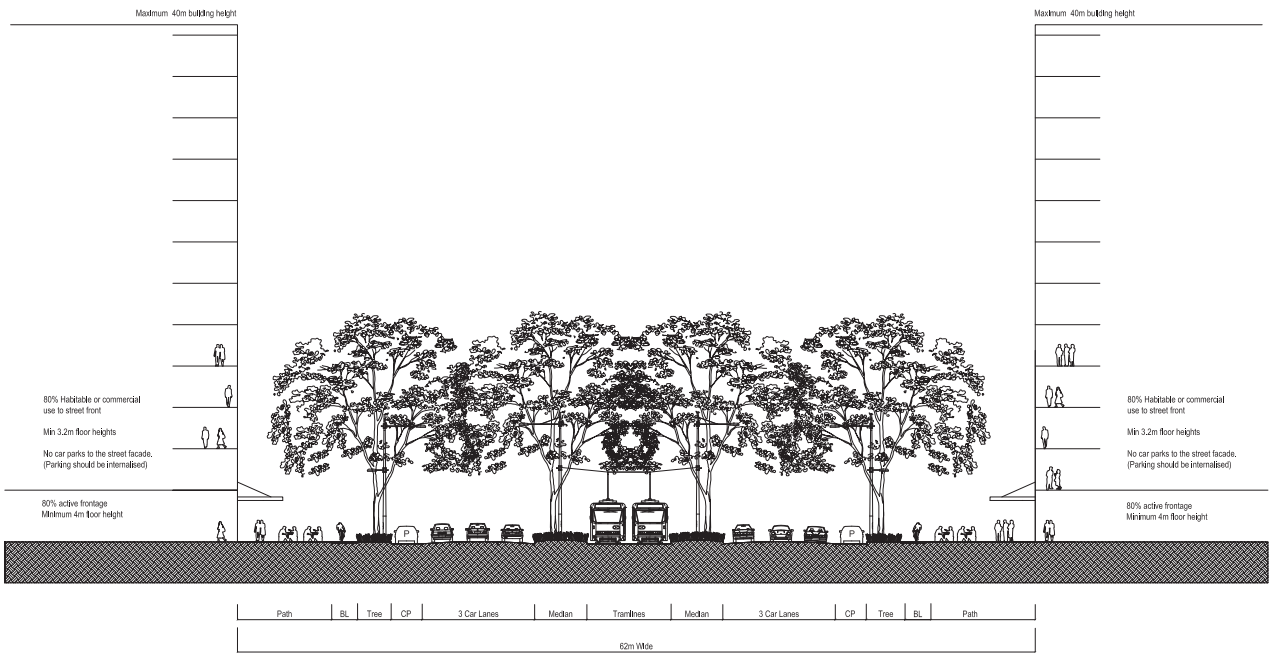


Appendix A: Street Sections

BOULEVARD
FLEMINGTON ROAD

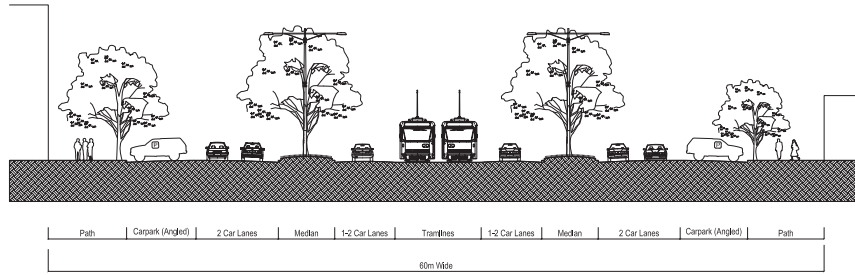
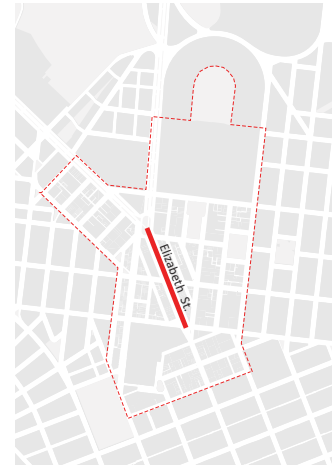


