Background Report

City North Structure Plan

City of Melbourne
May 2011

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01 Introduction

1.1 Overview of Structure Plan Purpose

The City North Structure Plan will provide a long-term vision for the area located directly to the north of the Central City.

Currently zoned for mixed and public use, the City North area is a diverse precinct characterised by industrial, commercial, retail and residential uses, alongside major education, health and research institutions. A proposal for a new metro-style underground passenger rail line between Footscray and Caulfield providing two underground stations at Parkville and CBD North has the potential to significantly revitalise the area to the north of the precinct.

The purpose of the Structure Plan will be to help guide comprehensive change and development in City North. It will set out clear frameworks for land use, transport and built form, together with an implementation and staging plan for the next two decades, 2010 to 2030.

1.2 Purpose of this Report (Links to the Structure Plan)

The Background Report provides analysis of existing activities, population and development trends, community values and stakeholder inputs relevant to City North, to inform the development of the Structure Plan.

The Background Report is divided into eight main parts:

1. Introduction
2. Context
3. Community Values
4. Population and Housing
5. Land Use and Economy
6. Movement and Transport
7. Built Form and Open Space
8. Environment and Infrastructure

The content of the City North Structure Plan builds upon information in the Background Report, as well as the integration of expert and stakeholder inputs, and consultation on the draft. As such, the content of the City North Structure Plan may be broader than what is included in this report.

1.3 Study Area

The Structure Plan area, relative to its surrounding environs, is shown in Figure 1.1.

Located to the immediate north of the existing Central City area, the structure plan area is bounded by A'Beckett Street to the south, Swanston Street, to the east, the University of Melbourne and Grattan Street to the north, and Harcourt Street, Courtney Street, Capel Street and William Street to the west.

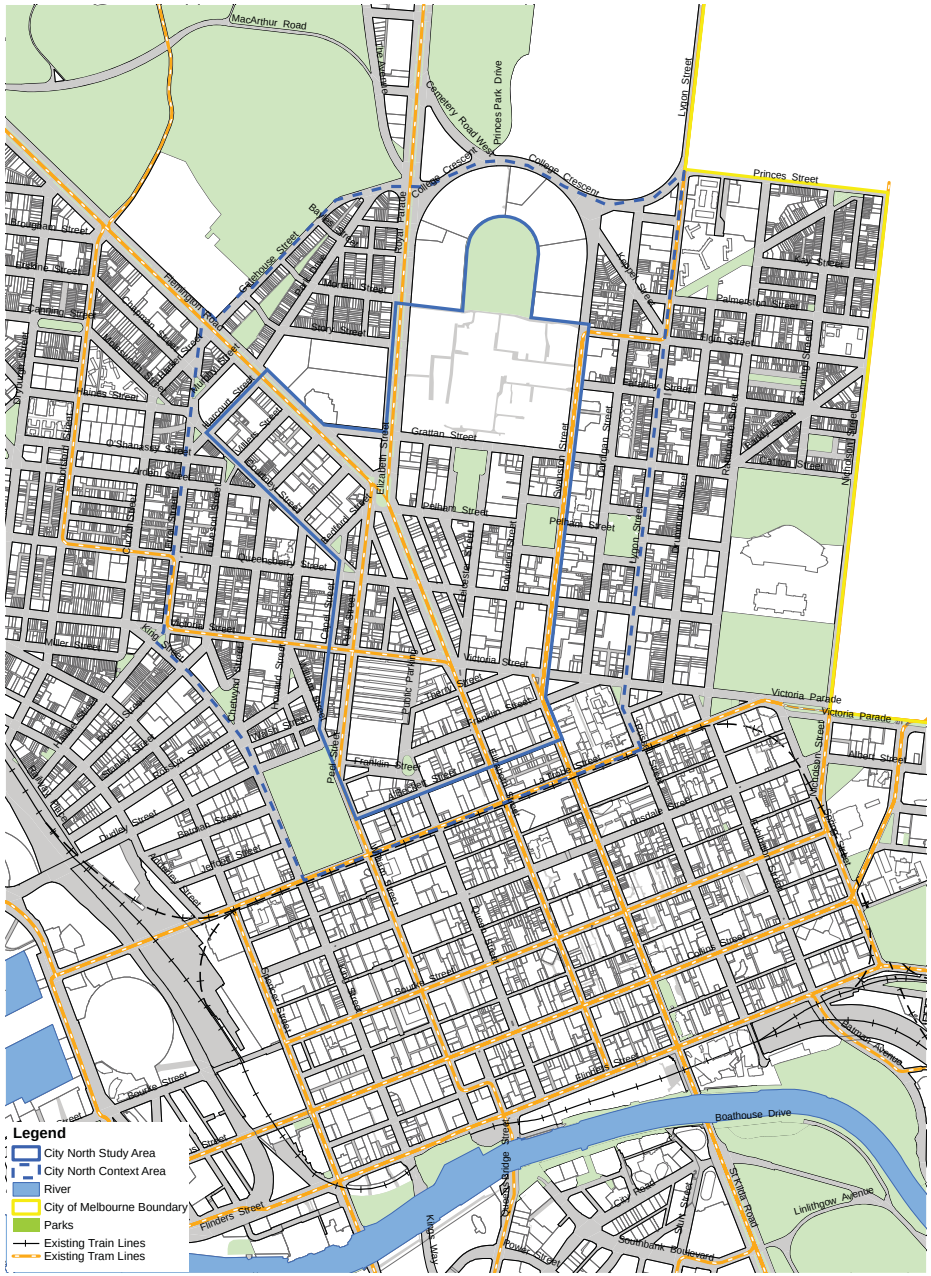

Figure 1.1: Study Area

The City North area is approximately 130 hectares of land. City North is the northern gateway to the municipality. The area encapsulates five suburb boundaries leading to a diverse and dynamic inner city precint. The Study Area broadly covers the suburbs of Parkville, Carlton South, Melbourne, West Melbourne and North Melbourne. The distinct neighbourhoods within the precinct have a diversity of employment and residential accommodation. Residences include a mix of established and new housing including purpose built student accommodation. Commercial and retail supply is scattered throughout.

Melbourne's knowledge precinct to the north, provides strong employment in medical and educational services. Historically Parkville and Carlton have developed as an education and knowledge precinct with both the University of Melbourne and the Royal Melbourne Hospital located in the area. Accompanying research institutes and bio-techonolgy uses have also developed in the precinct.

The Queen Victoria Market (QVM), RMIT University and the former Carlton United Brewery (CUB) site (commencing construction 2011) are located in the south of the precinct.

The QVM is a major tourist destination and Melbourne icon. The QVM has been on site since 1878. As Australia's only intact and operational major market of the 19th century, it is recognised by the National Trust of Australia for its cultural and architectural heritage significance. Architecturally significant structures supporting the function of the market include the large span open-sided sheds with heavy timber posts, iron trusses and timber pedimented facades, the single and two storey row shops on Victoria Street, the produce hall arch on Elizabeth Street, and the elaborate Meat Market designed by noted architect William Salway. The QVM reflects the history of market, shopping and leisure in Melbourne.

The area bounded by Victoria, Peel, Franklin and Queen Streets comprises Melbourne's first official cemetry, which was in operation from 1837 to 1854. Many of the estimated 10,000 burials remain on the site.

Royal Parade and Flemington Road are key boulevard entrances to the precinct and the Haymarket roundabout provides a significant gateway for access to the Central City to the south. Elizabeth Street has a unique retail offer with a historical and ongoing presence of car dealership and servicing uses.

Proximity to the Central City has seen parts of the precinct, particularly the areas in proximity to the QVM, become gentrified. The presence of the University of Melbourne and Royal Melbourne Hospital have ensured a strong demand for affordable housing, particularly in the north of the precinct.

There is a limited supply of local shopping and services in the Study Area. South Parkville and the area surrounding the University provide some local services and the QVM provides fresh food, deli and other retailing. Adjoining areas such as the Central City, Errol Street in North Melbourne and Lygon Street in Carlton also service the commercial and retailing needs of the precinct.

As part of the State Government policy and Council's draft Municipal Strategic Statement (MSS), central city-style activities will extend to City North.

A key catalyst will be the development of Melbourne Metro: a new, high-speed and high capacity underground passenger line proposed between Footscray and Caulfield.

The Metro proposal locates a station at Grattan Street and Swanston Street.

02 Context

2.1 Geography

The City North Study Area is a combination of spur and lower lying creek ground providing opportunities for key civic vistas. The north of the Study Area affords views back to the Central City area, due to its location upon a spur that separates the watershed of the Merri Creek and the Moonee Pond Creek valleys.

The south of the precinct is characterised by lower lying ground due to the historical Elizabeth Street creek.

There are no key natural features within the precinct, although a historical road and open space network provides character and opportunity for the future renewal of the area.

2.2 A Knowledge City

The City North Precinct and immediate area contains a rich concentration of high quality and world renowned educational, research and clinical facilities. It is identified as a 'knowledge precinct' and exhibits strong connections and affiliations with Melbourne's other knowledge generating precincts, corridors and facilities.

2.2.1 What is a Knowledge Precinct?

A knowledge precinct is an area within the city which has a recognizable identity relating to knowledge generation, transmission and consumption. The generation of research, high value-added products and technology are central to the economic activity in a knowledge precinct, and are important in enhancing employment opportunities and creating wealth. Knowledge precinct developments are established where there is advanced technological infrastructure and established networks of innovation between people and organisations.

2.2.2 Biotechnology Precincts

Victoria is considered to have several biotechnology precincts or clusters, as shown on Figure 2.1. Biotechnology is a dynamic sector which requires a strong foundation in research and a focus on applying knowledge to create commercial products and services. The sector is continuing to mature, as indicated by growth in clinical trial activities and commercialisation of new products.

As Australia's biotechnology capital, Melbourne is an innovative nucleus for world-class science with a strong life sciences industry, with 134 biotechnology companies, 13 major medical research institutes, nine universities and ten teaching hospitals that conduct significant medical research.

Some of the specialisations and Attributes of Victoria's Biotechnology Precincts are outlined below.

Parkville

Pre-eminent precinct in Australia for medical and bioscientific research, education, clinical practice and production of pharmaceuticals and biotechnology products;

Strengths in health biotechnology, including cancer, medical bionics, neuroscience and mental health, and infectious diseases

(See Map 2.2 for more detail)

Monash (Clayton)

(Monash Health Research Precinct)

Comprises leading science and technology-oriented manufacturing companies and has a key focus on biomedical and biotechnology research

Australia's largest stem cell research cluster;

Focus on translating research into clinical and commercial outcomes in health biotechnology, industrial biotechnology and nanotechnology

Strengths in infectious diseases, immunology, stem cell research, regenerative medicine and biomedical materials;

Key institutions include:

- Monash University;
- Monash Institutes for Health
- Monash Institute for Reproduction and Development
- Australian Stem Cell Centre
- Australian Institute for Regenerative Medicine
- Victorian Bioinformatics Consortium
- Southern Health Care Network
- Centre for Scientific and Industrial Research Organisation (CSIRO)
- NanoVic
- Australian Synchrotron
- Melbourne Centre for Nanofabrication;
- the Australian Synchrotron

Bundoora

- Agriobiosciences cluster
- $288 million AgriBio Centre being developed at La Trobe University
- Globally recognised strengths in plant and animal genomics, animal health, agricultural sustainability and dairy innovation
- New La Trobe Institute of Molecular Science will support the research and development of commercial products related to molecular science, biotechnology and nanotechnology.
- Comprises La Trobe University, La Trobe Research and Development

Park and RMIT University's Bundoora campus. It includes a range of organisations, spanning industry sectors, such as:

-Rio Tinto's Research and Technology Centre

-Plant Biotechnology Centre

-Walter and Eliza Hall Institute

Alfred Medical Research and Education Precinct Prahran

- Integrated biomedical research and development centre comprising the Baker Heart Research Institute and the Macfarlane Burnet Centre - with the Alfred Hospital and the Monash University School of Medicine to share infrastructure and undertake collaborative research

Werribee

Focused on animal and food research incorporating mixed research and industry hubs of excellence in biotechnology, including veterinary applications, agribusiness and environmental sustainability. It has links to:

- Victoria University of Technology
- Victorian Institute of Animal Science
- Austin Research Institute
- Industry

Deakin University, Geelong

Industrial biotechnology

- Large scale manufacturing capabilities
- Strengths in functional foods, advanced materials, nanotechnology and animal health
- Australian Carbon Fibre Research Facility

Austin Biomedical Alliance Precinct Heidelberg

Biomedical Alliance aims to foster closer links between researchers and clinicians to achieve better health outcomes through national and international collaboration, bringing together world-class research groups including the:

- Austin Health and the Ludwig Institute for Cancer Research (partners in the new Olivia Newton-John Cancer and Wellness Centre underway)
- University of Melbourne
- Austin Research Institute
- Florey Neuroscience Institutes (Melbourne Brain Centre)
- Australian Centre for Post-traumatic Mental Health
- Institute for Breathing and Sleep
- Epilepsy Research Institute

Melbourne's Central Biotechnology Precinct is well recognised for its major health biotechnology focus and comprises the Parkville Precinct and St Vincent's Hospital's Eastern Hill Precinct as well as the Western Hospital and the Peter MacCallum Cancer Centre. It is home to nine hospitals and many of Australia's oldest and most renowned medical research institutes in close proximity. Within Parkville there are two universities, however, new rail investment has the potential to enhance the connection of this precinct to three additional universities. Melbourne's Parkville Precinct is internationally recognised as a hub of excellence in healthcare, research and education. Its institutions have a history of collaboration and the presence of a leading University and key research facilities co-located within or near major hospitals foster a multidisciplinary approach that fuels new discoveries. The precinct plays an important role in biotechnology innovation and contributes to Melbourne's thriving life sciences sector.

2.2.3 Attributes of the Parkville Biotechnology Precinct

The Parkville Precinct, which incorporates the City North area and spans north along Royal Parade and Flemington Road, is recognised as a hub of healthcare, research and educational excellence, characterised by a cluster of research institutions and facilities co-located within or near major hospitals and with strong linkages with the University of Melbourne. As shown on Figure 2.2, the Parkville Precinct comprises a multitude of knowledge based institutions; these facilities and organisations have significantly contributed to advancements in cancer, medical bionics, neuroscience and mental health and infectious diseases and have strong capabilities in information and communications technology and life sciences.

Ongoing investments in research infrastructure and developments in the Parkville Precinct, some of which are outlined below, will continue to strengthen and facilitate the translation of new discoveries from 'bench to bedside' to improve health outcomes, attract innovative researchers and clinicians, and generate further international investment and research collaborations to Melbourne.

- The Bio21 Molecular Science and Biotechnology Institute which opened in 2005, is a flagship multidisciplinary research centre specialising in medical, agricultural and environmental biotechnology with 500 researchers, students and industry partners ranging from large biopharmaceutical R&D to small emerging biotech companies;
- The $1 billion Victorian Comprehensive Cancer Centre due for completion in 2015 will comprise 1,400 cancer researchers, making it one of the largest concentrations of cancer

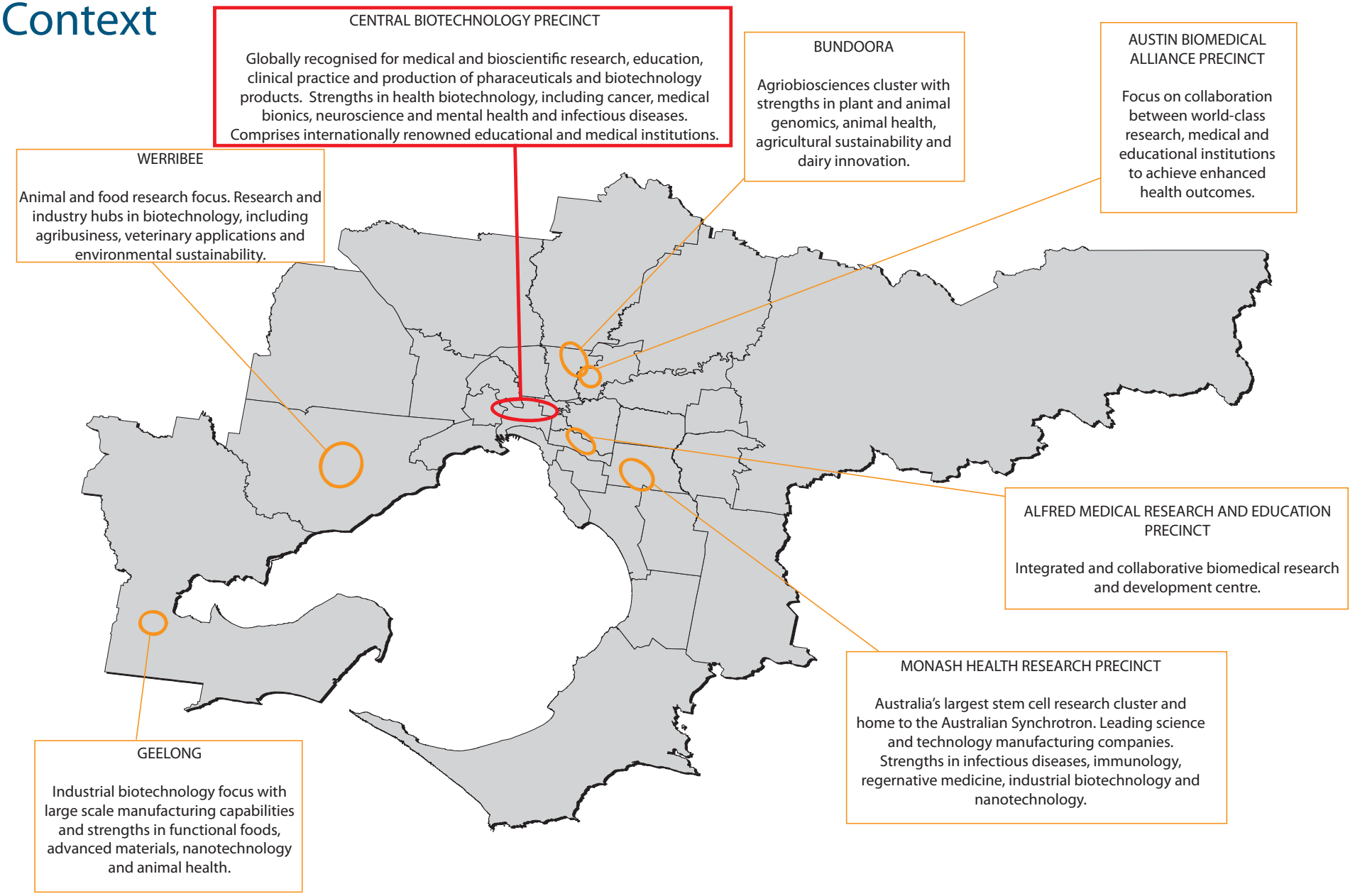

Figure 2.1: Melbourne's knowledge precincts

Industry

Health

Research

Education

1 Mental Health Research Institute
2 CSL Limited
3 National Ageing Research Institute
4 Orygen Youth Health
5 Monash University – Pharmacy & Pharmaceutical Sciences
Cephalon Australia
6 CSIRO – Division of Molecular & Health Technologies
Avipep
7 Royal Childrens Hospital, expected completion 2011
(Old RCH to be returned to parkland in 2014)
Murdoch Childrens Research Institute
University of Melbourne - Paediatrics
8 University of Melbourne - Veterinary Sciences
Veterinary Research Institute (University of Melbourne)
Pfizer Animal Health
9 Bio 21 Molecular Science and Biotechnology Institute and
Incubator (University of Melbourne)
CSL R&D (includes Patrys)
Prana Biotechnology R&D
Sienna Cancer Diagnostics Ltd
BioScreen
TechNyou
Tecniplast
10 University High School
Gene Technology Access Centre
11 Walter & Eliza Hall Institute of Medical Research
Nexpep
12 Royal Womens Hospital
13 Royal Melbourne Hospital
Ludwig Institute for Cancer Research
Australian Genome Research Facility
Bone Marrow Research Laboratories
BioGrid Australia
Cancer Trials Australia
University of Melbourne - Clinical Science
University of Melbourne Centre for Medical Research
Centre for Translational Neuroscience
14 Victorian Infectious Diseases Reference Laboratory
15 Victorian Comprehensive Cancer Centre
(expected opening 2015)
16 Planned Peter Doherty Institute for Infection & Immunity
University of Melbourne - Microbiology and Immunology
Microbiological Diagnostic Unit Public Health Laboratory
Melbourne Health: The Victorian Infectious Diseases Reference
Laboratory
17 University of Melbourne proposed new Medical and Health
Science Schools
18 University of Melbourne - General Practice and Physiotherapy
19 University of Melbourne - Information and Communication Technology
20 University of Melbourne Medical School
21 Melbourne Brain Centre (campus also at the Austin, Heidelberg)
Florey Neuroscience Institutes
Mental Health Research Institute
22 Alan Gilbert Building
Neuroscience Victoria
Neuroscience Australia
Melbourne Neuropsychiatry Centre (University of Melbourne
and Melbourne Health)
Florey Neurosciences Institute
Nossal Institute for Global Health

23 Melbourne Ventures
Hatchtech
Crytopharma
24 University of Melbourne - School of Population Health
Melbourne Sustainable Society Institute
Victorian Centre for Climate Change Adaption Research
(Melbourne, RMIT, Monash and Latrobe Universities and
Department of Primary Industries)
25 University of Melbourne - Centre for Neural Engineering
26 Victorian Life Sciences Computation Initiative and
the IBM Co-laboratory
27 Melbourne Dental School
The Royal Dental Hospital (RMIT University and
University of Melbourne - expansion underway)
Dental Health Services Victoria
28 University of Melbourne - School of Health Sciences
29 University of Melbourne Audiology, Hearing and Speech
Sciences
30 University of Melbourne - Graduate School of
Engineering
31 University of Melbourne Department of Electrical
and Electronic Engineering
Institute for a Broadband-Enabled Society
National ICT Australia Victoria Research
Laboratory (includes Monash University)
Centre for Ultra Broadband Information Networks
Melbourne Systems Laboratory
Centre for Energy Efficient Telecommunications
(Bell Labs and Alcatel-Lucent)
32 University of Melbourne - Graduate School of Land and
Environment
33 University of Melbourne School of Physics
Melbourne Materials Institute
Bionic Vision Australia
Defence Science Institute (Defence Science and
Technology Organisation partnership)
34 University of Melbourne School of Earth Sciences
Melbourne Energy Institute
Victorian Partnership for Advanced Computing Limited -
Health R&D (consortium of Victorian Universities)

IBM Global Research and Development Laboratory
(University of Melbourne Partnership) – location to be
determined

Please note: this list is not exhaustive and there are many
more companies, research collaborations and facilities, such
as user pay platform technologies and Centres of Research
Excellence with multiple consortium partners, located
within the precinct.

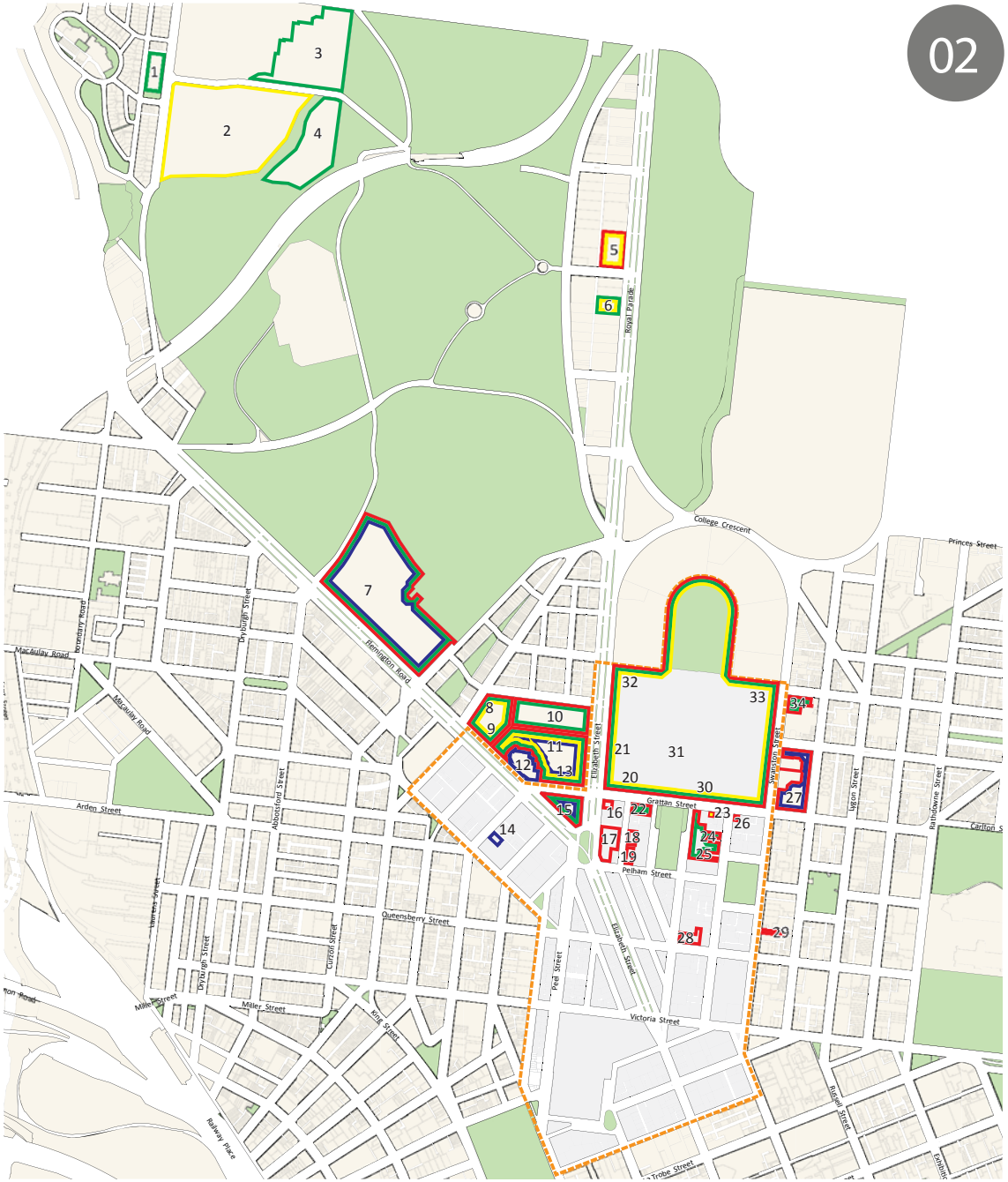

Figure 2.2: Knowledge precinct map 2

clinicians and researchers in the southern hemisphere, ranking it among the top ten cancer centres in the world. This facility will be used by staff from Peter MacCallum Cancer Centre, Melbourne Health, the University of Melbourne, Ludwig Institute for Cancer Research Melbourne, Walter and Eliza Hall Institute of Medical Research, The Royal Women's Hospital and the Royal Children's Hospital;

- Opening in 2011, the new $225 million Melbourne Brain Centre, which is a collaboration between the University of Melbourne, the Mental Health Research Institute, the Florey Neurosciences Institutes, Austin Health and Melbourne Health, will be the largest brain research centre in the southern hemisphere housing over 700 employees across two campuses at the University of Melbourne in Parkville and the Austin Hospital;
- The $210 million Peter Doherty Institute for Infection and Immunity will integrate the teaching, training, research and public health activities of the University of Melbourne and the Royal Melbourne Hospital to create a world class capability in infectious diseases;
- The $150 million expansion of the Walter and Eliza Hall Institute of Medical Research will strengthen its research capabilities through an increase in 400 employees;
- The CSIRO Materials Science and Engineering's laboratory in Parkville is an internationally recognised National Centre for Protein Engineering, developing antibody-like molecules for diagnostic applications, protein characterisation, structural biology, cell culture, protein purification and robotic crystallisation.
- The Victorian Research Laboratory of National ICT Australia (NICTA) Australia's Centre of Excellence for ICT innovation, is heavily engaged in the development of new technologies to support breakthrough biomedical and clinical research, including a lead role in the development of bionic eye technology as part of the Bionic Vision Australia research consortium.
- One of the world's five largest life science supercomputers will be located within the $100 million Victorian Life Sciences Computational Facility by 2012. Although locations for the planned IBM Global Research and Development are currently being considered, the first computer cluster is online and researchers have now been joined by members of the IBM Life Sciences Collaboratory.

As the precinct continues to expand its portfolio of internationally renowned research and clinical facilities, the University of Melbourne and RMIT will expand into the City North precinct – creating an agglomeration of educational facilities. This includes the RMIT Design Hub, which will provide facilities and accommodation for a diverse range of creative disciplines and the consolidation of the University of Melbourne campus, south of Grattan Street.

In addition to the clustering of research and innovation activities, the area has a catchment of highly educated workers, medical professionals, academics and researchers, and students. The Precinct also has commercial, residential and parkland interfaces and a high quality amenity and character as a result of the preservation of heritage.

2.2.4 Benefits of Knowledge Precincts

There is emerging international recognition that enhancing and maintaining prosperity is more dependent upon the ability to create and generate economically useful new ideas than on access to physical resources as in the past. To compete nationally and internationally cities need knowledge related infrastructure including:

- Universities and research and development institutes
- Technological infrastructure
- A concentration of well educated people
- Connections to the global economy through international companies, and finance institutions for trade and investment.

An independent evaluation of the STI Initiative undertaken by Deloitte found that a return of up to $3.55 can be expected for every dollar invested by the Victorian Government to the Victorian economy. Further to this, a recent evaluation ranked Melbourne among the top five global locations for drug discovery, diagnostics and clinical trials and as an international leader in key areas of health and agricultural biotechnology. The City North Precinct and surrounding area plays a significant role in contributing to these advances and enhancing Melbourne and Victoria's performance as an advanced economy.

At a national level, supporting knowledge activities can contribute to global economic competitiveness, including the development and enhancement of strong local, regional, national and global networks.

Local benefits of supporting the function and productivity of City North's knowledge activity are outlined below.

Economic

- Creation of more jobs and well-paid employment.
- Faster growth in the community's income and wealth.
- More sustainable economy due to increased capacity to adapt to technological innovations and attract off-shore investment .
- Revitalisation of traditional industries.
- Access to multiple markets and large specialised labour pools.
- Support ability of companies to innovatively respond to changing market conditions due to 'spill-over effects' from other firms (staff moves, networking, etc).
- Local access to a variety of goods and services
- Boost to business and recreational tourism by placing city 'on the map'.

Local - Social and Cultural

- Enhanced tourism potential.
- Enhanced capacity to share wealth through public investment (for example in parks, public transport, cultural facilities) and better funding of social safety nets.
- Enhanced city pride and confidence which attracts reinvestment of local capital into the local economy.
- Improved educational services.
- Enhanced tolerance towards minorities and immigrants.
- Enhanced democratic function through online knowledge-sharing among citizens, provision of inexpensive, real-time access to information.
- Local access to cultural facilities and social opportunities.
- Enhanced quality of life and place as a result of public service (eg. health and education), and conservation and development of cultural, aesthetic and ecological values to attract creative class of knowledge workers.

Local - Environmental

- High quality living environments.
- Improved capacity to maintain, enhance and repair the environment and greater commitment to pro-environment decisions.

2.3 Policy Context

2.3.1 State Policy

With the recent change in State Government, Council will be working with the new government to develop a new metropolitan strategy.

Parkville Precinct Strategic Plan

Vision

A precinct that integrates world-class healthcare, research and education to rapidly translate research discoveries into clinical practice, nurture life sciences and biotechnology development and drive economic growth in Victoria.

Aim of the Strategic Plan

The Parkville Precinct Strategic Plan has been developed to assure the Precinct's ongoing important role in healthcare, research and education. The 10-year Plan will guide the Parkville Precinct's development and strongly position the Precinct to take advantage of its institutions, established links, advanced infrastructure and supportive environment.

Parkville as a Precinct

The Parkville Precinct has an outstanding collection of healthcare, research and education institutions with a history of strong linkages. Co-locating a leading university and key research facilities within or near major hospitals enables an integrated and collaborative approach. The precinct is well located on the northern edge of Melbourne's CBD. Parkville's central location, along with its connections to important research centres, are two underlying competitive strengths.

The Plan identifies a number of opportunities for the Precinct to build on its foundation strengths. Due to partnerships fostered within the Precinct and across Victoria, Parkville is well placed to focus on translational research, the bridge between basic research and clinical practice. The establishment of eight Integrated Cancer Services across Victoria and focus on the delivery of best practice care, creates strategic opportunities to provide critical mass for a strong translational research direction in cancer. In particular, the establishment of the Western and Central Melbourne Integrated Cancer Service provides an opportunity for developing links that promote the rapid uptake of research into clinical practice.

There is also potential to develop commercial biotechnology facilities in close proximity to the Precinct, particularly in the existing commercial/ industrial areas of North and West Melbourne, and the CBD.

The Key Elements

The key elements identified as important for achieving the vision include:

1. Further investment in world-class facilities for research, education and clinical care

A number of significant sites were identified as opportunities to accommodate the Precinct's continued growth including the

former site of the Royal Dental Hospital, Walter and Eliza Hall Institute of Medical Research expansion, and commercial biotechnology development.

2. Enhancement of integration and coordination

The Structure Plan will assist in realising the Precinct vision by providing a decision-making framework for land use and development in Parkville. The implications of intensification of the Precinct will also be considered as a critical part of all relevant metropolitan or state planning studies.

3. Realisation of the opportunity currently afforded by the proximity of key institutions to facilitate a focus on cancer

The optimum treatment of cancer requires an integrated multidisciplinary approach involving a range of clinical specialists, nursing and allied health professionals, linked closely to research groups. As part of the Ministerial Taskforce for Cancer, Parkville has been identified as part of the Western and Central Melbourne Integrated Cancer Services.

4. Attraction and retention of the best talent in biomedical research, education and healthcare delivery

The implementation and communication of the Plan will showcase the Precinct as a recognised community of scientists and clinicians with the identity and facilities to attract and retain the best talent.

5. Fostering adaptability and innovation, and centres of creativity and excellence.

2.3.2 City of Melbourne Policy

Future Melbourne Community Plan (2008)
Endorsed in September 2008, Future Melbourne provides the vision for Melbourne to grow as a global city and one of the top ten liveable and sustainable cities of the world.

