ATTACHMENTS

Attachments for the Ordinary Council Meeting

24 March 2015

Part 2 of 3
(Pages 60 - 120)
Item 10.5.1 Canning Bridge Structure Plan - Endorsement

City of South Perth

ATTACHMENTS TO AGENDA ITEMS

Ordinary Council Meeting - 24 March 2015

Contents

The Journey So Far		
City of Melville	**Consultation**	**City of South Perth**
	2004 -2008 Consultation with the community and stakeholders. Included Precinct Planning strategies for Canning Bridge Rail Precinct	← Strategic Plan
Melville Visions →	2005 - 2006 Major Community Dialogue with Residents. Focus Groups, Surveys, Community Meetings	← Community Engagement Projects Canning Bridge and South Perth Rail Stations
Community Plan →	2006 - 2007 Analysis of Community Aspirations. Focus Groups, Community Meetings, Surveys	←
Community Information Day →	2008 Information collection and engagement to begin project	← Community Information Day
Neighbourhood workshops for Local Planning Strategy →	2008 Major Community engagement workshops to discuss Local Planning Strategy. Information provided on Canning Bridge	←
	Our Vision Ahead, community planning project with extensive consultation involving public workshops, focus groups, online surveys, survey hand-outs at City of South Perth events and a community conference	← Our Vision Ahead
Suburb Workshops →	2009 Workshops with Neighbourhood Champions for Neighbourhood Planning. Information provided on Canning Bridge	
Melville Stakeholder Workshops →	2008 - 2009 Workshops with Stakeholders within the Canning Bridge Rail Station Precinct	← South Perth Stakeholder Workshops
Canning Bridge Precinct draft Vision Advertising →	2010 Opportunity for all interested Residents, Businesses, Landowners and other stakeholders to comment on the draft Vision	← Canning Bridge Precinct draft Vision Advertising
Accept Submissions →	Comment from Interested Parties Collate, consider and integrate submissions from interested parties	← Accept Submissions
Canning Bridge Precinct Vision presented to City of South Perth for Endorsement →	Revise Vision taking into consideration input from submissions and Local Government resolutions	← Canning Bridge Precinct Vision presented to City of South Perth for Endorsement
	Final Canning Bridge Precinct Vision presented to Western Australian Planning Commission for Endorsement	
	Project Working Group formed with representation from Department of Planning, Transport Porfolio agencies, City of Melville and City of South Perth to undertake next stage of planning	

The Canning Bridge Structure Plan Study Process		
Implementation Plan initiated →	Further studies being undertaken including preparation of Development Guidelines, transport studies, environmental studies, and parking and access studies	← Implementation Plan initiated

Figure 3 Consultation Summary

1.5 Canning Bridge Precinct Vision

The Vision for the CBSP has been formed through ongoing consultation with the community and stakeholders since 2008.

Through the preparation of the CBSP, this Vision has been reinforced and can now be represented spatially.

The Canning Bridge Precinct Vision Statement is as follows;

'The Canning Bridge precinct will evolve to become a unique, vibrant, creative community centred on the integrated transport node of the Canning Bridge rail station. The precinct will be recognised by its unique location, its integrated mix of office, retail, residential, recreational and cultural uses that create areas of excitement, the promotion of its local heritage and as a pedestrian friendly enclave that integrates with the regional transport networks while enhancing the natural attractions of the Swan and Canning Rivers'

Canning Bridge Structure Plan Study Consultation Summary								
Phase One (July 2012 - November 2012)								
Community Briefing Session	→	Councillor Workshop	→	Community Workshop #1	→	Councillor Update	→	Community Workshop #2
Phase Two (December 2012 - November 2013)								
Community Survey	→	Youth Workshop	→	Councillor Update	→	Community Workshop #3		
Phase Three (December 2013 - now)								
Councillor Update	→	Public Comment Period						

Figure 4 Canning Bridge Structure Plan Study Consultation Summary

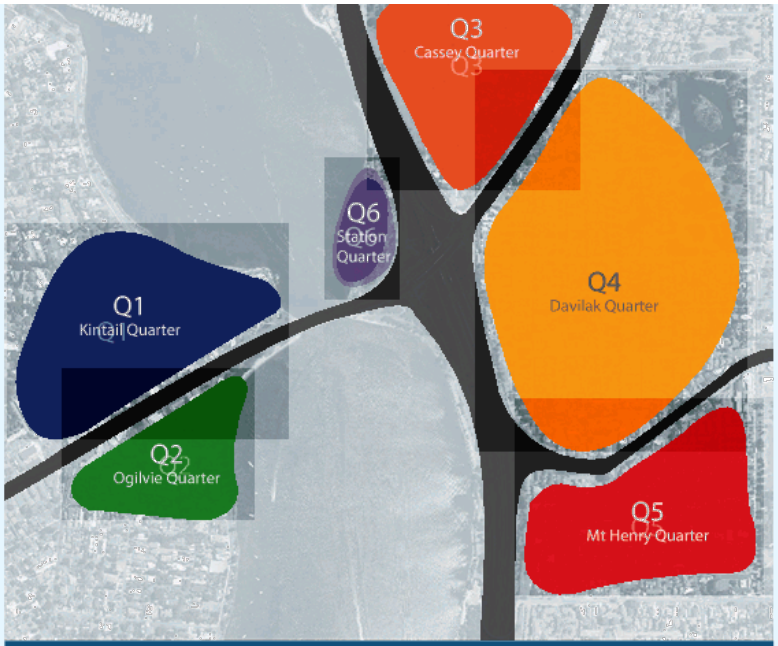


Figure 5 Canning Bridge Structure Plan Quarters

2 The Structure Plan in Summary

The 2011 release of the Canning Bridge Precinct Vision heralded a new outlook for the CBSP area. The Vision established the desire for a unique, vibrant and creative community, building on its natural economic and physical competitiveness. The Vision highlighted the positive contribution that the CBSP could make to the overall population and employment growth challenges which were identified in Directions 2031 and reinforced the expectation that the area could be established as a growth centre well in advance of many of the others identified.

Key elements of a plan for the CBSP area were proposed during the preparation of the Canning Bridge Precinct Vision. During the course of preparing the CBSP, these proposed outcomes were tested.

The key elements included:

- substantial redevelopment opportunities with an increase in residential densities and building heights subject to performance based streetscape and built form design guidelines;
- promotion of sustainable building types and uses which support the community;
- creation of a town square and central community hub in Applecross;
- opportunities for new commercial development adjacent to the freeway in Como in the longer term, including limited development on the foreshore;
- enhancement of streetscapes and foreshore reserves, including increasing the size of the foreshore recreation areas;
- improvement in pedestrian, cyclist and kiss'n'ride connections to a new bus/rail interchange and improvement in general pedestrian accessibility within each local government;
- allowance for a future ferry station integrated with the new bus/rail interchange;
- a new traffic connection resulting from the establishment of a third (replacement) structure over the river;
- a relocated/improved bus station and kiss'n'ride access from both sides of the river utilising a local connection through Como; and
- identification of opportunities for improved traffic movement associated with the Canning Highway/Kwinana Freeway interchange.

> "Meet district levels of community need and enable employment, goods and services to be accessed efficiently and equitably by the community."

Whilst the principles behind each of these key elements has been confirmed, the model of development previously proposed has been amended throughout the CBSP preparation process. The amendments have been based on increased rigour and testing of the desired outcomes, including assessment of natural landforms, natural barriers, safety, growth yields, traffic and transport, infrastructure services, commercial opportunities and community input.

Importantly, three key objectives for preparing the CBSP have not changed and are the rationale for undertaking this plan;

1. The CBSP is a long term plan – some elements may happen in 10 years, some in 20 years, some in 40 years; but the built outcome from the 'whole' of the plan will likely take over 50 years
2. Regardless of the size and scale of the CBSP area, good planning dictates that we have an obligation and responsibility to the community of the future to plan appropriately and with foresight. We must plan for the future or we will fail to deliver for the needs of future communities.
3. The CBSP area is designated as an activity centre, and the State and Local governments is committed to this for the sake of managing Perth's growth appropriately for future generations.

"Support a wide range of retail and commercial premises and promote a competitive retail and commercial market."

2.1 Place; Making

As indicated, an important part of preparing this structure plan was to test and reconsider the Vision which was established. In doing so, the study team looked critically at the objectives from the SPP. Whilst it was recognised that the SPP provides a strong framework to deliver activity and density within activity centres it was noted that the objectives of the SPP were not sufficient to provide for consideration of character and placemaking in those same activity centres.

Recognising this, the CBSP has been guided by the following placemaking principles:

1. Recognition of Place: place activation and place management
2. Integration of complimentary (mixed) land uses
3. Appropriate and safe access to key activity nodes, recreation areas and the rail station
4. Sustainability of place, transport and built form
5. Crime prevention through environmental design
6. Appropriate built form for the CBSP area
7. Optimum and appropriate land use mix and density

"Plan development in the Canning Bridge Structure Planning area around a legible street network and quality public spaces."

2.1.1. Character and Function

Importantly, the preparation of the CBSP began with a workshop to reconsider the current character and function of the area, the recognition of the place that already exists in the study area.

Whilst the Vision discussed the area as one homogenous 'place' the analysis has since recognised the inherent uniqueness of smaller parts of the centre, guided by the barriers created through transport infrastructure and the Canning River. The CBSP is thus overtly recognising those unique areas, and the entirety of the structure planning process has recognised these distinct 'Quarters' (neighbourhoods) (Figure 5).

To the West of the Canning River is Q1 and Q2, which represent more intimate residential streets, bounded by the river, divided by Canning Highway and bordered by Ullapool St in the West.

To the East is Q3, Q4, Q5 and Q6, which are bordered by the river and run North South from Cale St to Gentili Way, and as far East as the lots on Ley St. These eastern suburbs have some elevation over the river, and have an aspect to the West which gives good mid-range views across the river.

The recognition of these Quarters enables contextually appropriate urban design at a local scale, working towards a cohesive and recognisable whole. The urban design of the Quarters will concentrate upon identifying and reinforcing the existing local character of each of the Quarters, and allowing linkages between these

"Ensure the Canning Bridge Structure Planning area provides sufficient development intensity and land use mix to support and increase high frequency public transport."

to create a strong local and district scale wayfinding network.

Due to the strong North-South influence and boundary of the river, it is proposed that the urban design will aim to unite in a North South direction, Q1 with Q2 (the Western Quarters), and Q3, Q4 and Q5 (the Eastern Quarters), creating local destinations on a neighbourhood level which allow for increased local identity and community functions across these Quarters. Q6 is the central axis, and the importance of its role in centre sustainability will be celebrated.