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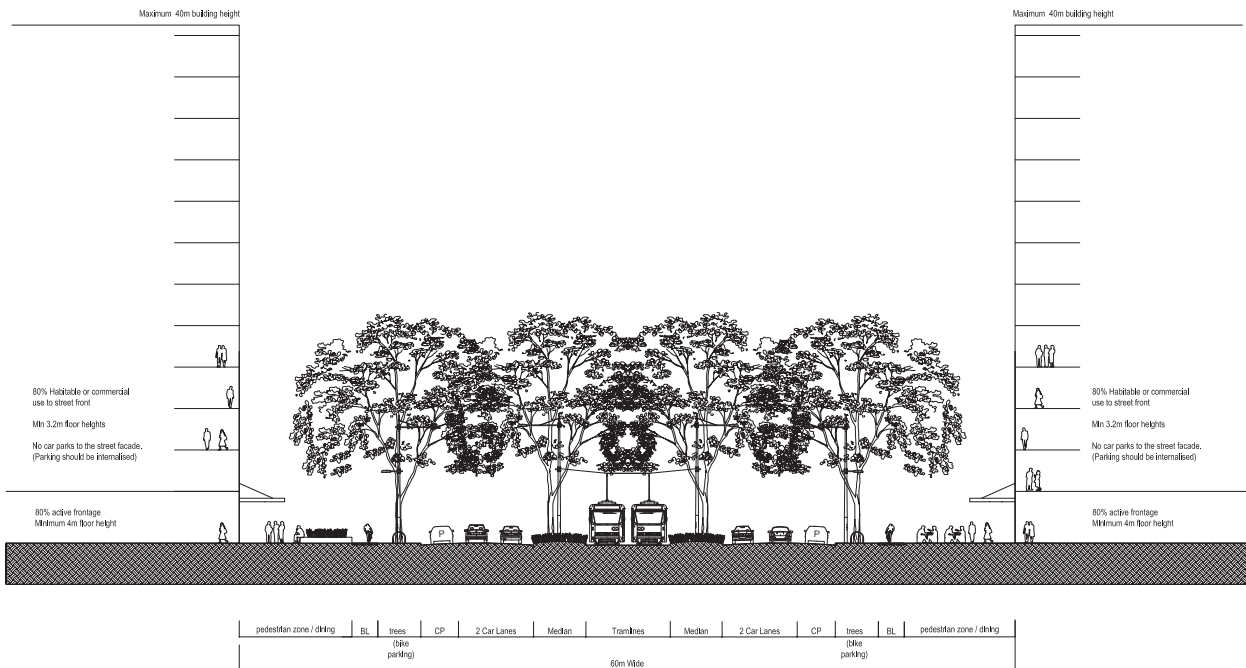