The Plan identified six high level goals to achieve the vision, these are:

- a city for people
- a creative city
- a prosperous city
- a city of knowledge
- an eco-city
- a connected city

A series of headline targets will track progress to achieving the high level goals. These targets that will be in some part achieved through the implementation of the structure plans include:

- All visitors and residents feel safe and welcome in the city
- All residents, businesses and visitors have easy access to electronic information
- The municipality is home to at least 140,000 people
- At least 20 percent of new housing is affordable or social housing
- City employment exceeds 400,000
- Per capita greenhouse gas emissions by 2020 have reduced by 35 percent per resident and 59 percent per worker from 2006 levels
- Per capita drinking water use by 2020 has reduced by 40 percent per resident and 50 per cent per worker compared to 2000 levels
- Melbourne will be one of the world's top five university cities
- At least 90 percent of people walk, cycle or take public transport to work in the CBD.

A range of more specific goals and targets have also been identified as part of Future Melbourne, which will guide the structure plan development. These are included in Appendix A.

Moving People and Freight 2006-2020
The vision for Moving People and Freight, which is the City of Melbourne's transport policy, is for a transport network which is convenient, equitable and sustainable, ensuring a thriving and sustainable city, and which meets the diverse needs of our residents, workers, tourists, visitors and businesses.

Moving People and Freight is currently being reviewed with an updated Transport Strategy to be released in 2011.

2.3.3 Melbourne Planning Scheme

Draft Municipal Strategic Statement 2010
The City of Melbourne's Draft Municipal Strategic Statement (MSS) provides the overarching vision, objectives and strategies for managing the use and development of land in the City. It is part of the Melbourne Planning Scheme and the strategic basis for local policies and other more detailed and locally specific planning provisions.

The City of Melbourne's Draft 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 would 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, as illustrated in Figure 2.4.

The 'Growth Framework Plan' in the Draft MSS identifies City North as an Urban Renewal Area. These are areas which are currently underutilised and where there are large sites and whole precincts which will undergo urban renewal. The Draft MSS states that these areas will be planned and designed to provide optimal living and working environments. Change will take place within the context of a well developed structure plan that will be adopted by Council.

In Urban Renewal Areas there is the opportunity to develop whole new precincts as integrated zero carbon and climate adapted neighbourhoods. There will generally be a new mix of uses, higher density development and excellent provision for walking, cycling and public transport. In these precincts, the design of the buildings, streets and public open spaces should be integrated with provision of sustainable utilities services to minimise the precinct's greenhouse gas emissions, optimise water management, mitigate the effects of extreme storm events, reduce the urban heat island and take precautions against sea level rise.

The Draft MSS identifies significant transport initiatives proposed for the Municipality including the Melbourne Metro rail line, the Regional Rail Link, the East Link Westgate Bridge Alternative (WestLink) and the Melbourne Metropolitan Freight Terminal. The Draft MSS factors in the existing and proposed transport infrastructure with the projected land development of the City, particularly in the Urban Renewal Areas and to a lesser extent in the Ongoing Change areas. These are further outlined in section 2.3 Major Projects.

The Draft MSS affirms the importance of good building design that is integrated with a well designed public realm – waterfronts, parks, plazas, streets and lanes.

The Draft MSS is a strategy for maintaining and enhancing the city's valued urban heritage at the same time as accommodating growth and development.

The following outlines relevant content from the Draft MSS.

VISION (Cl. 21.02)

A bold, inspirational and sustainable city

The Future Melbourne community plan for growth and development of the city (see above) goals form the basis of this Municipal Strategic Statement. Their achievement will be underpinned by:

- Integrating the City's transport and mobility with land use and development;
- Coordinating the development of the public realm (streets, paths, parks and places) with the private realm (buildings);
- A commitment to building and managing a city of zero carbon emissions and adapted for climate change; and
- Optimising land use to support high levels of amenity and a diversity and mix.

Managed and Targeted Growth and Development

With growth and development, the city will be very different from today. This will be guided by targeting growth and development to transform the large parts of the City that are currently redundant, underutilised or undervalued, enabling ongoing but more incremental growth and development in those parts of the City that need to constantly renew their vitality, and maintaining the existing character in valued established areas.

Ongoing Change Areas

Ongoing Change Areas (see Figure 2.4) are the product of well established land use and development controls. They have a mix of built form and land uses. Development in these areas tends to occur on a site by site basis and may include changes of use as well as changes to the buildings, or new development. Development will be in accordance with the relevant planning controls within the other sections of the Planning Scheme.

In the areas of Ongoing Change there will be opportunities to develop low emission and climate change adapted buildings. There may also be opportunities to contribute and develop precinct wide solutions.

Urban Renewal Areas

Urban Renewal Areas are the areas where large sites and whole precincts will undergo urban renewal. Many of these areas are currently underutilised or derelict parts of the City. With structure plans guiding change, these areas will be planned and designed to provide optimal living and working environments. It is anticipated that the sequence of development will occur generally in accordance with the timeframes indicated in Table 2.3.

In urban renewal areas there is the opportunity to develop whole new precincts as integrated zero carbon and climate adapted. There will generally be a new mix of uses, higher density of development and excellent provision for walking, cycling and public transport services. In these precincts, the design of the buildings, streets, public open spaces should be integrated with provision of utilities services to minimise the precinct's greenhouse gas emissions, optimise water management, mitigate the effects of extreme storm events, reduce the urban heat island and take precautions against sea level rise.

Table 2.3 shows that the indicative development timeframe for City North is between 2010 and 2020.

INTEGRATING TRANSPORT WITH LAND USE AND DEVELOPMENT (Cl. 21.03)

The targeted growth and development of the City in the urban renewal and ongoing change areas will be integrated with transport infrastructure initiatives and proposals including:

- The Melbourne Metro Rail Tunnel planned (mid decade) from Dynon Road to St.Kilda Road (Domain) joining the northern, western and south-eastern lines to cater for the increased demand service provision in this areas. A second stage of the project will extend the tunnel to Caulfield to progressively boost capacity in the south-east.

Public Transport (Cl. 21.03-1)

Objective 1: To optimise the use of public

02 Context

transport through efficient urban structure

Strategies:

- Ensure a development pattern in the Urban Renewal Areas that is permeable and fine-grained with a legible pattern of access and movement.
- Consolidate development with a mix of uses along tram and bus corridors and at and around railway stations in Urban Renewal and Ongoing Change Areas.

Walking (Cl. 21.03-2)

Objective 1: To create a comprehensive, safe, comfortable and convenient pedestrian network throughout the City

Strategies:

- Support the extension of the existing pedestrian network (including shared paths and through block links) throughout the municipality.
- Ensure that pedestrians are given priority around Local Activity Centres, within the Retail Core of the Central City, along key pedestrian routes, at the rail stations, high volume tram and bus stops, and around major activity generators including sports and entertainment facilities.
- Reinforce Swanston Street as a key pedestrian, public transport and cycling spine from the Arts Centre to the University of Melbourne

Table 2.3: Urban renewal areas indicative development timeframe

Dates	2010	2015	2020	2025	2030	2035	2040
years	0	5	10	15	20	25	30
Southbank							
Carlton Housing Estate							
CUB							
Docklands second decade							
City North							
E-Gate							
Kensington/Nth. Melbourne							
Dynon							
Racecourse Rail Corridor							
Jolimont rail corridor							

Objective 2: To improve pedestrian access

Strategies:

- Encourage a permeable and fine-grained development pattern in all Ongoing Change and Urban Renewal Areas.
- Provide publicly accessible pedestrian links through large development sites to increase permeability.
- Strengthen pedestrian connectivity and visual links throughout the Central City and with adjacent urban renewal areas.
- Integrate Docklands with the western edge of the Central City, North and West Melbourne, and Port Melbourne and Fishermans Bend, through a clear structure of streets, pedestrian routes and development blocks.

Cycling (21.03-3)

Objective 1: To develop a comprehensive, safe and convenient cycling network throughout the City

Strategies:

- Support the extension of the existing system of dedicated cycle routes (including shared paths) across the entire street network.

Objective 2: To develop principal on road and off road bicycle routes into and through the City of Melbourne from surrounding municipalities

Strategies:

- Support the extension of principal cycling routes into and through the City from surrounding municipalities.

Private Motor Transport (21.03-4)

Objective 1: To encourage more efficient use of private motor vehicles

Strategies:

- Recognise that cars are complementary to other modes of transport in the City of Melbourne and their use should be carefully managed to minimise all adverse impacts on other transport modes.

INTEGRATING PUBLIC REALM AND PRIVATE REALM (Cl. 21.04)

Overview

There will be increased emphasis on coordinating the development of the private realm (usually buildings) with the development of the public realm (the streets, paths, parks and places) to ensure that the new growth and development of the City is functionally integrated with the existing neighbouring urban fabric.

Heritage (Cl. 21.04-1)

Objective 1: To conserve and enhance places and precincts of identified cultural heritage significance.

Strategies:

- Conserve, protect and enhance the significant fabric of identified heritage

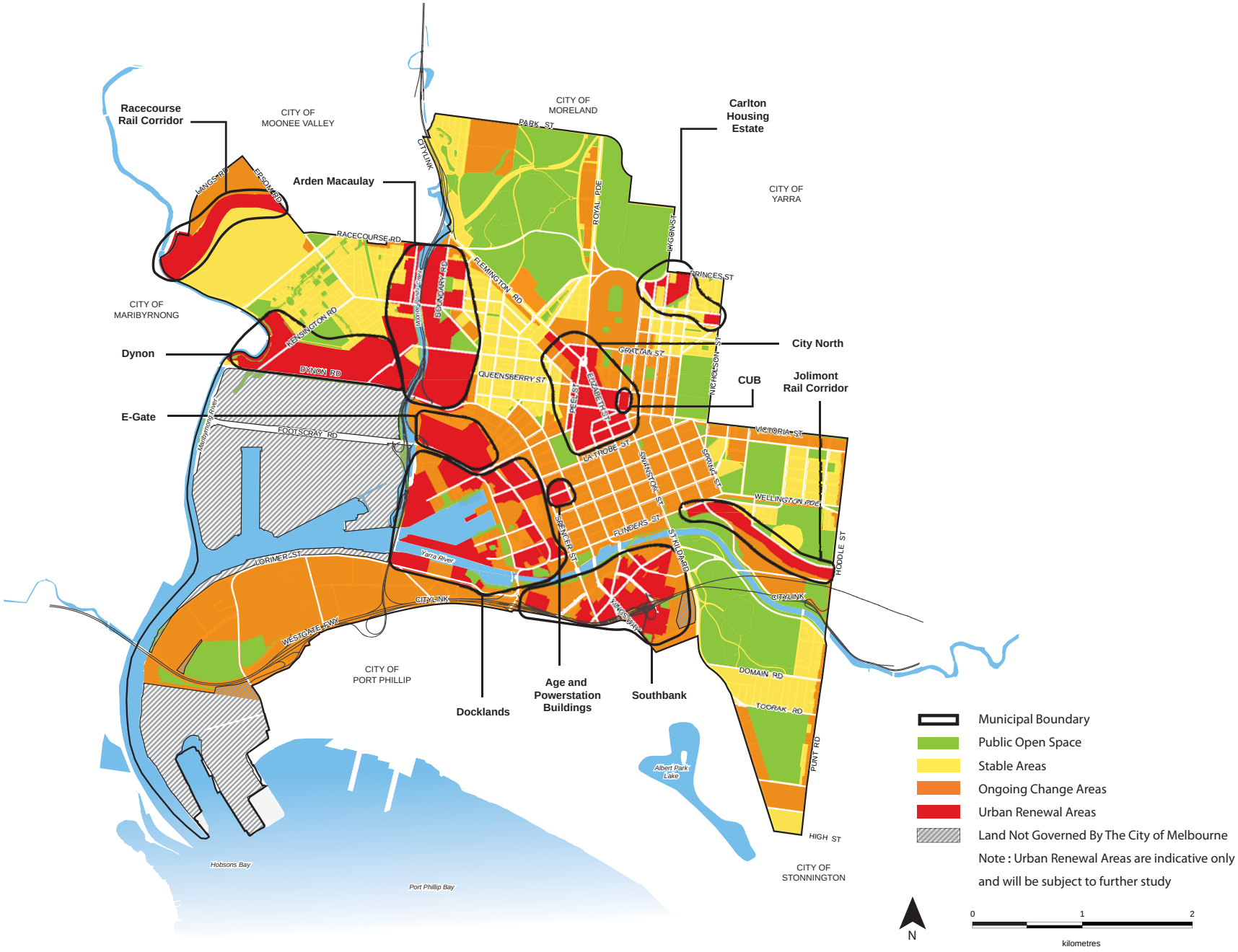

Figure 2.4: Draft Municipal Strategic Statement urban renewal areas

places and precincts.

- Protect buildings, streetscapes and precincts of cultural heritage significance from the visual intrusion of built form within precincts and from adjoining areas.

Distinctive urban structure (21.04-2)

Objective 1: To reinforce Melbourne's unique sense of place and physical identity

Strategies:

- Ensure a strong distinction between the built form scale of the Central City with that of development in surrounding areas.
- Ensure that the area bounded by Elizabeth/Peel Streets generally has a lower scale than the Hoddle Grid and provides a contrast in built form scale between the lower scale of Carlton and North Melbourne and the higher scale of the Hoddle Grid.
- Ensure a strong contrast in scale of development along Elizabeth Street from the lower scale areas to the north of Victoria Street and the higher scale of the Central City.

Objective 2: To enhance the role of principal streets and other main roads as entrances to the Central City

Strategies:

- Ensure that development along the City's established boulevards of, Flemington Road and Royal Parade respects and maintains the prominence of their landscaped character.
- Ensure development along principal streets reinforces their character as major, high quality entries into and through the City.

Objective 4: To ensure new development protects the characteristics of the Stable Areas

Strategies:

- Ensure that new development in Stable Areas maintains and reinforces the existing built form character of buildings and landscape.

Objective 5: To ensure new development meets the identified built form objectives of its locality.

Strategies

- Support development in Ongoing Change Areas as guided by the relevant planning controls.
- Encourage medium to high density residential development in Urban Renewal Areas.
- Encourage intensification of development of the Queen Victoria Market precinct where appropriate.

Safety, Health and Well Being (Cl. 21.04-3)

Objective 1: To provide for good levels of amenity throughout the City

Strategies

- Apply the Amenity Principles at 21.06-9.

Objective 2: To ensure the public realm supports physical and social activity

- Ensure that developments in the Central City and Urban Renewal Areas provide weather protection along key pedestrian routes, where this does not conflict with heritage or streetscape integrity.

Objective 3: To create a public realm where people feel and are safe

Strategies:

- Ensure that design principles of public and private safety are incorporated into the design of buildings, parks and public spaces.

Public Open Space (Cl. 21.04-5)

Objective 1: To preserve and enhance Melbourne's parks, gardens and other open spaces.

Strategies:

- Provide an integrated network of parks and open spaces within the Urban Renewal Areas.

ECO CITY – ZERO CARBON AND ADAPTED FOR CLIMATE CHANGE (Cl. 21.05)

Overview

Climate change is predicted to deliver more extreme weather events and the built environment must be designed to moderate and provide protection from these predicted disruptive climate impacts. This must also be done in ways that do not increase greenhouse gas emissions and so further exacerbate the problem.

Reduce Greenhouse Gas Emissions and Adapt to Climate Change (Cl. 21.05-1)

Objective 1: To make the built environment resilient to heatwaves, water shortages, extreme storm events and sea level rise.

Objective 2: To reduce built environment greenhouse gas emissions

Objective 3: To develop integrated precinct solutions to reduce greenhouse gas emissions and increase resilience to climate change

LAND USE AMENITY AND DIVERSITY (Cl. 21.06)

Overview

In some contexts there will be benefits from segregation of land uses, while generally a mix of land uses will achieve Council's objectives more effectively. While the potential conflicts between land uses needs to be managed, the benefits of mixing land uses are:

- More efficient use of city infrastructure;
- Enabling synergies between uses;
- Creating a safer and more vibrant public realm;
- Providing local services and employment; and
- Supporting urban intensification.

Mix of Uses (Cl. 21.06-1)

Objective 2: To provide for a mix of uses in

Ongoing Change and Urban Renewal Areas

Strategies:

- Encourage new housing, businesses, service industry, research and development and a mix of uses in the Mixed Use Zone in areas of on-going change and urban renewal areas (except for the Public Housing Estates) as identified in Figure 2.4.
- In Mixed Use Zones encourage a mix of public and commercial uses at ground level in new developments to support street life and provide pedestrian interest.
- Encourage, where consistent with the zoning of the land, the vertical and horizontal mixing of retail and hospitality land uses with other complementary uses, such as offices, health and personal services.
- Support a mix of retail, tourist and business uses around Argyle Square, Carlton, compatible with the amenity of existing residences.
- Support research and education uses, and residential buildings associated with the institutions, in the Business 2 zoned land along Royal Parade, Parkville.

Residential (Cl. 21.06-2)

Objective 1: To provide residents with an optimum level of amenity

Strategies:

- Ensure new dwellings are located and designed to protect prospective residents from off-site amenity impacts.

Objective 2: To support housing for families and the provision of good social housing and affordable housing

Objective 3: To support high quality purpose built student housing.

Retail (Cl. 21.06-3)

Objective 3: To support local centres

Strategies:

- Encourage the provision of local shops and services to serve new residential and working communities in Urban Renewal areas.
- Recognise that the vitality of local activity centres depends in part on their ability to attract people from a wider area.
- Encourage the role of shopping precincts for local shopping and neighbourhood facilities.

Commercial (Cl. 21.06-4)

Objective 1: To manage the potential amenity impact of businesses

Strategies:

- Support business uses that provide services to the local community in Residential Zones, only where consistent with the Amenity Principles Tables at Clause 21.06-10.

Entertainment, Recreation, Culture and the Arts (Cl. 21.06-6)

Objective 1: To maintain and develop a diverse range of arts, culture, leisure and entertainment facilities

Strategy:

- Support the Queen Victoria Market as a major retail and tourist facility.
- Ensure the land use around the Queen Victoria Market does not detract from its amenity or compromise its 24 hour function.

Knowledge (Cl. 21.06-7)

Objective 1: To integrate education and research facilities into their urban neighbourhoods

Strategy:

- Support the development and clustering of scientific research centres, hospitals and associated medical uses and their continued operation and development in their current locations consistent with the Amenity Principles at Clause 21.06-10 at the interface of residential and mixed use zones.
- Support the continued growth, and expansion of the University of Melbourne and RMIT University consistent with the Amenity Principles at Clause 21.06-10.
- Support greater integration of the University of Melbourne and the RMIT University into the public realm of the City through access connections and the orientation of new development.
- Discourage the encroachment of non-residential uses associated with research, education and medical institutions into adjoining Residential Zones and parkland.
- Manage the off-site impacts of education and research facilities such as car parking and traffic so as to protect the character and amenity, (including visual amenity) of adjoining areas.

Community Facilities (Cl. 21.06-8)

Objective 1: To ensure community facilities are provided to meet the current and projected needs of new residential communities

Strategy:

- Require urban renewal areas and new development to make provision for appropriate support services and community facilities.
- Discourage activities near hospitals that risk reducing the efficiency or safe delivery of acute health care, trauma and emergency services (including 24 hour emergency helicopter access).
- Encourage the development of neighbourhood hubs with indoor and outdoor public spaces and associated retail and community services.

Built Form Amenity Principles (Cl.

Areas where Ongoing Change in the built environment is envisaged:

Amenity Principles

The primary differences between the two zones are:

- Ensure that development does not undermine the significance of any identified Heritage Place or Precinct.
- Ensure that the height, mass, scale and articulation of new development considers the potential future built form and land use on adjoining sites.
- Ensure that reasonable access to daylight, sunlight, privacy and outlook is maintained for adjoining residential properties.
- Ensure a high level of on-site amenity for future occupants of new residential developments, including access to private or public open space.

Central City where Ongoing Change is envisaged:

Amenity Principles

- Ensure new buildings are well spaced and offset to equitably distribute access to outlook and sunlight between towers and minimise direct overlooking between habitable room windows.
- Ensure a high level of on-site amenity for future occupants of new residential developments, including access to private or public open space
- Ensure that new buildings towards the edges of these precincts provide an appropriate transition to adjacent lower scale development.

Areas of Urban Renewal where a substantial change in the built environment is envisaged:

Amenity Principles

- Ensure that development does not undermine the significance of any identified Heritage Place or Precinct.
- Ensure new buildings are well spaced and offset to equitably distribute access to daylight, sunlight, privacy and outlook and minimise overlooking between habitable room windows wherever possible.
- Ensure that the height, mass, scale and articulation of new development considers the potential future built form and land use on adjoining sites.
- Ensure a high level of on-site amenity for future occupants of new residential developments, including access to private or public open space.

LAND USE AMENITY PRINCIPLES (Cl. 21.06-10)

Residential Zones (except Mixed Use Zone)

- Maintain the highest standards of residential amenity.
- In appropriate locations, allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs.
- Ensure that responsibility for management of operational impacts such as traffic, parking, odour, light spill, signage and noise falls upon the agent of change, to minimise impacts on the neighbourhood.
- All new dwellings immediately adjacent to a Road Zone, railway line or existing noise generating use should consider acoustic attenuation measures.

Mixed Use Zone & Business 5 Zone

- Ensure that responsibility for management of operational impacts such as traffic, parking, odour, light spill, signage and noise falls upon the agent of change, to minimise impacts on the neighbourhood.
- Ensure that all new residential uses have appropriate acoustic attenuation measures.

IMPLEMENTATION PROGRAM (Cl. 21.07)

The objectives and strategies identified in Clauses 21.03 to 21.07 will be implemented by using the existing zones, overlays, local policy and the exercise of discretion and be guided by the outcomes of further strategic work (see table 2.5).

Project	Affects whole city	Affects Urban renewal areas	Affects Ongoing change areas	Affects Stable areas
Prepare structure plans and associated Urban Design Frameworks for all Urban Renewal Areas- South Parkville		+	+	

Table 2.5 Further strategic work

Local Planning Policies

Local policies provide guidance specific to the local area. The City of Melbourne has a number of local policies relevant to City North. These include:

- Urban Design within the Capital City Zone: to protect Melbourne's grand and unique Central City area.
- Sunlight to public spaces: This policy applies to public spaces such as parks and gardens, squares, streets and lanes, and includes privately owned spaces accessible to the public, such as building forecourts, atria and plazas within the municipality.
- Heritage Places within the Capital City Zone: To conserve and enhance all heritage places.
- Heritage Places outside the Capital City Zone: Applies to all places with the Heritage Overlay to preserve places of heritage significance and contribute to Melbourne's rich history.
- Discretionary Uses in a Residential 1 Zone: To protect residential areas from the encroachment of incompatible non residential uses and maintain attractive residential neighbourhoods.
- Urban Design outside the Capital City Zone: Provides guidance for new development to respect the existing built form character (where significant) and add to the overall quality of the urban environment.
- Environmentally sustainable office buildings: sets out objectives for the efficient use of energy and minimisation of greenhouse gas emissions through efficient building design.
- CBD Lanes: The Central City laneway network is a valued and vital part of the city's urban form and provides an insight into the city's built form evolution.

2.3.4 Melbourne Planning Scheme: Zoning Provisions

Existing zones in the Study Area are depicted in Figure 2.6 and primarily include Capital City Zone 1- Outside the Retail Core and Capital City Zone 2- Retail Core and the Mixed-Use Zone. Other zones in the City North Study Area include Comprehensive Development Zone, Public Use 2 (Education) and Public Use Zone 3 (Health and Community), Public Park and Recreation Zone, Residential 1 Zone and Road Zone 1. Key provisions of these controls are described below.

Capital City Zone

The Capital City Zone Schedule 1 covers the area north of Latrobe Street, east of Flagstaff Gardens, west of RMIT and south of Victoria Street.

The Capital City Zone has two schedules. Schedule 1 encourages a strong mix of residential and commercial uses whereas Schedule 2 seeks to encourage a more retail focus of mixed land use.

The primary purpose of the Capital City Zone Schedule 1 is to provide for a range of financial, legal, administrative, cultural, recreational, tourist, entertainment and other uses that complement the capital city function of the locality.

The Capital City Zone is unique to Victoria. Under the Capital City Zone almost all land uses (with the exception of Industry) do not require planning permission. Other uses that do require planning permission include:

- Hotel
- Nightclub
- Tavern
- Supermarket

It is also noted that land located within the Capital City Zone is exempt from the permit requirements of Clause 52.27 Licensed Premises.

Under the zone, most buildings and works require planning permission. This includes shopfront alterations and other minor works. In addition, the Capital City Zone includes its own requirements for advertising signage (separate from Clause 52.05 Advertising Signs) including decision guidelines for the erection and display of Major Promotion Signs (those with an area greater than 18sqm)

Most importantly, buildings and works are exempt from notification requirements under Section 52 of the Planning and Environment Act and there are no third party rights. Often, this results in major developments such as mixed use or residential towers being approved without notification to adjoining owners or occupiers.

Mixed Use Zone

The Mixed Use Zone covers the majority of the Study Area north of Victoria Street.

The primary purpose of the Mixed Use Zone is to provide for a range of residential, commercial, industrial and other uses which complement the mixed-use function of the locality.

The following land uses, relevant to the subject precinct, do not require a planning permit under the Zone:

- Dwelling
- Place of worship (with restrictions)

The following relevant land uses require planning permission:

- Accommodation (other than dwelling)
- Industry (other than Materials Recycling and Transfer Station)
- Office
- Retail Premises and Shop
- Warehouse (with restrictions)
- Leisure and Recreation
- Medical Centre
- Service Station (with restrictions)

The following relevant land uses are prohibited:

- Adult Sex Bookshop
- Brothel
- Material Recycling and Transfer Station

There are no requirements under the Schedule to the Mixed Use Zone.

The Mixed Use Zone provides greater rights for residential uses than for commercial or industrial activities. Residential uses are permitted as-of-right, whereas a permit is required for both industry and office uses. Experience in the City of Melbourne and other inner city locations suggest that the Mixed Use Zone is essentially a 'de-facto' residential zone.

Capital City Zone versus the Mixed Use Zone

The primary differences between the two zones are:

- More land uses are discretionary (require a planning permit) under the Mixed Use Zone than the Capital City Zone. These include office, most retail and warehouse uses.
- More land uses are prohibited under the Mixed Use Zone than the Capital City Zone
- Accommodation (excluding dwellings) requires planning

Residential 1 Zone

Only a two small sections of land within the Study Area fall within the Residential 1 Zone. This land is located in the vicinity of Peel Street, just south of Queensberry and Victoria.

The primary purpose of the Residential 1 Zone is to provide for residential development at a range of densities with a variety of dwellings to meet the housing needs of all household: it encourages residential development that respects the neighbourhood character and, in appropriate locations, to allow educational, recreational, religious, community and a limited range of other non-residential uses to serve local community needs.

The permit requirements of the zone are outlined below.

The following land uses, relevant to the subject precinct, do not require a planning permit under the Zone:

- Dwelling (On a lot greater than 300sqm)
- Place of worship (with restrictions)

The following relevant land uses require planning permission:

- Accommodation (other than dwelling)
- Convenience Shop
- Food and Drink Premises (other than convenience restaurant and take away food premises)
- Leisure and Recreation
- Medical Centre
- Service Station (with restrictions)
- Store
- Take away food premises (must adjoin a Road Zone)

The following relevant land uses are prohibited:

- Amusement Parlour
- Brothel
- Cinema
- Industry
- Nightclub
- Office
- Retail Premises (other than Community market, Convenience shop, Food and drink premises, and Plant nursery)
- Warehouse

There are no requirements under the Schedule to the Residential 1 Zone.

Residential 1 Zone versus the Mixed Use Zone

The primary differences between the two zones are:

- More land uses are discretionary (require a planning permit) under the Mixed Use Zone than the Residential 1 Zone. These include office, most retail and warehouse uses.
- More land uses are prohibited under the Residential 1 Zone than the Mixed Use Zone. These include land uses such as office, most retail and warehouse.

Similarities of the two zones include:

- Accommodation, which includes all types of residential buildings (excluding dwellings) require planning permission under the zone.
- The primary strategic direction of both zones is to encourage residential growth.

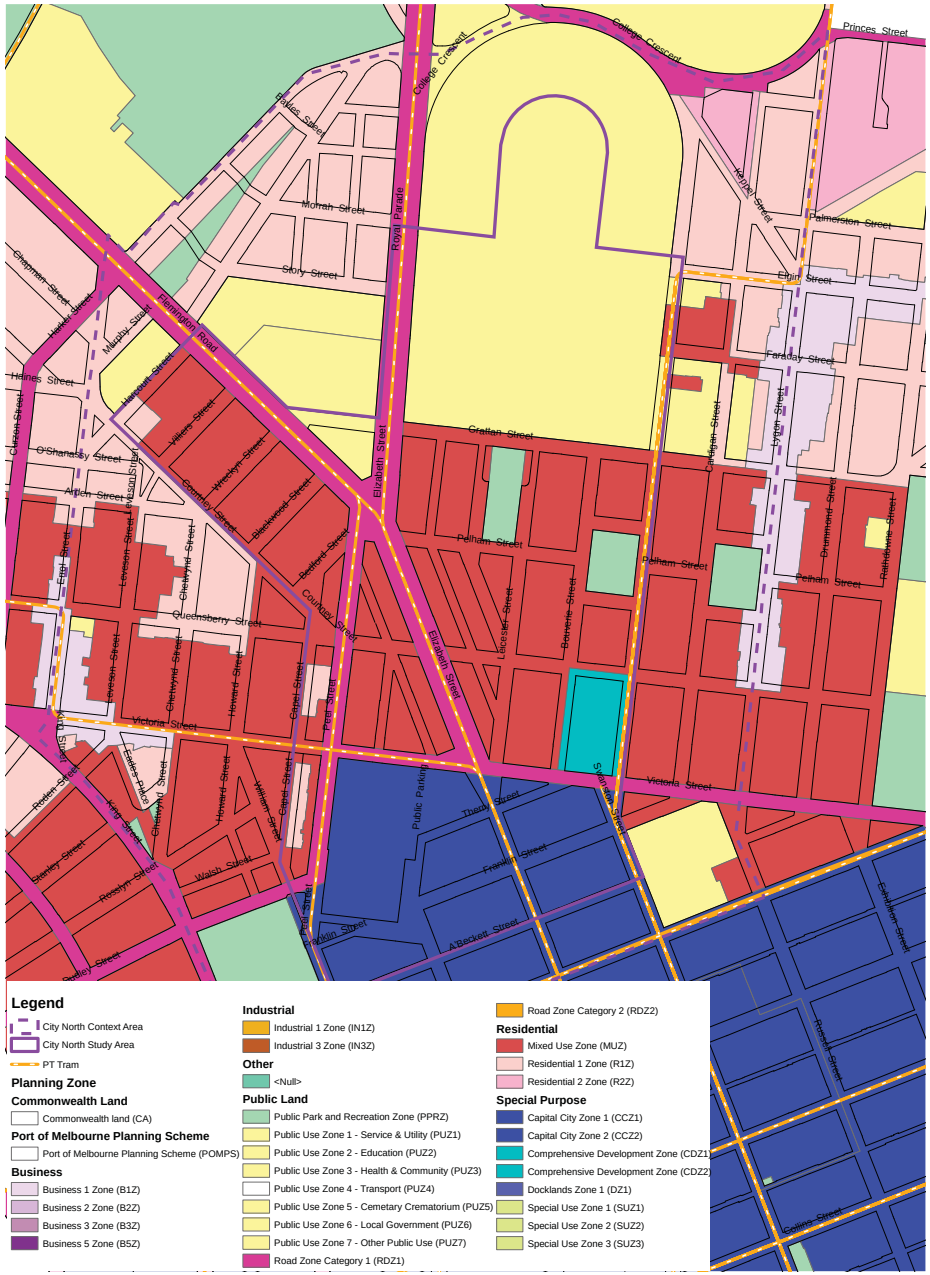

Figure 2.6: Melbourne Planning Scheme land use zones

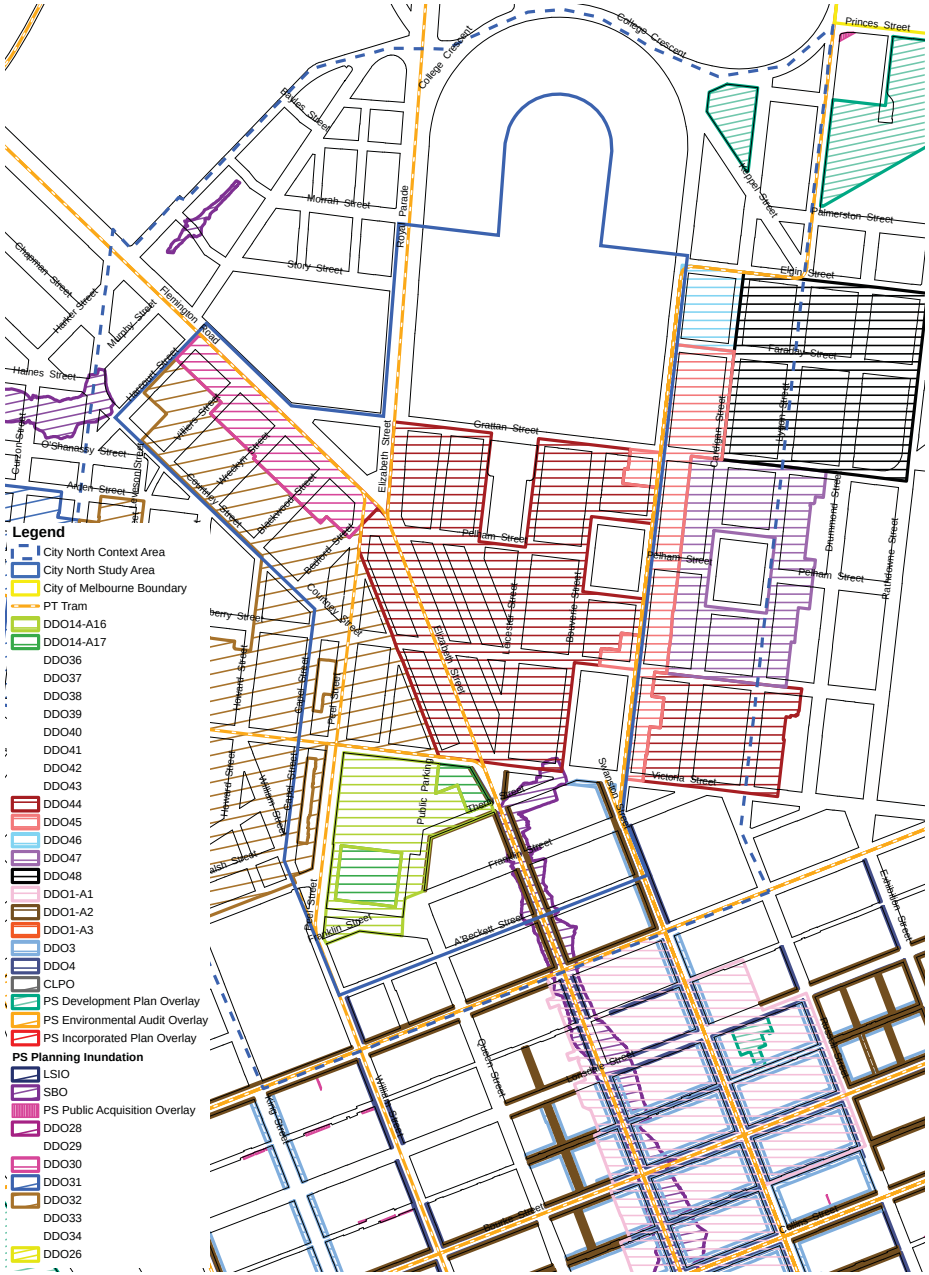

Figure 2.7: Melbourne Planning Scheme overlays

02 Context

Comprehensive Development Zone
The only area covered by the Comprehensive Development Zone is the former Carlton Brewery Site which is currently under construction. The zone includes a development plan which is incorporated into the Melbourne Planning Scheme. The plan clearly outlines strategic direction for land use and development. Any new land uses or development need to be in accordance with this plan.