A detailed discussion on each of these Quarters can be found in chapter 2.3 below.

2.2 Key Information about this Structure Plan area

Demographically, the entire centre is characterised as an affluent, multi-cultural community which has succeeded itself over generations of development, with long term residents now existing alongside younger generations of families and single residents. The census data shows a slightly maturing population despite being strongly influenced by Curtin University with substantial student residency

Though each of the Quarters is physically quite distinct, and offers varying services and public open space options, the diversity of housing types and styles is quite consistent across the Quarters, comprising remnant 1960's bungalows and newer, higher density and multiple occupancy housing types, although a preference for single residential housing was communicated during consultation. The preference for single, low scale residential housing dictates that quality built form outcomes for the centre will be an important measure of success in the future, for both the community and decision makers alike.

"Increase the range of employment within the Canning Bridge Structure Planning area and contribute to the achievement of sub-regional employment self-sufficiency targets."

As a district centre the CBSP area performs exceptionally, with a high office tenancy to retail ratio. This mix results in a very efficient use of the available floorspace with a high ratio of employment to floor space compared to other district centres. Its amount of office floor space is competitive with Secondary Centres in the Activity Centres Hierarchy, which represents a significant natural advantage to be built upon for employment growth in the centre. The challenge for the centre will be to encourage employment and service opportunities in all Quarters so that each can operate its required role within the collective.

"Increase the density and diversity of housing in and around the Canning Bridge Structure Planning area to improve land efficiency, housing variety and support the facilities in the area."

The CBSP area as a whole is significantly affected by the negative effects of the movement network, with the existing infrastructure supporting regional movements on ageing and sometimes sub-optimal assets. However, recognition of the unique Quarters has allowed the focus to move from 'solving' connectivity challenges to embracing difference. Nevertheless, the movement network is a key challenge for amenity and use of the centre and requires clever and innovative solutions to improve the human experience.

Physically the centre offers an outstanding aspect, although not fully exploited. All Quarters of the centre have excellent access to river views and fall of the land is such that most land within each of the Quarters will have access to views regardless of nearby development. Designing to take best advantage of this has been a key consideration. The River itself provides for extremely high amenity in the centre and access, recreation and improvement to the River experience represents an opportunity to create a positive legacy of the development of the centre.

"Maximise access to and through the Canning Bridge Structure Planning area by walking, cycling and public transport while reducing private car trips."

Other background investigations suggest that some challenges to the provision of services will need to be overcome through careful staging of development and infrastructure cost contributions. Sustainable servicing opportunities should be seriously entertained for the

centre which will benefit both private and public interests.

In all, the CBSP represents an excellent opportunity to build on a thriving community and deliver a true transit oriented development in close proximity to a large population and the Perth CBD.

2.3 Quarters and their character

2.3.1 Q1 - The Kintail Quarter

Of the six Quarters in the CBSP area, Q1's existing urban fabric is the most mixed use, with a well-developed retail and commercial centre which has developed historically along Canning Highway. The commercial centre has day to day retail facilities such as supermarkets, post office and convenience stores, along with hospitality facilities such as several bars and restaurants.

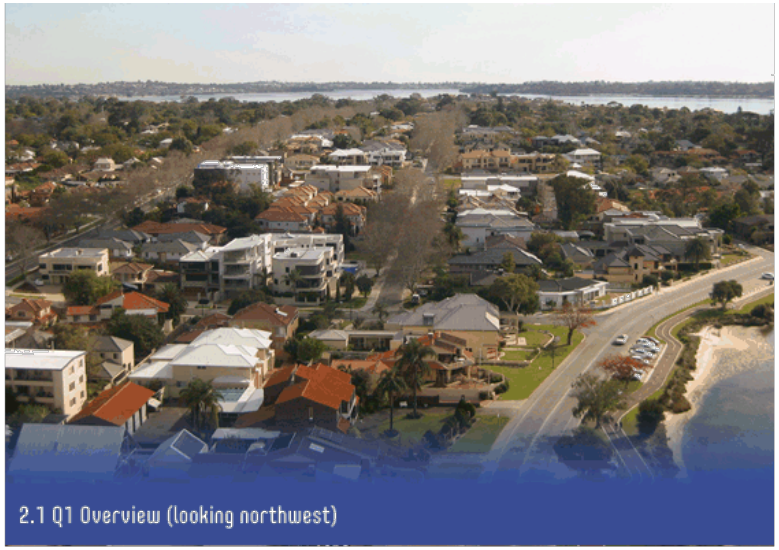
Significant elements of the built form are the heritage listed Raffles Hotel and the Tivoli Theatre, and it contains the only high-rise in the CBSP area; the Raffles apartment development. The residential streets are currently generous in scale, with a good coverage of mature plane trees which contribute to a leafy character.

The community identifies Q1 as a place of social gathering, where retail and commercial activity come together. This area is identified as generally being quite 'urban', with fewer open spaces. For these reasons, maintaining the treed nature of the streets, and encouraging good quality hard landscaped gathering spaces will be very important.

Building upon the existing commercial maturity of the Quarter, and the demand for redevelopment here, Q1 will likely lead the built revitalisation of the CBSP area.

The Place Vision (defining characteristics | activity | urban form)

Q1 will be the premier retail area within the CBSP area. Comprising the largest retail offering, office space, organised entertainment activities such as theatre, cinema and restaurants, and providing public spaces which are actively planned for events such as markets and sporting and movie screenings, as well as the majority of Civic uses in the Western Quarters, Q1 will be the driving force behind employment opportunities in the CBSP area.



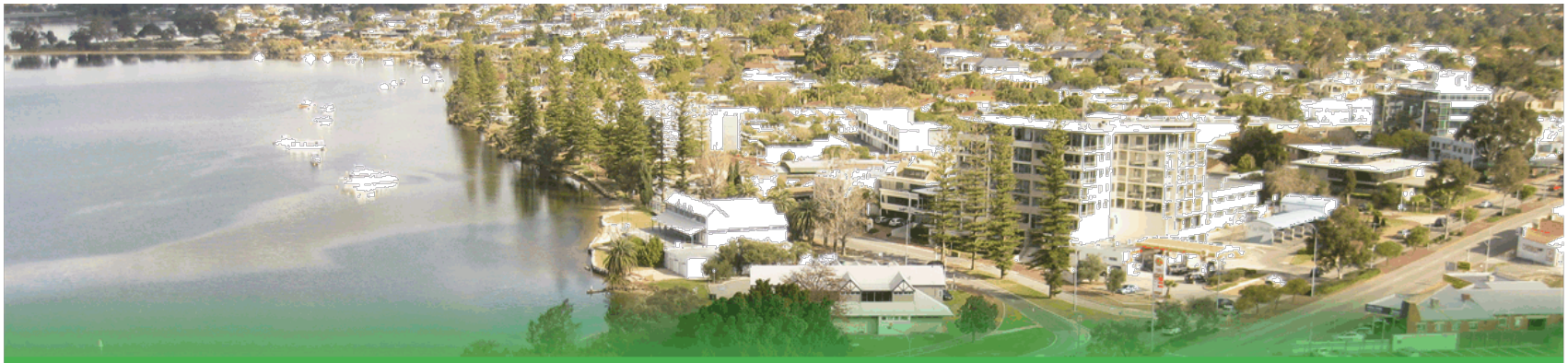
2.1 Q1 Overview (looking northwest)

Residential opportunities in the Mixed Use area will be in apartment style, whilst the surrounding urban area will comprise medium to high density housing. Streets will be well treed, and regardless of the type of road will be landscaped to result in intimate, 'human' spaces which belie the taller buildings nearby.

"Q1 will be the premier retail area and the driving force behind employment opportunities in the CBSP area."

Serviced for active recreation by the riverfront, the community of this Quarter will seek out opportunities for open space in the nearby Q2 and to the Northwest at Heathcote.

The eastern end of Kintail Road and part of Moreau Mews will form the linking pathway which connects Q1 and Q2 through to the Q6. Built form along this spine will be particularly focused on the pedestrian experience with active frontages, sheltered awnings over paths and colonnades and multiple opportunities for rest and respite. Extension of this comfortable pedestrian journey will be expected through to Q6.



2.2 Overview of Q2 (looking south-west)

2.3.2 Q2 - The Ogilvie Quarter

Q2 has a strip of remnant retail and commercial premises which bound the South side of Canning Highway, with some well-known local restaurants located at the eastern edge. Q2 is characterised by a number of office developments extending south along Kishorn and Ogilvie Road.

Overall, the built form is similar to nearby Q1, with a mix of low rise residential developments which have been historically developed, gradually being superseded with increased density by newer, multi storey, multi occupancy residential and commercial developments.

"Q2 will be the 'business' Quarter, of the CBSP area and playground of the Western Quarters."

The scale of the residential streets is generous in nature, but does not have as many well established mature street trees as those of Q1. The street trees themselves are peppermint trees, but large areas of trees have been lost to development, and do not provide a continuous avenue treatment throughout.

Much of the social infrastructure for Q2 can be found on the foreshore, namely the Canning Bridge Senior Citizens Club and the Swan River Rowing Club. The foreshore lineal park is well utilised, and provides a valuable link for cyclists and recreational users, and connects with the Q1 and Q6 foreshore via a pedestrian underpass/pathways beneath and along Canning River Bridge.

Proximity to the river and larger areas of open space are recognised as key attractors, whilst safe access to the northern Q1 Quarter is identified as a key challenge.

The Place Vision (defining characteristics | activity | urban form)

Q2 will continue to attract strong growth in office and residential development out to Helm Street in the South. As the 'business' Quarter of the CBSP area, Q2s excellent connectivity to the Perth CBD and Curtin University, as well as Fremantle to the West, will attract businesses seeking to take advantage of the natural amenity of the Quarter and the surrounding residential population for their workforce.

Excellent internet capability through fibre-to-the-premises broadband will support both large scale and smaller offices, as well as working from home for start-up businesses. Small cafes and restaurants will be located here to service the office workforce during the day and the residential community in the evenings.

Innovative, sensitive and well-designed riverfront areas will characterise this as the playground of the Western Quarters, and more active uses will be encouraged at the Rowing Club and along the foreshore.