PROPOSED

BOULEVARD
ELIZABETH STREET

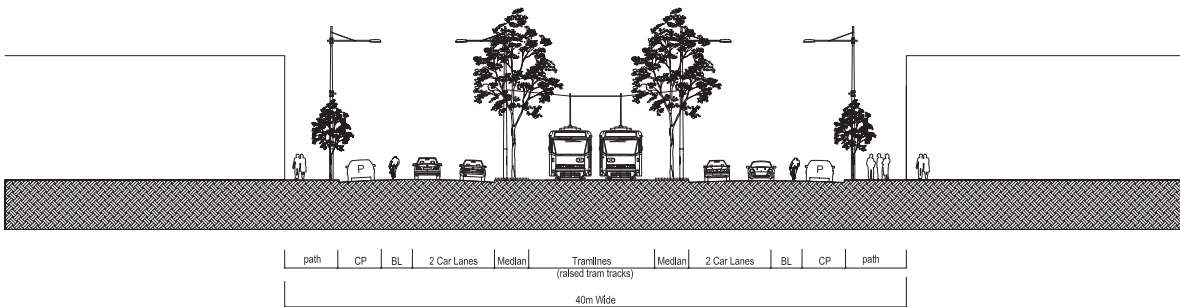


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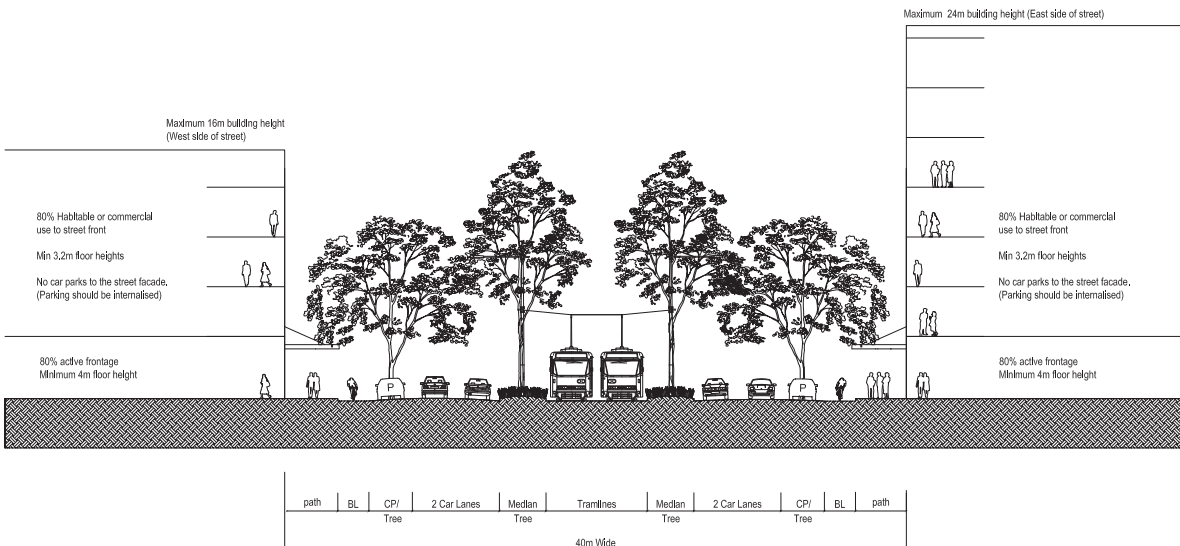