The zone sets out uses which are as of right, discretionary and prohibited.

Public Use Zone 2 and 3
The Public Use Zone 2- Education and Public Use Zone 3 – Health and Community, expand the northern portion of the City North Structure Plan (north of Grattan Street). This zone relates to the control and regulation of education and health facilities. The PUZ2 controls the land and facilities associated with the University of Melbourne, whilst the PUZ3 provides guidance for the Royal Melbourne Hospital, Victorian Comprehensive Cancer Centre, Bio21 and the Walter and Eliza Hall Institute amongst others.

The zone is generally unrestrictive in terms of land uses as long as these are consistent with the table included within the Zone. The table sets out the specific land use objective being Service and Utility, Education, Health and Community, Transport, Cemetery, Local Government or Other Public Use.

As a result, the zone itself is very restrictive when considering development and land use potential for the precinct. The zone does not encourage the inclusion of residential and commercial uses which are not consistent with the land use objectives described above.

Public Park and Recreation Zone
The zone is relatively simplistic in its strategic direction. Its purpose is to protect and manage parks and gardens in the municipality. Like the Public Use Zone, there are clear restrictions on land use and development

The zone states that land identified in a schedule to this zone may be used and developed in accordance with the schedule or the specific controls contained in an incorporated document corresponding to the land, provided any condition in the schedule or incorporated document is complied with. This zone covers areas of public opens space within the Study Area including University and Lincoln Squares. Flagstaff Gardens are also zoned PPRZ.

Road Zone Category 1
The Road Zone Category 1 covers most arterial roads. These roads are managed by VicRoads.

2.3.5 Melbourne Planning Scheme - Overlay Provisions

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)

Heritage Victoria provides an additional level of heritage control at a state level. Those properties listed on the Victorian Heritage Register require planning permission from Heritage Victoria for most internal and external alterations to buildings including demolition. The heritage overlay states that a planning permit is not required to develop a heritage place which is included on the Victorian Heritage Register. Accordingly, where the heritage overlay is the only planning permit trigger, sites listed on the Victorian Heritage Register do not require separate planning provision from the Responsible Authority (Council).

In addition to these controls, the City of Melbourne includes heritage ‘gradings’ for buildings considered to have special heritage significance. These gradings were determined under precinct heritage reviews conducted in 1984 for the North and West Melbourne Precinct and the Carlton Precinct. There are however, no statements of significance for the wider precincts. These are limited to individual building identification through the City of Melbourne’s ‘I-Heritage’ system.

Almost all buildings and works as well as new signage require planning permission under the Heritage Overlay. The heritage overlay accounts for a large percentage of planning permit applications which are currently assessed for the City North Structure Plan area.

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 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 to the city and to acknowledge the transitional nature of the area and the opportunity for the development of a new built form character. In addition the overlay seeks to encourage development opportunity for growth in the education, research and development sectors.

The schedule includes a discretionary height control of 6 storeys, where residential development has floor to floor dimensions of 3.5 metres and 4.0 metres from non-residential uses.

DDO32 – North Melbourne Peripheral
The schedule to the overlay covers a large proportion of the western section of the Precinct Study Area in residential areas of North Melbourne.

The primary purpose of the overlay is to maintain the predominant low scale nature of the area. Accordingly, the overlay imposes a mandatory maximum height control of 14 metres for any new development.

DDO44 – Elizabeth Street and South Carlton
The schedule to the overlay covers a large proportion of the eastern section of the Precinct Study Area in residential and commercial areas of Carlton and the Elizabeth Street Boulevard north of Victoria Street.

The primary purpose of the schedule to the overlay is to encourage development which promotes Elizabeth Street as a major boulevard entrance to the Central City fronted by buildings of a consistent scale and to encourage a consistent higher form of development in this area.

Importantly, the overlay seeks to acknowledge the transitional nature of the area and the opportunity for the development of a new built form character. In particular, the overlay seeks to acknowledge the importance of the Haymarket roundabout with dominant landmark buildings surrounding.

The overlay imposes a discretionary height control of 8 storeys where residential development has floor to floor dimensions of 3.5 metres and 4.0 metres from non-residential uses.

Special Building Overlay
The Special Building Overlay identifies land in urban areas liable to inundation by urban drainage system as determined by, or in consultation with, the floodplain management authority. Applications must be referred to Melbourne Water, which is the relevant Authority on this matter. The Elizabeth Street corridor up to Victoria Street is covered by such an overlay.

Existing overlay controls are depicted in Figure 2.5.

02 Context

2.4 Historical Context

Upon European settlement, the City North Study Area encompassed what was the primary transport route to Geelong and the hinterland along Elizabeth Street. The site that is now the Queen Victoria Markets was allocated as the second cemetery for Melbourne in the 1830s, but was made a market site after burials ceased in 1857.

The area to the north contained cattle, pig, horse and hay markets, evidenced today by the Haymarket intersection and the Queen Victoria Markets. Land uses associated with the markets developed around this area, such as stabling and carriage makers, which changed to focus on motorised vehicles, still evident today. Hotels were another associated industry, some of which still remain.

The wide boulevards were used for public events and were adapted for tramways in the 1920s. After WWII, following the consolidation of the markets, the Dental Hospital and the Royal Melbourne Hospital were developed. More recently, the area has developed as a location for student accommodation and buildings associated with the expanding Melbourne University, changing the traditionally low scale development in some areas.

Further information regarding cultural heritage may be required.

Detailed information and recommendations can be found in section 7.3 Heritage Assessment.

2.5 Major Projects

There are a range of projects and drivers that may influence the development of the City North Structure Plan.

All of the projects are outlined in the following section and included in the draft Municipal Strategic Statement (MSS).

Projects outlined in the following section are shown in Figure 2.8, with further detail about transport related initatives included in the

Movement and Transport Section, 6.2.1.

Key Projects

E-Gate (Major Projects Victoria)
E-Gate is a 20 Hectare redevelopment site bounded by Footscray Road (to the south), Dudley Street (to the east), metropolitan railway lines converging at North Melbourne station (to the north) and the Moonee Ponds Creek (to the west). The site is currently used for railway-related storage and maintenance. The project is being led by Major Projects Victoria.

Implications for the Structure Plan

The emphasis of the Structure Plan will be on ensuring network access and mobility linking E-Gate and the Arden-Macaulay Structure Plan area to the City North precinct.

Footscray Renewal
The revitalisation of Footscray will provide a range of services and functions similar to the Central City such as employment concentrations and a range of commercial, retail, entertainment, education and government services.

Implications for the Structure Plan

The revitalisation of Footscray will strengthen the western corridor of Melbourne. This will increase the demand on residential and commercial development in City North as the Central City expands

Dynon Terminals Revitalisation
Linked to elevating Footscray's role, there is an opportunity to develop a continuous corridor of urban development between the inner-west and the city. A logical corridor for this development could be the underused storage terminals along the northern side of Dynon Road.

This land, located directly to adjacent to the Port of Melbourne, has been identified in the City of Melbourne's draft MSS as an 'urban renewal area'.

Royal Children's Hospital Redevelopment
The redevelopment of the Royal Children's Hospital is to be completed in 2011 with the demolition of the existing campus is to commence in 2012. This will ensure there is no net loss of parkland in the precinct. The new hospital will expand its existing services and provide 50 additional beds which is a 16% increase (up from 307 to 357). Local servicing is included in the redevelopment with eight food outlets being developed onsite.

Around 3,750 students and staff visit the hospital daily.

Victorian Comprehensive Cancer Centre
Construction on the VCCC is to commence in 2011 and be completed in 2015.

The VCCC will include more than 30,000 square metres of research space capable of accommodating up to 1,400 cancer researchers in addition to cancer treatment and hospital facilities. It is anticipated the VCCC will have an employment of approximately 3,000 people.

The development will be used by clinical and research staff from the Peter MacCallum Cancer Centre, Melbourne Health (which includes the Royal Melbourne Hospital), the University of Melbourne, the Melbourne Branch of the Ludwig Institute for Cancer Research, the Walter and Eliza Hall Institute of Medical Research, the Royal Women's Hospital and the Royal Children's Hospital.

Walter and Eliza Hall Institute
Redevelopment of WEHI will expand the gross floorspace from 15,775 square metres to 31,283 square metres. A new wing is scheduled for completion in 2011 with a refit of an existing wing to be completed in 2012.

Alongside the expanded floorspace WEHI staff will grow from about 580 to more than 1,000 with more than 400 additional scientific research and support jobs by 2015.

Royal Melbourne Hospital Master Plan
Royal Melbourne Hospital has developed a long term master plan for their Parkville campus.

Peter Doherty Institute
The Peter Doherty is a research centre under development which will accommodate six organisations with up to 800 employees and 150 students.

Former Carlton and United Brewery Site
The former CUB site, which is zoned for Comprehensive Redevelopment, will be an intensive mixed use development. It will include four residential buildings with staged development. The precinct will include student and residential accommodation. It will also act as a sub-regional activity centre, with Coles K-Mart, Dan Murphy's and Dick Smith anchoring as major retail tenants. Early floorspace indications suggest the development will have in the order of 40,000m2 of retail; 1200 residential units. In addition the development will include an increase in commercial floorspace including an 83 storey office tower which will accommodate 80,000 square metres of commercial floorspace.

Queen Victoria Market Review
In addition to the City North Structure Plan, the City of Melbourne is also undertaking a review of the strategic vision of the Queen Victoria Market as a 'Key Strategic Activity'. This activity is looking at the strategic operation of the market.

Melbourne Institute of Technology
The Melbourne Institute of Technology will be located in the redeveloped Argus building on the corner of Lonsdale and Elizabeth Streets. MIT is anticipated to cater for 2,000 students (domestic and international). Expected completion is in 2012.

Projects referred to in the section 6.2.1

- Melbourne Metro
- Regional Rail Link
- Melbourne International Freight Terminal
- WestLink

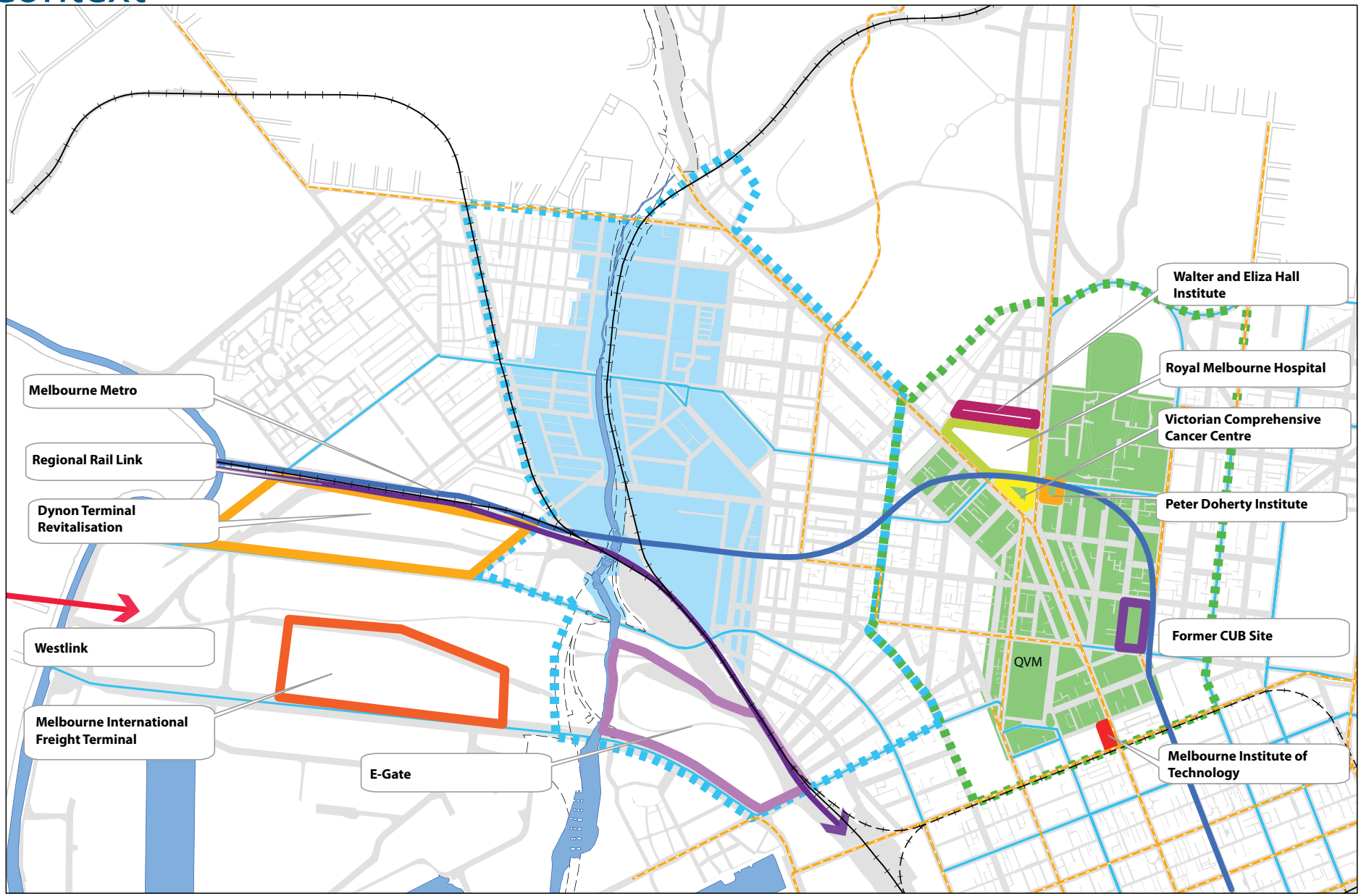

Figure 2.8: Relevant major projects

03 Community Values

To inform the development of the Structure Plan, the City of Melbourne ran a month long consultation program. Members of the community were encouraged to express their key values, issues and opportunities for the City North area through three key activities as outlined below:

1. The community and stakeholders were invited to participate in a consultation workshop held on Monday 13 September 2010, with 37 people attending. The purpose of the workshop was to determine the community and stakeholder's key values for the revitalisation of City North, and identify the range of issues and opportunities they felt should be addressed.

People were invited to the workshops via a range of communication channels, including:

- A mailed invitation (sent to approximately 2,850 property owners in the subject area).
- A notice in the Moonee Valley Community News, The Melbourne Times and City Weekly between 31 August and 2 September 2010.
- The City of Melbourne website (www.melbourne.vic.gov.au/getinvolved).
- Direct liaison with residents groups and other key stakeholders.

The workshop format included:

- A brief presentation of the planning context and purpose of a structure plan.
- An introduction to general themes for consideration throughout the consultation process.
- Small group discussion of the strengths and challenges currently facing the area.
- Small group discussion of the opportunities for the future.

2. The community was invited to participate in a moderated forum through the City of Melbourne website. The website replicated the themes from the community consultation and was available to the public for one month from Wednesday 15 September to Friday 15 October. 16 comments were received. (http://www.melbourne.vic.gov.au/getinvolved/StructurePlans/CityNorth).
3. Written submissions were received through a dedicated and publicised email address (structureplans@melbourne.vic.gov.au).

Five key "themes" emerged from this first round of consultation as priorities for the Structure Plan to deliver. They included:

- Character and Lively Streets
- Moving (accessible, safe and sustainable transport options)
- Community and Culture
- A Mix of Uses
- Spaces and Places for People.

These themes are expanded upon in Figure 3.1.

Source: Community and Stakeholder Consultation Evening, City North Structure Plan , 13 September 2010. Moderated Online Forum, www.melbourne.vic.gov.au/getinvolved, 15 September- 15 October 2010.

Figure 3.1: Community and Stakeholder Consultation September 2010

CITY NORTH: PRINCIPLES & OBJECTIVES

Principles	Objectives
Diversity of Activity	1. Provide a diversity of scale and range of activities to meet the needs of existing and future residents, workers, students and visitors. 2. Provide direction for mixed use intensive development around existing and planned transport infrastructure. 3. Capitalise and recognise the area's economic potential through knowledge exchange, research clusters, innovation and commercialisation. 4. Encourage a diverse mix of uses that provide a fine grained network of activities to complement the knowledge function and capitalise on the precinct's proximity to the central business district.
Integrated Transport Network	5. Provide an integrated, efficient and sustainable transport network for moving people and freight. 6. Prioritise walking, cycling and public transport trips around City North and into surrounding areas, including the CBD. 7. Identify areas to improve and enhance transport infrastructure and services.
Quality Streetscapes and Open Spaces	8. Create new and enhance the existing network of high quality spaces and local parks. 9. Enhance the amenity of the street network through the creation of shared zones, greening and streetscape upgrades. 10. Improve safety in streets and open spaces through the urban intensification and the design of buildings and spaces. 11. Enhance legibility throughout the precinct including walking and cycling routes.
Build on the Unique Qualities of the Local Area	12. Capitalise on and develop further the unique sense of place in City North, building on the area's special qualities. 13. Protect and enhance valued cultural and industrial heritage places and street scapes. 14. Emphasise places of interest unique to the City North area including the Queen Victoria Market and also those that demonstrate the unique industrial heritage of the area. 15. Create new and enhance the existing permeable street network that reflects the historic subdivision pattern of the area.
Sustainable Communities	16. Encourage flexible building types that are adaptable to the changing needs of future residents and workers. 17. Provide residential and mixed use premises that foster a diverse, inclusive residential and commercial community through appropriate servicing and built form. 18. Encourage environmentally sustainable development through building design, citing and sustainable infrastructure delivery. 19. Ensure adequate provision of community infrastructure to service the growing community, including residents, students, workers and visitors to the precinct.
Linkages Between Institutions and the Public Realm	20. Encourage quality urban design and integration of institutional master plans to enhance their collective contribution to the community and public realm.

Table 3.2: Principles and Objectives

04 Population and Housing

4.1 Overview

The City North study area has a population of 5765, making up 7.6% of the total population of the City of Melbourne (ABS 2006).

For the analysis in this section, the Draft Urban Renewal Area boundaries, shown in Figure 4.1, were used. This area has population of 3752, making up 5% of the total population of the City of Melbourne (ABS 2006), with 6% of the occupied floorspace being residential (CLUE 2008).

The residential profile of the City North Study Area suggests a substantial tertiary student population. City North includes a larger representation of young people, a higher proportion of residents not working and with no income and a lower proportion of people in full time work compared with the Local Government Area as a whole. A high proportion of residents speak languages other than English at home which may reflect a substantial international student population. There is a high level of household mobility in City North. There is also a low level of car ownership.

These statements are explored in this chapter.

4.2 Population

The characteristics of residents living in City North differ from the Melbourne Local Government Area (LGA). The main differences are identified below and explained in greater detail within their sub headings:

- The proportion of City North residents aged 15-24 is higher than the LGA by 19%.
- Christianity is represented at a lower level, by 11%, in City North compared with the LGA.
- A much lower proportion (19% less) of City North residents were born in Australia compared with the LGA as a whole, with higher proportions of Malaysian and Chinese born in City North.
- There were 18% less residents who speak English at home, compared with the LGA, and a higher proportion of Mandarin and Cantonese speakers

Age

- A large proportion of City North residents are aged between 15 and 24 years (51%), compared with the Melbourne LGA at 32%.
- The second highest age group is the 25 to 39 age bracket with 32% of residents which is comparable to the LGA at 35%.
- Both City North and the LGA have a very low proportion of residents aged below 14 years, with 123 (3%) and 5057 (7%) respectively
- Only 2% of residents are aged over 65 years, compared with 6% for the LGA.

Country of Birth

- 32% of City North residents were born in Australia. This is much lower than the LGA with 51% born in Australia.
- In City North 15% and 10%, were born in Malaysia and China respectively, which is considerably higher when compared with the LGA with only 6% for each country

Language

- In City North 43% of people speak English at home, compared with 61% in the LGA.
- 18% of people speak Mandarin and 14% speak Cantonese, compared with 9% and 7% in the LGA.
- Indonesian, Korean and Malay are the next most popular languages, compared with Indonesian, Italian and Vietnamese for the LGA.

Religious Affiliation

- Both Christianity and No Religion (both at 37%) make up the highest proportion of religious affiliations in the City North focus area. This is similar to the LGA (48% Christianity and 33% No Religion).
- The next highest religious affiliation is Buddhism for both City North and the LGA, at 16% and 9%.

4.3 Employment

The main differences between City North residents and the Melbourne LGA as a whole for employment included 8% less residents Employed Full Time than the LGA as a whole. On top of this 11% lower proportion of City North residents were Not in the Labour Force compared to the LGA.

In terms of travelling to work, 12% more people walked to work in City North than across the LGA whilst 8% less people drove to work, i.e. 39% for City North and 27% for the LGA.

Work – Labour Force Status

- 31% of residents are ‘Employed Persons Working Full Time’ which is less than across the LGA where 39% of residents are employed full time.
- The most notable disparity between City North and the LGA was in the category ‘Not in the Labour Force’ with 41% of residents in City North compared to 30% in the LGA identifying in this category.

Occupation

- At 60%, a higher proportion of people in City North identified their occupation as ‘Not Applicable’, this compared to 51% for the LGA.
- For the remainder of occupation fields the proportions are similar for both City North and the LGA areas.

Industry of Employment

- There are no notable disparities between City North and the LGA for

this field. The major industries for both areas were Professional, Scientific and Technical Services (7% and 9%) and Accommodation and Food Services (7% and 5%), with the LGA also having 5% of employees in the Health Care and Social Assistance industry.

Method of Travel to Work

- In City North a higher proportion of people, 39%, walked to work, compared with 27% for the LGA as a whole.
- In addition to high rates of people walking to work, less people drove to work (as driver). This figure was 20% in City North compared with 28% for the LGA.

Place of Work by Local Government Area

- The majority of City North residents worked within the City of Melbourne (64%), followed by the City of Yarra (6%) and the City of Port Phillip (5%), as largely consistent with the LGA, at 58%, 6% and 7% for the respective Local Government Areas.

4.4 House Hold Statistics

The main disparities between City North residents and the Melbourne LGA as a whole for house hold statistics are as follows:

- 13% higher proportion of Occupied Private Dwellings in City North
- 19% higher proportion of dwellings with no motor vehicles and with a much lower ownership of one and two vehicles per dwelling in City North.
- Higher proportion of dwellings having internet connection and broadband in City North.
- Higher proportions of ‘Lone Person Households’ and ‘Group Households’ in City North.
- City North experiences higher household mobility proportions for both one year and five year mobility.
- 12% more households in City North had no income than the LGA.
- In City North there is an 8% higher proportion of dwellings rented than across the LGA.

Dwelling Type (private dwellings only – includes public housing)

- 93% of dwellings within City North are ‘Occupied Private Dwellings’, this compares to 88% across the LGA. The other category is ‘Unoccupied Private Dwellings’.

Dwellings Structure

- The majority of dwellings within City North are a Flat, Unit or Apartment, in

Figure 4.1: Draft urban renewal area

04 Population and Housing

a four or more storey block. This is consistent across City North (65%) and the LGA (60%).

- In addition, 17 % of dwellings in City North are 'Flat, Unit or Apartment' in a three Storey block, higher than the LGA with 13%.
- As outline above, the majority of residences in City North are located within three or more story blocks. Outside of this (65%) only 2% of residences in City North were 'Separate Houses' this compares to 5% for the LGA; 2% were 'Semi Detached Row or Townhouses etc' with one storey, this is lower than the LGA with 6%.

Number of Motor Vehicles

- A much higher proportion of dwellings in City North have no motor vehicles, at 58%, compared to 39% across the LGA.
- A much lower proportion of residences in City North have 1 and 2 motor vehicles per dwelling, at 33% (one car) and 8% (two cars) this is significantly lower than the LGA, at 46% and 16% respectively.

Type of Internet Connection

- Only 14% of dwellings in City North have no internet, compared with a much higher 21% for the LGA.
- 73% of dwellings in City North have broadband internet, compared with 62% for the LGA.

Household Composition

- A lower proportion of dwellings are 'One Family Household with Only Family Members present' in City North, at 33%, compared with 41% for the LGA. City North has a slightly higher proportion of both 'Lone Person Households' and 'Group Households'. Lone person households in City North comprise 41% compared to 38% across the LGA.
- 23% of households within the precinct are group compared with 18% across the LGA.

Household Mobility Indicator

Household one year mobility:

- There were a higher proportion of dwellings in City North (40%) in the field "All residents in the household aged one year and over had a different address one year ago" than the LGA (33%)
- However a lower proportion of dwellings in City North (52%) were represented in the field "No residents in the household aged one year and over had a different address one year ago" than the LGA at 59%

Household five year mobility:

- 10% more dwellings in City North (82%) were represented in the field "All residents aged five years and over changed address during the last five years" than the LGA (72%).
- 10% less dwellings in the field "No residents aged five years and over changed address in City North (14%) were represented during the last five years"

Household Equivalised Income (gross weekly)

- A higher proportion of City North residents have 'nil income', 22% compared to the LGA at 10%.
- Only 6% of households in City North earn over $2,000 per week. This is 5% lower than the LGA, at 11%.

Tenure Type

- A higher proportion, 74%, of dwellings are rented in City North compared with 66% in the LGA.
- A lower number, 12% of dwellings, are being purchased in City North compared with 17% across the LGA. This low level of home ownership is also reflected in homes purchased with 15% fully owned in the LGA, with only 11% in City North.

05 Land Use and Economy

5.1 Land Use

The City North Study Area contains approximately 130 hectares of land characterised by a mix of well-established industrial, commercial, retail, residential and institutional uses. The area presents as a typical 'mixed-use' area in that a range of uses are distributed throughout the area, rather than located in pockets or clusters of discrete development.

Currently zoned for mixed and public use, the City North area is a diverse precinct characterised by retailing, residential, education and training and health services. Features of the area include a mix of land uses, ranging from the Queen Victoria Market to hospitals and university properties, and the immediate proximity of the Central City.

A State Government proposal for a new underground metro passenger rail line between Footscray and Domain, with a station at Parkville, has the potential to significantly revitalise the area to the north of the precinct and provide the opportunity for an intensive, mixed-use continuation of Melbourne's Central City.

The planned inclusion of a metro station in proximity to Melbourne Central would also be expected to lead to further development opportunities in this area.

5.2 Land Use and Employment

The City of Melbourne's Census of Land Use and Employment (CLUE) delivers a research methodology that collects, manages and reports small area data, and delivers information on land use, industry, employment, and business capacities in a Study Area.

City North is a mixed use area in which a range of industrial, retail, commercial, institutional, residential and other activities are undertaken. This mix is evident with reference to the CoM's CLUE data base which is summarised in table 5.1 and 5.2.

CLUE identifies land uses and employment levels. According to CLUE, City North has a total of approximately 580,570 m2 of floorspace allocated to a number of retail, commercial, industrial, accommodation and other activities, and this supports an estimated 8,320 jobs in the area.

Commercial accommodation (hotels, motels and other) accounts for the largest share of gross leasable floorspace in the City North precinct (42%), while approximately one-quarter (24%) of floorspace is industrial, followed by office (14%) and retail/shopfront uses (11%).

In terms of jobs, industry only accounts for 11% of jobs in City North, even though it is one of the mainland uses in terms of area. Office activities dominate in terms of jobs, accounting for 44% of all jobs, and followed by retail and other shopfront uses accounting for 24% of jobs.

Table 5.1 and 5.2 provides a summary of these land uses by area and jobs, with this data sourced from the CLUE.

5.2.1 Occupied Floorspace and Employees[1]

In 2002 'Retail Trade', and 'Public Administration and Safety' were the predominant floor space users in City North with both representing 28% of the floor space. 'Health Care and Social Assistance' and 'Other Services' both represented 9% of floor space in City North, a figure substantially lower than the predominant uses. These categories also represented the majority of employees, accounting for 59% of employment in City North.

In 2008 'Public Administration and Safety' was the predominant use by floor space, representing 37% of floor space, a significant increase of 9% on 2002 data. 'Retail Trade' remained unchanged at 28%, maintaining its viability within the precinct. 'Other Services' was the next highest category at 13%, up from 9% in 2002.

'Accommodation and Food Services' significantly decreased occupied floorspace from 3950.96 m2 (2%) in 2002 to 145.75 m2 (0%) in 2008. Employees decreased from 14 to 2 over this time (remaining at 0%).

The 'Health Care and Social Assistance' category also decreased in both floorspace and employees over this period from 21,094.97 m2 (9%) and 477 (14%) of employees in 2002, to 2,128.89 m2 (1%) and 31 (1%) employees.

Overall, the percentage of floorspace corresponded closely with the percentage of employees in that industry. However, there were some notable differences, for example occupied floorspace represented higher percentages than employees for 'Public Administration and Safety' by 8% in 2002 and 11% higher in 2008. 'Transport, Postal and Warehousing' made up 7% of employees, but only 2% of floorspace in 2002, however this gap reduced to a 1% difference in 2008. The percentages of employees remained higher than floorspace in 'Rental, Hiring and Real Estate Services' over both time periods, with 7% and 3% in 2002 and 10% and 4% in 2008, respectively.

Land uses yielding a higher percentage of employees to floorspace, such as 'Professional, Scientific and Technical Services', 'Transport, Postal and Warehousing' and 'Rental, Hiring and Real Estate Services' are ideal in order to maximise employment density. However, trends show that the most dominant use 'Public Administration and Safety' is increasing, which has a higher floorspace percentage than employees.

Although 'Health Care and Social Assistance' decreased from 2002 to 2008, this industry is expected to grow due to planned future developments, encouraging higher employment density. In order to provide services to this growing working population, other industries with high employment to floorspace ratios are likely to develop.

1Occupied Floorspace and Employees by ANZSIC, City of Melbourne Census of Land Use and Employment, 2002 and 2008)

Table 5.1: Occupied Floorspace and Employees by ANZSIC 2002 in City North Structure Plan Focus Area (CLUE 2002).

Industry Group	Occupied Floorspace	%	Employees	%
Agriculture	0	0	0	0
Mining	0	0	0	0
Administrative and Support Services	0	0	0	0
Arts and Recreation Services	0	0	0	0
Electricity, Gas, Water and Waste Services	1672.33	1	0	0
Professional, Scientific and Technical Services	2141.61	1	125	4
Information, Media and Telecommunications	2206.73	1	87	2
Transport, Postal and Warehousing	3821.38	2	254	7
Financial and Insurance Services	3901.46	2	62	2
Accommodation and Food Services	3950.96	2	14	0
Manufacturing	4973.27	2	87	2
Construction	5387.81	2	181	5
Rental, Hiring and Real Estate Services	6064.32	3	257	7
Wholesale Trade	6259.01	3	76	2
Education and Training	16624.91	7	296	8
Other Services	19331.26	9	153	4
Health Care and Social Assistance	21094.97	9	477	14
Public Administration and Safety	63183.2	28	707	20
Retail Trade	63524.35	28	730	21
TOTAL	**224137.57**	**100**	**3506**	**100**

Table 5.2: Occupied Floorspace and Employees by ANZSIC 2008 in City North Structure Plan Focus Area (CLUE 2008).

Industry Group	Occupied Floorspace	%	Employees	%
Agriculture	0	0	0	0
Mining	0	0	0	0
Accommodation and Food Services	145.75	0	2	0
Arts and Recreation Services	241.55	0	4	0
Information, Media and Telecommunications	422	0	22	1
Manufacturing	1707.49	1	40	2
Health Care and Social Assistance	2128.89	1	31	1
Financial and Insurance Services	2240.49	1	54	2
Electricity, Gas, Water and Waste Services	2269.94	1	0	0
Administrative and Support Services	2642.66	1	27	1
Transport, Postal and Warehousing	2739.73	1	57	2
Professional, Scientific and Technical Services	3040.02	1	100	4
Wholesale Trade	3217.03	2	38	1
Construction	4980.08	2	165	6
Rental, Hiring and Real Estate Services	7370.73	4	271	10
Education and Training	11951.95	6	233	9
Other Services	27331.82	13	163	6
Retail Trade	56329.07	28	753	28
Public Administration and Safety	75770.67	37	700	26
TOTAL	**204529.87**	**100**	**2660**	**100**

05 Land Use and Economy

5.2.2 Occupied Floorspace by Space Use 2008

Zero floorspace is taken up by Community Use. It is also interesting to note that, although student accommodation is perceived to be a dominant use, it only represents 1% of the floorspace, or 1159.63 m2. This is much less than the space taken up by car parking, with all types of parking combined taking up 20,135.21 m2, or 10% of the floorspace.

Dominant uses included combined retail categories, at 32% of the floorspace, and 9% of the floorspace was under construction.