2.3 Overview of Q3 including Como Beach, Como (looking east)

Streetscapes will be improved to establish a consistency of trees and street furniture, whilst Q2 will generally be characterised by more open streetscapes. However, the spine of Kishorn Road will be developed to contribute to the pedestrian experience as the extension to the pedestrian journey through Q1. Access through to the river from the mid-point of Kishorn Road via a future laneway will create a more direct connection back to the river for the users of Q2, and developers between Kishorn and Ogilvie Roads will be encouraged to extend this laneway opportunity.

The long term reconstruction of the Canning River Bridge will also enable additional connectivity to the north via an improved active underpass to Canning Highway.

2.3.3 Q3 - The Cassey Quarter

Q3 is located on the East of the Canning River and North of Canning Highway. It is directly adjacent to the North South alignment of the Kwinana Freeway and is separated from the Swan River by the Freeway. A pedestrian overpass over the Freeway connects the northern part of Q3 back to the foreshore near Cale Street, directly linking to the Scout Water Activity Centre (former Como Sea Scout Hall).

This area was historically connected to the Rivers edge, and the local residents share a strong affinity for reconnection with the waterfront in this area.

Q3 is predominantly residential, with small commercial development located at the junction of Henley St and Canning Highway with neighbourhood scale shopping. Generally low rise, housing stock is indicative of grouped housing styles of the 80's and 90's and the area comprises a significantly higher proportion of semi-detached and apartment style housing than the state average (49% compared to WA Average of 11%).

An exceptional existing asset in Q3 is Olives Reserve, which provides a links to recreational and commuter pedestrian and cycle networks located on the foreshore and has excellent views to the River. Adjacent housing has naturally oriented towards these views and the natural landform affords a large number of lots leading back to Canning Highway with the same access.

"Q3 will be the centre of riverfront activity for the Eastern Quarters. Excellent visual connections will also encourage high end apartment development."

2.4 Q4 Overview (looking south east)

The Place Vision (defining characteristics | activity | urban form)

Q3 will be the centre of riverfront activity for the Eastern Quarters. Access to the river will be via existing and future pedestrian overpasses and Q3 will be connected through Q6 to a vibrant waterfront playground. Excellent visual connections will also encourage high end apartment development.

Connection through to the Q6 from Q1 will be the triumph of the Quarter, with excellent links to sustainable transport options encouraging young, innovative, technology savvy professionals to live car free near their workplace and recreation destinations. Working from 'home' in shared office spaces will be encouraged here as broadband connectivity improves and technology based enterprises remove the need to be office based. Student housing will also continue to be in strong demand, so a variety of apartment options will be available.

Initial redevelopment will be slow, but long term redevelopment will embrace higher density living. The area nearest the train station will be a small but active space, with commercial opportunities servicing both daily commuters and the local community, including cafes', mini-markets and small office and retail uses. The high frequency public transport corridor through the CBSP area will deliver a central hub of activity, day and night.

2.3.4 Q4 - The Davilak Quarter

Q4, located south of Canning Highway and between Q3 and Q5, is a quiet and almost entirely residential area dominated by single and grouped dwelling developments. Commercial activity is notably absent, with a few commercial uses along Canning Highway at Henley Street and a mixed use development proposed on Manning Road at the corner of Ley Street. None of these activities service the immediate local community's shopping needs.

"Q4 will be a vibrant and rejuvenated area, with access to a main street of local shops and employment along Robert Street and Davilak Street. Actively programming the McDougall Park space will see regular neighbourhood barbecues, day and night markets and local arts events."

The land is elevated above the Canning River and has gentle undulations which afford many areas with reasonable access to views. The residential streets are quite open in nature, whilst the major arterial roads of Manning Road and Canning Highway act as significant barriers to Q3 and Q5 at all times of the day.

2.5 Q5 Overview (looking east)

The Q4 has the most extensive parkland area of the CBSP area in McDougall Park, and the streets immediately adjacent have a good aspect to this well utilised and quality public open space. Nearby housing has already been redeveloped in response to this.

The Place Vision (defining characteristics | activity | urban form)

Q4 will be a vibrant and rejuvenated area, with access to a main street of local shops and employment along Robert Street and Davilak Street. Development adjacent to the Freeway will make the best use of the river views whilst providing an excellent local community focus; a new urban piazza to link with the beautifully maintained McDougall Park. Actively programming the McDougall Park space will see regular neighbourhood barbecues, day and night markets and local arts events.

Robert Street and Davilak Street will be characterised by attractive mixed use buildings which provide activity and shelter for pedestrians at the ground level and housing opportunities above. Robert Street will be abuzz with local offices and retail spaces and a small mini market providing walkable daily grocery options for the local residents and commuters through the area.

Housing will cater to multiple users, with student housing and apartments dominating the area closest to the train station and three and four storey townhouses and apartments fringing the park. Access to the rail station and bus interchange will be via improved pedestrian overpasses, and local entertainment and recreation opportunities are just a short distance away in Q1, Q3 or Q6.

2.3.5 Q5 - The Mt Henry Quarter

Q5 represents the smallest and most disconnected part of the CBSP area. Whilst it too is separated by major traffic arteries it is largely serviced by the Manning Hub on Welwyn Avenue to the east and has a vibrant local community which attracts its residents generally eastwards.

A stand-alone tavern development is located at the corner of Manning Road and Lockhart Street with almost half of the site currently vacant. A small commercial area is located near the Ley Street and Manning Road intersection. In conjunction with the planned Manning Hub, this commercial development provides a local shopping service for the community, without the need to traverse busy Manning Road.

There is an excellent linkage to the river foreshore to the south at Gentilli Way, but otherwise the Quarter is very disconnected from Q6 and the broader centre by extensive transport infrastructure. The planned Manning Road Southbound on-ramp will add visually to this disconnection.

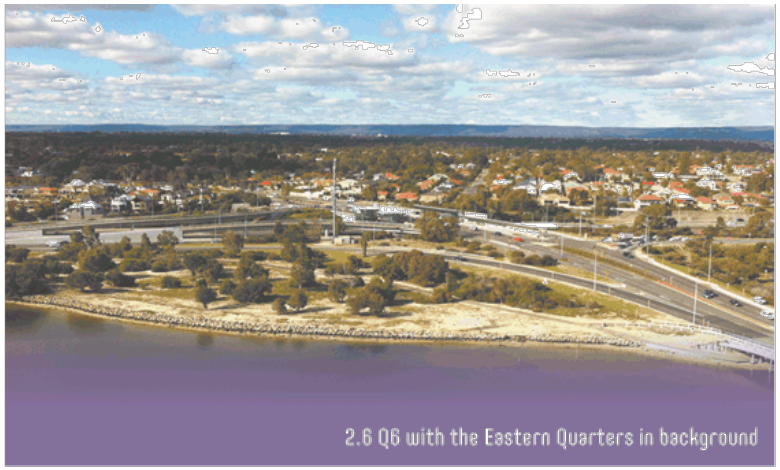
The Place Vision (defining characteristics | activity | urban form)

Q5 will be characterised by quiet residential streets. A relatively low density area, dominated by grouped townhouse and medium density apartments, Q5 will identify more closely with its southern neighbours in both character and style. Higher density development will focus along the heavily trafficked Manning Road and nearer to public transport corridors.

> "Q5 will be characterised by quiet residential streets. A relatively low density area, dominated by grouped townhouse and medium density apartments, Higher density development will focus along the heavily trafficked Manning Road and nearer to public transport corridors. The redeveloped tavern site will provide for boutique local services and employment and will contribute to improved amenity along Manning Road."

Access to recreation and community activities at McDougall Park will be important, and traffic light phases at the Ley Street and Manning Road intersection will continue to provide accessibility. The Q5 community will enjoy access to both the Q4 main street area and the Manning Hub.

The redeveloped tavern site will provide for boutique local services and employment and will contribute to improved amenity along Manning Road. This development will be a landmark building, signifying the link to Curtin University and a point of access to the Freeway. The southbound Freeway on-ramp will enable greater access to the Southern Suburbs and employment opportunities at Murdoch, Cockburn and further afield.



2.6 Q6 with the Eastern Quarters in background

2.3.6 Q6 - The Station Quarter

The existing composition of Q6 is hard infrastructure, basic and unappealing security treatments, and unplanned open space which is little more than the remnants of the road and foreshore reserves from the development of the Kwinana Freeway and Canning Highway. The state of the public open space in this area is quite degraded, with no discernible quality to the vegetation or the foreshore treatments and a smattering of reasonably mature trees providing limited shade.

The network of pedestrian and cycle paths through this area cuts the site in two, and presents a barrier to the public open space usage of the area. The embankments which form part of Canning Highway present considerable visual blockages to the amenity value of the area. The use of a pedestrian underpass, which acts as the main access point to the existing bus and train station, presents a public safety issue with poor lighting and being quite isolated. An illegal and dangerous pedestrian route has been utilised crossing Canning Highway from the northbound on-ramp abutment, which pedestrians find preferable to walking the circuitous route to the station.

2.7 Low quality Public Open Foreshore at Q6

The Place Vision (defining characteristics | activity | urban form)

The Canning Bridge Station Interchange will be a thriving hub of activity, exhibiting characteristics of busy transport interchanges around the world; travel and ticketing information, options for refreshments, access to basic banking, storage facilities, shade and shelter, seating and opportunities for resting. Some of these will be available within the station itself on platforms and in the entrances, whilst others will be provided within a carefully landscaped and managed foreshore/station interface area comprising shops and cafes leading to a (long term) ferry terminus on the river.

The elevated nature of the proposed bus station will afford magnificent views of the river, and a carefully designed series of retained terraces will lead downwards to the river's edge. Long term planning for the area could include some more significant civic or entertainment uses, and perhaps even some car-free residential development.

"Q6 includes the Canning Bridge Station Interchange which will be a thriving hub of activity, exhibiting characteristics of busy transport interchanges around the world; travel and ticketing information, options for refreshments, access to basic banking, storage facilities, shade and shelter, seating and opportunities for resting."

3 Centre Context

3.1 Regional Context

The Perth Metropolitan Region has been growing consistently over the last 30 years, and currently has a population of 1.7 million people (Census 2011). Growth forecasts for the region anticipate that population will increase to 2.2 million in 2026, and 3.5 million in 2050.

The Perth Metropolitan Region is therefore planning for an additional 500,000 people in the next 12 years, and 1.8 million in the next 35 years. Planning for these extra residents, along with the housing, infrastructure, services and jobs they will require presents a significant challenge to Government.

In response to anticipated growth, the State Government has released Directions 2031, which seeks to address population growth scenarios and land use patterns for the medium to long term increase of more than half a million people in Perth and Peel by 2031, as well as being prepared to provide for a city of 3.5 million people after 2050. Directions 2031 presents a preferred growth scenario that achieves a balance between greenfield and infill development.