PROPOSED

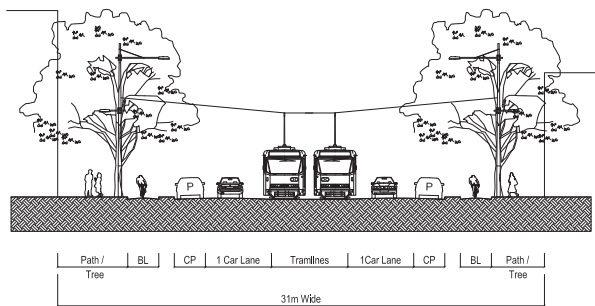
AVENUE
PEEL STREET



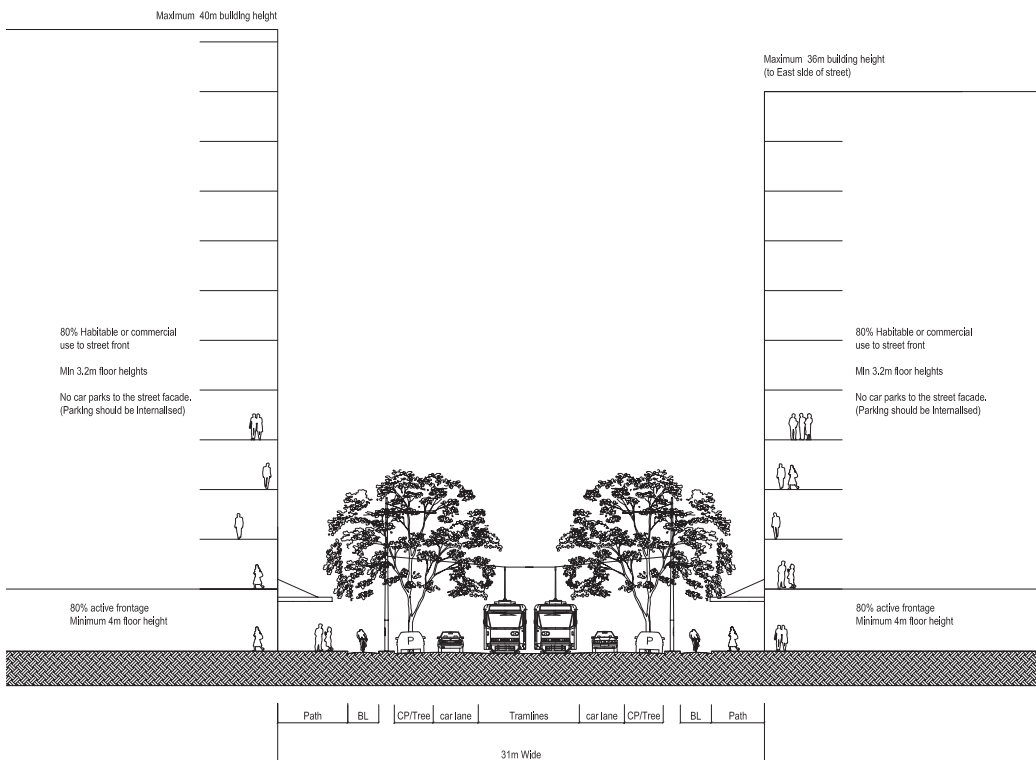
EXISTING



STREET TYPE 1
SWANSTON STREET

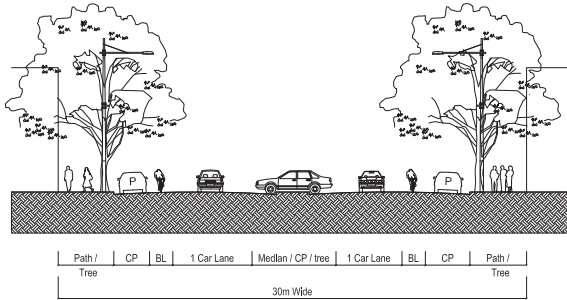
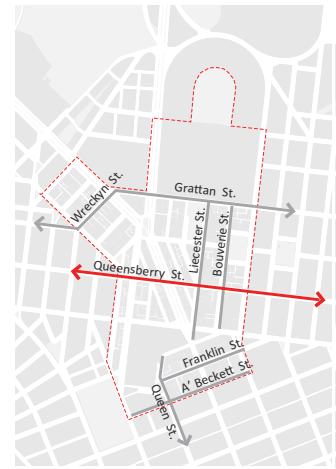