5.2.3 Space Use (ground floor predominant) (CLUE 2008)

As identified on the space use map (Figure 5.4, showing ground floor predominant use) retail is the main ground floor use in City North, however this area is relatively mixed in terms of space use.

5.3 Key Issues and Trends - Retail and Commercial[1]

A number of issues are identified for City North in terms of planning for retail and commercial development in this area over the next 30 years. Among these are the issues associated with floorspace requirements to meet the retail and other needs of the expanding population and local workforce, and the influence that daily visitors may have on the provision of facilities and services, including visitors to the hospitals, the universities (the University of Melbourne in the north and RMIT in the south). Also having regard to the retail influence of Queen Victoria Market and the Carlton and United Brewery (CUB) site.

The residential and workforce population of City North is expected to expand substantially over the period 2010 to 2040, and will generate demand for at least 10,000m2 of new retail floorspace provision. Most of the retail demand will be for convenience shopping and food catering (ie, spending at cafés, restaurants and take-aways), although a share of expenditure will be directed to the higher-order shopping components planned for the CUB site.

This retail demand by residents and workers in the Study Area represents just a small proportion of the total likely future demand for retail floorspace provision. Other important customer segments include students and staff at nearby campuses, visitors and workers at the major health precinct on the northern edge of the Study Area, visitors (including tourists) to the Queen Victoria Market, and people passing through the area on their way to the Central City.

Commercial office development is likely to be an increasingly attractive investment and development opportunity in the City North Study Area, as the intensity of development proceeds northwards from the Central City. Other factors likely to promote office and associated development include demand for research and teaching space associated with the higher education and health sectors, and opportunities for small business to take up space in the refurbishment or redevelopment of current redundant or under-utilised space for office and mixed use activities. Construction of the Metro station at Grattan Street and Royal Parade would contribute to commercial office development in this general locality through improvements to public transport accessibility.

Significant new development for commercial offices and institutional tenants (education, health and government service providers) is expected to occur in the Study Area as part of the ongoing intensification of development in the northern fringe of the Central City. An increase in commercial floorspace is a reasonable proposition having regard for known development plans and trends in office space absorption. City North also contains large areas land in service industry and service business activities, some of which can be expected to relocate to more appropriate sites over time, thus freeing-up land for further development.

[1]*Occupied Floorspace by Space Use (City of Melbourne Census of Land Use and Employment, 2002 and 2008)*

Table 5.3: Occupied Floorspace by Space Use 2008 in City North Structure Plan Focus Area (CLUE 2008).

Industry Group	Occupied Floorspace	%
Community Use	0	0
Entertainment/Recreation - Outdoor	0	0
Institutional Accommodation	0	0
Transport	0	0
Retail - Showroom	68	0
Manufacturing	80.1	0
Unoccupied - Under Renovation	179	0
Performances, Conferences, Ceremonies	640.1	0
Hospital/Clinic	755.43	0
Student Accommodation	1159.63	1
Wholesale	1528.1	1
Equipment Installation	1561.2	1
Parking - Private Uncovered	2468.6	1
Open Space - Outdoor	2735	1
Unoccupied - Undeveloped Site	3089	2
Parking - Commercial Covered	3385.39	2
Parking - Private Covered	3617.92	2
Storage	3735.65	2
Workshop/Studio	5057.62	2
Commercial Accommodation	5241.56	3
Common Area	6345.14	3
Educational/Research	7021.25	3
Residential Apartment	8132.03	4
House	9311.99	5
Entertainment/Recreation - Indoor	10214.25	5
Parking - Commercial Uncovered	10681.3	5
Retail - Cars	12349.12	6
Office	15989.04	8
Unoccupied - Under Construction	17456	9
Retail - Stall	18993.8	9
Retail - Shop	24884.71	12
Unoccupied - Unused	28583.4	14
TOTAL	**205264.33**	**100**

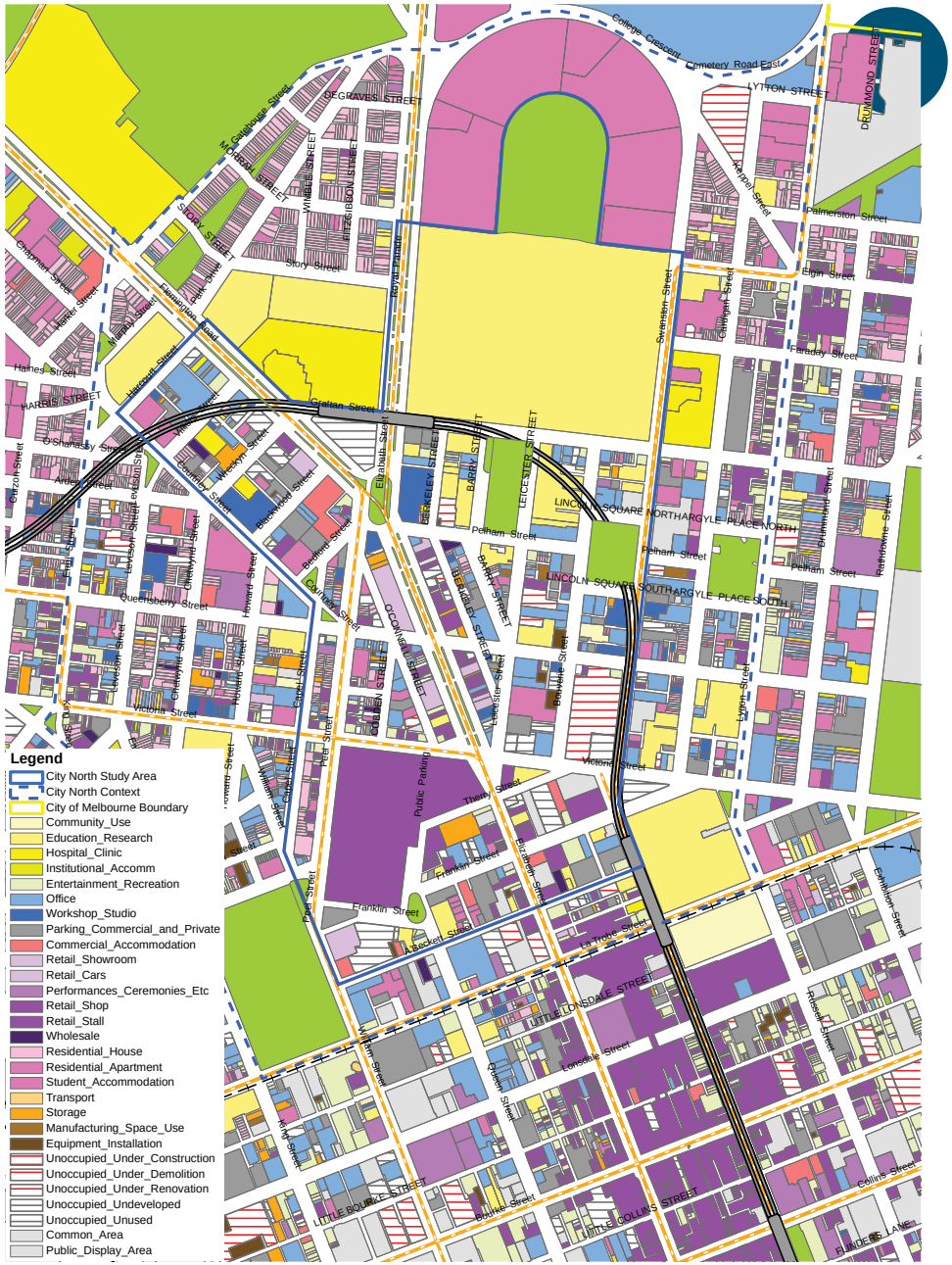

Figure 5.4: Land use (CLUE 2008)

05 Land Use and Economy

5.4 Opportunities

Opportunities for retail expansion

The main retail development opportunities for City North are the CUB site, the area around the Metro station, and improvements in the retail offer and operation at Queen Victoria Market.

Other opportunities for retail development could include;

- City fringe development: New retail development associated with a general expansion of retail activity into the northern fringe of the Central City. Examples of recent retail development include Aldi on Franklin Street, and the growth in cafe and dining along Swanston Street. Development in this location would be mainly associated with retail facilities to serve increasing student numbers.
- Elizabeth Street: This part of the Study Area has potential to accommodate more intensive activity along the length of Elizabeth Street between A'Beckett Street and the intersection with Flemington Road. This might include more significant showroom type development, as well as ground floor convenience retail associated with high rise apartment and office buildings that would be expected to develop along this corridor.
- Peel Street : This is a precinct which is currently under-utilised and has potential for more intensive retail and commercial development. However, development in this locality should not be allowed to fragment the current shopping focus at Queen Victoria Market. Over time, the type of development in this location might include a greater array of local convenience and food dining establishments, as well as a range of showroom-type developments oriented towards the surrounding businesses and apartments.

Opportunities for Office development

A number of major developments are already identified in and surrounding the City North Study Area; these include:

- Victorian Comprehensive Cancer Centre: this development on Grattan Street and Flemington Road is planned for completion in 2015 and is to accommodate approximately 3,000 jobs including 1,400 cancer specialists. The development comprises 30,000m2 of floorspace.
- Peter Doherty Institute: this is planned for a location on the corner of Grattan Street and Elizabeth Street and is to accommodate six medical research organisations including the University of Melbourne. It accommodate up to 800 employees and 150 students.
- CUB redevelopment site: includes provision for 70,000m2 of commercial office space, including the RMIT Design Hub.
- Swanston Street Academic Building: detailed information is not known at this stage.
- Flemington Road – George Apartments: redevelopment of this site opposite the Royal Children's Hospital is proposed to include approximately 3,400m2 of commercial office floorspace.

In addition to these known developments, ongoing opportunities for renovation and redevelopment of building stock will occur throughout the Study Area, with particular opportunities likely to emerge in;

- Central City Fringe area
- Elizabeth Street, north of A'Beckett Street and
- Leicester Street/Victoria Street/ Queensberry Street

The development of the medical precinct in the north of the Study Area will also generate demand for complementary businesses which will require office space. Therefore, a share of total future office development is also likely to be developed in the north of the Study Area in close proximity to the Metro station.

5.5 Land Use Precincts

The following land use precincts, shown on Figure 5.6, have been established to guide future urban renewal in the City North Structure Plan area:

1. Knowledge
2. Medical
3. Research
4. Campus
5. Student Living
6. Little Carlton
7. Tech Knowledge
8. Intensive Mixed Use
9. CBD Revitalisation
10. Queen Victoria Market
11. Elizabeth Street – Principal Street
12. Character and Commerce

Knowledge Precinct (1, 1(a), 2, 3, 4, 5

- Assure the precinct's important role in health care, research and education.
- Guide development, strongly positioning uses in this area to capitalise on links to the areas institutions, including the Royal Melbourne Hospital (RMH), Victoria Comprehensive Cancer Centre (VCCC), the University of Melbourne (UoM), Bio21 and Walter and Eliza Hall Institute (WEHI).
- Capitalise on the precinct's advanced infrastructure and supportive environment for knowledge industries.

Precinct 1: Medical Precinct

- Encourage the continued consolidation of major institutions within their existing footprint (RMH, Bio21, VCCC etc).
- Provide for commercial development

that complements the function of the knowledge precinct through the provision of medical facilities, consultancy rooms and other ancillary uses.

- Provide local service retailing at ground floor (e.g. retailing of food and beverage)
- Provide for increased residential development to bolster the residential catchment of the Parkville Metro Station (proposed) and provide accommodation in close proximity to the institutions.
- Provide the opportunity for new bio-medical/ tech institutions within the knowledge precinct.
- Provide for active frontages along Flemington Road.
- Provide new community hub in Flemington Road precinct.

Precinct 2: Research Precinct

- Provide the opportunity for the location of world class research institutions with an emphasis on medical research.
- Enhance connections between the VCCC, RMH and UoM.
- Ensure provision of ancillary uses to the research function and provision of services for employees and visitors to the precinct, including food and beverage retailing which is publically accessible within new developments.
- Provide for a mixed use 'Gateway' building- with active ground floor uses and upper level uses which contribute to the public realm. Ensure uses accommodate research, office, teaching and mixed complementary uses, such as book shops and food and beverage retailing.
- Encourage active frontages along Elizabeth Street, the Haymarket end of Pelham Street, and Grattan Street and at the Haymarket gateway.

Precinct 3: Campus Precinct

- Provide for expansion and consolidation of the University of Melbourne campus. Ensure provision of teaching spaces, office, non-medical related research and other uses associated with the consolidation of the university campus.
- Provide for uses ancillary to a University such as bookshops, stationary supplies etc.
- Promote student entertainment; including bars and pubs, food and beverage retailing, pool halls, active recreation etc.
- Promote residential development and a diverse mix of activities to ensure a 24 hour mix of activity in the precinct.
- Promote the area as a mixed use precinct providing for the University, ancillary and other uses.
- Encourage active frontages along Bouverie Street, Pelham Street and Grattan Street.

Precinct 4: Student Living Precinct

- Encourage student and mixed residential accommodation. Include provision for food and other retailing at ground floor and servicing to meet the needs of the residential and visiting population.

Precinct 5: Little Carlton Precinct

- Encourage a fine grain of mixed uses which complement the university campus and the redevelopment of the CUB site. These uses must meet the needs of professionals and students as well as other visitors to the precinct. Encourage uses such as food and beverage (including bars / taverns), bookshops, record stores, active spaces and artistic spaces to locate in the precinct. Promote these uses out of hours and year round.
- Encourage not-for-profit and new business start-ups to locate within the precinct. Also promote the location of niche businesses associated with the knowledge precinct such as lawyers and accountants.
- Encourage active frontages to locate at ground level along Bouverie Street, Pelham Street and Queensberry Street.

Precinct 7: Tech Knowledge Precinct

- Support the expansion and consolidation of the RMIT campus. Ensure provision of teaching spaces, office, research and other uses associated with the consolidation of the university campus
- Encourage the expansion of the RMIT design hub.
- Encourage design related business and associated uses to establish within the precinct. This may include studios, photo laboratories etc.
- Encourage a mix of uses which complement the University campus including food and beverage (including bars), bookshops, record stores, active spaces and artistic spaces to locate in the precinct.
- Provide active frontage along Swanston and Victoria Streets.

Precinct 6: Intensive Mixed Use

- Encourage intensive residential and commercial development.
- Encourage opportunity for student accommodation.
- Encourage retailing.
- Encourage fine grained mixed use development at ground level throughout the precinct.
- Encourage active frontages along Swanston Street, Bouverie Street and Victoria Street.

Precinct 8: CBD Revitalisation

- Encourage intensive commercial and residential development.

05 Land Use and Economy

- Encourage retailing including the extension of the retail core along Elizabeth Street to the Queen Victoria Market.
- Encourage buildings and services associated with affordable and social housing.
- Encourage community facilities, such as childcare to locate within the precinct.

Precinct 9: Queen Victoria Market Precinct

- Encourage retailing and food and beverage services to locate alongside the market.
- Encourage community facilities.
- Encourage shop top housing where appropriate along Peel and Victoria Streets.
- Promote active frontages along Peel and Victoria Streets.
- Ensure development in this locality does not fragment the current shopping focus at Queen Victoria Market.

Precinct 10: Elizabeth Street- Principal Street

- Encourage ground floor retailing the length of Elizabeth Street.
- Encourage intensive commercial uses (particularly in first 6-8 storeys of buildings - on top of retail at ground floor)
- Encourage business which complement the knowledge precinct to locate along Elizabeth Street (to foster the commercialisation of research).
- Encourage intensive residential development.
- Active frontages the entire length of Elizabeth Street

Precinct 11: Character and Commerce: Mixed residential and commercial precinct

- Encourage the provision of residential development.
- Encourage commercial uses along Peel Street.
- Encourage local servicing retail along Peel Street and Wrecklyn Street / Flemington Road.
- Active frontages along Peel Street and Wrecklyn Street (and Flemington Road).

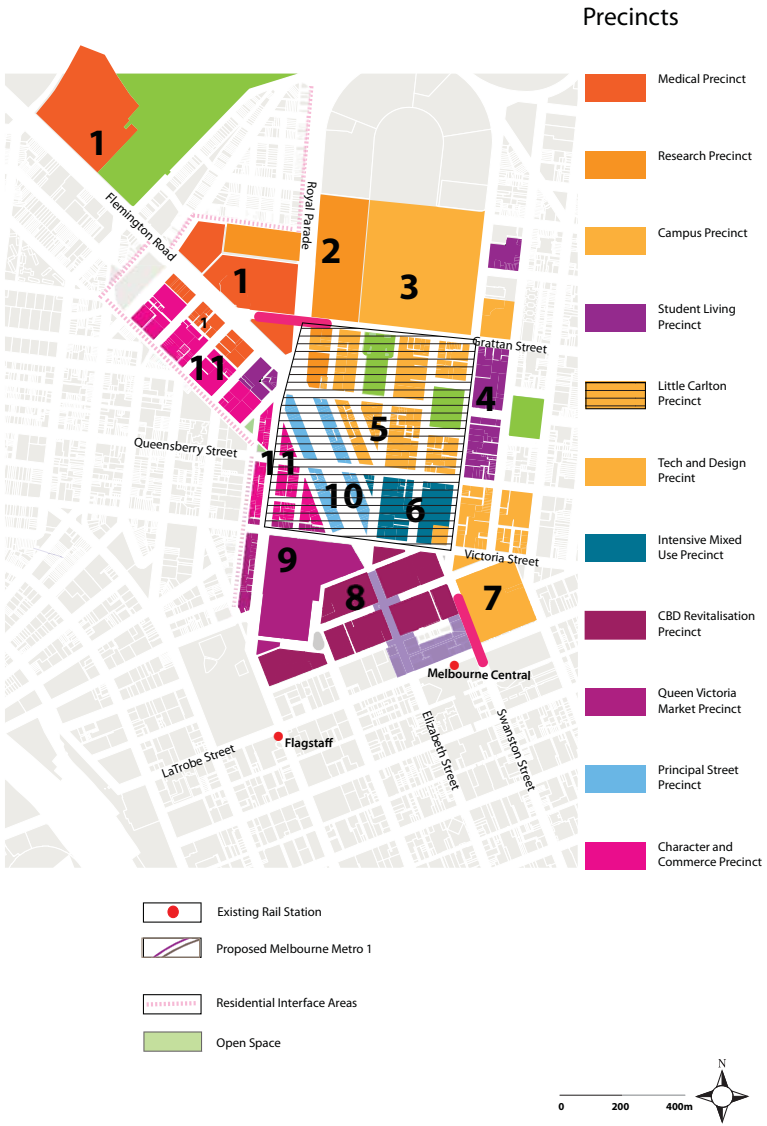

Figure 5.6: Land use precincts

06 Movement and Transport

The transport system must be structured to deliver optimum access for the full, long term redevelopment and activity potential of the City North Structure Plan area. This will include realising maximum trips by non-motorised transport modes, public transport and car sharing, in order to effectively minimise the share of private car trips. These outcomes will provide the desired high levels of amenity and safety suited to the activity profiles envisaged in the precinct.

6.1 Road Network

The City North Study Area currently provides access along primary roads from the north and west of Melbourne into the Central City. The Study Area has sound access to the Melbourne's regional arterial road network via CityLink. CityLink strategically links the Study Area to Melbourne's airports to the north, industrial/ storage areas to the west and the Port of Melbourne to the south. On and off ramps to the tollway are located outside the Study Area to the north west, Racecourse Road, which is accessed via Flemington Road and to the south west, Dynon Road, accessed by Victoria Street. Whilst the tollway access is located outside the Study Area, the existence of the Tollway presents several challenges for the City North precinct in moving traffic onto the freeway from the Central City. Opportunities exist within the Structure Plan process to ensure these roads do not act as barriers for movement within the Study Area.

Outside of the Tollway, the City North area, in particular Peel Street, Elizabeth Street/ Royal Parade and Flemington Road provide access to the north and west of Melbourne. The significant traffic volumes and carriageway of these roads currently impedes local movement. The Haymarket roundabout is the convergence of all of these roads and creates a significant obstacle in the broader road network. VicRoads' plans to signalise this roundabout should provide a short term solution to improving this significant network barrier.

City North also provides key east-west connections in the form of Victoria Street, and Grattan Street. At a more localised level Queensberry Street plays a critical role in traffic movement between the city and North Melbourne. North - south access through the Study Area is directed through Elizabeth and Peel Streets.

Several 'major' roads (Elizabeth Street, Peel Street and Victoria) currently play a critical role in the Melbourne road network and are designated (in part) as Road Zone Category 1 roads.

6.1.1 Road Use Hierarchy

The management of Melbourne's road network occurs under the structure of SmartRoads – a State Government Initiative delivered by VicRoads. This aims to manage competing interests for limited road space by giving priority use of the road to different transport modes at particular times. The ultimate aim is to guide decisions about the operations of the road network to support land use and transport planning and better consider the effects on the surrounding community, activity centre and the environment.

As part of SmartRoads, a series of Road Use Hierarchy maps have been collaboratively developed by VicRoads and local councils across metropolitan Melbourne, in consultation with other government agencies and relevant stakeholders over several years. These maps form the foundation for Network Operating Plans – more detailed documents that illustrate which transport modes have priority on different sections of the road network at different times – based on the agreed road use hierarchy. It is anticipated that by designating which modes have priority on which roads, the road network can work better for everyone. The road use hierarchy is shown in Figure 6.1.

The VicRoads Smart Roads Map designates the following road hierarchy in City North as:

- Pedestrian Priority: Elizabeth Street between Pelham Street and Victoria St, and Peel Street between Victoria Street and Dudley Street
- Tram Priority: Routes include Royal Parade, Flemington Road, Peel Street, Victoria Street, Elizabeth Street and Swanston Street.
- Bus Priority Route: Queen Street, Franklin Street and Dudley Street
- Preferred Traffic Route: Victoria Street
- The City of Melbourne's draft Municipal Strategic Statement nominates Flemington Road, Royal Parade and Victoria Street as Principal Streets.

6.1.2 Traffic

The Investing in Transport: East West Link Needs Assessment found that strong population growth is exceeding employment growth in the city's west. This results in increasing traffic pressures as more people travel to the CBD and inner- and middle-eastern suburbs for work.

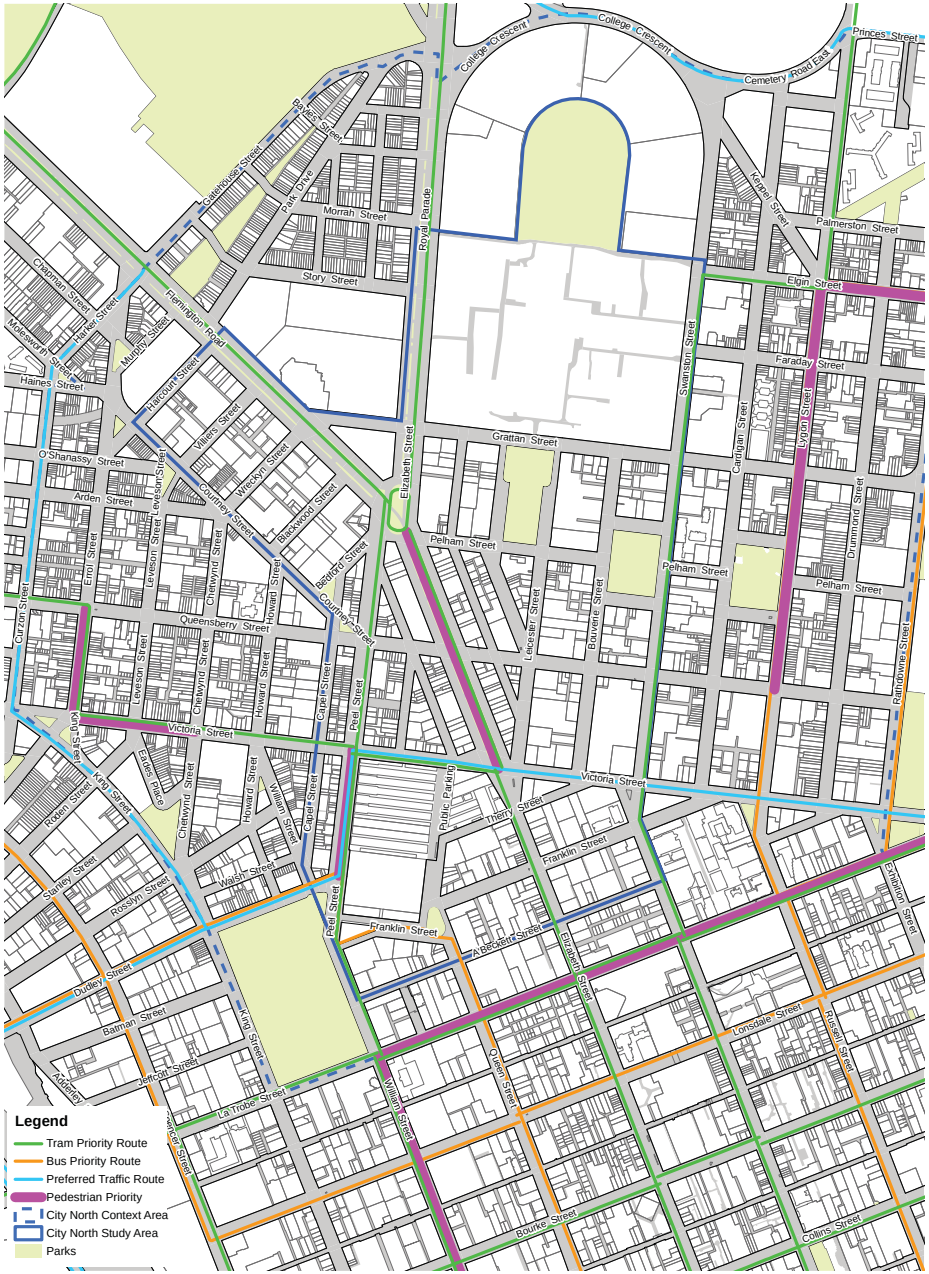

Figure 6.1: Vic Roads modal priority

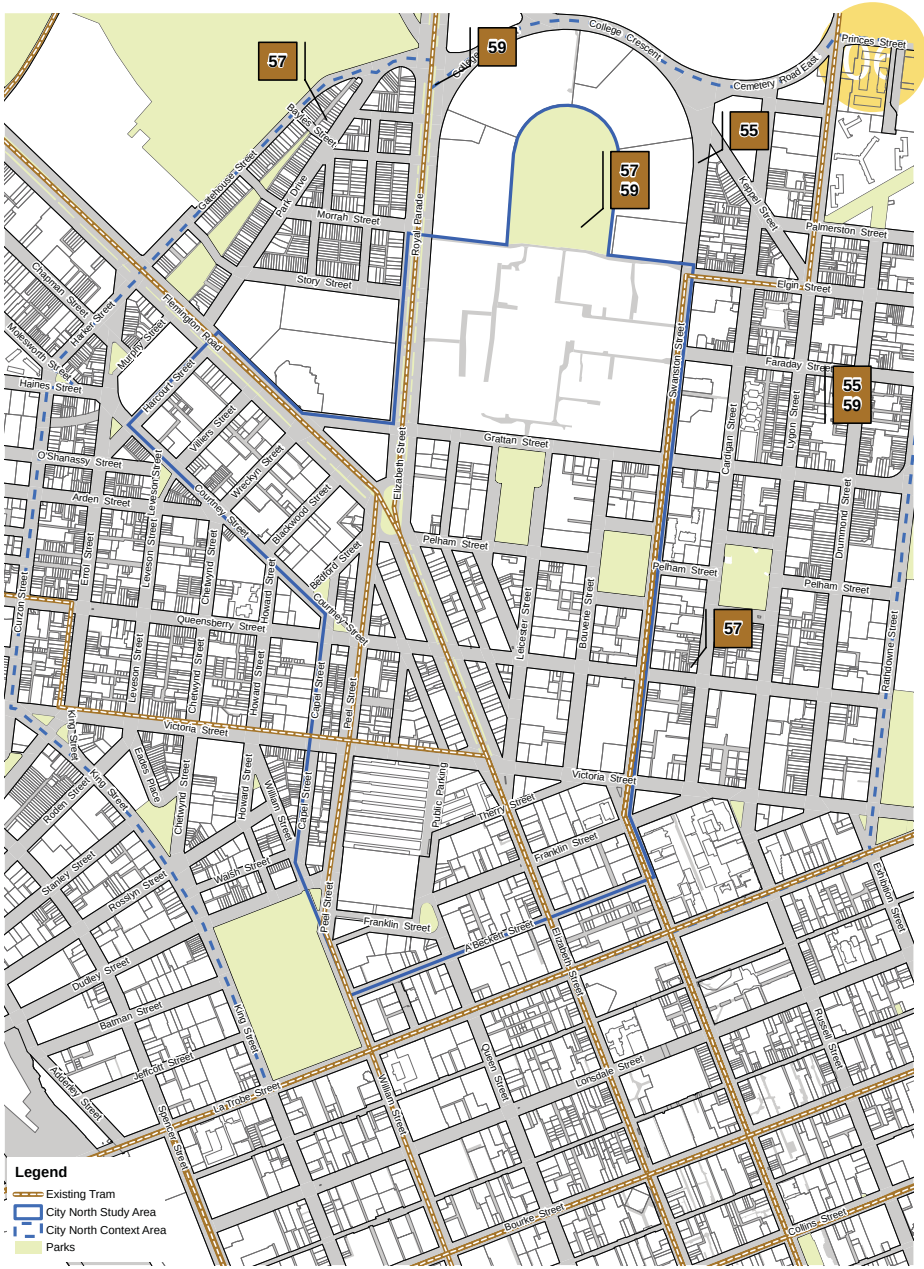

Figure 6.2: Existing tram network

06 Movement and Transport

It is recommended that use of the existing and proposed freeway network should be the principal means to satisfy existing traffic demand and new traffic movements. That is, the ongoing use of urban arterials across inner Melbourne for the purposes of carrying high volumes of commuter traffic is no longer acceptable.

The dominant traffic flows in the AM peak are found on Flemington Road, Princes Street/Alexandra Avenue, Hoddle Street and Victoria Parade. The majority is destined for the CBD and its environs, with a reverse pattern in the PM peak period. The traffic volume on these roads is typically between 2,000 to 3,000 vehicles per hour in the peak direction, highlighting the subservience of the road network in largely catering for the flows between the northern freeways (CityLink and Eastern Freeway) and the CBD.

Boundary Street, Macaulay Road, Abbotsford Street, Arden Street, Queensberry Street and Rathdowne Street also carry high volumes of traffic, some of which is associated with the northern freeways. These roads have also benefitted from targeted traffic management in recent years to limit the proportion of through traffic and to promote a greater local access and circulation role.

In the morning peak period, over 2,000 vehicles per hour exit CityLink in the citybound direction, with the majority of this traffic bound for the CBD and its northern environs. The traffic volume approaching the market roundabout in the morning peak hour is over 1,400 vehicles per hour, just over 80% of which have destinations in the CBD and areas to the immediate north. The remaining traffic is through traffic, with a reverse pattern in the evenings.

The southbound traffic volume approaching the Haymarket roundabout is around 850 vehicles per hour of which 30% originate from College Crescent (many in turn from the Eastern Freeway). Interestingly, those motorists on Royal Parade generated from locations further north of College Crescent are bypassing the CBD. It is estimated that around 27% or traffic that has not originated from College Crescent is bound for destinations on Victoria Parade to the east of Nicholson Street.

6.1.3 Traffic Patterns

A review of available traffic and transport data has identified that some of the heaviest traffic flows to the CBD's north occur in association with travel to and from the northern freeways. Supplementary analysis was undertaken to better understand the nature of traffic flows on Flemington Road, Elizabeth Street (north of Victoria Street) and Victoria Street/Parade (two of the routes with heaviest traffic flows linked to the northern freeways).

Focusing on non-local traffic utilising the Flemington Road/ Elizabeth Street/ Victoria Street route, it was found that there is a modest level of through traffic travelling (in both directions) between Royal Parade/ Flemington Road and destinations of Victoria Parade to the east of Nicholson Street. Many of the motorists on these roads are accessing the CBD.

Key findings from the AM origin/destination surveys are:

- 19% of motorists with origins on Flemington Road have destinations on Victoria Parade (east of Nicholson Street)
- 19% of motorists with origins on Royal Parade have destinations on Victoria Parade (east of Nicholson Street)

These motorists represent a sizable component of the eastbound traffic stream on Victoria Parade. Of the total eastbound traffic on Victoria Parade around 30% have originated northwest of the Haymarket roundabout (19% from Flemington Road and 11% from Royal Parade).

Key findings from the PM origin/destination surveys are:

- 18% on Flemington Road (northwest of Haymarket roundabout)
- 12% on Royal Parade (northwest of Haymarket roundabout)

These motorists represent a substantial component of the westbound traffic streams on Flemington Road (28%) and northbound traffic streams on Royal Parade (24%).

6.2 Public Transport Network

The southern aspect of the City North precinct is well serviced by metropolitan rail services including Melbourne Central station and Flagstaff Gardens, however there is a recognised need for additional rail capacity in the inner-city, which is of critical relevance to the precinct. Whilst both these stations are located on the City Loop, providing excellent access to the metropolitan rail network, Flagstaff provides a more limited service due to its closure on weekends.

Melbourne Central serves as a major interchange hub with ten tram routes providing access across the metropolitan region. This is provided along Elizabeth and Swanston Streets within the Study Area.

In addition to the identified tram routes, eleven bus routes operate through the precinct. These bus routes provide access to the inner and outer eastern suburbs of Melbourne which have limited connectivity to the rail and tram network.