Canning Bridge is a District Centre in the *Directions 2031 and Beyond* (Directions 2031) Activity Centre Hierarchy. Notable centres in proximity apart from the Perth Capital City Centre are the Secondary Centre of Booragoon and the Specialised Centres of Bentley-Curtin and Murdoch (see Figure 6 and Figure 7).

The CBSP area is located in the central sub region of the Perth Metropolitan area. It is located 7km from the Perth CBD and is easily accessible from all directions, being located on major transport networks heading both north-south and east-west.

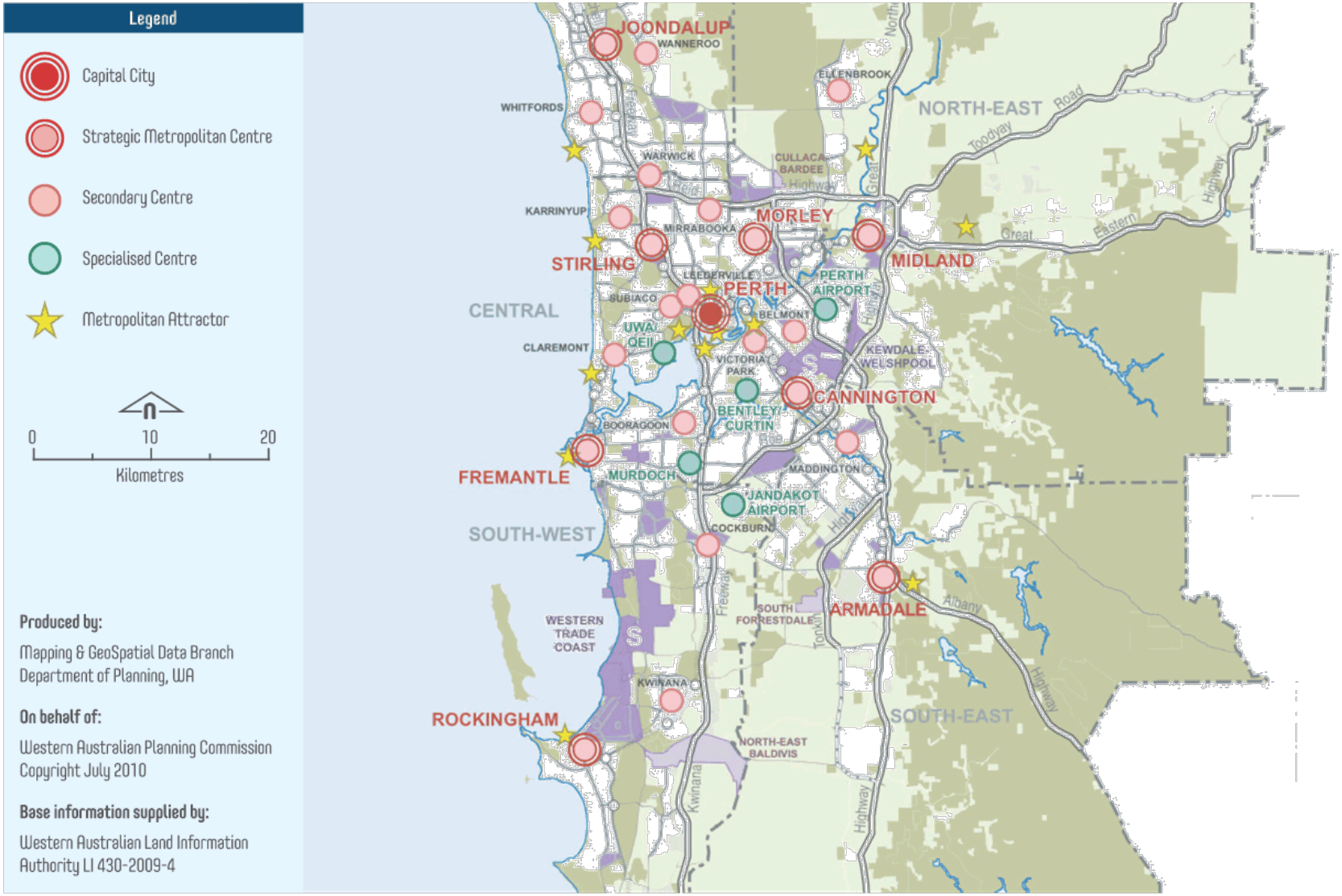


Figure 6 Directions 2031 Metropolitan Context

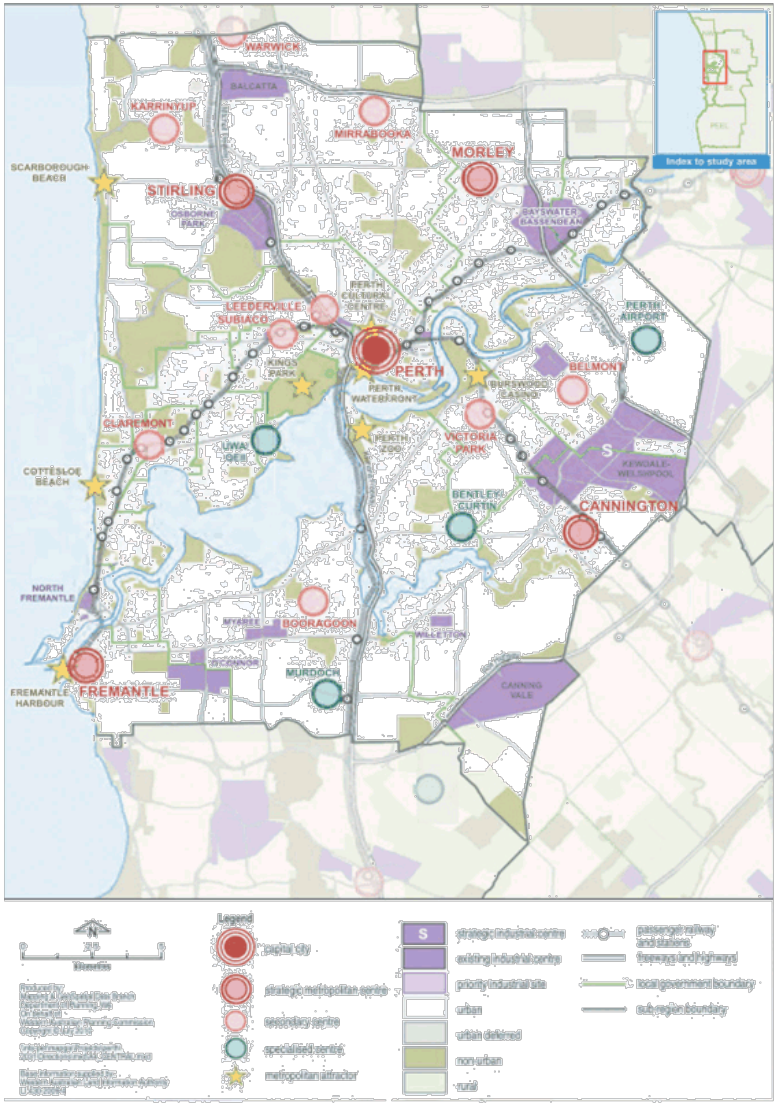


Figure 7 Directions 2031 Regional Context

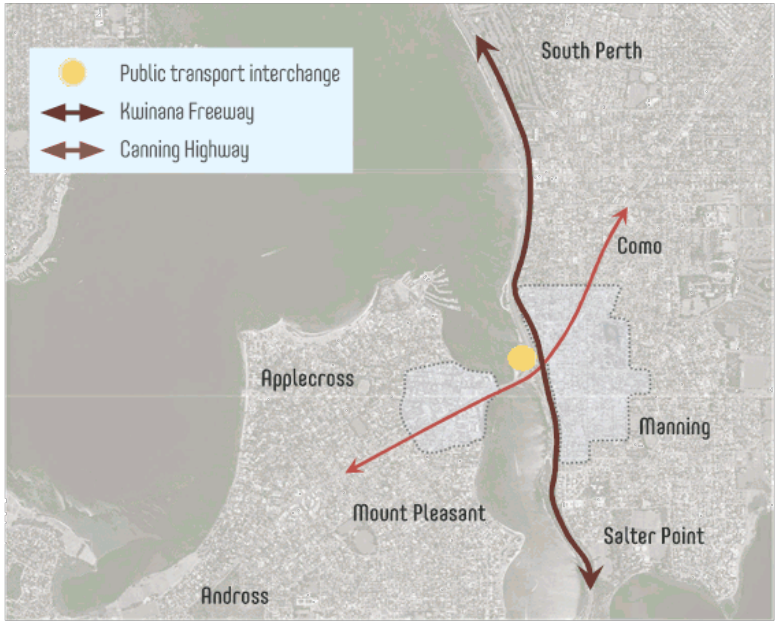


Figure 8 Local Context

As a District Centre, the CBSP area serves the daily and weekly shopping and community needs of its local population; however, its retail function is more akin to the lower order' Neighbourhood Centre'. Despite this, its future service population will be the same as a District Centre (between 20,000-50,000 persons), as the Centre population will ultimately reach around 24,000 persons and the surrounding population will contribute additional demand.

Conversely, its commercial and office space function is similar to the *higher* order 'Secondary Centre'. In the future, this will be encouraged and enhanced by a desirable land use mix which is heavily weighted towards office functions. The factors which make the centre naturally attractive to office functions now (proximity to the CBD, workforce, public transport and physical and social amenity) will be amplified through development of the CBSP and expansion of its resident workforce population.

Figure 9 Social Infrastructure

Despite its unusual land use mix, it is not expected that the development of the centre will significantly impact on the important roles that nearby centres have in the regional context. Its limited retail function does not and will not serve to undermine the retail activities at Booragoon (Garden City), and its professional office/business activities will not compete with the specialised business agglomerations at Bentley-Curtin (knowledge and education) or Murdoch (knowledge, education and health).

Its increased resident and workforce population will be adequately serviced by its functions and it is unlikely that the activity will affect the existing nearby District and Neighbourhood Centres such as the Riseley Centre, Ardross Street, the Manning Hub and Karawara.

The centre is extremely well serviced by public transport. The Canning Bridge Station Interchange (Figure 8) services one of the highest frequency public transport networks in the Perth Metropolitan Region, with movements every five minutes during the peak. This, combined with excellent access to private vehicle networks, makes the CBSP area an extremely well connected centre.