EXISTING

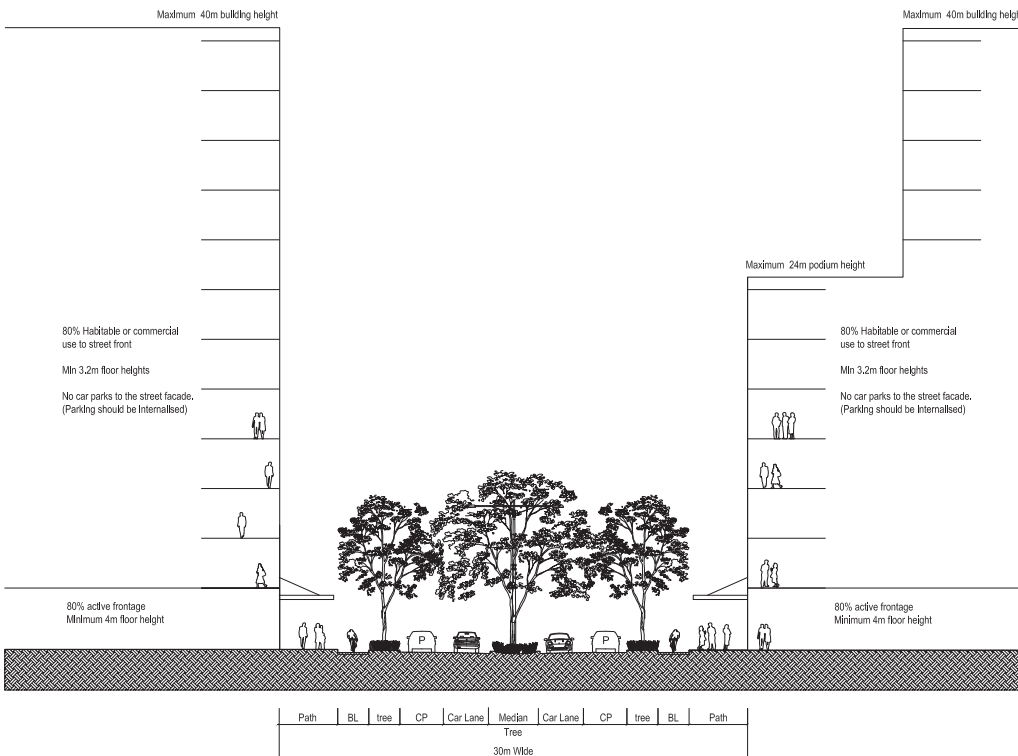


PROPOSED

STREET TYPE 2
QUEENSBERRY STREET

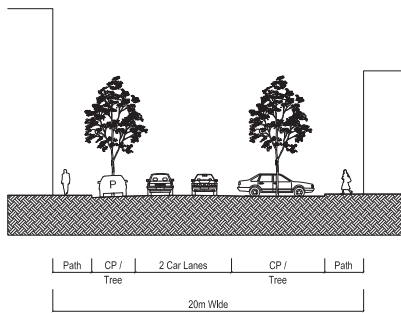
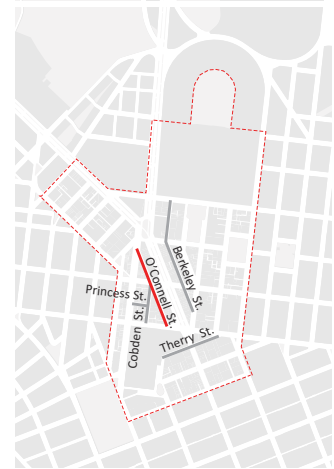