Tram Routes

Routes servicing the study area along Swanston Street include:

003 East Malvern - Melbourne University

005 Malvern (Burke Road) - Melbourne University

016 Kew - St Kilda Beach - Melbourne University (via City & St Kilda)

024 North Balwyn - City (La Trobe Street)

027 City - Kew Tram Depot (via La Trobe Street)

030 City - St Vincents Plaza (via La Trobe Street)

064 East Brighton - Melbourne University (via Hawthorn Road)

Routes servicing the study area along Elizabeth Street include:

057 West Maribyrnong (Cordite Avenue) - City (Flinders St / Elizabeth St)

019 North Coburg - City (via Coburg, Brunswick & Parkville)

059 Airport West - City (Flinders Street / Elizabeth Street)

Bus Routes

200 City - Bulleen - Doncaster Shoppingtown

201 City - Doncaster Shoppingtown (via Belmore Road)

203 City - Doncaster Shoppingtown (via Kilby, Thompsons Road & Manningham Road)

207 Donvale - Doncaster Shoppingtown - City (via Doncaster Road)

301 The Pines Shopping Centre - City (via Thompsons Road & Eastern Freeway)

302 Box Hill - Kew East - City (via Belmore Road & Eastern Freeway) 303 Mitcham - City (via Eastern Freeway & Springfield Road)

304 City - Warrandyte (via Eastern Freeway & Blackburn Road)

305 City - Warrandyte (via Eastern Freeway & George Street)

306 City - North Ringwood (via Eastern Freeway, Wetherby Road)

307 City - Mitcham (via Eastern Freeway & Doncaster Road)

308 Deep Creek Reserve - City (via Blackburn Road, King Street & Eastern Freeway)

309 City - Donvale (via Reynolds Road, Williamsons, Lynnwood, High Street & Eastern Freeway)

319 The Pines Shopping Centre - City (via King Street, High Street & Eastern Freeway)

401 North Melbourne - University of Melbourne via Royal Melbourne Hospital

402 Footscray - East Melbourne via North Melbourne

954 NightRider - City - Craigieburn via Mt Alexander Road, Pascoe Vale Road

956 NightRider - City - Epping via Lygon Street, High Street

As highlighted above, the City North precinct is well serviced by existing public transport network given its proximity to the Central City and key institutions.

A new Melbourne Metro would benefit the area by providing a rail service linking Parkville to Footscray and the Central City and Caulfield.

Figures 6.2 and 6.3 identify the existing Public Transport routes within the City North Study Area.

Transport analysis shows that approximately 35,400 passengers are serviced through train and tram services travelling through the municipality's north-west quadrant toward the city during the AM peak period, with the majority operating at, or close, to capacity. Although a part of the existing ridership is generated from land uses within the Study Area, the majority are from the middle and outer metropolitan Melbourne suburbs.

06 Movement and Transport

Therefore, residents of City North are likely to experience difficulty boarding public transport bound for the CBD in the morning. Similarly, it would also be difficult for those with the City North precinct as their morning destination to board these congested services.

There is both a need to relieve existing congestion and to accommodate for the projected increasing population and employment. To achieve this, there is a need for a combination of major and minor public transport projects and an expansion of services.

6.2.1 Potential Transport Infrastructure Proposals

Several transport infrastructure projects are currently under consideration by the State Government and have implications for City North. These are outlined below

Melbourne Metro

The Melbourne Metro rail tunnel proposes a new passenger route between Footscray and Caulfield. To date, the Department of Transport has not provided specific details on the proposed alignment; however, it has outlined indicative locations of potential rail stations. Figure 5.4 in Land Use and Economy indicates the proposed location of these stations within City North. The following proposed underground stations are in proximity to City North:

- Grattan Station in Parkville
- CBD North in Swanston Street in the Central City
- CBD South in Swanston Street in the Central City
- Arden Station in North Melbourne

Key benefits of the Melbourne Metro include:

- releasing capacity on Melbourne's busiest rail corridor;
- creating additional space for more than 14 trains each hour on the Craigieburn, Sunbury, Werribee, Williamstown and Upfield lines. Additional space will be delivered to around 12,000 passengers each hour on these busy lines;
- Linking people to jobs, growth and education in Parkville and St Kilda Road.

Regional Rail Link

The Regional Rail Link is a new dedicated V-Line route that will provide capacity for up to 9,000 extra passengers across the network in peak hour.

This project will separate regional trains from metropolitan trains – for the first time giving Geelong, Bendigo, and Ballarat trains dedicated tracks through the metropolitan system from Sunshine to Southern Cross Station.

The project includes new dedicated regional tracks from west of Werribee to Deer Park and along the existing rail corridor from Sunshine to Southern Cross Station.

Melbourne International Freight Terminal

A new Metropolitan International Freight Terminal is proposed to be built to the north of Footscray Road in the Dynon-Port precinct, on the sites currently occupied by the wholesale produce markets and the South Dynon Terminal. The purpose of the project is to improve freight efficiencies by enabling the seamless transfer of containers between the stevedoring terminals and rail and road shuttle services connecting the Port to intermodal terminals located in Melbourne's key industrial areas to the west, north and south-east.

WestLink

In 2008 the East West Link Needs Assessment proposed a freeway standard road linking the Eastern Freeway at Hoddle Street to the Western Ring Road. The State Government's Linking Melbourne Authority is conducting a planning study to consider part of the route for this road, known as WestLink. The project would link the Port of Melbourne precinct with west Footscray via a road tunnel.

6.3 Pedestrian Network

There is a strong demand for pedestrian movement within the study plan area given the location of major institutions and visitor destinations within the precinct. Given this the pedestrian environment within the Study Area is relatively sound, with many public laneways (see Figure 6.4) providing the opportunity for movement within the precinct.

There are however significant barriers to pedestrian movement. These barriers are primarily due to roadways. In their present form Elizabeth Street, Peel Street, Victoria Street and the Haymarket roundabout provide significant pedestrian barriers.

The quality of the public realm in City North also impedes pedestrian movement in the Study Area, with a poor quality of public realm along many pedestrian paths undermining the quality of the pedestrian network. In parts of the precinct an industrial subdivision pattern also impedes movement throughout the precinct. As sites are upgraded and redeveloped, opportunities to enhance pedestrian links and facilities will need to be capitalised upon.

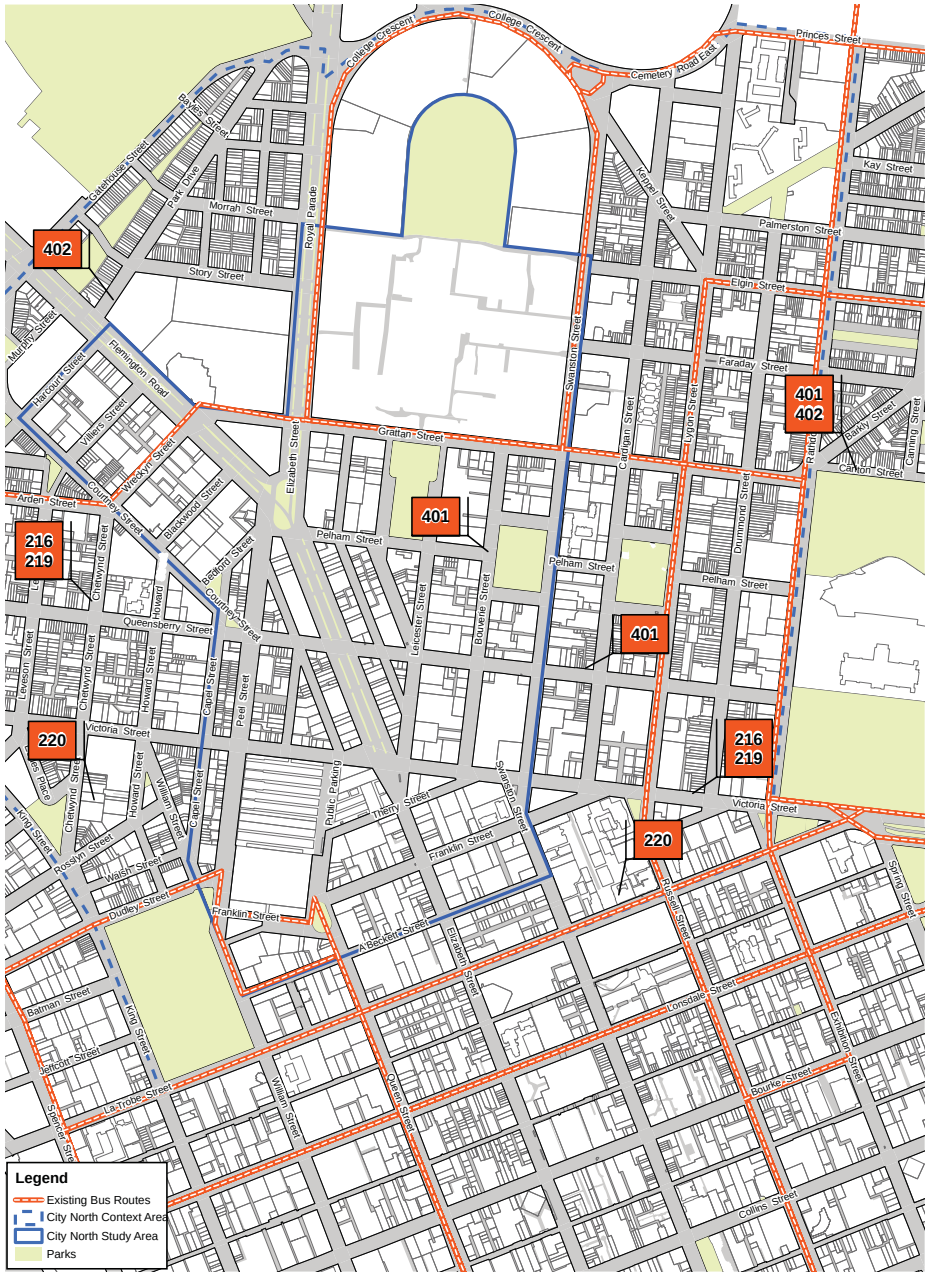

Figure 6.3: Existing bus routes

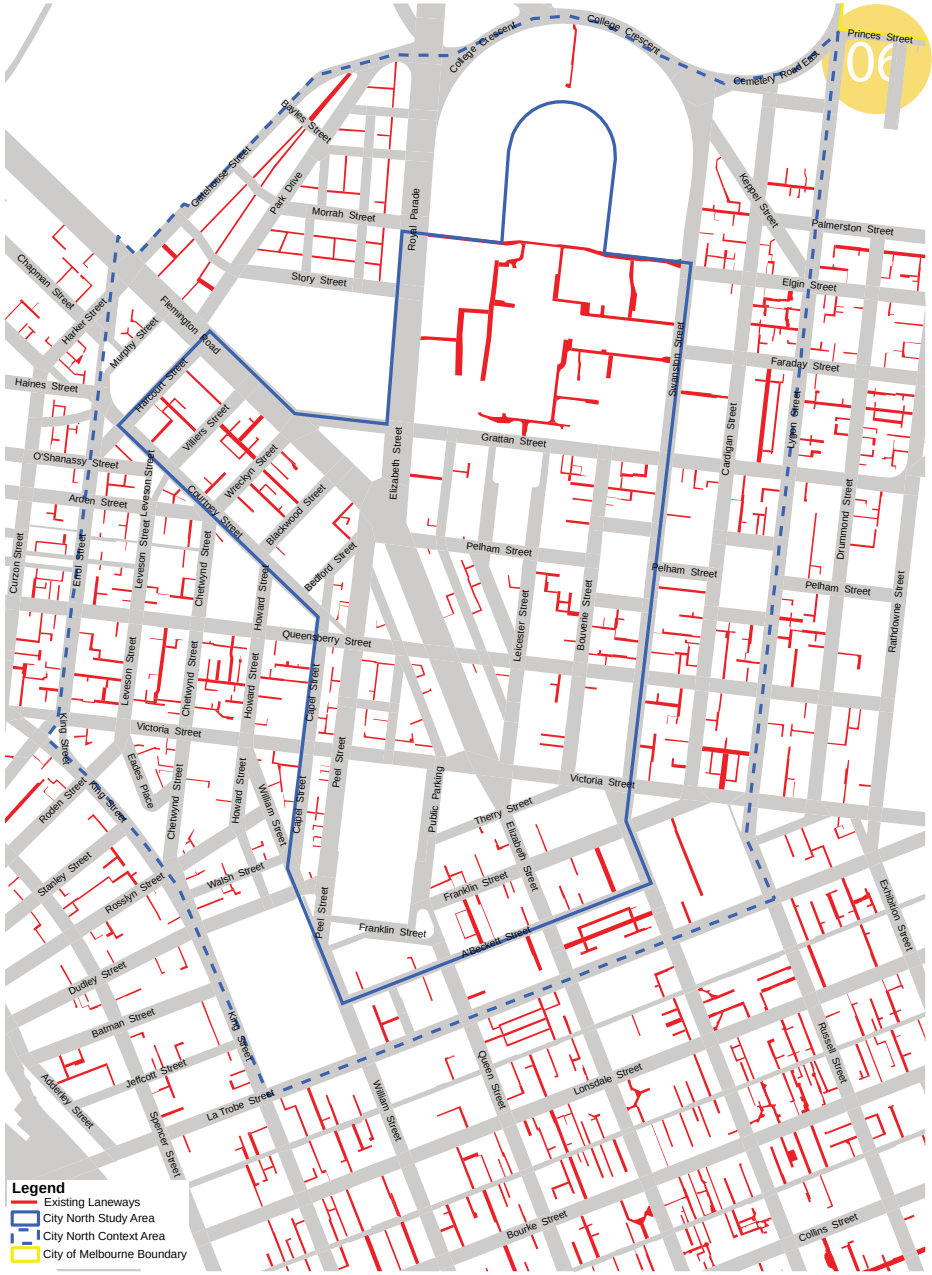

Figure 6.4: Laneways

06 Movement and Transport

6.4 Bicycle Network

The existing bicycle network in the Study Area (shown in Figure 6.5) includes all 'Exclusive On Road' bicycle lanes, with the exception of the stretch of Swanston Street between Queensberry Street and Victoria Street. The Exclusive On Road lanes (i.e. dedicated on-street bike paths) are on Flemington Road, Capel Street, William Street, Swanston Street (South of Victoria Street) and Bouverie Street. Whilst these roads provide exclusive on road bicycle lanes the majority of this infrastructure is located on the periphery of the City North Study Area and provide for very limited connectivity of the bicycle network within the precinct. The exception of this is the recent investment in Queensberry Street bicycle lanes.

Despite limited infrastructure within the City North area, it continues to be a popular route for cyclists with demand for cyclists travelling to the Central City for employment and the large volume of students and employees accessing the University of Melbourne at the north of the precinct and RMIT to the south.

Bicycle counts highlight a decrease in rider-ship at the intersection of Swanston Street and Queensberry Street, with 2007 and 2008 numbers providing 1222 and 1220 respectively. 757 riders were counted in 2010, up 81 from 2009.

At the intersection of Royal Parade and Grattan Street there were 1011 riders counted, up by 279 from 2009 figures and higher than the count of 938 in 2007. However, again the 2008 count was substantially higher at 1650.

Whilst these figures indicate less riders in 2010 than earlier counts, there may be several externalities which need to be taken into account including weather on the day of the bike count. These numbers do illustrate a demand for cycling within the City North Study Area.

6.5 Car Parking[1]

The majority of parking spaces commercial, at 3069, followed by residential, at 2363, and Private parking with 908 spaces.

The total floorspace Car Parking area within the structure plan area is 394,772 m2, with the total number of spaces at 6340, indicating a high density of car parking.

[1] *City of Melbourne 2008, Census of Land Use and Employment: Number of spaces per property*

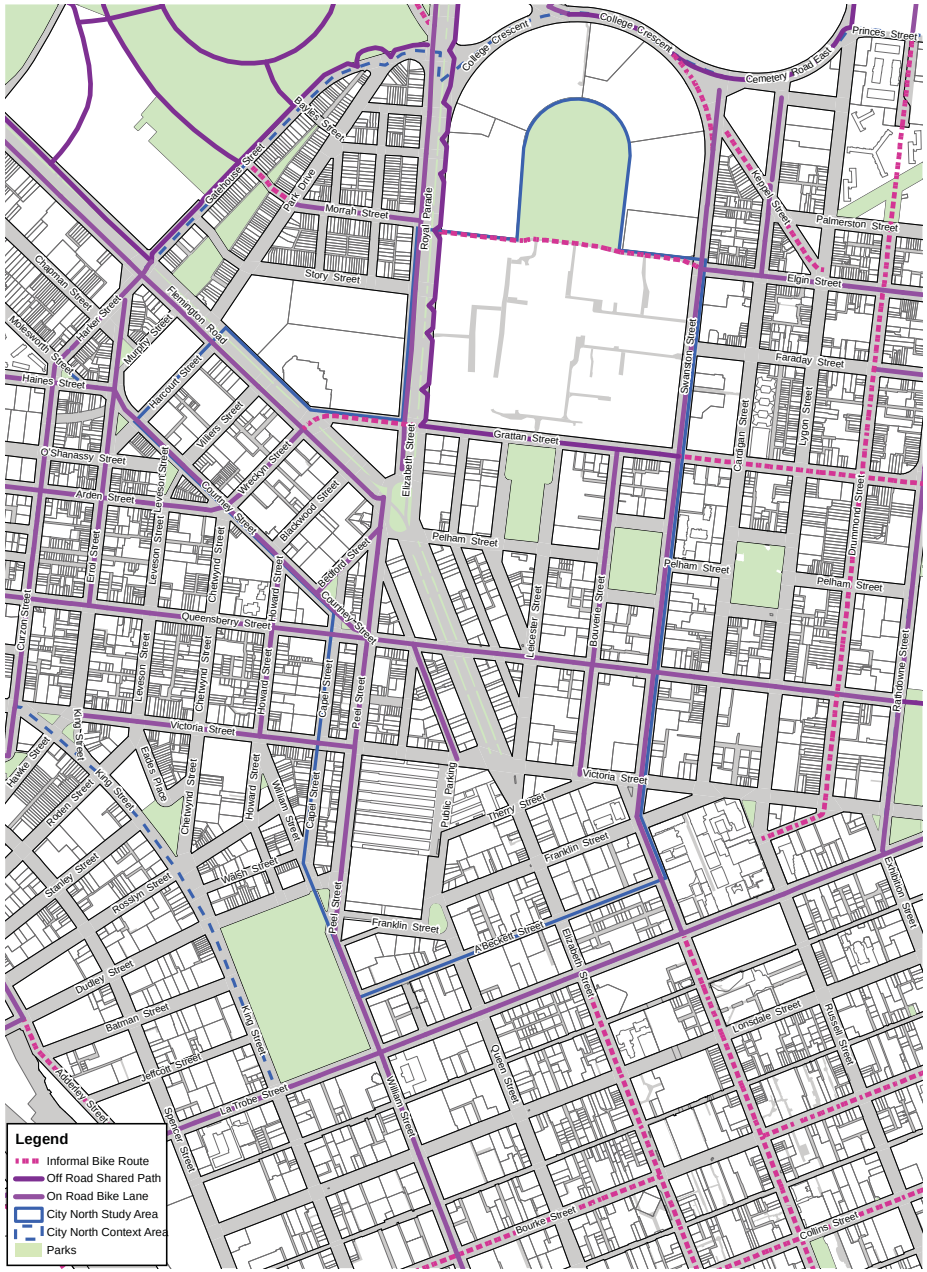

Figure 6.5: Existing bike paths

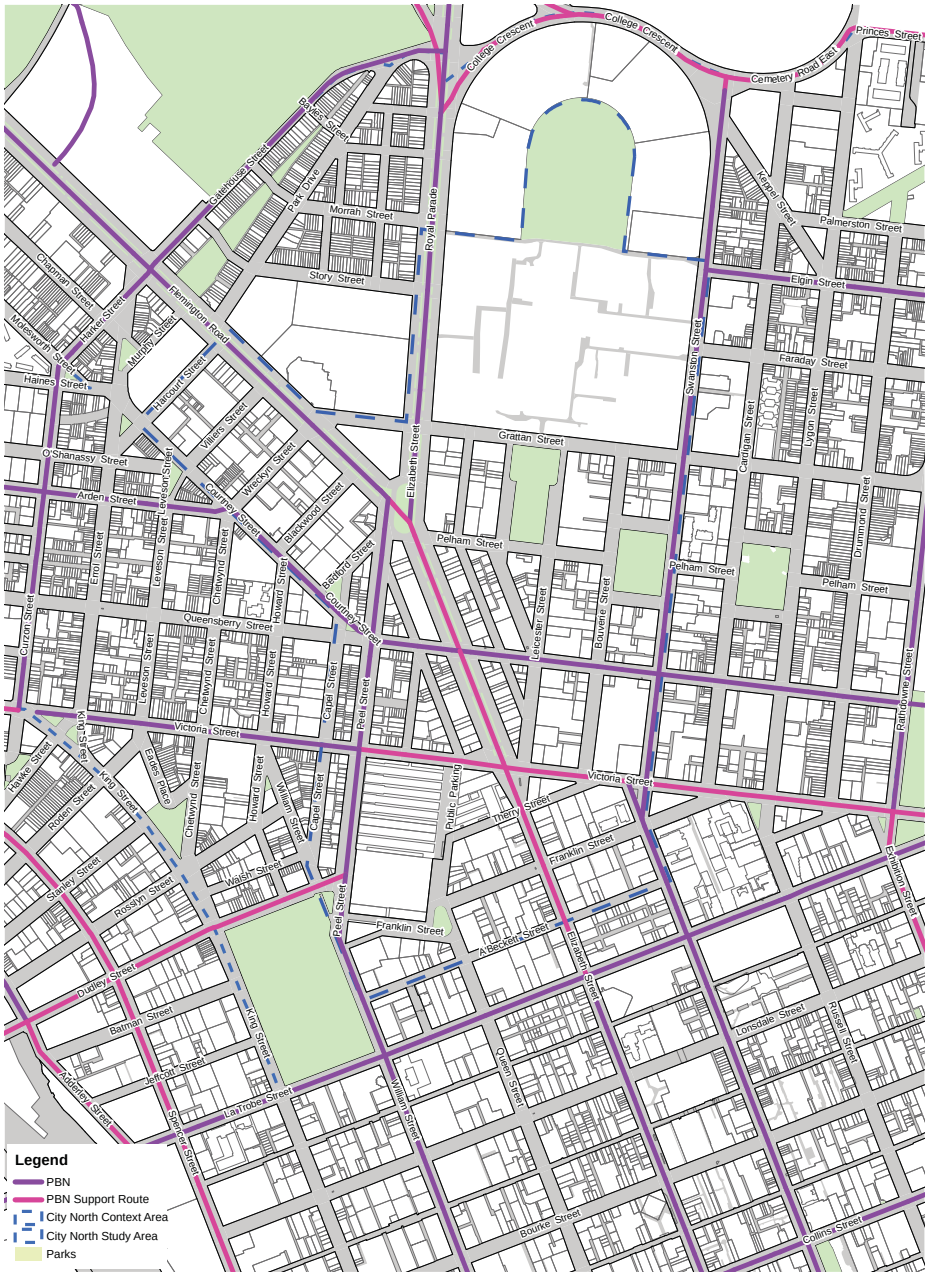

Figure 6.6: Principal bike network

06 Movement and Transport

6.6 Trip Generation

Journey to work trips can be divided into three categories:

- Residents of the precinct employed within the City of Melbourne
- Residents of the precinct employed outside the City of Melbourne
- Workers coming to the precinct to work but living outside the City of Melbourne

In the City North precinct, given its renewal opportunities and proximity to the Central City it is estimated that there will be low motor vehicle dependency reflecting existing high levels of public transport use and walking and cycling. It is also assumed that residents living and working within the precinct travel to work on foot or bicycle.

The Melbourne Metro and other recent and new public transport projects (such as the recently completed North Melbourne station upgrade and the planned Metro stations) will further support the transfer of motor vehicle trips to public transport. The continued pedestrianisation and reduction of the role of the motor vehicle in the City of Melbourne will further promote walking and cycling. Consistent with current trends for inner city areas, residents of the City North precinct will be expected to have a slightly lower vehicle dependency than those employees coming for work and are not residents of the City of Melbourne.

Given their proximity to a high concentration and diversity of jobs, it is assumed that residents of the City North precinct employed within the City of Melbourne can walk, cycle or use public transport for the journey to work.

07 Built Form and Open Space

7.1 Existing Conditions

7.1.1 Landform and Contours

Figure 7.1 shows that the Study Area inclines gradually from the south to the north, starting at 13m above sea level and peaking at 43m in the north east corner around the intersection on Berkeley and Grattan Streets.

There is a small plateau west of the Study Area on Howard Street, between Queensberry and Victoria Streets, peaking at 42m above sea level.

7.1.2 Existing Built Form and Scale

The area comprises a diversity of built form and scale, reflecing City North's industrial heritage, predominantly associated with warehousing and storage, and the strong presence of large scale medical and educational institutions. Further to this, the built form varies amonst the distinct precincts within the area. The existing built form is shown on Figure 7.3.

The built form is predominantly low scale in the west of the Study Area in North Melbourne, with higher scale buildings more prevalent in the south of the Study Area. Prevailing characteristics include few front or side setbacks to properties and a high level of site coverage.

There are many examples of recently developed buildings which are higher than the height limits recommended in the Design and Development Overlays (DDO) and several graded buildings which are not covered by a Heritage Overlay (HO), indicating the need to review appropriate built form controls for this area.

The Study Area has been divided into several distinct character areas, as outlined in this section and shown on Figure 7.5, to identify contributory elements of the existing built form, the effectiveness of built form and heritage controls and recent development patterns and trends.

A series of streetscapes within City North were surveyed to analyse the nature of development of the area and test built form control proposals for further consideration in the Structure Plan. Further detail of this analysis is included in Appendix B.

1. Central City Interface

- Currently zoned within the Capital City Zone, the area is characterised by a diverse built form, with very tall buildings for both office and residential use reflecting the consolidation of the Central City adjacent to low to mid-scale semi-industrial buildings which reflect the industrial heritage of the area.
- DDO14 applies to the west of this area, specifying maximum building heights, ranging from 12 to 60 metres which establish a transition from the low scale heritage environs of the Queen Victoria Market. No height limit applies to the east of this area.
- Small scale buildings which support market related functions fringe the Queen Victoria Market along Therry, Queen and Franklin Streets. These are of an appropriate scale for the largely single storey open sheds and two-storey ancillary buildings of the QVM.
- Tall residential development has concentrated east of Elizabeth Street around Therry and Franklin Streets.
- Considerable development has occured in William Street surrounding the Flagstaff Gardens.
- Many recently developed buildings are sheer to the street or have minimial podiums, comprimising the street environment.

2. Queen Victoria Market Precinct

- The Queen Victoria Market is primarily a series of single storey sheds with ancillary premises of single and two storeys on the north and east perimeter. The southern portion is used for car parking.
- DDO14 applies to the Queen Victoria Market.
- The built form of this area is subject to further review.

3. Peel Street West (south of Queensberry Street)

- The scale of development along Peel Street is generally two storeys with some recent development opposite the Queen Victoria Market up to 4 storeys.
- There is generally a high level of consistency in the fine grain nature of the streetscapes in this area which are characterised by nineteenth century streetscapes with a large number of heritage buildings protected by a heritage overlay.
- DDO32 applies along most of Peel and Capel Streets with a maximum height of 14 metres.

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

- The intersection of O'Connell Street running parallel with Elizabeth Street and the network of small streets on the magnetic grid alignment, create a distinctive character here.
- Buildings in the area are predominantly between two and five storeys.
- There is a high concentration of heritage buildings, particularly Victorian era terraces and early industrial buildings related to the Queen Victoria Market including food warehouses, hotels and stables. Many of these heritage buildings have been redeveloped for residential purposes and comprise upper additions which are recessed from the facade.
- New residential development is complementary in height and satisfies the requirements of DDO32.

5. Courtney Street

- The area has strong heritage characteristics and provides a transition between the stable

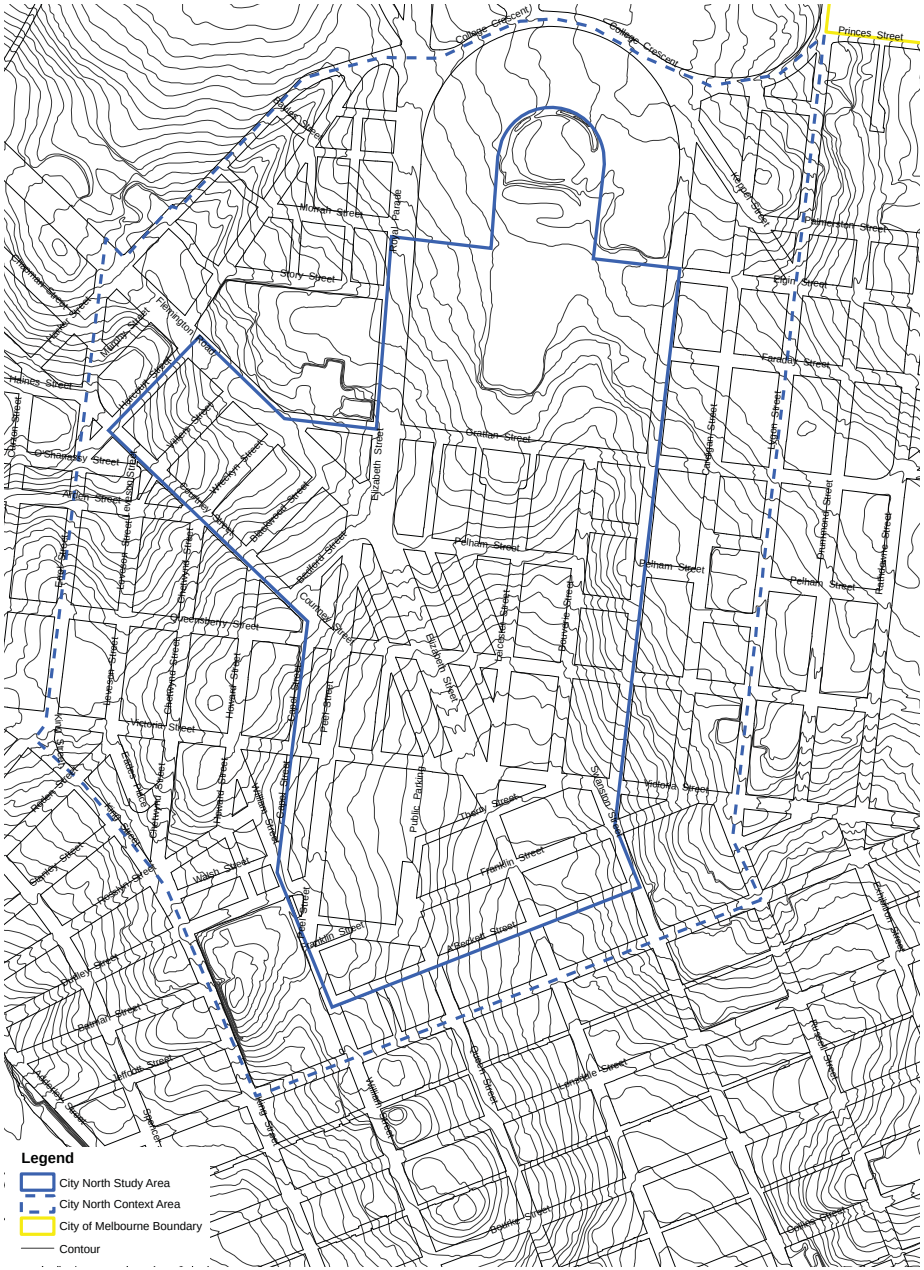

Figure 7.1: Contours

Figure 7.2: Open Space and Street Trees

07 Built Form and Open Space

residential areas in North Melbourne and Flemington Road precinct.

6. Elizabeth Street, Victoria Street and Flemington Road

- Elizabeth Street has relatively modest built form with a handful of higher buildings despite its role as a major transport corridor connecting to the Central City. The eastern side predominantly comprises narrow lots compared to the western side which comprises several extremely large lots, with a low level of built form.
- Commercial showrooms, with a furniture or motor trade connection are located on both sides of Elizabeth Street, often extending to the property rear on Berkeley Street or O'Connell Street. These present key opportunity sites for redevelopment.
- DDO44 establishes a maximum height of 8 storeys which does not reinforce the primacy of Elizabeth Street.
- Several recent developments and approvals along Elizabeth Street exceed height limits and have resulted in the demolition of graded buildings.
- In recent years, several buildings on the southern side of Flemington Road have been developed which are of similar height to the Royal Melbourne Hospital buildings on the north.
- Recent development on the south side of Flemington Road has resulted in some demolition of either low scale or contributory buildings, resulting in a changed character.
- Buildings along Victoria Street are between 8 and 10 storeys, providing a transition from the scale of the buildings within the Central City.
- The former CUB site, which was substantially demolished and is fringed by historic structures of two to four storeys, is curently being redeveloped with a mix of building heights and residential, retail and commercial uses.
- The built form is lower along the western side of Swanston Street compared to the eastern side.

7. Haymarket

- Several extremely large lots abut the Haymarket, however the majority of buildings are of a low scale due to uses associated with automative sales and services. This built form does not reflect or capitalise on the proximity to the knowledge precinct or enhance the area as a gateway to the Central City.
- Buildings of around 8 storeys are located in the area.
- The development of the Peter Doherty Research Centre, on the former Ampol site and the Victorian Comprehensive Cancer Centre will enhance the height adjacent to Haymarket significantly, .