Opportunities to enhance Q6 by providing better accessibility, end of trip facilities, local shopping opportunities and a future ferry link through to the University of Western Australia result in the CBSP area being capable of significant population growth without excessive need for increased car ownership or car use.

The centre is also reasonably well serviced by social infrastructure (Figure 9), including library facilities, senior citizens facilities, and recreation clubs and large areas of open space, albeit generally associated with the River foreshore.

Education facilities are located just outside the centre in both local government areas, although it is very likely that greater capacity will be required for the future population of the area. Feedback from the community suggests there is a lack of variety in the entertainment options within the CBSP area and that passive and active recreation space is lacking in Q1 and Q2. Access to water based recreation is excellent and the area has widespread mature tree growth which aids in creating a general feeling of lushness at ground level. Maintenance and retention of mature trees during the ongoing development of the CBSP area will be paramount to maintaining the sense of leafiness, and will also aid in reduction of the heat island effect.

3.2 Local Context

As indicated in chapter 2.1, the study area has been divided into six Quarters. An analysis of the existing demographics and urban form of each of these Quarters have been considered independently, however, demographics and urban form can be tied together to present a snapshot of the existing urban framework and the current profile of existing residents for each of the areas.

The demographics represent a snapshot at 2011, and as such, present a critical analysis of the existing residents for the area. Overall, the demographics suggest an affluent, multi-cultural community which has succeeded itself over the generations of development, with early residents from the 1960 and 1970s now existing alongside successive generations of younger residents with families and single person households. Housing types in each of the Quarters broadly represent the age of the suburb; with the older suburban development comes a lower density housing preference, and in the Quarters with newer development more diversity of housing types, built form and services can be found.

The centre currently comprises some 1,898 dwellings and a population of approximately 3800 persons, with an occupancy ratio of 2 persons per dwelling, lower than the metropolitan average of 2.3.

The Q1 community is multi-cultural, educated, affluent, and enjoys housing diversity. Current housing styles in Q1 represent remnant 1960s bungalows and newer, higher density, multiple occupancy housing types. The Q2 community is multicultural, educated, affluent, and enjoys living in separate houses, with fewer

children. The Q3, Q4 and Q5 demographic profile shows affluent suburbs that are also strongly influenced by Curtin University, with significant student residency.

The existing statutory framework would facilitate growth to support approximately 4,700 dwellings and a population of up to 10,000 people. However, without more detailed structure planning through the CBSP, it would be difficult to accommodate such growth in a way that respects the aspirations of the current community, ensures adequate and coordinated infrastructure upgrades, and recognises and designs for increased traffic and other movements.

3.3 Planning Framework

A summary of the planning framework which underpins the CBSP has been undertaken during the early phase of its development. The principal piece of policy which guides the development of the CBSP is *State Planning Policy 4.2: Activity Centres for Perth and Peel*. The SPP provides both the framework and the guidelines for development and endorsement of activity centre structure plans.

Importantly, the CBSP will provide the basis for amendments to the City of Melville and City of South Perth local planning schemes. The CBSP will identify land use and provide development guidelines to guide height, density and provision of social and service infrastructure.

The SPP is supported by a number of other policies and guidelines which are relevant to the study area, including the following:

State Planning Policy (SPP) 2 – Environment and Natural Resources	SPP 2.6 State Coastal Planning Policy
SPP 2.9 Water Resources	SPP 2.10 Swan and Canning River Systems
SPP 3 Urban Growth and Settlement	SPP 3.1 Residential Design Codes
SPP 3.4 Natural Hazards and Disasters	SPP 3.6 Development Contributions for Infrastructure
SPP 5.2 Telecommunications Infrastructure	Public Transport Plan for Perth 2031
Directions 2031 and Beyond: Metropolitan Planning Beyond the Horizon	Draft Central Metropolitan Perth Sub-Regional Strategy
Development Control Policy 1.6 – Planning to Support Transit Use and Transit Oriented Development	Designing Out Crime Guidelines
City of Melville Community Planning Scheme No. 5	City of Melville Draft Local Planning Strategy
City of Melville Local Commercial Strategy Plan	City of Melville Strategic Community Plan 2012
City of South Perth Town Planning Scheme No. 6	City of South Perth Local Commercial Strategy 2004
City of South Perth Sustainability Strategy 2012-2015	City of South Perth Draft Integrated Transport Plan
City of South Perth Strategic Plan 2010-2015	City of South Perth Strategic Community Plan 2013-2023

4 Movement

An Integrated Transport Strategy has been prepared for the CBSP and can be found as an Appendix to this Structure Plan. This Chapter of the CBSP provides a high level summary of the key issues and recommendations for transport in the CBSP area.

4.1 Regional Movement Perspectives

4.1.1 Transport implications of Perth Metropolitan Growth

The regional transport implications of Perth's forecast growth are substantial, potentially generating up to 2.5 million additional daily car trips to 2031 and over eight million car trips to 2050 on regional roads if significant interventions and changes in urban form and behaviour are not achieved. Regional transport networks – both road and passenger rail - cannot accommodate continued business as usual growth which focusses on outer suburban development with employment focussed in the Perth CBD, requiring over a million people travelling into the City for work each day.

The development of transit oriented developments and activity centres across the Perth Metropolitan Region is essential to enable efficient transport in the future. Benefits to transport and efficient movement include:

- Density in close proximity to public transport assets creates higher demand for public transport that makes investment in improved services cost effective for government;
- Mixed use, including residential and employment development, in an area of amenity provides for employment self-sufficiency, and potential for employment self-containment, reducing the need for people to travel on road or public transport for work;
- Provision of employment in nodes around the Perth Metropolitan Region intersects the number of trips to the Perth CBD, relieving pressure on regional infrastructure in the inner suburbs;
- Provision of density closer to the City with good access to public transport reduces the number of people living in the suburbs with limited public transport, and therefore reduces the number of vehicles on the regional network from the suburbs to the CBD.

4.1.2 Regional Movements and the Canning Bridge Structure plan Area

The CBSP area is strategically located to benefit from the existing good road and rail connections. Intensification of development in this area will not be without challenges, but there is an opportunity to create an area that takes advantage of the local circumstances to build a local economy with high levels of self-sufficiency.

The CBSP area's location in relation to significant regional transport facilities brings several opportunities and challenges. Transport infrastructure within the study area currently serves two separate functions:

1. Regional road transport – connecting Fremantle and Perth's southern suburbs to the Perth CBD via Canning Highway and Kwinana Freeway;

2. Strategic public transport interchange – with the Canning Bridge Rail Interchange and nine bus services crossing the river.

Figure 10 shows current indicative regional demands within the CBSP area, based on the Main Roads Regional Operations Model (ROM) and information provided by the Public Transport Authority.

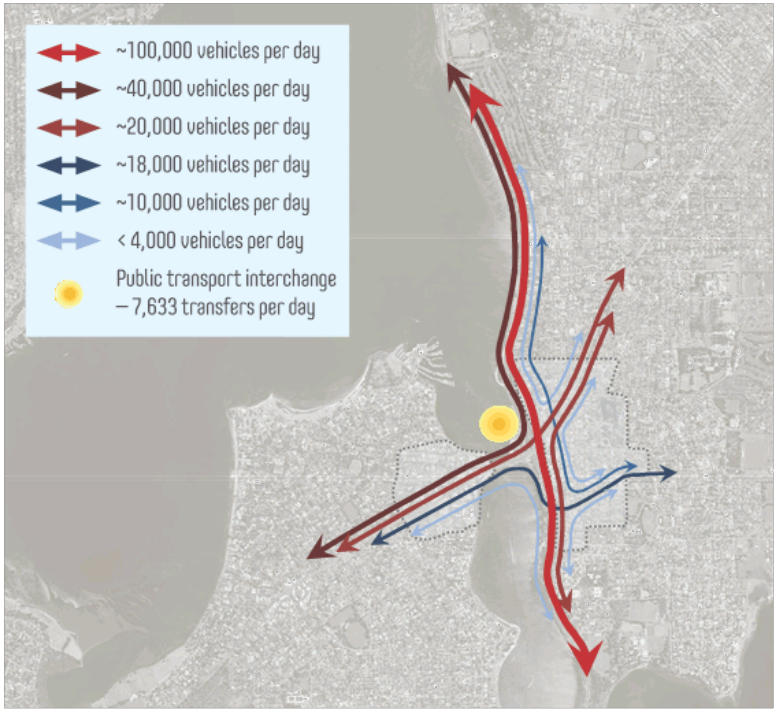


Figure 10 Broad current regional transport flows

Growth forecasts for the Perth Metropolitan Region will place significantly higher demand on regional transport networks, including regional infrastructure within the CBSP area. These increases are a result of broader metropolitan growth, as well as growth associated with current zoning within the CBSP area, which already allows for significant infill development. This regional growth is anticipated irrespective of implementation of the CBSP. Indicative 2031 traffic flows, based on the Main Roads ROM are shown in Figure 11.

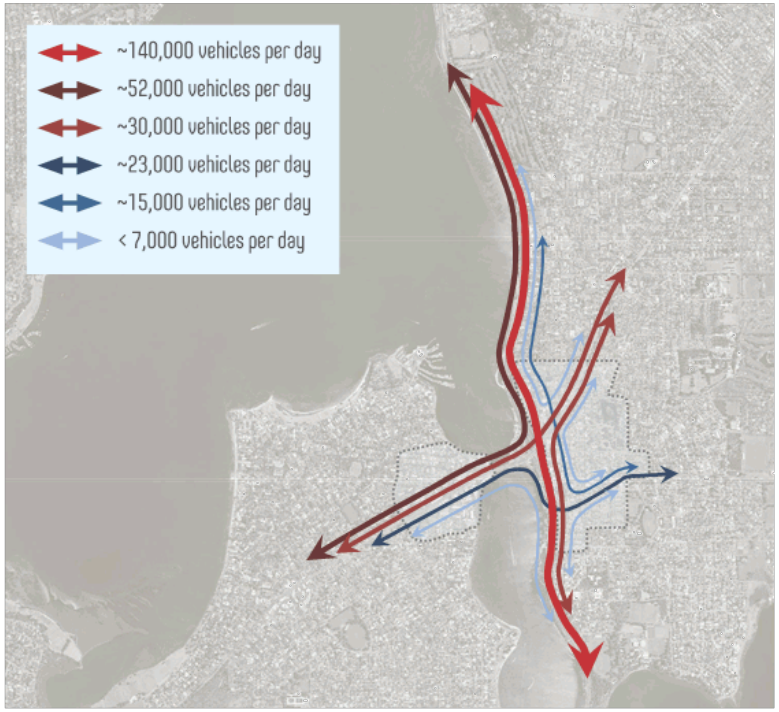


Figure 11 Indicative 2031 regional transport flows within the Canning Bridge Structure Plan area 2031

Regional traffic modelling indicates that the CBSP area may experience an increase in regional flows in the order of 36 percent to 2031, irrespective of the implementation of the CBSP as the current zoning of the area facilitates similar levels of growth to 2031. This assumes there are no major interventions to increase capacity in the regional network.