EXISTING

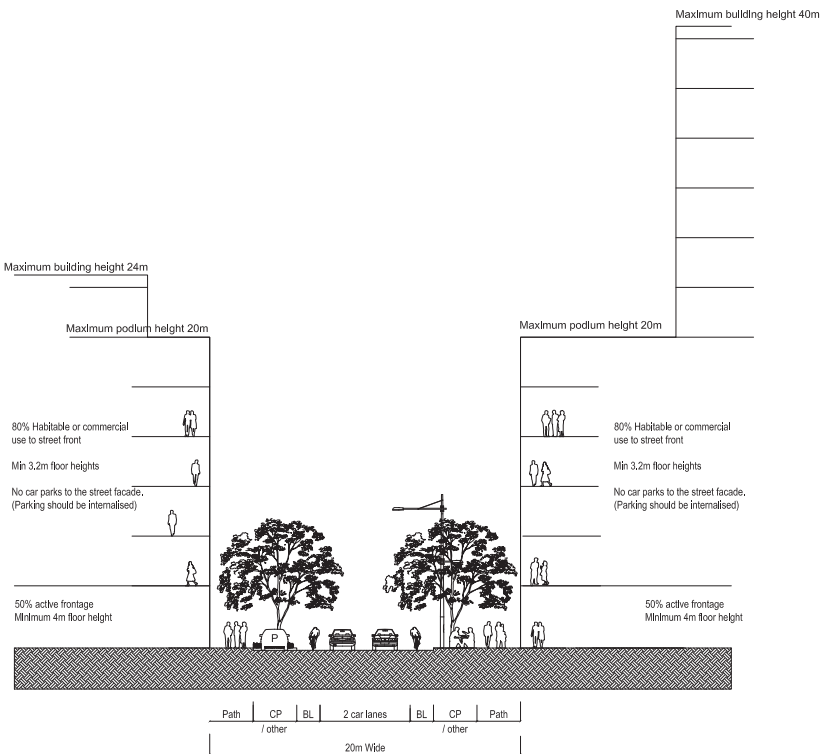


PROPOSED

STREET TYPE 3 - 20m wide
O'CONNELL STREET

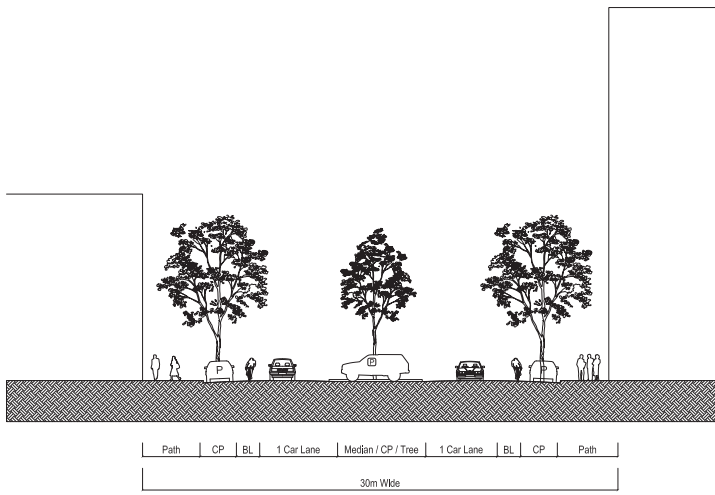
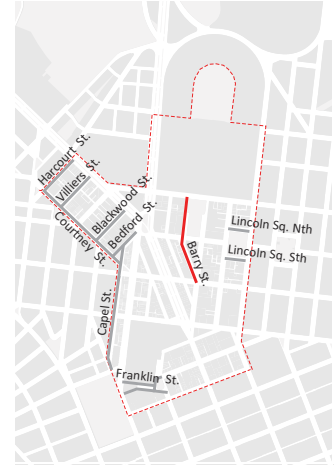