8. Little Carlton

- Although the area was historically predominantly residential, some showroom, warehouse, and transport facilities located in the area in the early decades of the twentieth century, capitalising on proximity to the Central City.
- Several clusters of row terraces remain intact, or have contemporary recessed additions. The retention of terraces in new development contributes to the fine grain character.
- Industrial and commercial buildings from the early twentieth century are generally of high architectural quality and have potential heritage value, particularly around Bouverie Street near Lincoln Square and along Berkeley Street.
- Institutional buildings are generally the largest lots and buildings in the area, often spanning the width of the block.
- The eastern side of Berkeley Street has predominantly low level buildings, many of which have blank facades or car parking entrances.
- Pelham Street has relatively intact heritage buildings which are predominantly two to three storeys, however this extends up to 12 storey between Leicester Street and Barry Street.
- Lots along the west side of Swanston Street are generally large, however built form is low compared to the recent high development on the east side.
- Bouverie Street has many buildings between 2 and 5 storeys, with higher properties located in proximity to Lincoln Square North and South, with the highest at 9 storeys. Properties directly opposite Lincoln Square are between 2 and 3 storeys.
- Along Leicester Street, between Queensberry and Pelham Street there is greater diversity in building heights, with a range of between 2 and 10 storeys, and property widths ranging from attached terraces to 40m.
- Queensberry Street has a low scale built form of between 2 and 4 storeys, comprising industrial buildings with some higher buildings near the intersection with Leicester Street. The building on the corner with Leicester Street extends to 6 storeys.
- Grattan Street is generally characterised by a low built form of one to 4 storeys, and fine grain single and double storey Victorian era attached residential terraces which are integrated into educational buildings or other office based uses. The scale increases towards the west, with the building between Barry Street and Berkeley Street exceeding the DDO.
- Several recent development

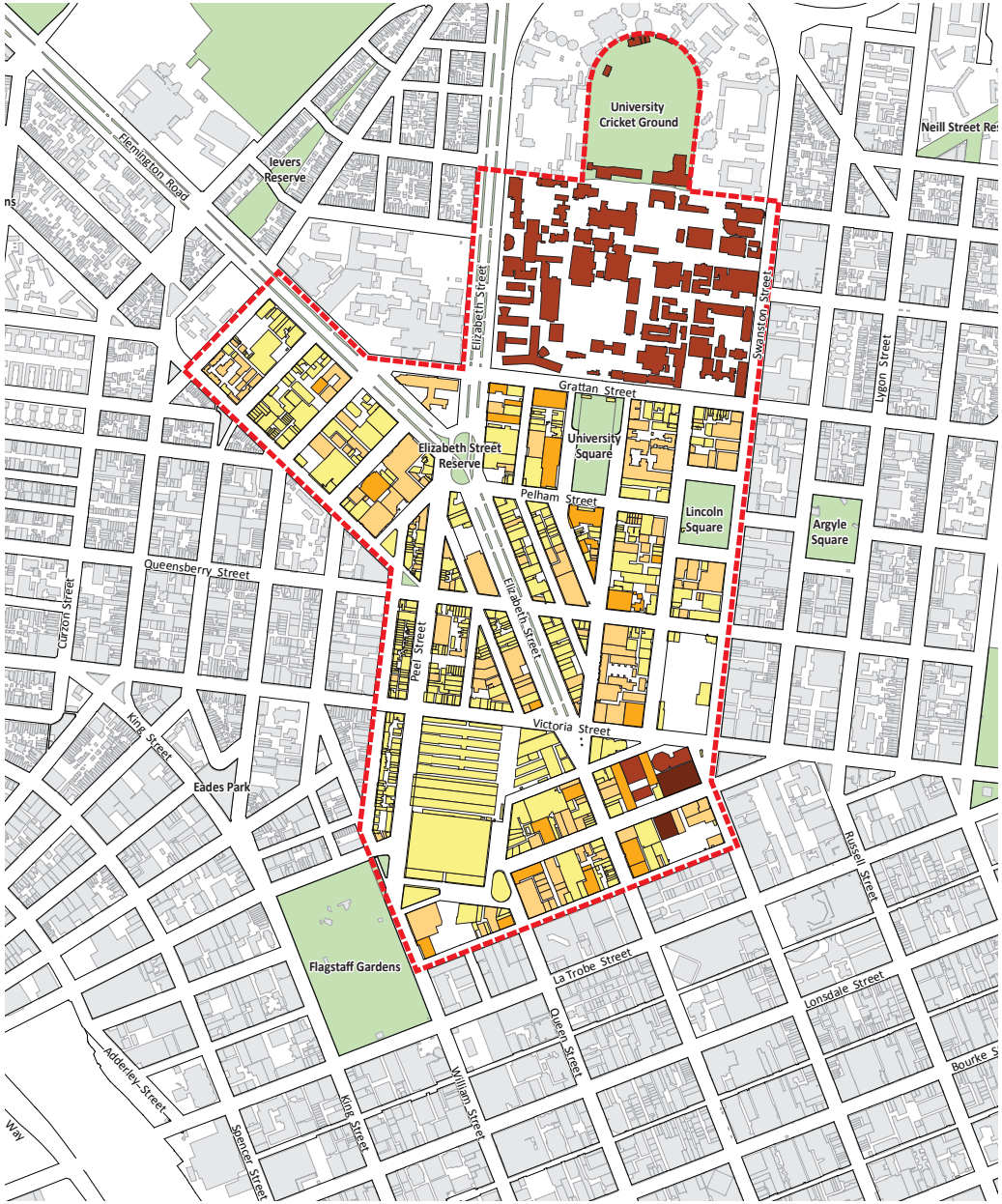

Figure 7.3: Current heights

07 Built Form and Open Space

applications exceed the 8 storey height limit, indicating the need for review of built form controls to reflect the changing nature of this area, whilst supporting the preservation of heritage character.

The context area also has a varied built form, including:

- The tall buildings of the Royal Melbourne hospital complex to the north, with the tallest having a height around ten storeys;
- The low to medium scale of the University of Melbourne campus to the north east;
- University buildings mixed with commercial and former industrial sites in Carlton South, as well as the three 1850s parks of Pelham Street linked to Carlton Gardens to the east;
- The recent high-rise student accommodation of Swanston Street, mainly of ten storeys;
- RMIT is a mixed medium and high rise form to the south east of the Study Area;
- Commercial development with sharply contrasting heights in the south;
- Flagstaff Gardens to the south west; and
- The low scale areas of North Melbourne to the west and north west.

7.1.3 Landmark Sites

Landmark sites include the Queen Victoria Market and the university precinct. Landmark opportunities exist at the CUB development site, bound by Victoria, Swanston, Queensberry and Bouverie Streets, the Haymarket roundabout, and the key points on the north of Grattan Street at the intersections with Bouverie Street and Leicester Street.

7.1.4 Street Trees

The majority of the streets within the Study Area are lined with trees. There are no trees on the Victoria Street side of the Queen Victoria Markets, with Victoria Street in general being quite sparsely tree-lined. Wreckyn Street also has a sparse tree-lining, with greatest density of street trees being on Capel Street, south of Victoria Street, and Villiers Street.

7.2 Open Space

7.1.4 Street Trees

As shown in Figure 7.2, the majority of the streets within the Study Area are lined with trees. There are no trees on the Victoria Street side of the Queen Victoria Markets, with Victoria Street in general being quite sparsely tree-lined. Wreckyn Street also has a sparse tree-lining, with greatest density of street trees being on Capel Street, south of Victoria Street, and Villiers Street.

7.2.2 Open Space Gaps in City North

An analysis undertaken shows that for the western side of the City North area, there is a lack of sufficient proximity to open space along Elizabeth Street. The area between Flemington Road and Victoria Street within the Study Area has access to only small local open space, however is in insufficient proximity. In the north east section of the precinct University Square and Lincoln Square provide adequate access to open space. Flagstaff Gardens, Victoria Market Reserve and Eades Park also provide sufficient open space access in the south west section of the Study Area.

7.2 Open Space

Key influences on open space include:

- Climate change mitigation and adaptation – open space can play a role in stormwater harvesting and increasing passive cooling efficiency in the city. This could include consideration of alternative water sources; increasing water efficiency; managing how parks are used; adapting the landscape; and participating in water offsets programs. Additional trees are also required to mitigate climate change. Space to retain and plant large, long-lived trees needs to be adequately provided in the Urban Renewal Areas. Green roofs and green walls may play a role in both climate change mitigation and public space provision; however there are a number of unresolved issues pertaining to this.
- Future population growth – particularly in the designated urban renewal areas, population growth will require increased demand for open space.
- Vertical living – reduces private open space and increases the need for public open space. The presence of, and proximity to, green space is also an important factor in enabling children's independent mobility for those who live in high rise housing.
- No net reduction in parkland – although this needs a clear definition, , a principle of the planning urban

renewal areas could be ‘no net loss of unrestricted public open space.’

7.2.1 Open Space in City North

The main barrier to accessing open space in City North is major traffic routes. City North enjoys proximity and access to Flagstaff Gardens, Lincoln Square, Princes Park, Royal Park, Argyle Square and Carlton Gardens.

7.3 Heritage Assessment

A heritage assessment was conducted to:

- Identify the historical cultural heritage values in the Study Area, recognising the role the area has played in the development of Melbourne.
- Identify areas currently covered by heritage overlays in the Melbourne Planning Scheme and any other heritage listings.
- Identify any significant gaps in existing heritage overlay coverage.
- Identify opportunities for built form/land use conversion.
- Provide recommendations for measures and mechanisms to integrate the heritage themes and the historical industrial character of the area into the structure plan and new development.

7.3.1 Existing Heritage Sites

1. Central City Interface

- The majority of the sites fringing the market reserve were graded in the 1985 Central City Activities District Conservation Study, but only one is subject to an individual Heritage Overlay.
- Some of the sites which included graded buildings but which were not subject to an individual heritage overlay have been demolished and/or redeveloped in recent years.
- Several sites are considered to be relatively undisturbed and are included in the City Archaeological map as having ‘potential’ or ‘partially disturbed.’
- On the east side of Elizabeth Street, few buildings are covered by individual Heritage Overlays. The 1985 Central City Activities District Conservation

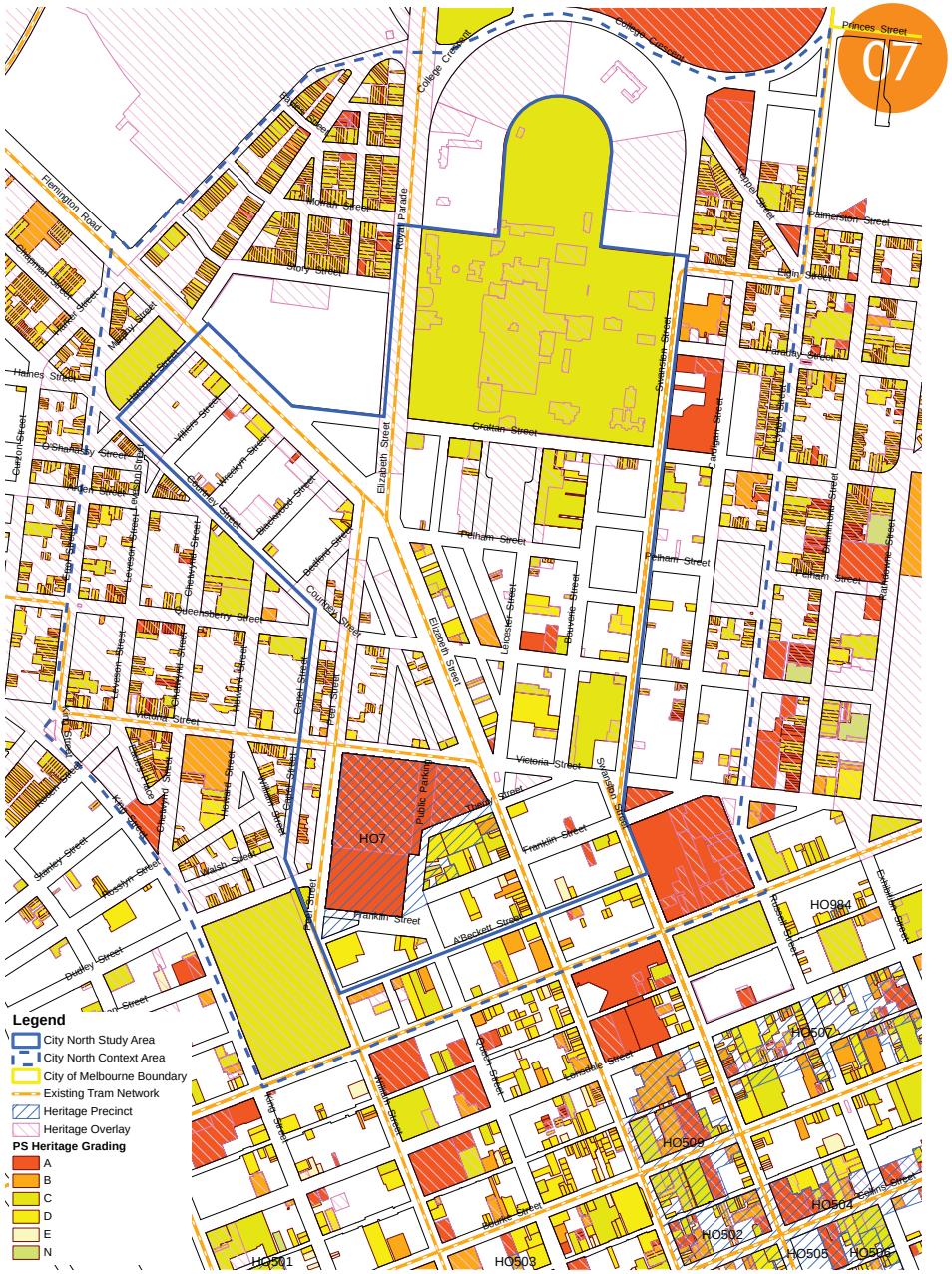

Figure 7.4: Heritage controls

Study graded several buildings in this area, including showroom/warehouse buildings from the middle of the twentieth century, however some which were not subject to an individual Heritage Overlay have been demolished and/or redevelopment in recent years.

2. Queen Victoria Market Precinct

- The Queen Victoria Market is included in the Victorian Heritage Register. As the site of the second cemetry for Melbourne, the block bounded by Peel Street, Franklin Street, Queen Street and Victoria Parade may have archeological potential.

3. Peel Street West (south of Queensberry Street)

- The North and West Melbourne precinct HO3 applies in Peel and Capel Streets. Many buildings are graded in the North and West Melbourne Conservation Study, 1985.
- There is generally a high level of consistency in the streetscapes and there are particularly fine streetscapes north and south of Victoria Parade and in Capel Street.
- The central tram pole installation in Peel Street is included in the Victorian Heritage Register.

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

- This area is covered by the North and West Melbourne precinct HO3.
- Many buildings are graded in the North and West Melbourne Conservation Study 1985, including a fine streetscape of nineteenth and early twentieth century shops along the north side of Victoria Parade.

5. Courtney Street

- There are few graded buildings in this area, however individual and precinct Heritage Overlays apply to much of the area.
- The Meat Market is included in the Victorian Heritage Register.

6. Elizabeth Street, Victoria Street and Flemington Road

- There are several buildings on either side of Elizabeth Street which were graded in the 1980s in the Carlton, North Carlton and Princes Hill Conservation Study or the North and West Melbourne Conservation Study. The majority of buildings which contribute to the early to mid twentieth century character of this sector are extant and make a strong contribution to the existing character.
- Contributory buildings to the heritage precinct (HO3) are scattered throughtout the area abutting Flemington Road, including a D graded foundary reflecting past industrial development and an early timber house which is A graded in Villiers Street.
- The boulevard form and tree planning of Flemington Road and Elizabeth Street have high heritage values.
- In Bouverie Street the streetscape of bluestone structures related to the early brewing industries within the former Carlton United Brewery site are prominent and are included in the Victorian Heritage Register.

7. Haymarket

- The southern end of the Royal Parade roadway and trees is included in the Victorian Heritage Register.
- The boulevard form and tree plantings which converge at this intersection have high heritage values.

8. Little Carlton

- There are several graded buildings in the area.
- Several individual sites are covered by a Heritage Overlay, this includes remnant nineteenth century residential, commercial and industrial buildings and hotels.
- The warehouse qualities of Berkeley Street are distinctive and have high heritage value.
- Some smaller non-residential mid twentieth century buildings have architectural distinction, however not all of these are graded.

7.3.2 Historical Themes

1. 1830s A Wooded Landscape;

In 1837 Robert Russell prepared a map, marking the area east of 'Burial Hill' (later Flagstaff Hill) as Lightly Wooded and the area north as Wooded. However there are no remnants of this wooded landscape left today.

- Surveyor Robert Hoddle's map in 1842 showed the current Queen Victoria Markets as a cemetery laid out in denominational areas over an area of 10 acres. The 'Cattle Market 10 Acres' was also marked opposite the cemetery abutting Victoria Street. The land in the structure plan area was described as 'Grassy forest land principally timbered with Eucalyptus, Casuarina, Mimosa.'
- A track roughly aligned with Flemington Road was shown in Hoddle's 1837 map as one of the two roads connecting Melbourne and Geelong.
- Elizabeth Street, within the Hoddle Grid, is a natural low point and remains subject to inundation.
- Further investigation regarding cultural heritage may be required.

2. Markets; Servicing the Markets

- An 1855 Plan of Melbourne shows the large land reservation for local markets for hay, pigs and horses, at the northern edge of the Study Area.
- Flemington Road had been surveyed

and became the main route to agricultural lands to the west of the state and to the goldfields. Many hotels located along this route, with the Royal Artillery Hotel on the corner of Queensberry Street and the Turf Club Hotel near the Haymarket still surviving there today. Several more are located off Elizabeth Street including the Cobb and Co staging post hotel, Macs in Franklin Street and in Victoria Street opposite the Queen Victoria Market and the Royal Exchange Hotel, Central Club Hotel, Albert Hotel and Victoria Hotel. In Peel Street the Sir Robert Peel Hotel and the Shannon and Shamrock Hotel both survive.

- Stabling, carriage trade and hotels were services associated with the markets. The area between the Haymarket and what would become the Queen Victoria Market developed with small scale industry servicing the various markets. The building on the triangular site at the intersection of O'Connell and Cobden Streets is a good example of the small scale buildings associated with the market service sector. This area was also used for warehousing and some fine examples remain, such as 15-19 O'Connell Street.
- The extensive warehousing of the Myer Emporium in Berkeley Street is typical of the city fringe servicing provided by the Carlton South area.
- The well developed, small scale residential development to the west of the cemetery largely remains today along Peel and Capel Streets.
- Although the wholesale component of the Queen Victoria Market is no longer in place, it continues as a general market and remains a bustling centre for pedestrian activity.

3.Urban Planning in Melbourne - Boulevards and the Hay Market

- The development of Melbourne is closely connected with the development of the agriculture hinterland. The export of agricultural goods was a large part of the Australian economy, with much of this passing through the Port of Melbourne.
- Before the development of an extensive rail freight network goods were brought to the docks at the Custom House in Flinders Street. Peel Street connected via William Street directly with the docks in the south and with both the Sydney Road (Royal Parade) and Flemington Road transport routes at the Haymarket in the north. An extra wide road reservation facilitated the flow of traffic along Peel Street.
- Extra wide reservation was also provided on Elizabeth Street due to the connection to the Queens wharf.
- Peel and Elizabeth Streets converge at the Haymarket, replete with landscaped medians installed by the early 20th century. The London Plane trees now mature in Elizabeth Street appear to be those shown in a 1910 photograph. The plantings in Peel Street were altered as part of the central tram median of the 1920s.
- Hoddle's plan for the subdivision of Carlton was laid out with the elements required to achieve a high level of urban amenity. The streets are of generous width and several areas are set aside for London style parks. The axial arrangement of the parks around and along Pelham Street is a rare example of formal town planning for the young City of Melbourne. Running from the Carlton Gardens to the Haymarket intersection, Argyle Square and Lincoln Square have a major impact on the urban form, providing pedestrian connectivity through this area. The allocation of land for University Square occurs later, but links with the Pelham Street axis on its northern side physically connecting with the open space at the University of Melbourne and visually connected to its entrance.
- The alignment of Pelham Street with the intersection of the three major boulevards – Flemington Road, Royal Parade (Sydney Road) and Elizabeth Street – further enhances the potential for the creation of a major urban space at the Haymarket. The slightly later Peel Street connection adds further to this.
- Local bluestone, dressed blocks for kerbs and rows of pitchers for gutters were used for civil street works in the 19th and early 20th centuries, much of which still remain.

4. Servicing the Central City

- While high quality residential development occurred to the north of the Pelham Street park axis, less desirable uses developed to the south.
- The Carlton United Brewery developed from an early date in Bouverie Street, eventually taking over the whole block. Including a malting house, the malodorous nature of the industrial activity discouraged residential development in the South Carlton region and consolidated the small scale industrial character of this area.
- The southern part of the Study Area continued to develop with low scale city fringe businesses into the twentieth century. With the rise of motorised vehicles, industries providing sales and services to this trade concentrated here, spreading up the hill along Elizabeth Street.
- Two car sales businesses remain in Elizabeth Street and many motor bike outlets remain south of Victoria Street.

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- The streamlined architectural styling of the premises at on the north west corner of Queensberry Street and Elizabeth Street epitomise the sense of modern living and freedom associated with car ownership after the First World War.
- The built form remained low scale into the 20th century as showrooms for furniture and the like co-located with the motor trade.
- One of the chimney stacks scattered across the panorama of 1866 remains today.

5. Residential Renaissance in the Central City

- The building stock of generally single or two storey row-houses developed from the 1850s was largely complete across these suburbs well before the turn of the twentieth century. However as the city grew, the pressure for industrial and commercial uses increased.
- In North and West Melbourne, the residential development within City North was on relatively small blocks and occurred early. There was little redevelopment of housing for industry along Peel Street and Capel Streets as was typical elsewhere in North and West Melbourne in the early 20th century.
- After the First World War housing had been redeveloped for commercial showrooms and the like at the northern end of Elizabeth and Peel Streets within the City North area.
- Following the first heritage controls applying to parks and boulevards in 1981, planning controls were introduced in 1983 to provide protection to 'Urban Conservation Areas'.
- As industrial uses diminished in the latter decades of the 20th century, residential redevelopment occurred on many sites in the low scale areas.
- Large scale, high rise residential development then began to appear in the previously commercial/industrial areas to the north and north-west of the central business district.

6. Landscape and Vegetation

- Melbourne's mature elms have international significance, as Dutch Elms Disease has decimated elms throughout the world apart from Australia. The existing elms on Flemington Road appear to be over 110 years old.
- Flemington Road meets the equally generous Royal Parade and Elizabeth Street at the Haymarket intersection. This broad open space, traversed by three sets of tram tracks does little to capitalise on the dramatic termination of the paired tree avenues of these boulevards.

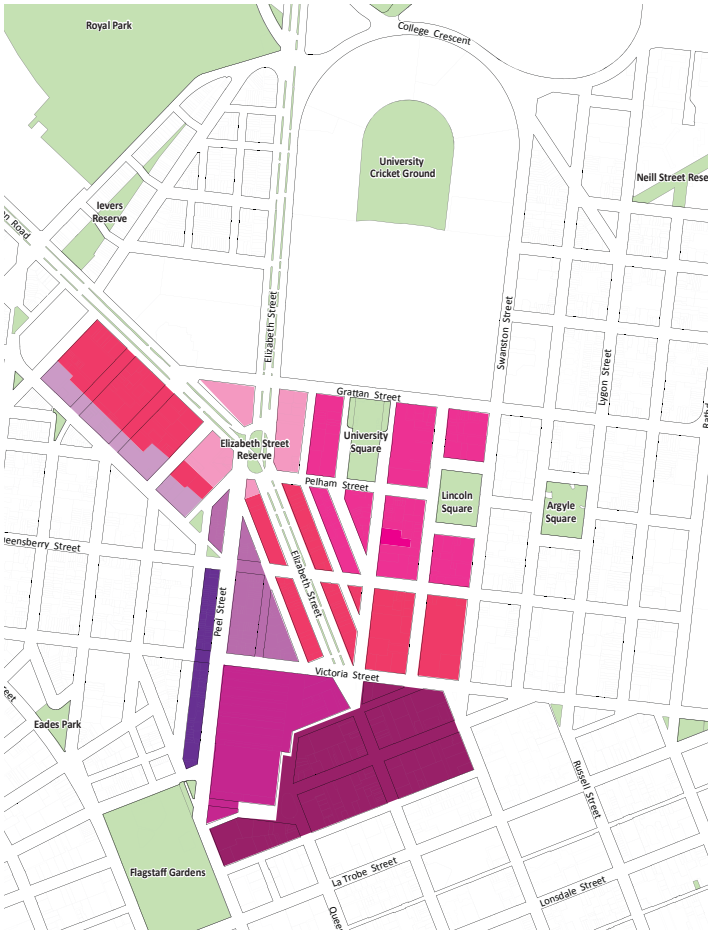

Figure 7.5: Character precincts

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8.1 Community Infrastructure

An assessment of community infrastructure provision and requirements was undertaken for City North. Community infrastructure considered in this assessment included:

- lifelong learning and information;
- family and children's services;
- education;
- youth services;
- community programs and meeting spaces;
- health;
- arts and cultural facilities; and
- aged care services.

8.1.1 Community Infrastructure Provision in City North

Although City North accommodates some of the State's primary health facilities and is bounded by tertiary institutions, the area has a lack of local level community services and facilities. The facilities and services available in City North, and the adjacent areas adjacent are outlined below and shown in the Community Infrastructure Map (Figure 8.1).

Aged and disability services

Reflecting the small population of older residents, there are no aged services within the City North Study Area.

Arts and cultural facilities

City North is located in proximity to a wealth of regionally and internationally valued arts and cultural facilities including the Melbourne Museum, Royal Exhibition Building, the Trades Hall, La Mama Courthouse Theatre, the Melbourne Meat Markets, the Little Errol Street Studio, the Multicultural Hub and the galleries and theatres at the University of Melbourne and RMIT.

Family and children's services

There are few childcare facilities and preschools in City North and adjacent areas of Carlton, North Melbourne and Parkville. Maternal and Child Health services operate from facilities in Carlton and North Melbourne, however these are generally operating at capacity. The Carlton Baths and family resources centre redevelopment is scheduled for completion toward the end of 2012.

Education

City North is extremely well serviced by tertiary education facilities at the University of Melbourne and RMIT. Three primary schools and one secondary school are located in proximity to City North in Carlton and North Melbourne.

General Community

There are several community centres, community meeting spaces, neighbourhood houses and planned activity groups which are located in proximity to City North. The area is located in proximity to public libraries including the North Melbourne Library, City Library and State Library, in addition to tertiary institution libraries at the University of Melbourne and RMIT.

Health

At present there are few local level health services within City North. The majority of health facilities and services are higher order, such as the Royal Melbourne Hospital, Royal Women's Hospital, Melbourne Sexual Health Clinic and Centre for Cultural Ethnicity and Health. Existing community health services, particularly counselling services, are experiencing demand from tertiary students a high proportion of which is by international students.

Youth Services

Although around half of the current population residing in City North is between 15 and 24 years old, there are no youth services located within the Study Area. Youth services are located in adjacent areas in Carlton.

Figure 8.1: Community infrastructure

8.2 Sustainable Infrastructure

The purpose of the sustainable infrastructure servicing scenario is to explore and identify opportunities that will contribute towards delivering the objectives of the Future Melbourne Eco-city goals.

The objectives of the study were to:

•Support and inform the development of the City North Structure Plan precinct in relation to the provision of sustainable utilities.

•Develop a concept to guide and influence the development of the City North Structure Plan that embraces the Future Melbourne Eco-city targets and objectives.

•Identify opportunities for improving the sustainability of the City North precinct with a focus on water and energy infrastructure.

8.2.1 Existing Utility Infrastructure

There are major trunk pipelines for electricity, water supply, gas, sewerage and drainage across the precinct. It is considered a high cost construction zone due the costs of reinstatement and traffic management and other asset congestion in the ground.

Electricity

CityPower is the responsible authority for maintaining and operating the electricity distribution and sub-transmission network within City North. There are two electricity zone substations at the Queen Victorian Market and Bouverie Street. The current electricity system is not designed for distributed energy generation (DEG), which can create fault current in the networks. This can be minimised however, by installing new switch gear.

Gas

Gas is distributed to most consumers in City North through reticulated pipe networks that operate at pressures lower than the high pressured transmission pipes used for transmission.

Water Supply

There are several water mains in and near City North, including a water main that runs east west under Queensberry and Victoria Streets and another running north south under William Street and Royal Parade, with City West Water as the responsible authority.

Sewerage

There is an extensive sewer pipe network along most roads in the precinct, with occasional pumping stations that discharge to a sewage treatment plant. City West Water manages and maintains the pipe network, while Melbourne Water is the responsible authority of the sewer mains. A mains sewer is located along Gatehouse and Harker Streets, south of the Royal Children's Hospital.

Drainage (stormwater)

Melbourne Water is responsible for managing the large stormwater drains in the City North precinct. These are part of an extensive network covering the catchment north of the Yarra River. The City of Melbourne is responsible for the local stormwater drains, road network and street and property drainage that feed into these large

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stormwater drains, several of which converge at the intersection of Therry and Elizabeth Streets.

The existing drainage trunk infrastructure is designed to accommodate part of the flows resulting from rainfall events with a 100-year Annual Recurrence Interval frequency. However climate change is expected to adversely impact on drainage outfall arrangements through both sea level rise and increases to peak stormwater flows.

Natural Resources

Wind

The available wind resource in City North is unknown, therefore it is difficult to assess the viability of generating electricity from micro wind turbines (MWT). However, a recent Alternative Technology Association study found that average wind speeds in the Melbourne CBD were 3.94 metres per second. For MWT to be effective a wind speed averaging at least 4.5 m/s is recommended, with best results being achieved at average wind speeds above 5.4 m/s. Therefore, given the proximity of City North to the CBD, the wind speed is likely to be insufficient to justify MWT for generating electricity.

Rainfall

Climate change is expected to increase the severity of flooding and lead to reductions in long term average annual rainfall, leading to greater water scarcity in Melbourne. Increasing flooding severity in City North could result in mass public stranding, exacerbation of public transport delays, impacts to business operations and accidents involving pedestrians.

Having a range of water supply options will create higher water security in an uncertain climate. In assessing these options, consideration needs to be given to:

- The seasons – periods of peak demand (summer) and peak supply (winter) are not synchronised
- How alternative water supplies will be collected, treated, stored and distributed
- The likely energy demand of a treatment plant.

Solar

The generation of energy from solar radiation is significantly affected by the availability of sunlight. As such, existing and future building structure could potentially cause overshadowing in some areas of the precinct, reducing access to sunlight. However without shading, and taking into account the annual variation in solar radiation, the average electricity output per square metre per day for a typical photovoltaic panel is approximately 4.1 KWh/m2/day.

Aquifer Storage and Recovery

ASR can provide a means to store water in winter for extraction during the summer peak demand period. Such an approach could be cheaper than constructing new dams and reservoirs outside of the precinct, reducing biodiversity loss and avoids evaporation losses. Key cost related considerations include:

- Prevailing geological conditions
- Designing the system
- The process the capture and pump stormwater
- Drilling and the depth of bore holes
- Procuring components of the system and installing delivery and return pipes

Although ASR can be costly, if the geological conditions are suitable and the land required for storage and treatment of stormwater is not available, this could be a viable option. However there is a shallow, saline water table across the Yarra Delta region and the City of Melbourne is located on unconsolidated quaternary alluvium deposits, meaning there is very low storage potential for ASR.

8.2.2 Land Ownership

Land ownership could be a significant limitation to reducing the environmental impact of the precinct as distributed energy and water supply systems will require a significant amount of space to house plant and equipment. Investment in sustainability initiatives is unlikely to provide a high commercial return for existing private land owners, therefore it is likely that the location of the initiatives that require a significant parcel of land, such as distributed energy generation, may need to be limited to government owned or low value land. Within City North there is an opportunity to explore the expansion of the water storage tanks located under Queen Street near the QVM.

8.2.3 Regulations

Buildings

Despite a strong business case for the implementation of efficient building measures, there are barriers within the property industry preventing this. These barriers relate to the owner/tenant and developer/contractor/owner division, or ‘split incentives,’ resulting in the benefits of energy efficiency measure not accruing to the party that funded their costs.

The Building Code of Australia (BCA) regulates the design and construction of buildings and other structures. The Code applies to all phases of a building project including design, construction and post occupancy. Section J of the BCA includes energy efficiency provisions for housing (Class 1 and 10) and commercial buildings. However this is designed to prevent worst practice than encourage best practice and many sustainability related issues are outside the scope.

Sustainability requirements related to buildings can also be integrated into the local planning framework. However, improved clarity is required as to the appropriate level of sustainability initiatives that should be incorporated during the early stages of planning and design.

Wastewater

Wastewater can provide a reliable source of

water that, with appropriate treatment, can be recycled for non-potable uses such as toilet flushing, washing and irrigation, or potable uses either directly (into the distribution network) or indirectly (via a large storage reservoir or aquifer). However treating wastewater to a potable standard and injecting this back into the potable water supply network is not supported by current Victorian Government policies or regulations.

Distributed energy generation

Regulatory barriers to DEG are both diverse and complex, with the Australian Energy Regulator (AER) currently developing guidelines to encourage and guide the application of this new approach. As distributed generators in part undermine the business model of Distribution Network Service Providers (DNSP), incentives don't currently exist for DNSPs to upgrade their networks to enable DEG connections.

A connection agreement, which establishes connection costs and the standards of services that the connection party will receive, is required to supply electricity to the grid. The AER is currently developing a framework to oversee these connection agreements. Currently there is a disparity between the connection costs distributed generators are charged and the costs charged to transmission-connected generators, as new transmission-connected generators are not required to pay for downstream transmission augmentation.

No regulatory framework currently exists for the distribution and sale of thermal energy in the form of hot and chilled water. There is also no mandate for developers to connect into and use centrally generated hot and chilled water.

Developing a business case for DEG should involve incentives to encourage the use of the thermal energy from DEG plant. Attractive tariffs and the low carbon density of thermal energy could be important elements of this business case. Ensuring security of supply from DEG is often difficult and developers may need to supply supplementary cooling for critical infrastructure such as server rooms and laboratories.

While the regulatory framework for district heating and cooling pipe networks within the public realm is untested, approvals from the Victorian Environment Protection Authority and the Electricity Authority (CitiPower in the case of City North) would be required.

The Environment Protection (Scheduled Premises and Exemptions) Regulations 2007 require a works approval or licence for premises generating electrical power from the consumption of a fuel at a rated capacity of a least 5 megawatts of electrical power (MWe). However premises using only natural gas turbines with a total rated capacity of less than 20MWe are exempt from licensing under section 20(1) of the Act.

If DEG plants sells electricity back to the grid, a retail license would need to be sought from the Electricity Authority, and if it is proposed to have a generation capacity greater than 5MWe a generators license would be required. Additionally, if the DEG plant is planned to have a generation capacity greater than 30MWe, it will need to be a scheduled generator.

8.2.4 Opportunities

Reduce resource consumption

More efficient use of resources can be encouraged through:

- Efficient buildings
- Behaviour change
- Urban design – including transport connections, depths of buildings (for natural ventilation), Water Sensitive Urban Design, and green open space.
- Decentralising resource supply

Generate resources

There is an opportunity to locally generate and distribute low carbon energy and non-potable water, to supply a portion of the precinct's energy demand, help balance its load profile and reduce its potable water use. Energy and water can be generated through renewable energy, distributed energy generation and recycling stormwater and sewage. These can be housed in Central Services Hubs (CSH) and distributed across the precinct in a combined services tunnel. Opportunities include:

- Renewable energy
- Distributed energy generation
- District water
- Central services hubs
- Combined services tunnel

THE SUSTAINABLE INFRASTRUCTURE SERVICING CONCEPT

The following options have been identified for further consideration for inclusion in the City North Structure Plan:

Option 1: Establish a Central Services Hub (CSH)

A Central Services Hub is a form of decentralised infrastructure that can store stormwater, house plant and equipment, recycle wastewater and generate energy. Electricity generated is fed into the existing network, stormwater is converted into Class A water for non-potable water uses, and thermal energy is created in the form of chilled and hot water. The three water pipes containing chilled, heated and recycled water are distributed across the precinct for consumption by individual buildings.