The location of the CBSP area in relation to the existing rail station, bus services, as well as potential light rail and ferry services creates potential for development of a transit oriented development (TOD). Planning for TOD will enable the study

area to move away from only relying on the regional road network for transport purposes, and reduce regional traffic movements by intersecting and displacing vehicle demand generated from urban expansion in the outer suburbs and employment concentration in the Perth CBD, and by increasing access to public transport and active movements.

With the implementation of the CBSP and achieving mode share targets provided in the Integrated Transport Strategy, growth within the CBSP area will broadly represent only 12 percent of 2031 indicative regional volumes. Delivery of the CBSP provides for potential savings on the regional road network, enabling investment in various interventions to change the way in which people will move through and within the area.

4.2 Local Movement Perspectives

The CBSP focuses on a range of techniques, technologies, and planning interventions to match demand to capacity across various modes in order to support the CBSP objectives. These interventions include:

- Demand management, which involves taking active measures to reduce the number of trips generated each day, or in other words, reducing the need for people to travel.
- Mode shift, which describes the phenomenon by which people change their main method of travel from one mode to another (e.g. car to walking, cycling or public transport)
- Peak spreading, which is the redistribution of trips during the peak period to other times of the day. This improves the utilisation of the road by reducing the maximum level of demand on the road network, thereby resulting in less congestion.
- Improved network operations, which involve finding and implementing measures designed to make better use of the existing road and public transport infrastructure, thereby increasing its overall capacity.

The CBSP takes a holistic approach to movement, providing a focus on directions of movement and hierarchies across all forms (car, bus, bike, pedestrian etc), rather than individual consideration of the infrastructure requirements of various modes. Ensuring infrastructure within the CBSP area responds to the needs of all transport modes – with particular focus on active and public transport – will assist the achievement of target mode splits shown in Table 1.

Table 1 Target mode splits for Canning Bridge Structure Plan Area

Mode	Current zoning (BAU)	CBSP to 2031	CBSP to 2050
Car Driver/Car Passenger	63.7%	50%	35%
Train, light rail, BRT, Bus, Ferry	15.1%	20%	25%
Walking, cycling	3%	7%	12%
Telework (work from home)/ shop (internet retail) etc	16.3%	20%	25%
Taxi/motorbike	1.8%	3%	3%

4.2.1 Movement Hierarchy

The movement hierarchy provides the overall approach to transport planning in the CBSP area, along with recommended spatial corridors to support all movement modes, including active and public transport movements. The local movement hierarchy provides the spatial foundation for all other transport interventions and strategies.

The local movement hierarchy facilitates local movements within and outside of the CBSP area in two ways:

- using strategic public transport and cycling infrastructure to link the CBSP area to its surrounding region; and
- promoting pedestrian and cycle movements and local public transport to link Quarters within the CBSP area to each other and to strategic public transport infrastructure.

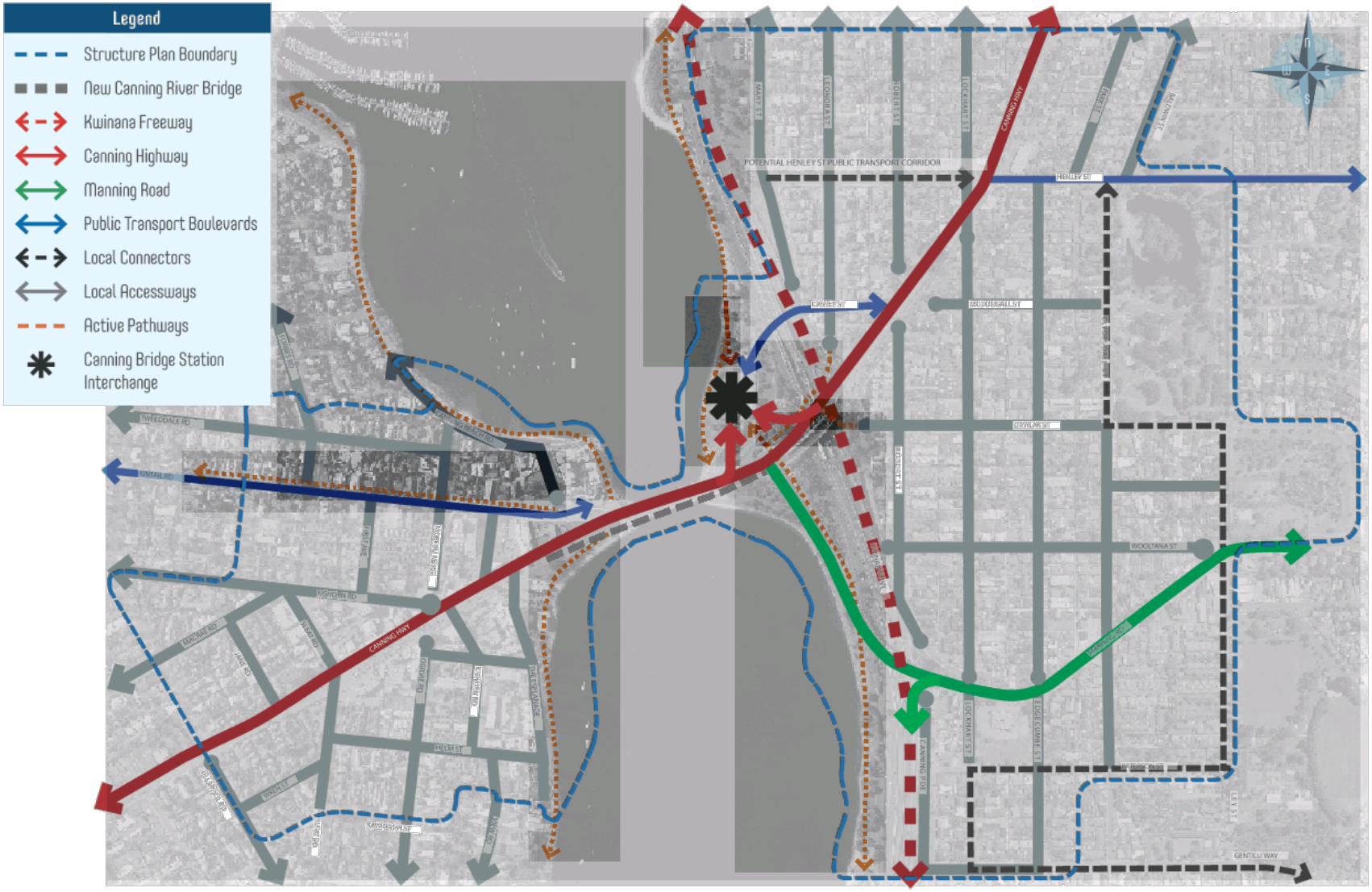


Figure 12 Canning Bridge Structure Plan Area Movement Network Plan

This Movement Hierarchy is shown in Figure 12. The local road hierarchy shows the Canning Bridge Station Interchange and Canning Highway as the focus for movement. These strategic public transport assets are connected into the CBSP Quarters through "public transport boulevards" and "local connectors". "Local access ways" prioritise pedestrian and cycle movements to enable residents and workers within the CBSP to easily access local services, employment and link into public transport. The detail of this movement hierarchy is shown through typical midblock cross sections at each of the movement corridor types.

The Movement Hierarchy is made up of a number of concepts and cross sections as follows:

Canning Bridge Station Interchange

The centre of the Movement Network Plan, Q6, will comprise the Canning Bridge Station Interchange. Figure 13 is an indicative sketch of how the new bus station may link into the adjacent foreshore area.