EXISTING

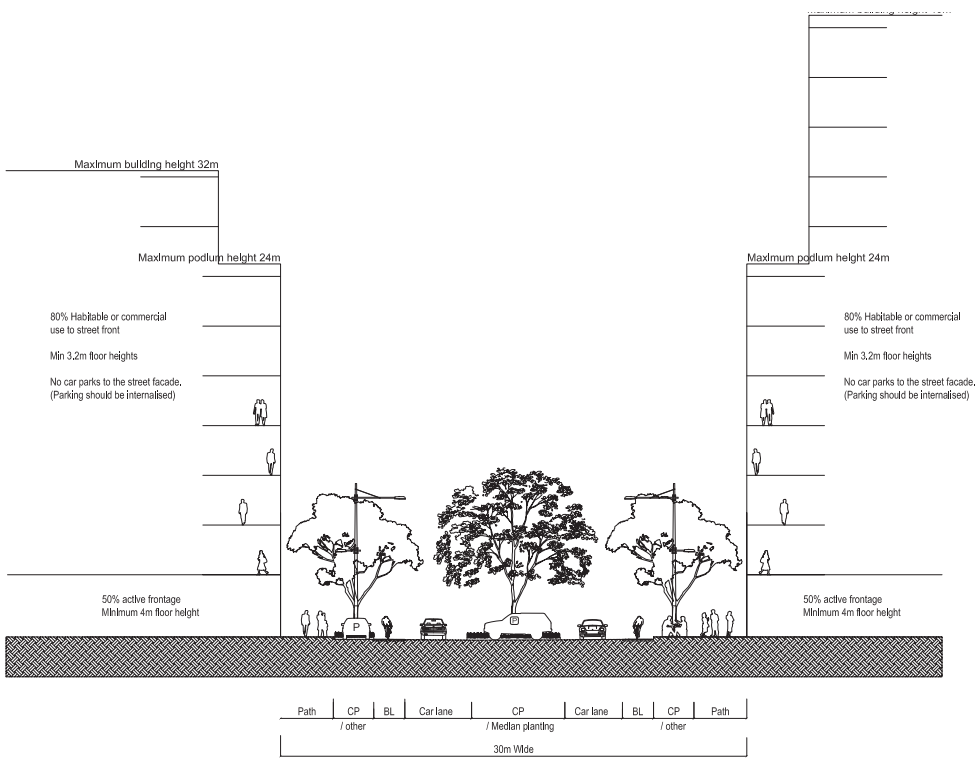


PROPOSED

STREET TYPE 3 - 30m wide
BARRY STREET

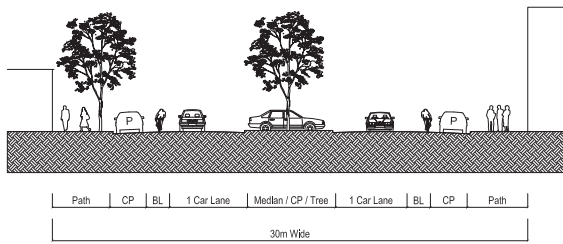
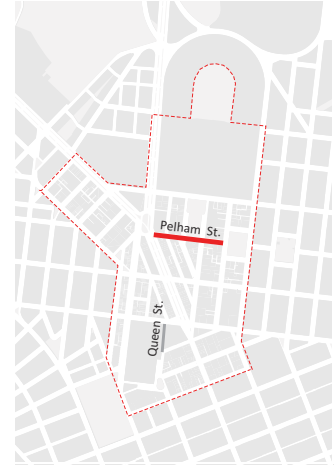