Availability and access to space to house and operate the CSH, the distance to existing infrastructure services and the proximity to a large heat sink will enable the efficient operation of the CSH.

The grouping of these infrastructure services in the one CSH is an innovative concept, however the technologies are proven, reliable and already operating in numerous development in Australia and internationally.

Option 2: Generating non-potable water

There is potential for stormwater to be collected, treated, stored and distributed

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across the precinct as non-potable water. Stormwater could 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 SCH located at either the QVM, 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.

Option 3: Generating energy
Tri-generation or co-generation plants generate electricity, hot water and chilled water. The hot and chilled water can be used as an alternative to conventional air-conditioning that is driven by electricity and environmentally destructive refrigerants.

The plants could be fuelled by natural gas as the supply is reliable, presently distributed to the precinct and lower in greenhouse gas emissions than grid electricity generated from centralised coal fired power stations.

Co-generation is now a reliable and mature technology, and while tri-generation is not as mature, it is becoming increasingly so.

Option 4: Distribution resources via a combined services tunnel
In order to operate the CSH a combined services tunnel is proposed to house the pipes and conduits that would be installed to provide the distribution network. The tunnel is proposed to be located as a trench under the road network, with three separate water related pipes containing chilled, hot and non-potable water. The existing utility service, such as gas, electricity, communication and potable water can also be relocated to the services tunnel.

An upfront investment is required for the installation of the pipe network, with financial returns only occurring when customers connect to the network. There is an opportunity for the installation to be aligned with the planned future upgrade of the existing services within the precinct, such as electricity infrastructure.

The technologies involved are mature and reliable, with many similar systems existing in Australia and internationally. This combined services tunnel is considered appropriate for the City North precinct's unique context.

Option 5: Efficient buildings
Residential and commercial buildings are responsible for 23% of Australia's greenhouse gas emissions. Therefore there is an opportunity for the City of Melbourne to improve the building efficiency standards above the BCA for new and existing buildings and the potential adoption of energy generation technologies, such as photovoltaic panels and solar hot water units.

Option 6: Water Sensitive Urban Design
WSUD reduces pollutant loadings in stormwater and down stream and provides vegetated public spaces with shade, improved air quality, habitat and visual amenity. Between 2-3% of the impervious surface area of the precinct can be replaced with porous and permeable pavers.

Option 7: Incorporate a Vehicle-to-Grid system
A V2G system could be implemented into car parks to generate electricity by electric drive vehicles plugging into the electricity network to feed electricity back into the grid during peak demand and charge when electricity demand is low. This could be targeted particularly to fleet vehicles, car-rental companies and parking lots. This technology could develop in the next 20 years.

09 Appendix

A: Future Melbourne Goals

A city for people
A great place to live

Goals	Indicators	Outcomes
Growth of the city Economic and residential growth is balanced and managed to ensure the needs of all communities are considered and that city's liveability, sustainability and economic vitality are protected and enhanced.	City of Melbourne residential population **Target:** 2020 - 140,000 **Current:** 2008 - 86,000 City of Melbourne unemployment rate **Current:** 2006 - 7.5 per cent of City of Melbourne residents were unemployed [1] The proportion of people who experience food insecurity **Current:** 2007 - 4.6 per cent of City of Melbourne residents had experienced food insecurity [2]	A city that prospers, growing economically, becoming increasingly sustainable while still being a great place to live.
A sense of community Within neighbourhoods, precincts and buildings there is a sense of community - where people engage with others and actively contribute to a sense of well being.	Social support **Current:** 89.8 per cent of City of Melbourne residents said they could definitely get help from friends, family or neighbours when they needed it **3** Community connection **Current:** Normative data from the **AUWBI** indicates that the average Community Connection score for persons living in the City of Melbourne was 65 out of a possible 100 (2007)	Strong robust communities that are inclusive and supportive of people from all walks of life, representing all social and economic circumstances.
Balancing diverse community needs The municipality has diverse communities: residents, workers, visitors and students with differing and sometimes conflicting needs and aspirations which are recognised and addressed.	Community acceptance of diverse cultures **Current:** 2007 - 93.2 per cent of residents in the City of Melbourne agreed or strongly agreed that cultural diversity is a good thing for a society **4**	Robust communities in all sectors. The municipality functions as a global city, capital city and a series of local neighbourhoods, and meets the needs of all.

Infrastructure and services Infrastructure and services expand to meet the needs of our growing and changing communities.	Provision of community infrastructure **Current:** Refer to the community infrastructure audit results **5**	Physical and social infrastructure and services are maintained and augmented to cope with the projected increase in both residents (of all types and circumstances) and visitors and economic growth. All residents including single, couples, families with children, young people and older people have access to social infrastructure and services.

Inclusive community

Goals	Indicators	Outcomes
Valuing Melbourne's student community Local and international students are better supported and integrated with local communities.	Satisfaction level of international students. **Current:** In 2006, 84 per cent of international students living in the city describe it as an excellent or good place to live and study. [6] **Target:** indicator to be developed Local student indicator to be developed. Connectedness indicator to be developed.	Lifelong relationships and networks are fostered through students experiencing Melbourne positively and in an engaging manner. Students feel connected and have the opportunity to meaningfully participate in Melbourne's social and cultural life.

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Community infrastructure and support programs The municipality has adequate and accessible infrastructure and support programs to support its growing and diverse communities.	Community satisfaction rating for overall performance in the key service area of Health and Human Services **Current:** Weighted index of 70 out of 100. [7] **Target:** indicator to be developed	The care needs of the population, particularly vulnerable communities, are met with affordable and accessible infrastructure Growing communities are actively supported. Free health and welfare support services for young people, newly arrived and refugee communities and marginalised communities. Improved liveability of the city for children with a specific focus on children's rights and citizenship. Melbourne is a Child Friendly City with UNICEF and provides health, education and care services that maximise child development health and wellbeing. An Age Friendly City, where opportunities for positive ageing and improved quality of life are available. Older people are active, valued and connected with the community. Cultural exchange and cultural fusion is supported/ provided by community and arts grants.

Healthy community

Goals	Indicators	Outcomes
A healthy city environment To promote a healthy (physical and mental) community through a healthy municipal environment.	City users rating of the cleanliness of the municipality. **Current:** Indicator to be developed.	A reduction in environmental factors that are detrimental to health. A municipality that is clean, not too noisy, provides shade and encourages activity and social connection.
Physical activity and social interaction Public and private space that is accessible to all and designed to encourage physical movement, communal exercising and social interaction.	Residents perception of the appearance of public areas. **Current:** In 2007, the City of Melbourne received an indexed value of 74 out of a potential 100 for community satisfaction of Public Areas. **5**	A municipality designed to promote mental and physical wellbeing. Public spaces such as parks, plazas, roads and paths are designed to foster physical activity, social interaction, connections to the natural environment and quiet, reflective spaces. New private spaces provide for community needs.

Designed for People

Goals	Indicators	Outcomes

Human scale The municipality, its streetscapes and its buildings have a human and pedestrian scale. The fine grain of the municipality's streets and lanes is preserved. New developments respect and enhance this character.	Number of metres dedicated to 'A', 'B' and 'C' grade frontages in the central city. **Current:** Map shown on page 21 on Places for People 2004.	Melbourne's fine grain and human scale is preserved and enhanced.
Sense of place Streets and spaces retain their liveability, authenticity and sense of place. as they undergo change to become more sustainable and respond to climate change.	Percentage of city users using active modes of transport such as walking, bike riding or public transport. **Current:** 54 per cent (2006) [1]	Melbourne becomes sustainable while retaining its sense of place.
Continuity and change Urban design and architecture respects our heritage and its context while looking forward in its approach and solutions. Ensure a robust heritage perspective for the future - for both our physical and social heritage. Acknowledge and celebrate our Indigenous and European heritage in our public spaces and places.	Percentage of new development which adaptively reuses some or all of existing structures. **Current:** Indicator to be developed. Number of programs developed to incorporate the Indigenous and historic landscape culture into the cityscape. **Current:** Indicator to be developed.	Development which respects physical and cultural heritage whilst reflecting modern thinking and processes. Development which acknowledges Indigenous and European heritage whilst reflecting modern thinking and approaches.
Activity and interest on our street edges Ensure our streets and laneways remain unique, surprising, interesting, engaging and authentic. Ensure street edges and activities on the street contribute to the culture and liveability of the municipality.	Kilometres of accessible and active lanes, arcades and alleys in the CBD. **Current:** In 2004, 3.4 km. [2] Total area of parkland (public open space) accessible to residents and visitors. **Current:** 567.8 ha [3]	Street space reallocated to sustainable modes of transport - footpaths are wide and support a mix of uses and activities. Our public spaces and laneways continue to remain unique, surprising, interesting, engaging and authentically Melbourne. Urban spaces are designed to reflect our urban and natural context.
Sustainable urban design and architecture Promote quality urban design and sustainable architecture through demonstration projects and policy that encourages architecture to have a positive contribution to its surroundings and the city.	Percentage of new buildings that achieve green star ratings of five or above. **Current:** Indicator to be developed.	Well designed buildings that contribute positively to the urban environment and relate well to the public realm.
Strong neighbourhoods Design and protect neighbourhoods that encourage social interaction and activity and provide access to a range of services and facilities.	Satisfaction of residents with the level of social interaction and inclusiveness within their suburb. **Current:** Indicator to be developed.	Strong neighbourhoods grow supporting a sense of community and caring.

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Functional public and private space Create and protect public and private space designed to support a range of uses and users, including physical movement, safety, areas of respite and social interaction.	Space dedicated to squares, malls and promenades. **Current:** In 2004, 72,200m2 [4]	Well designed public spaces that build on the city's heritage and character, promoting healthy and active communities and making the city accessible and enjoyable for everyone.
A supportive regulatory framework The Melbourne Planning Scheme (including the Victorian Planning Policy Framework) supports and encourages a city designed for people. Road regulations and implementation that give the same weight to pedestrians, bicycles and public transport as cars.	Indicator to be developed.	A clear, concise and consistent Melbourne Planning Scheme that supports good design and facilitates design excellence and good decision making. Equitable allocation of road space to all modes.

An affordable place to live

Goals	Indicators	Outcomes
Affordable housing opportunities An increase in the number and variety of affordable housing opportunities to support our growing and diverse population.	Proportion of City of Melbourne residents who spend more than 30 per cent of their income on a rent or mortgage. **Current:** Indicator to be developed [1] 20 per cent of new City of Melbourne housing completed is affordable. **Current:** Indicator to be developed.	Increased affordable housing options, with emphasis on housing for vulnerable populations, Social (public) and affordable housing stock in the city increased via the introduction of inclusionary zoning, community land trusts, partnerships and other mechanisms that ensure a proportion of social (public) and affordable housing in new developments. Increased housing affordability for low and moderate income residents and workers including the tertiary students, the cultural and artistic community and service workers. Housing is available for key workers.
Affordable and nutritious food An increase in affordable and healthy food choices.	The distribution of fresh food outlets throughout the City of Melbourne. **Current:** Indicator to be developed.	Diet and health improves along with access to nutritious food and food security.
Chronic homelessness eliminated An increase in facilities and services to support and house the chronically homeless to alleviate long term and chronic homelessness.	Number of people sleeping rough in the City of Melbourne. **Current:** 108**3**	Decrease in number of chronic homeless people. Increased general public tolerance and understanding of homeless people and the issues that affect them.
More housing construction Housing construction and conversion keeps pace with demand to ensure a ready supply of varied accommodation options.	Number of dwellings in the City of Melbourne. **Current:** 2008: 48,000 dwellings **4** Rental vacancy rate. **Current:** 2008: 0.6 per cent within 4km of the CBD **5**	A variety of housing options are available and affordable to house our growing and diverse populations.
Better site utilisation Optimal development of residential sites to provide diverse housing types catering to a range of needs.	Diversity of new housing stock. **Current:** Indicator to be developed.	Available residential sites developed to their full potential in a timely manner and providing a variety of housing types.

Equitable planning system A planning system that ensures development contributes to and supports community betterment including affordable housing and infrastructure provision.	Indicator to be developed.	The establishment of a development contributions system which is aimed at community benefit while facilitating greater density. Additional provision of community infrastructure and affordable housing.

Quality public space

Goals	Indicators	Outcomes
Variety A range of public space options exist within close proximity to residents and workers, including areas for formal and informal recreation and areas of respite. New public space opportunities are pursued, including indoor active recreation facilities and roof top gardens.	Satisfaction with the range and proximity of public space within walking distance of a resident's home. **Current:** Measure to be developed. [1]	Residents and workers are able to access and enjoy public space that caters for their wants and needs.
Adaptability Our public space is flexible and adaptable and able to accommodate a range of uses over the course of a day and a year.	Indicator to be developed.	The municipality's public spaces are adaptable to facilitate a range of uses. Public spaces cater for regional activities and events as well as local needs and uses.
Accessibility Our public space is accessible to a range of users and responds to our changing demographics and to the range of potential users from metropolitan Melbourne. Public space is interesting, engaging and safe, with active edges, and hosts a mix of uses.	Greater numbers and diversity of people accessing and enjoying parks. **Current:** Measure to be developed. [2].	People from many different backgrounds, and from all parts of metropolitan Melbourne, feel welcome, safe and engaged in public spaces. New and revitalised diverse public spaces, including non-traditional spaces, are used for public purposes, and cater for our population growth and diverse communities.

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Movement and activity Create and maintain public space which encourages physical activity and social interaction. Encourage streetscapes that facilitate movement by sustainable modes.	Percentage increase in pedestrian counts in the central city on weekdays and weekends. **Current:** Trend reported in *Places for people* [3] Percentage increase satisfaction with the amount and connectivity of the bike path network. **Current:** In 2007, the satisfaction rating was 50 per cent. [4]	A movement network which prioritises pedestrian and cyclist movement and encourages non-motorised transport modes. Public access and quality pedestrian and cycle links along rivers and waterways. A laneway system that provides pedestrian linkages throughout the central city.
Connected network of spaces Ensure that parks and public spaces are well connected by physical and visual links.	Percentage increase of residents living within walking distance of a public open space. **Current:** Indicator to be developed.	Public spaces are well linked throughout the city. Road and path networks in combination with strategic landscaping will provide a way-finding system between public spaces.
Streets, boulevards and laneways Demonstrate that when you design a good street you design a good city. Recognise and enhance the existing street hierarchy, particularly within the central business district. Continue to celebrate central city laneways, including the connections they provide and their more intimate scale of development and space. Apply a consistent planting schedule for street trees.	Indicator to be developed.	A streetscape that is consistent with Melbourne's distinct sense of place. A clear hierarchy of boulevards, streets and lanes.
Parkland Melbourne's parkland is maintained to a high standard. Existing parkland is protected and there is no net reduction in area. New opportunities for parkland are explored where appropriate, for example where connections are missing and in under-supplied neighbourhoods. Our parks and gardens provide opportunities for people to connect with nature and their community.	Number of city user (including residents) per hectare of parkland .[5] **Target:** 1500 per hectare **Current:** 1261 per hectare (2006) Proportion of parkland within 300m of dwellings. **Target:** **Current:**	Melbourne's existing parkland areas will be maintained to ensure their ongoing contribution to cultural heritage, and to ensure their enjoyment by future generations. Green spaces will be protected from development encroachment. New opportunities for parkland will be explored and developed where appropriate.

Waterways Melbourne's waterways are protected and celebrated, including the Yarra River, Moonee Ponds Creek, Victoria Harbour and Port Phillip Bay. Development and activity on and around waterways protects and enhances ecological values. Moonee Ponds Creek is restored to a wetland and links up the existing network of parks and waterways.	Percentage of waterway frontage accessible to the public. **Current:** Indicator to be developed. Increase in the diversity of marine life and plants. **Current:** Indicator to be developed.	A waterfront experience which is inclusive and respects and reflects Melbourne's maritime heritage, whilst allowing for new opportunities. A healthy and diverse marine ecology and a rejuvenated waterways system.
Private and communal open space Ensure new subdivisions and residential developments incorporate private and communal open space. Promote communal open space within new development which is of a quality and scale to accommodate a range of uses.	Private space (m2) per resident. **Current:** Indicator to be developed.	City of Melbourne residents will have a range of public and private spaces to use and enjoy. Communal and private open spaces will offer areas of respite without being isolated.

Community facilities and services to meet growth

Goals	Indicators	Outcomes
Provision of infrastructure Comprehensive physical and social infrastructure for rapidly growing, diverse and changing communities. Services and support provided to vulnerable communities. A range of physical and social infrastructure to support our growing and diverse youth.	Increasing proportion of residents who feel they can access services when needed. **Current:** Indicator to be developed.	Comprehensive community infrastructure and services support diverse communities. A whole-of-government approach, including the establishment of partnerships to deliver community infrastructure, exists. Young people are supported and given opportunities to connect and participate in meaningful employment, educational, recreational and social pathways.
Sport and recreation infrastructure Recognising the importance of sport and recreation, encourage activities that build healthy lifestyles and social connectedness.	Amount of parkland. **Current** 568 ha [1] Number of people who visit City of Melbourne sports and recreational facilities each year. **Current:** 1.5 million [2]	Sporting facilities accommodate our growing population, our diverse communities, and a range of sports from a wide variety of cultures. Access to sporting facilities is improved and participation increased. Sports facilities and grounds are of the highest standard of environmental sustainability. Access to sporting opportunities and facilities exist for people of all abilities.

A creative city

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Creative risk taking
No goals were identified.

Vibrant creative community

Goals	Indicators	Outcomes
Artistic creativity and cultural innovation Melbourne is and has an international profile as a vibrant creative city.	City users' perception of creativity, experimentation and risk taking in the Melbourne context. **Current:** indicator to be developed. Audit results of publicly accessible art in Melbourne, either as part of a program or contained in collections and heritage assets. **Current:** indicator to be developed. Creative industries employment and floor space occupancy. **Current:** 2006 - 4,964 people were employed in arts and culture services within the municipality. [1]	Melbourne's strength in traditional and emerging creative industries has grown and is recognised globally. More art exists in the public domain, including public art, street art and works of a temporary and permanent nature. A greater number and range of free arts activities are available and accessible for workers, residents and visitors.
Affordable and creative spaces for artists **More affordable and flexible spaces attract the arts and creative activity.**	Quantity, area and type of affordable and subsidised spaces for cultural production. **Current:** indicator to be developed. Number of enquiries handled regarding all aspects of housing the arts. **Current:** indicator to be developed.	Growth in arts and cultural activities; more affordable, flexible and creative spaces including a 'creative' industries incubator.

Celebrating diversity
No goals were identified.

Prosperity through creativity

Goals	Indicators	Outcomes

A thriving creative economy A strong and growing creative economy and workforce.	The number of arts organisations located in the city and their rate of employment. **Current:** In 2006, 162 establishments were providing arts and culture services within the municipality, and 4,964 people were employed in arts and culture services.[1]	A city that is attractive to a creative and skilled workforce and a thriving knowledge economy that encompasses traditional creative industries; design and architecture; new media; as well as in retail and food experiences. Strong cross-sector partnerships and networks across the city; generation of new inventions and world class products. An increased capacity to attract and retain a creative workforce

A prosperous city

A global city

Goals	Indicators	Outcomes
Attract skilled and talented workers The world's most skilled and talented workers, leading researchers and students are attracted to Melbourne for its vibrant knowledge economy, competitive business environment, liveability and diversity.	**Indicator:** *2thinknow Innovation-City Rankings* **Target:** top 10 most innovative global cities **Current:** 2007 Melbourne ranked 8th out of 95 global cities for innovation [2]	Melbourne is an international centre for knowledge and innovation in its education, research and business communities and has built on its strengths in science and design.
Infrastructure to support global connectivity High quality communications and passenger and freight transport infrastructure enable effective global business and cultural connections.	**Business perceptions of international positioning of Melbourne.** **Current: 2006** - six per cent said there was room for improvement. **3** Number of international and domestic visitors **Current:** 2006-07 - 4,532,000 international and 17,806,000 domestic visitors accessed Melbourne Airport**4**	Businesses are well connected to and competitive with the rest of the world virtually as well as by sea and air.

A stimulating and safe 24 hour city

Goals	Indicators	Outcomes
Welcoming, engaging and safe 24-hour city Melbourne's central business district is a safe and enjoyable 24-hour place to visit, live and to do business that also supports the cultivation of business relationships through meeting and networking places out of the office.	Percentage of visitors who feel safe in the City of Melbourne. **Target:** 100 per cent **Current:** 2006 - average perception that the city was safe - 89 per cent. [1]	Visitors, workers and residents feel welcome, safe and engaged in the streets and venues throughout the 24-hour cycle of city life. There are capital city and international functions and events and late night entertainment, restaurants and retailing. Services for visitors, workers, businesses and residents are available throughout the 24-hours.

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Safe city Levels of violence and crime on streets and in homes (particularly in relation to vulnerable groups) are reduced and perceptions of safety are improved.	Percentage of visitors who feel safe in the City of Melbourne Municipality. **Current:** 2006 - the average perception of safety was 89 per cent. **4**	Residents, visitors and workers feel safe in the city 24 hours a day. Safety and crime prevention are priorities and city safety is enhanced. Reduced rate of crime against the person offences (per head of population) and particularly vulnerable groups such as women, children and young people.
24-hour public transport service Public transport is provided at an appropriate and effective level 24-hours a day to service all users of the city.	Number of public transport services available at 11pm, 1am, 3am and 5am. **Current:** indicator to be developed.	Public transport is available and well patronised 24-hours a day. Increased mobility and access supports extended and non-conventional operating hours.
Complementary day and night use of space Precincts and places in the municipality are used during the day or night with complementary activities to maximise use of the resource.	Land use mix in precincts. **Current:** indicator to be developed. Central Area Pedestrian Counts Day. **Current:** 2007 - average pedestrian activity 175,000 to 224,000 counts per day **5**	Increased access to diverse public spaces across the municipality. Public space is used innovatively and creatively and the principles of 'Safer by Design and Access for all Abilities' are applied.

Affordable for new business

Goals	Indicators	Outcomes
Affordable space for business Diverse, affordable and flexible accommodation is available to facilitate business formation, growth and expansion. Capital city leadership is demonstrated by piloting and supporting new forms of accommodation and innovative space.	Average rent for office and retail space. **Office space (2007):** • Premium-grade: $360-540 m2 per year • A-grade: $290-315 m2 per year • B-grade: $215-285 m2 per year. **Retail space (2007):** Prime rentals in the Melbourne CBD range from $1,400 per m2, for secondary retail, up to $5,600 per m2 for small super-prime retail space in the Bourke Street Mall and on Swanston Street. [1]	A variety of affordable spaces are available for new business to establish and for existing businesses to expand. Under utilised public spaces and facilities are used for short-term retail projects such as pop-up shops or short-term opportunities so that prospective retailers can test the market for their product or service. A whole-of-life-cycle approach to business formation and growth exists (wherein businesses may initially develop at less expensive locations graduating up to premium grade locations).

Utilise long term, usable vacant property Incentives are identified and introduced to allow long term vacant properties (but in usable condition) in the city to be made available to new businesses.	Commercial / industrial premise long term vacancy rates	The municipality has attracted new and start up knowledge-rich, capital-poor business to set up their operations. Vacant buildings are managed to allow for short term use of of the space.
Industrial and commercial land supply/ accommodation Construction of commercial and industrial space keeps pace with demand. Flexibility in design, construction and scale to provide for growth and future demands.	Proportion of land in the municipality, which is used for commercial/industrial accommodation. **Current:** Commercial accommodation 674,245 [2]	Land is available and able to be developed for appropriate commercial and industrial uses. Supply of commercial and industrial property is maintained. Design of new buildings allows for flexible use and reuse.

Supportive of business

Goals	Indicators	Outcomes
Grow business and employment A growing business community and expanding employment opportunities including retention of the city's priority business sectors (such as the finance sector).	Net growth of office floor space in the city.[1] **Target:** **Current:** 6,808,763m2 (2006). Total employment in the municipality [2] **Target:** 2020 - 400,000 **Current:** 2006 - 365,900	An increase in business activity, range and diversity of employment opportunities.
Business connections Improved physical connections between businesses in the municipality and those in surrounding suburbs and municipalities to facilitate face to face commercial dealings and better access to skilled workers.	Intra-city transport costs, including costs of delays, as a fraction of overall business costs. **Current:** Indicator to be developed. Personal commuting costs as a fraction of household income. **Current:** Indicator to be developed.	Increased efficiencies for business being able to access suppliers, collaborators, markets and workers with greater ease. Efficient and affordable intra-city transport for workers, supplies and products.

An events city

No goals were identified.

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A great place to visit
No goals were identified.

A philanthropic culture
No goals were identified.

A city of knowledge

Generating innovation from knowledge

Goals	Indicators	Outcomes
World class universities Melbourne will maintain and develop its world class universities	Universities ranked on the *Times Higher Education World University Ranking* **Target:** 2020 - to be developed **Current:** 2008 - University of Melbourne 22nd, Monash University 38th.	Melbourne's world class universities maintain a major connection with for city's knowledge economy into the world knowledge economy.

Synergies between the city and universities

Goals	Indicators	Outcomes
Leading university city Melbourne will be a world leading university city. Melbourne already ranks highly. The aim is to maintain this position in an increasingly competitive global league	Ranking in *The Global University City Index* top 20 world university cities **Target:** 2020 - in the top 5 **Current:** 2008 - 4th (Sydney 5th) 2020	Melbourne will be a world centre for knowledge through its universities.
New generation of entrepreneurs Foster knowledge business clusters and networks to develop a new generation of entrepreneurs.	Number of entrepreneurs as registered on the Global Entrepreneurship Monitor (GEM)**3** **Target:** indicator to be developed **Current:** Indicator to be developed	A network of world class industry-specific centres of excellence, focused on Melbourne's international strengths. Rapid growth of a dynamic and creative small business sector delivering services locally based on deployment of advanced management and marketing strategies.
Leader in scientific research Melbourne is a leader in scientific research with leading facilities that attract leading international academics and researchers.	Increased placement of international researchers in Melbourne. **Target:** to be developed **Current:** to be developed	Melbourne as the home of research within Australia is underpinned by the best knowledge based facilities in Australia.

Learning city
No goals were identified.

Online city

Goals	Indicators	Outcomes
High-speed, high-capacity internet High-speed, high-capacity internet connectivity within the municipality and to the globe for business, education and research.	Benchmark comparisons with other cities **Target:** indicator to be developed **Current:** indicator to be developed	High-speed internet allowing access to quality data and information, social networks and economic information and connections for all Melburnians

An eco-city

Zero net emissions city

Goals	Indicators	Outcomes
Residents reduce emissions Residents reduce their greenhouse gas emissions by 35 per cent per capita by 2020 (from 2006 levels).	CO2 Emissions per resident per year. **Target:** 5.1t **Current:** 7.8t reported every two years	Existing houses (12,000), apartments and flats (24,000) have been retrofitted for better energy and water efficiency. Housing is comfortable and is affordable to heat and cool. Residents are informed and empowered and make low-carbon choices.
Workers reduce emissions Workers reduce their greenhouse gas emissions by 59 per cent per capita by 2020 (from 2006 levels).	CO2 emissions per worker per year. **Target:** 4.1t **Current:** 9.9t reported every two years	approximately 1200 Buildings (70 percent of the existing commercial building stock) in the city of Melbourne have been retrofitted to cut greenhouse gas emissions through programs such as the *Clinton Climate Initiative* . New commercial and institutional buildings have at least as much greenery within their plot as if they were an empty, native site.
Transport reduces emissions Reduce transport related greenhouse gas emissions for trips within, to, and from the municipality.	Reduction in emissions for trips within and to and from the municipality per passenger kilometre. **Target:** Indicator to be developed **Current:** baseline to be developed. reported every two years	Residents, workers and visitors utilise alternative modes of transport (cycling, walking and public transport) to meet their transport needs.

The city as a catchment

Goals	Indicators	Outcomes

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Residents' water consumption reduced Reduce residents' mains water consumption by 40 per cent by 2020 (from 1999/2000 levels).	Residents use of drinking water is reduced by 40 per cent from 2000 levels. **Target:** 178 litres per person per day **Current:** 179 litres per person per day (296 litres per person per day in 2000)	Most residences now have water efficient fittings and appliances and gardens that use little water. Residential apartment blocks are water efficient and some use alternative water sources. Householders save water and money by using it carefully.
Workers' water consumption reduced Reduce workers' mains water consumption by 50 per cent by 2020 (from 1999/2000 levels).	Worker's use of drinking water is reduced by 50 per cent from 2000 levels. **Target:** 91 litres per worker per day. **Current:** 95 litres per person per day (181 litres per worker per day in 2000)	Most commercial, industrial and institutional buildings have water efficient fixtures and appliances, gardens that use little water, the capacity to harvest rainwater and stormwater and where possible, recycle water for fit-for-purpose use. Building owners save water and money by using it carefully.
Reduce pollution entering waterways Reduce pollution entering our waterway by 20 per cent reduction in total suspended solids; 20 per cent reduction in total phosphorus; 35 per cent reduction in total nitrogen by 2020 (from 2005).	Volume of total suspended solids, total phosphorus and total nitrogen/year/ratepayer. **Target:** Reductions of three per cent total suspended solids, four per cent total phosphorus and four per cent total nitrogen in 2007 (from 2005). **Current:** To be determined.	The municipality's stormwater is clean when it is discharged into the creeks, rivers and the bay and has improved the aquatic ecology, recreation and tourism. Groundwater infiltrates into water table and aquifer where possible and is managed to ensure no less quantity or quality of water occurs. All planning and building proposals demonstrate no net negative effect on receiving waters in terms of quality and quantity and all new infrastructure in the municipality has applied water sensitive urban design techniques.

Resource efficient

Goals	Indicators	Outcomes
Reduce household waste in the city.	Tonnes of residential waste generated/year/worker **Target:** Indicator to be developed **Current:** to be developed. [2] Tonnes of residential waste recycled/year/worker **Target:** Indicator to be developed **Current:** to be developed.[3]	Economic and environmental benefits to householders and the municipality as a result of significant reduction in household waste.

Reduce commercial waste in the municipality.	Tonnes of commercial waste generated/year/worker **Target:** Indicator to be developed **Current:** Indicator to be developed Tonnes of commercial waste recycled/year/worker **Target:** Indicator to be developed **Current:** Indicator to be developed	Economic and environmental benefits to businesses and the municipality as a result of significant reduction in commercial waste.
Ecological footprint and target Develop a municipal ecological footprint and target including embodied energy and water in the goods and services used within the municipality.	Ecological footprint indicator to be developed	An integrated view of our activities and lifestyles, based on full life cycle thinking about consumer goods and services has resulted in significant reductions in material goods.
Recycling and waste collection more economic Waste collection and processing system is assessed and a system is developed and implemented which is more economic and efficient.	Cost of waste management/year/ratepayer	Waste is collected and managed more economically and more efficiently to reduce waste generation, increasing recycling and reducing costs.
Embodied energy The use of materials and products with high levels of embodied energy is reduced. Embodied energy is the total amount of energy required to transform raw products and materials to their final use (i.e. extract, harvest, process, manufacture, transport, construct and maintain) and must be reduced for life cycle energy and greenhouse gas emission targets be achieved.	Indicator to be developed.	Materials, products and systems used for building and public realm construction, refurbishment and maintenance reflect current best practice in energy conservation through low embodied energy use. Residents of the municipality are able to make informed choices in terms of embodied energy levels when purchasing materials and products.

Adapted for climate change

Goals	Indicators	Outcomes
Innovative climate adaptation solutions Innovative and productive climate adaptation solutions tailored specifically to the municipality and which make a measurable contributions to greenhouse gas mitigation.	Indicator to be developed.	Melbourne has adapted to the risks of climate change and continues to prosper.

Living and working in dense urban centres

Goals	Indicators	Outcomes

09 Appendix

A sustainable mixed use urban centre The central city will have a greater proportion of residents to daily visitors. It will be the metropolitan region's principal mixed use high-density sustainable urban centre linked by good public transport to other similar urban nodes.	The proportion of residents to daily visitors **Target:** 18 per cent **Current:** 11 per cent	The municipality has become dense and walkable mixed use urban centre. New development has been in buildings at around six storeys. There is a dynamic mix of residential, employment, retail and cultural activities and opportunities, linked by fast public transport to other similar urban nodes in the metropolitan area.
Better population balance Increase the number of people to both live and work in the municipality.	Proportion of people who live and work in the municipality **Target:** 65 per cent **Current:** 42 per cent	Many more people now live and work within the municipality and prefer to walk or cycle to work, school, shopping and for recreation.
More locally produced food Increase production, distribution and consumption of locally and regionally grown food.	Increase proportion of fresh food consumed locally but grown within 50km of the municipality. **Target:** 30 per cent **Current:** data to be collected.	A thriving niche market for locally grown fresh produce supplied by rooftop gardens, under franchise agreements with building owners corporations. Melbourne has an international reputation for its many 'food mile' restaurants who serve delicious cuisine made from produce sourced within 50km of the central city. Open spaces enable local residents to cultivate food for their own consumption or for sharing on a not-for-profit basis.

A connected city

Effective and integrated public transport

Goals	Indicators	Outcomes
Improve and expand metro public transport Improve and expand metro public transport. Significantly increase the capacity and quality of train, tram and bus services to and from the municipality to enable mode shift out of cars and to meet the projected growth in demand.	Percentage of people who use public transport, cycle or walk to work in the central city. **Current:** 72 per cent (2006). [1] **Target:** 90 per cent.	Reduce congestion on the municipality's road network. Central city bus routes, stops and terminals provide premium accessibility, efficiency and service delivery. Trams and buses are given priority over vehicles improving their speed and efficiency.
New urban growth as transit oriented development New urban growth into transit-oriented development. Direct new growth into metropolitan network urban centres and strips around tram and rail stops to strengthen commuter preference for public transport and to develop off-peak inter nodal trips. Melbourne 2030 strategy.	Percentage of metropolitan development in m2 floor area within 800m of rail stations or tram routes. **Current:** Indicator to be developed. [2]	Melbourne's public transport system is reliable, comfortable, frequent, coordinated and safe.
Integrate public transit with pedestrian and cycling Integrate inner city public transit with pedestrian and cycling to ensure they complement and strengthen one another.	Indicator to be developed.	Sustainable transport modes are integrated encouraging more people to use sustainable transport modes.