Figure 13 Indicative sketch – Canning Bridge Station Interchange

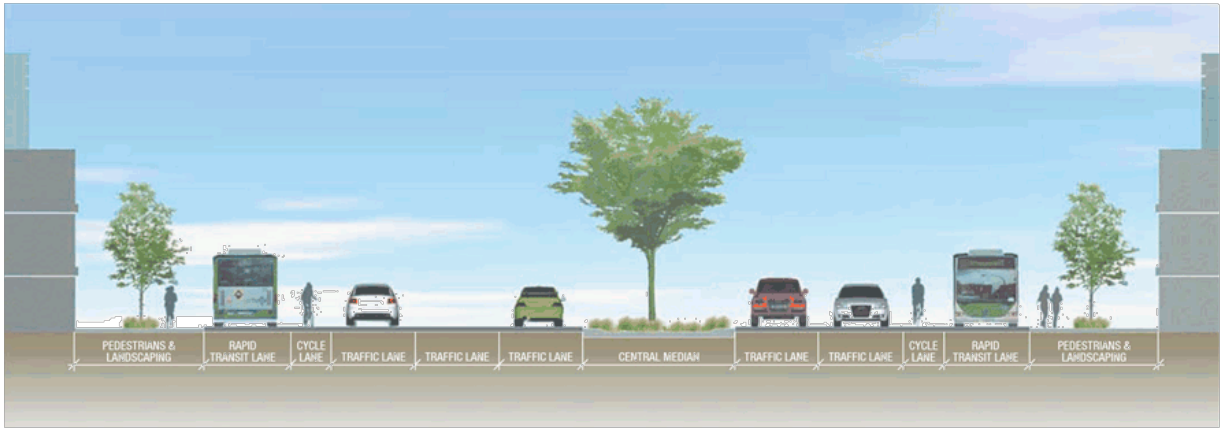


Figure 14 Indicative cross section – Canning Highway

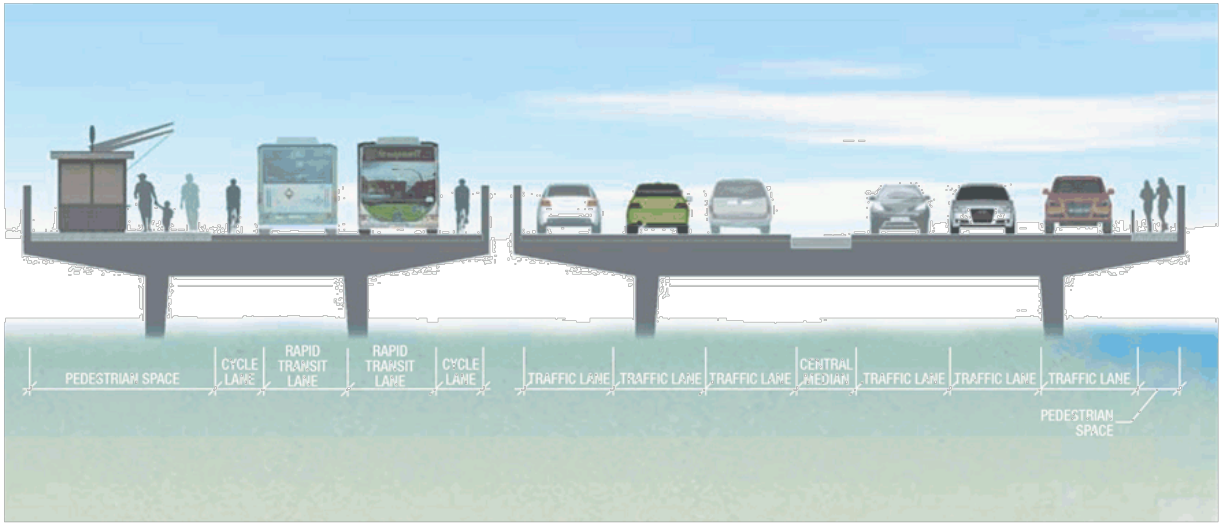


Figure 15 Indicative cross section – Canning River Bridge

Canning Highway

Canning Highway becomes a linear focus for regional public transport with the introduction of dedicated lanes for priority public transport (rapid transit) along with enhanced pedestrian and cycle connections. Figure 14 illustrates a typical mid-block cross section of Canning Highway in the Western Quarters (a typical cross section of Canning Highway through the Eastern Quarters is two lanes plus bus lanes in each direction).

Canning River Bridge

A new traffic bridge will eventually carry regional traffic, whilst one of the old heritage bridges will be retained as a place exclusively for public transport, cyclists, and people. The large space for pedestrians will create opportunities for markets, stalls, and shelter from weather to better link Q1 and Q2 to the station. Figure 15 shows an indicative cross section.

Manning Road

Future road upgrades to Manning Road will provide enhanced pedestrian and cycle connections as shown in Figure 16.

Figure 16 Indicative cross section – Manning Road

Public Transport Boulevardes

Linking residents – public transport boulevards will place priority on public transport, with opportunity to bring rapid transit services and light rail into the Quarters as per Figure 17.

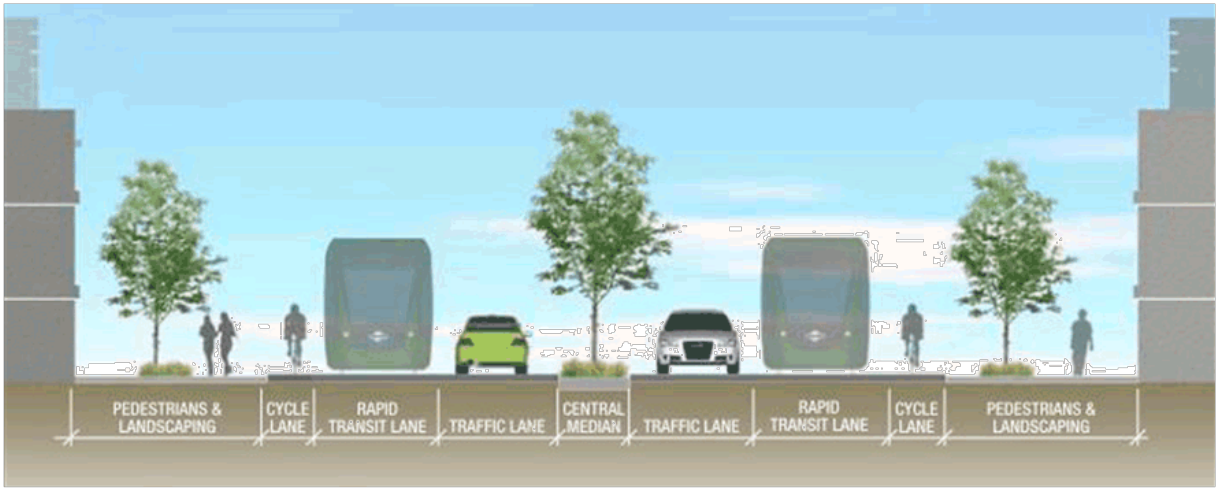


Figure 17 Indicative cross section – Public Transport Boulevards

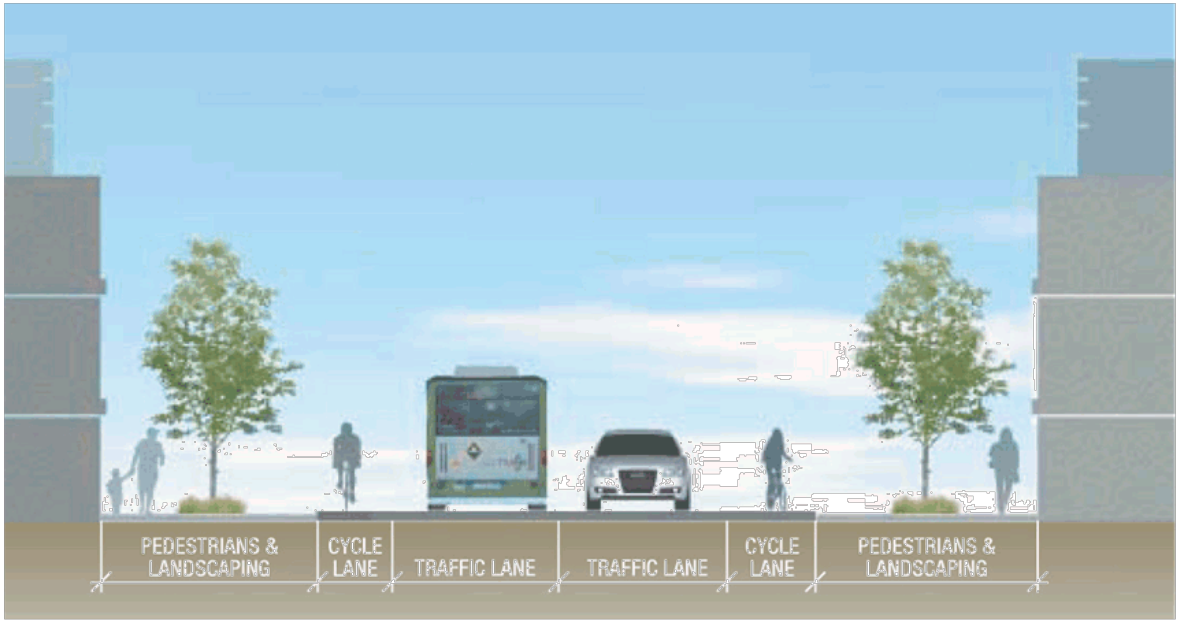
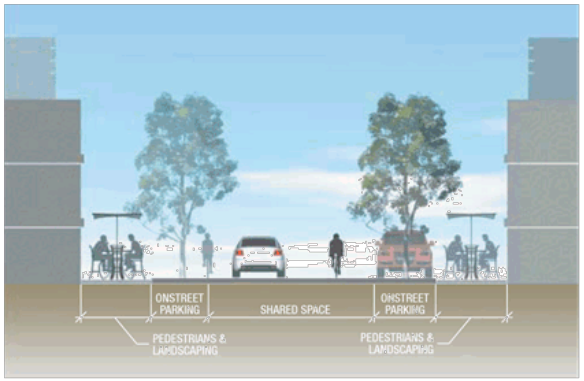


Figure 18 Indicative cross section – Local Connectors



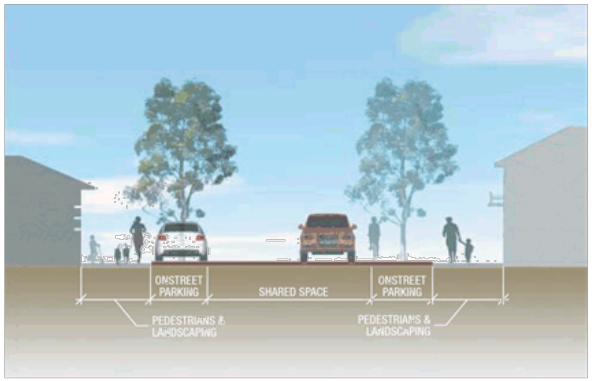


Figure 19 Indicative cross section – Local Access ways

Local Connectors

Local connectors will link local development areas to public transport boulevards, and facilitate pedestrian and cycle movements in the context of vehicle congestion. These links will also provide public transport and private vehicle access into the residential and commercial areas. These roads will provide dedicated cycle and pedestrian areas to encourage active transport into and out of the area.

Local Access ways

Shared spaces allow for public transport and local vehicle access whilst encouraging pedestrian and cyclist safety and comfort. Internal detailed road design will encourage public transport, cyclists and pedestrians rather than private vehicle movements.

The design of local access ways will be different in retail areas and residential streets, with activity and vibrancy on the street encouraged to support urban design strategies. Figure 19 illustrates the indicative cross sections.