EXISTING

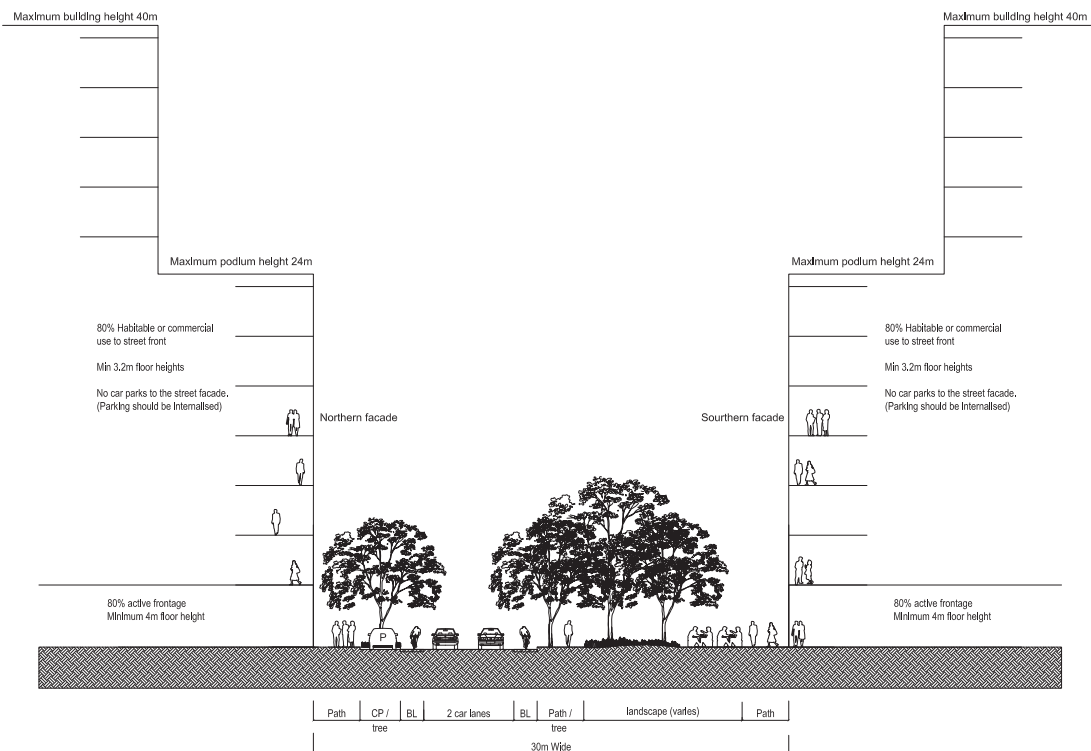


PROPOSED

STREET TYPE 3 - Shared
PELHAM STREET

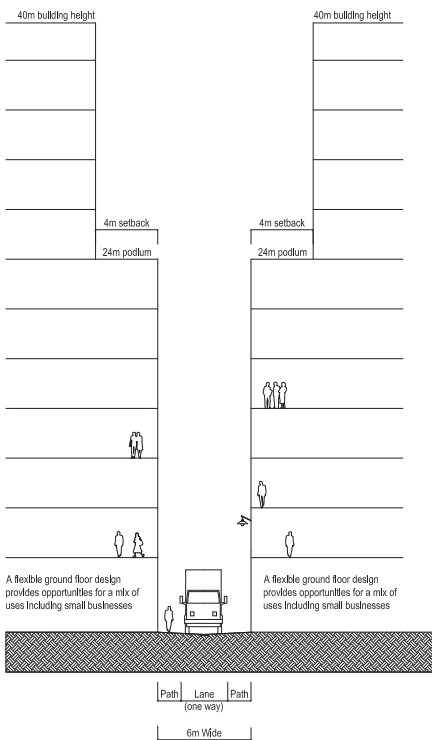
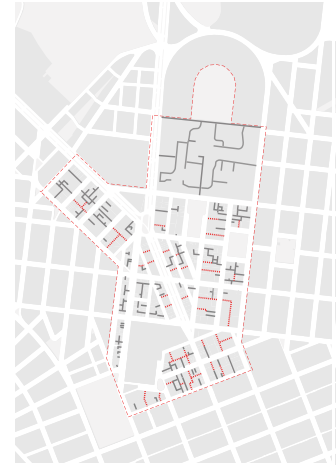


EXISTING

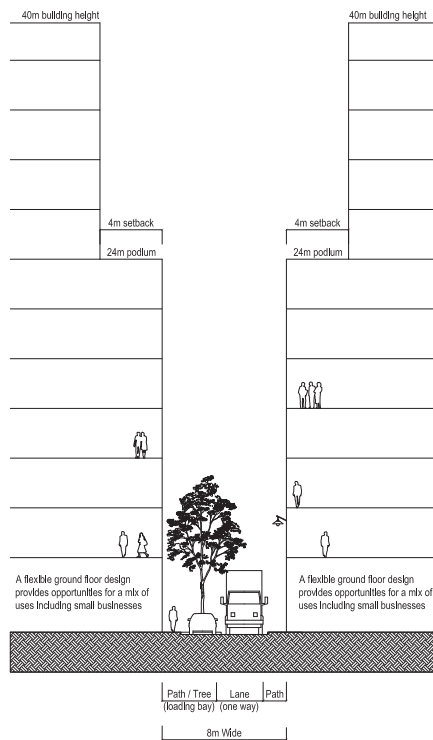


PROPOSED

LANEWAYS
INDICATIVE LANEWAYS SECTIONS



PROPOSED 6m LANE



PROPOSED 8m LANE