Accessible and integrated public transport system An accessible and integrated public transport system, including taxis, particularly for people with disabilities or the mobility impaired through minimising barriers to public transport, accessible public transport mode transition and an increased supply of maxi taxis.	Indicator to be developed.	Melbourne's public transport system including trains, trams, busses and taxis provides reliable accessible transport options free of obstacles for persons with disabilities and those with special mobility needs including parents with children in prams, older people with declining mobility or sensory abilities and people of varying ages with temporary mobility restrictions. Public transport stations and stops are designed to provide for efficient and safe movement of increased users. Increased availability of maxi taxis to service disadvantaged groups.

Cycling city

Goals	Indicators	Outcomes
The whole network made bike safe The whole road and path network will be made safe, easy and enjoyable for cycling.	Fatalities and serious injuries/rider km/year in the municipality **Target:** 2020 - 0 **Current:** Indicator to be developed Proportion of bicycles of all road traffic in the municipality vehicle kms/year **Target:** Indicator to be developed **Current:** Indicator to be developed	There are zero deaths or serious injuries from collisions with motor vehicles and cars are not intimidating so many more cyclists of all ages now enjoy riding anywhere on the municipality's road network, reinforced by low traffic speed (30 km/h), dedicated lanes and mixed bike/ped zones.
Quality end of trip facilities Are standard at city work places, educational facilities and other key destinations.	Proportion of workplaces with over 10 employees with quality end of trip facilities.**5** **Target:** **Current:** to be developed (overall number 1,330)	Cycling to work is commonplace and convenient in the municipality including those commuting 10km or more.

Walking city

Goals	Indicators	Outcomes

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A comprehensive, fine grained walking network Good quality on and off street walking path network throughout the municipality. In the central city, locations with a high concentration of pedestrians, paths must be of very high quality.	The proportion of people walking to all traffic in the municipality. **Target:** 2020 To be developed. **Current:** Indicator to be developed (5% walk to work (2006) [3]	Walking is the main way most people get around. From business executives going to and from meetings to young children walking to school unchaperoned and the elderly, all are very well represented and walking is a key to their healthy longevity. The main CBD lanes have been converted into permanent shared zones and are hives of activity. Mid-block, signalised pedestrian crossings are available on main streets.
Connected network of pedestrian places. Plazas, malls, parks, pedestrian only and shared zones are linked up throughout the municipality.	Proportion of paved public space allocated for pedestrian only and shared zones.**5** **Target:** **Current:** Indicator to be developed (area72,200m2 - 2004)	A network of pedestrian streets and lanes, parks, plazas and **shared zones** throughout the city provide a generous, connected and safe pedestrian realm and play spaces for children.

Innovative urban freight logistics

Goals	Indicators	Outcomes
Increase rail freight and reduce road freight. More efficient rail transport infrastructure that balances the competitive advantage of roads and meets the continued growth of the Port of Melbourne.	The proportion of freight moved in and out of the Port of Melbourne. **Target:** Indicator to be developed **Current:** Around 20 per cent of all freight moved in and out of the Port of Melbourne is carried by rail. [3]	A rail freight network which is competitive with the road freight system. A modal shift with an increasing proportion of port freight using rail transport.
Reduce amenity degrading freight. Restrict freight access to local roads, and develop innovative road-based solutions to meet the urban freight task.	Resident feedback about local area amenity (specifically noise and air pollution). **Target:** Indicator to be developed.[4] Traffic congestion and road capacity data on main freight routes. **Current:** Indicator to be developed.	The needs of freight traffic and the needs of residents are balanced by means of innovative urban planning and freight management. Land-use conflicts around the port and its rail and road freight routes are managed to ensure a productive port.
Low impact and efficient central city last-mile freight Deliveries to minimise amenity degrading and inefficient freight traffic in the central city.	Proportion of last mile central city freight delivered by low impact vehicles **Target:** Indicator to be developed **Current:** Indicator to be developed[5]	Freight deliveries will take place efficiently while minimising their externalities in a dense and active urban environment.
Low impact and more efficient waste freight To minimise amenity degrading and inefficient waste freight in the municipality and facilitate local recycling opportunities.	Total vehicle kms to achieve the waste removal freight task **Target:** Indicator to be developed **Current:** Indicator to be developed [6]	Reduced waste freight traffic and reduced noise and air pollution from waste freight. Increased local recycling of waste.

Smart city driving

Goals	Indicators	Outcomes
Efficient, flowing inner urban motor vehicle traffic. Improve traffic flow for motorists. Maintain reasonable travel times without death or serious injury or loss of mobility for vulnerable road users. Reduce vehicle running costs including fuel consumption, wear and tear and greenhouse gas emissions.[4] [5]	Average cross inner city motor vehicle trip times. **Target:** Indicator to be developed **Current:** Indicator to be developed. Motor vehicle traffic volumes. **Target:** Indicator to be developed **Current:** Indicator to be developed.	The road network in the municipality has a low speed limit and is safe for cars, motor bikes, pedestrians and cyclists. Optimal trip times for all modes. There are zero fatalities or serious injury for vulnerable road users.
Smart and efficient motor vehicle use. Develop and implement programs, services and infrastructure that enables, more efficient, responsive and sustainable motor vehicle use and parking in municipality.	Proportion of “smart driving” motor vehicle trips in the municipality **Target:** Indicator to be developed. **Current:** Indicator to be developed.	Car ownership in the municipality has reduced and more people rent the use of a car as they require. “Green” cars are an increased proportion of motor vehicles. With the use of advanced technologies parking in the city is managed to support smart driving in all forms.
Motoring compatible with vulnerable road users Make motor vehicle traffic compatible with vulnerable road users by reducing the threat of death and trauma, motor vehicle traffic noise, and air pollution. Increase urban amenity.	Traffic generated noise 24 hour profile. **Current:** Indicator to be developed.	Streets are relatively quiet and safe, the air is free of pollution and the threat of injury by motor vehicle collision is significantly reduced

Regional and global transport connection

No goals were identified.

09 Appendix

B: Built form analysis

A series of streetscapes were analysed in City North to explore the effectiveness of existing height controls and to test potential built form controls to inform the Structure Plan. These built form proposals will be further considered in the Structure Plan and consultation process.

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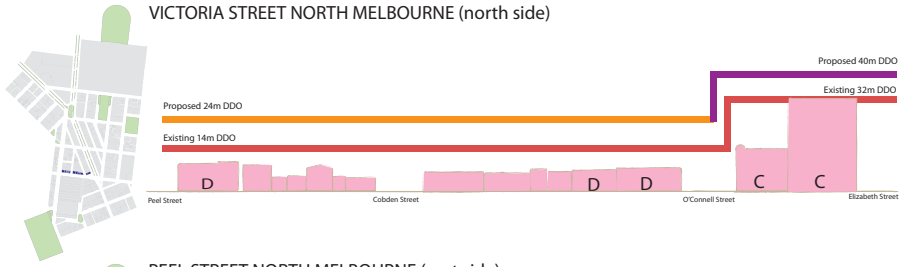

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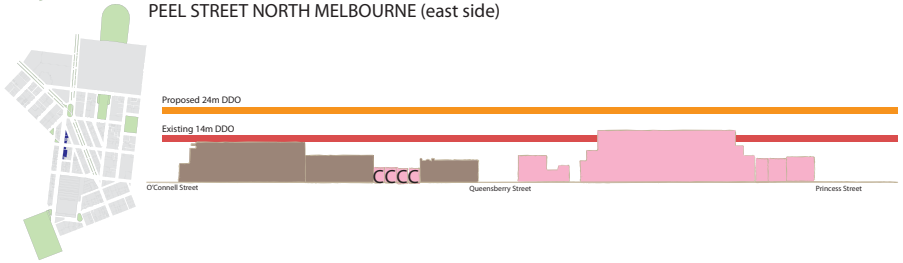

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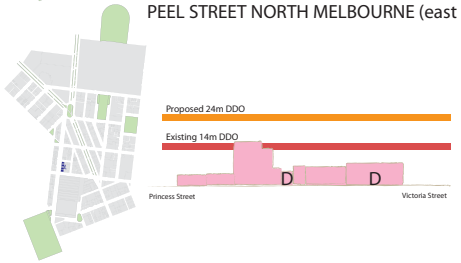

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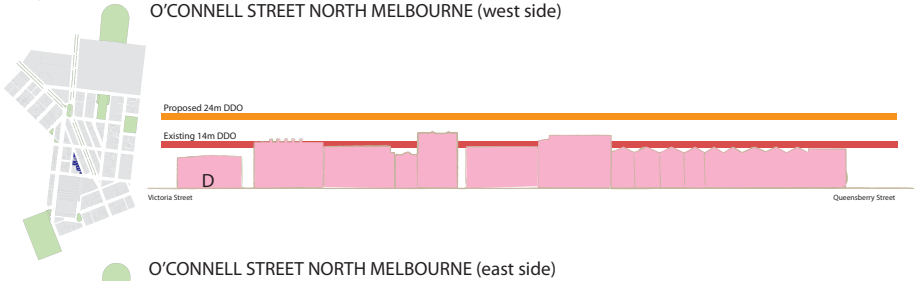

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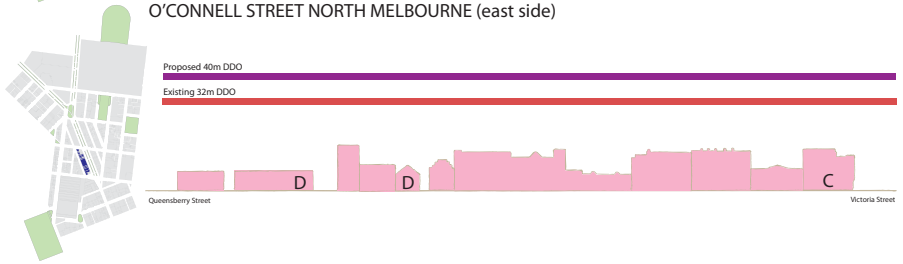

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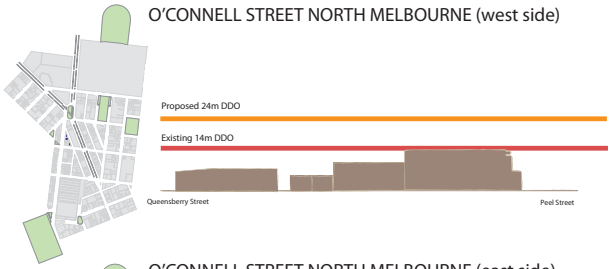

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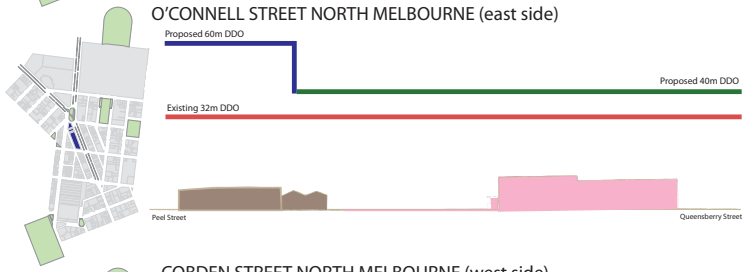

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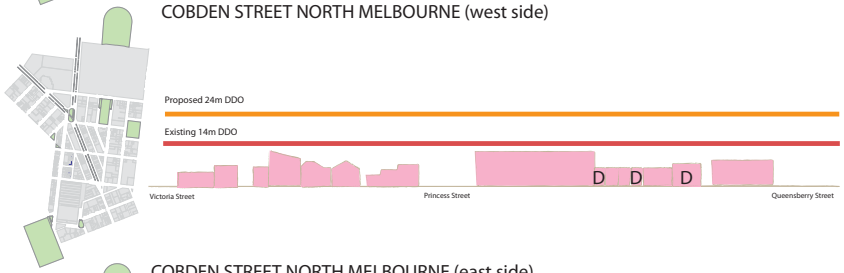

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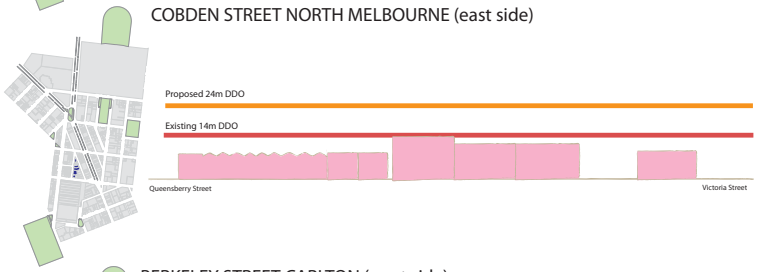
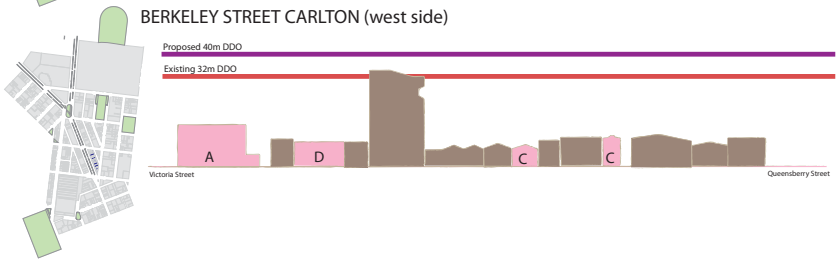


BERKELEY STREET CARLTON (west side)



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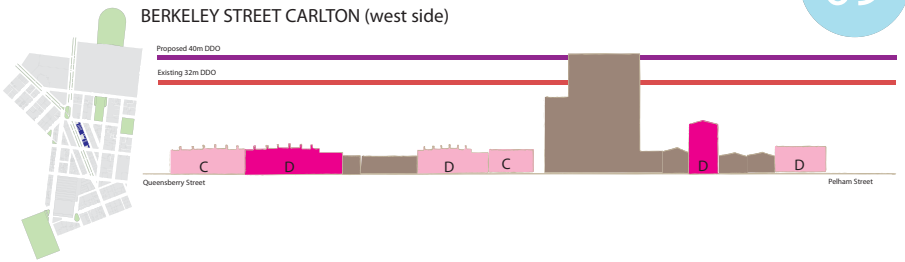

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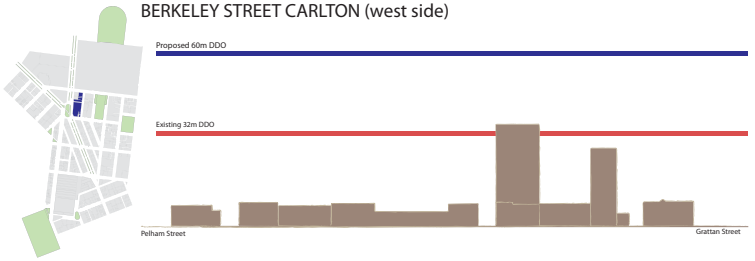

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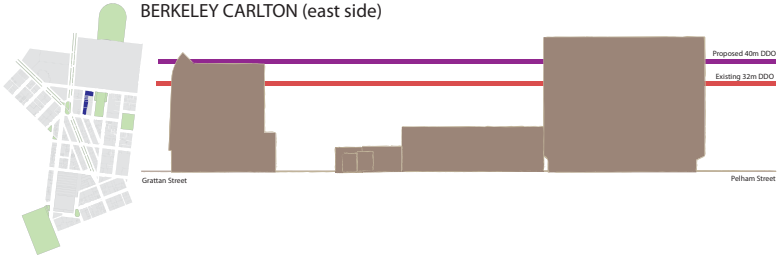

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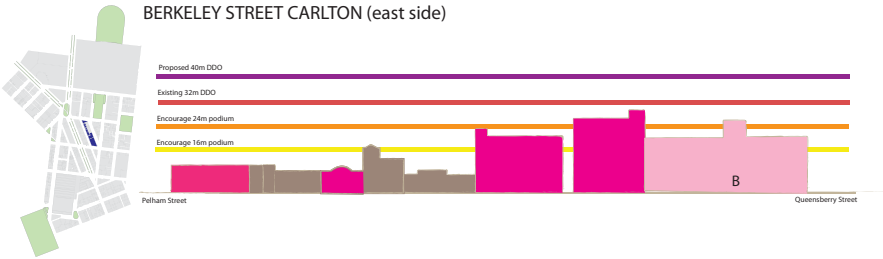

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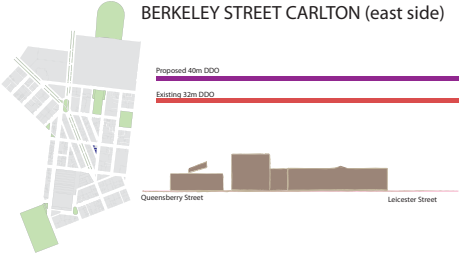

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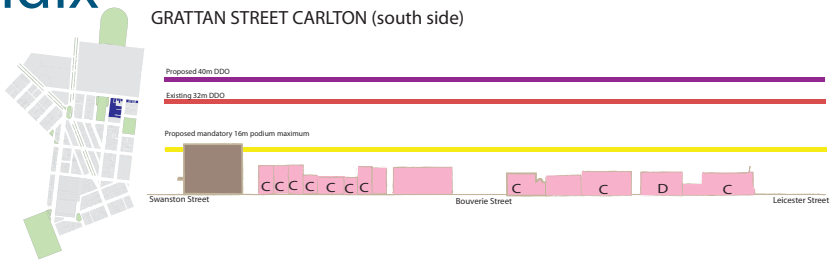
GRATTAN STREET CARLTON (south side)



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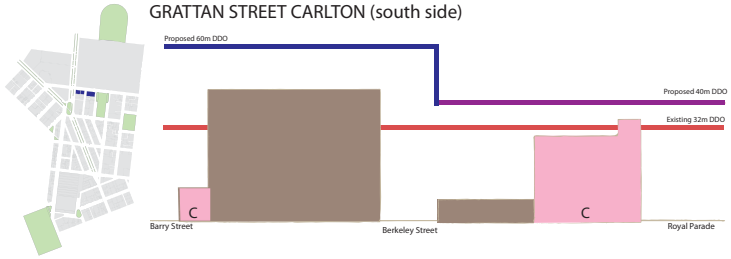

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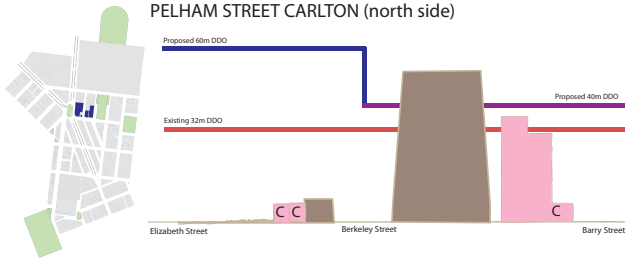

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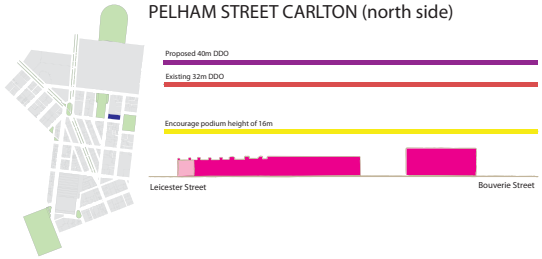

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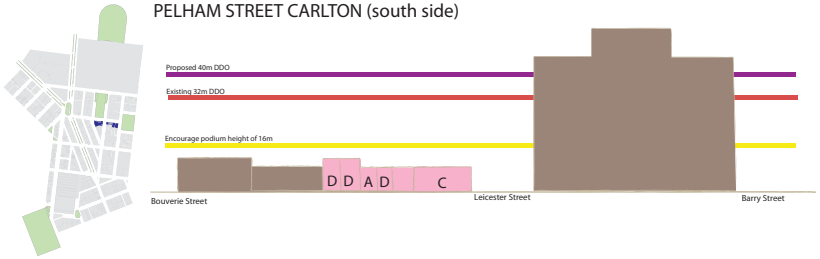

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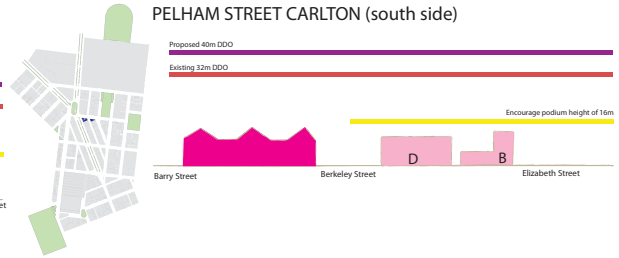
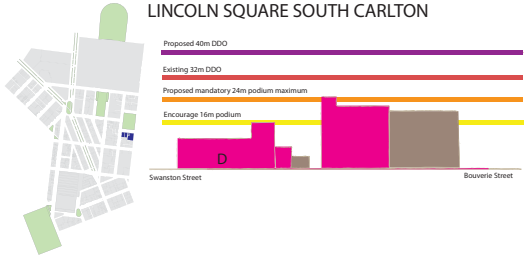


LINCOLN SQUARE SOUTH CARLTON



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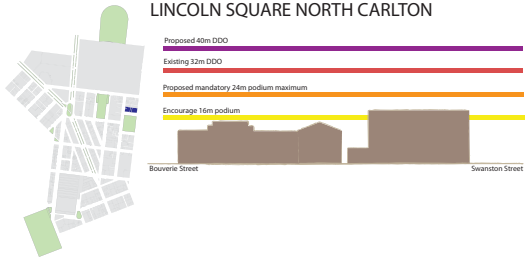
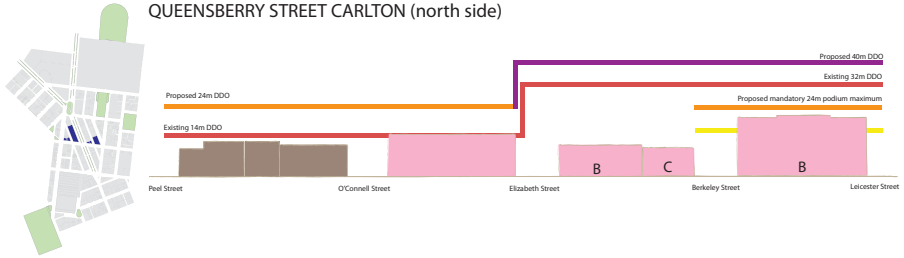


QUEENSBERRY STREET CARLTON (north side)



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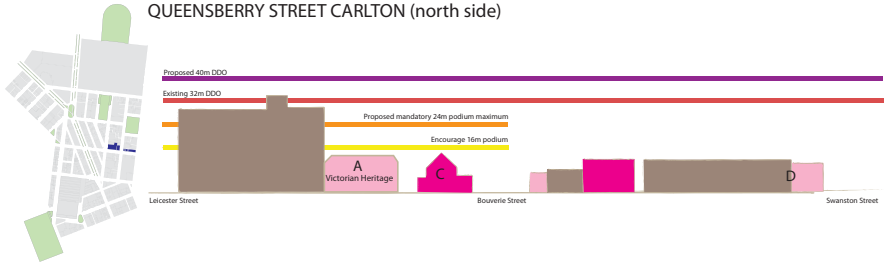

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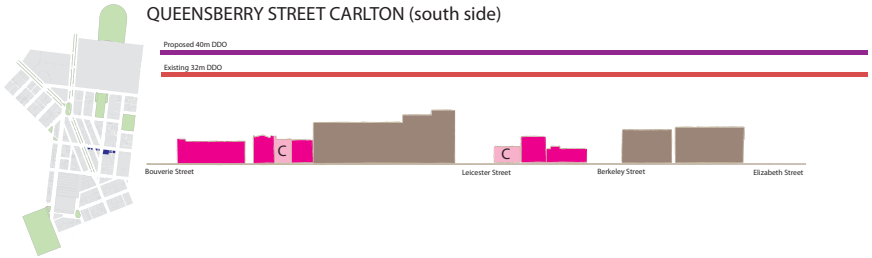

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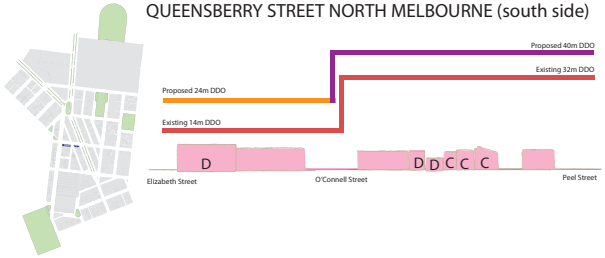

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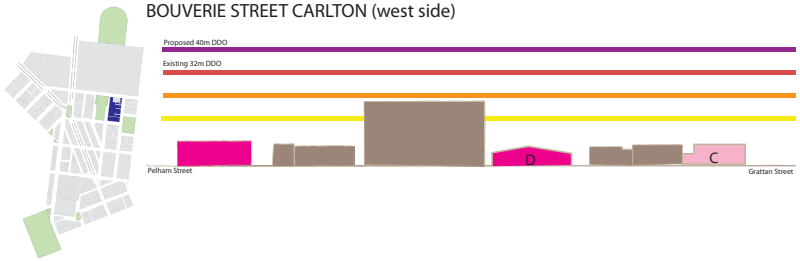

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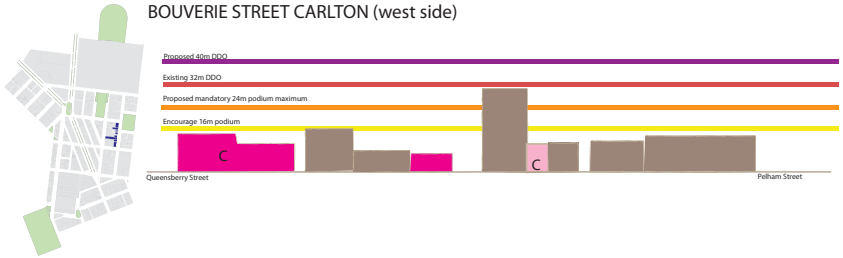

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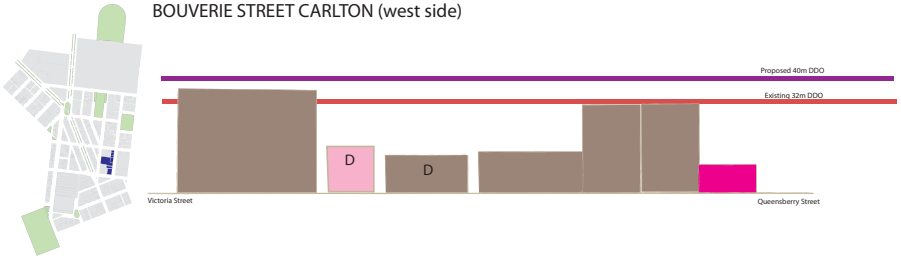

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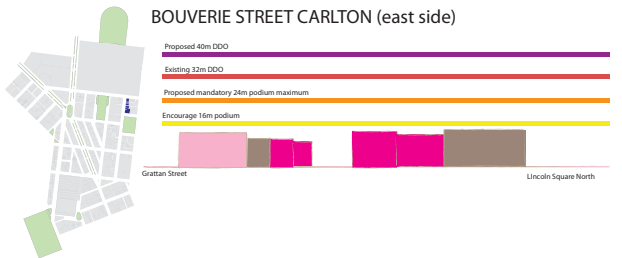

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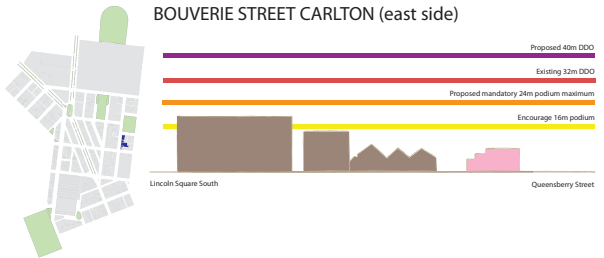
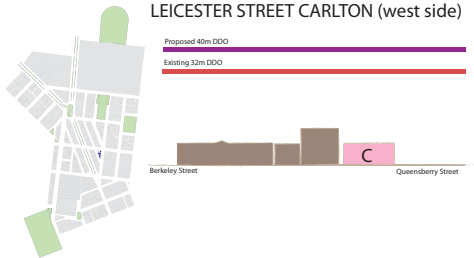


LEICESTER STREET CARLTON (west side)



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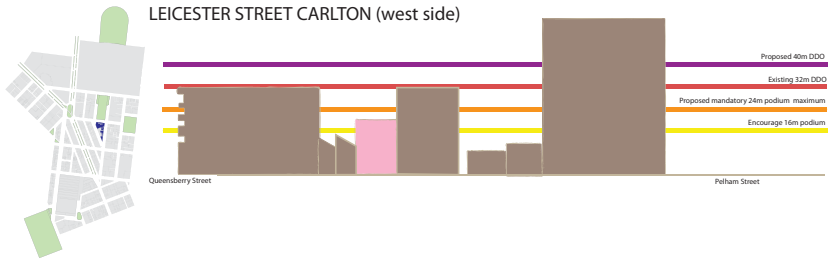

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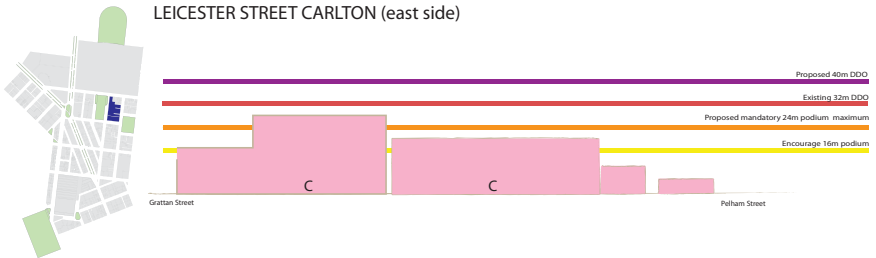
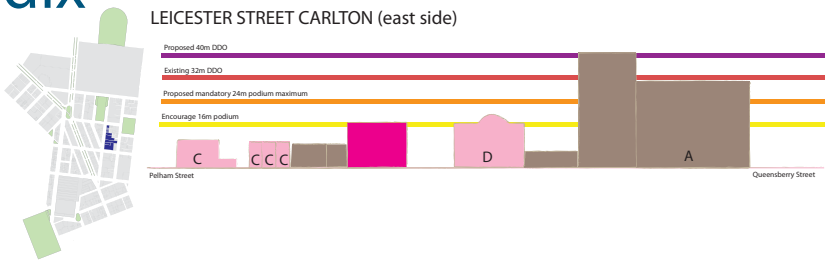
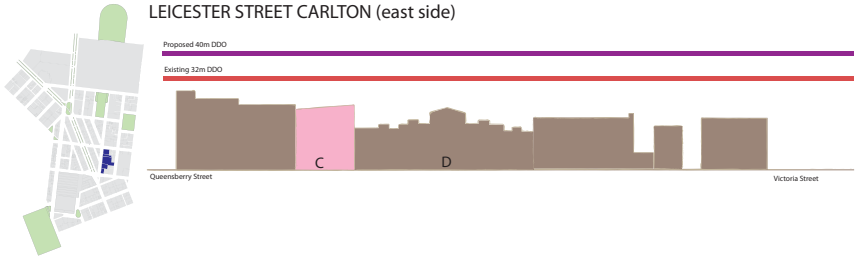


09 Appendix

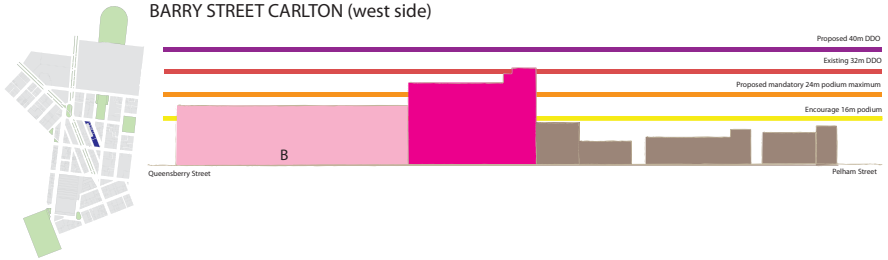
LEICESTER STREET CARLTON (east side)



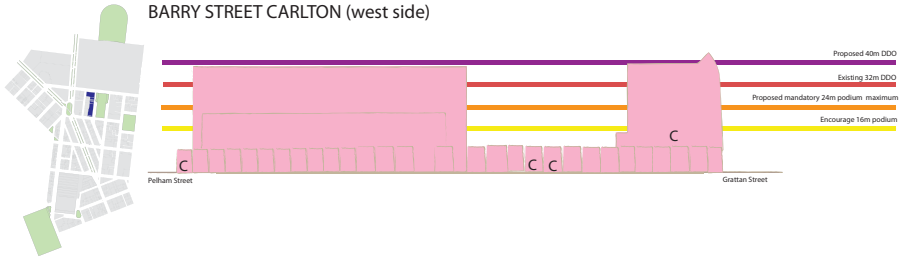
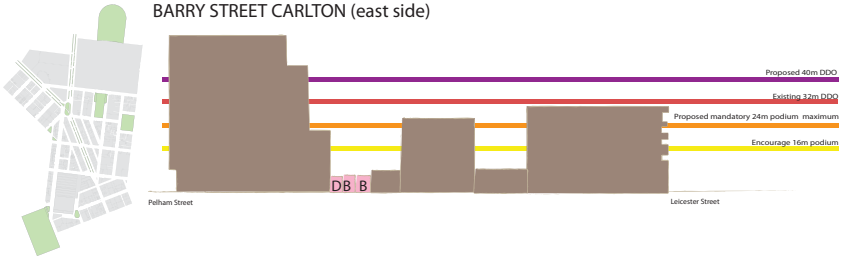
LEICESTER STREET CARLTON (east side)



BARRY STREET CARLTON (west side)



BARRY STREET CARLTON (west side)



BARRY STREET CARLTON (east side)