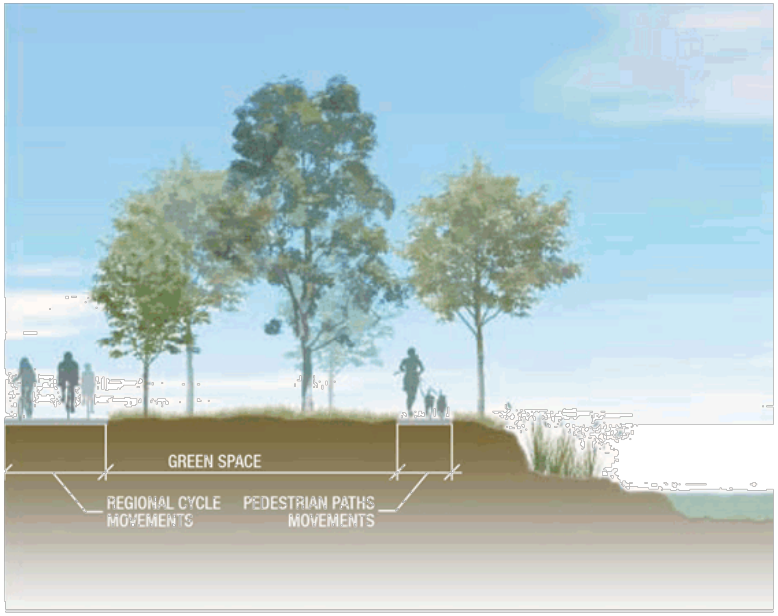
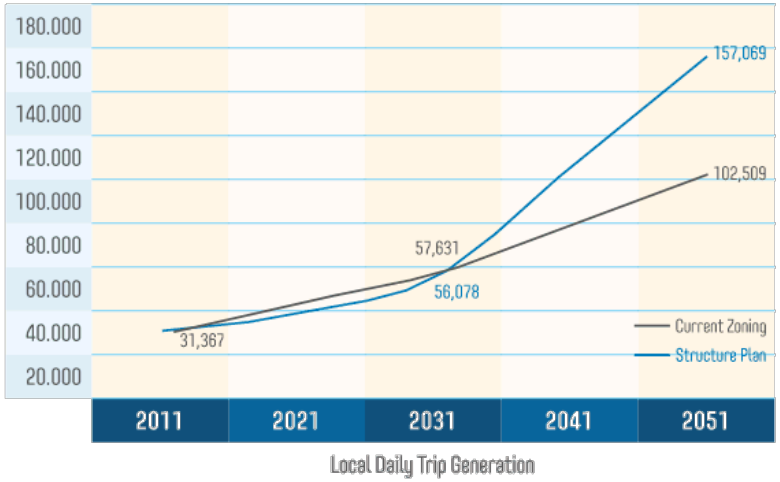


Figure 20 Indicative cross section – Active Pathways

Active Pathways

Active pathways provide exclusive links for pedestrians and cyclists. Regional cycle movements, particularly linking into the Perth Bicycle Network and commuter pathways, will be separated from pedestrian paths to provide greater safety as shown in Figure 20.



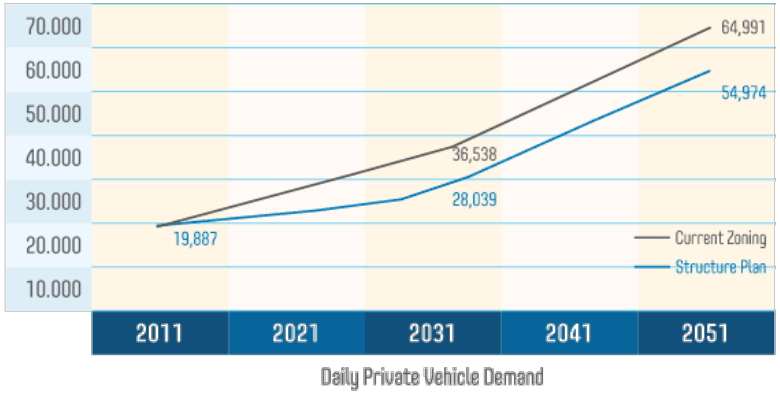


Figure 21 Trip generation and private vehicle demand – current zoning potential vs implementation of Canning Bridge Structure Plan

4.3 Transport Demand

Local transport demand (trips per day) in the CBSP area is shown in Figure 21. This compares anticipated demand with implementation of the CBSP with increased demand that will occur through current zoning and natural redevelopment.

In the medium term, total transport demand in the CBSP area to 2031 increases to a similar scale irrespective of implementation of the CBSP. However by achieving greater mode share as shown in Table 1 the implementation of the CBSP can actually decrease the demand for private vehicles.

To achieve these modes share targets, a number of strategies have been identified, as follows:

4.3.1 Providing greater accessibility to strategic public transport

With the increased number of trips that will be generated from the CBSP area, a mode shift from private cars to public transport will be critical to ensure the continued accessibility, liveability and productivity of the precinct. An aspirational target of 20% of all trips in the precinct being made using public transport by 2031 is proposed in order to achieve this. This section provides a summary of recommendations to achieve this target.

It should be noted that any specific recommendations relating to public transport services are subject to review, approval and implementation by the Public Transport Authority (PTA).

Canning Bridge Station Interchange

- Improved Canning Bridge Station Interchange
- No park-and-ride
- Kiss-and-ride area

Enhanced Bus Infrastructure

- Priority bus lanes along Canning Highway
- Pedestrian Action Plan
- Medium term removal of buses from Canning River Bridge.
- Long term removal of buses from Kwinana Freeway/Canning Highway interchange.

Enhanced Accessibility

Enhancing Public Transport Accessibility Level (PTAL) by:

- Reduced walking distance to services
- Increased frequency of services
- Improved mode reliability and preference
- Improved versatility
- Introducing new and/or rerouting services
- Providing regional, local and special routes to Garden City/ Curtin University/Murdoch
- Increased bus frequencies

An initial baseline analysis of existing public transport services within the CBSP area is illustrated in Figure 22.

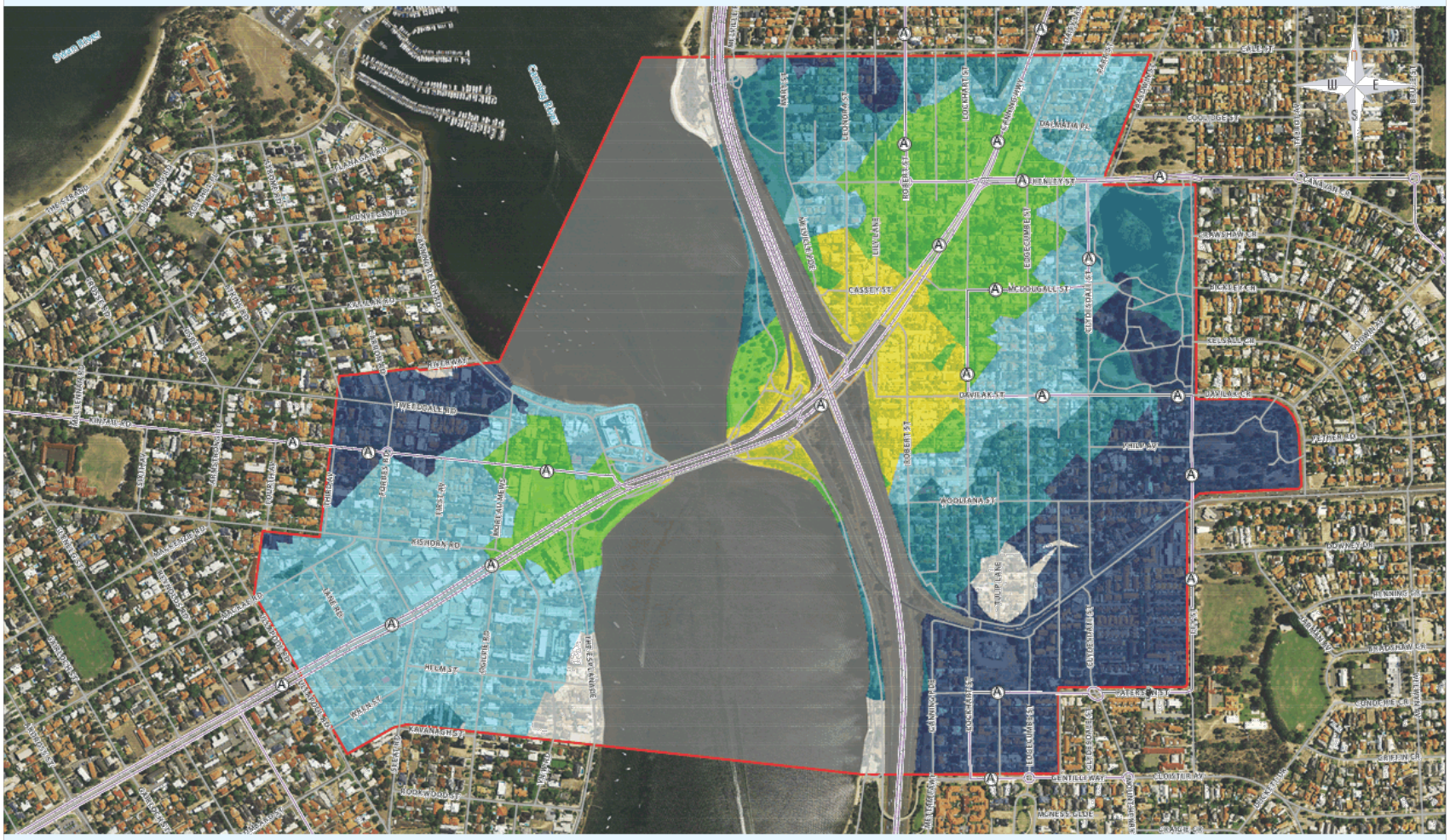


Figure 22
Current Public Transport Accessibility Level

4.3.2 Pedestrian and Cycle Movement

The integrated transport strategy for the CBSP area aims to develop a transport system that promotes accessibility, liveability and good health outcomes. To achieve this, every effort needs to be made to encourage persons to consider walking and cycling as a real alternative to the car for some or all of their daily trips. Thus, travel within the precinct should focus on the ease of travel by bicycle or on foot. Any trips that are shorter than three kilometres should be candidates for either cycling or walking.

Figure 23 shows the Pedestrian Network Plan, showing key desire lines and areas requiring enhanced access and crossings. Figure 24 illustrates the Cycle Network Plan.

Facilitation of pedestrian and cyclist movement is a fundamental strategy for the CBSP. A number of structural, land use, and other strategies to encourage walking and cycling as a mode of choice will include:

- Provide shared spaces
- Reduce road speeds in the central CBSP area
- Activate frontages
- Provide footpaths of appropriate widths and standard
- Improve the permeability of network and provide facilities to support active transport options
- Provide quality public spaces
- Lighting, day and night
- Mid-trip and end-of-trip facilities
- Shade and shelter

4.3.3 Parking management

The parking strategy incorporates the following sustainable parking principles:

- Focus on people access not vehicle access;
- Provide efficient and effective alternatives to car access;
- Parking policy and strategy must support sustainable transport;
- The appropriate amount of parking for a centre will be well below the unconstrained demand for parking; and
- The provision of parking requires a demand management, not a demand satisfaction approach.

Parking approaches within the CBSP area move away from the "predict and provide" approach to consider initiatives that focus on management and an "appropriate" supply of car parking.

4.3.4 Improved technology and changing practices

The following additional list of practices, developments and technologies are proposed to assist in managing and promoting efficient movement through the CBSP area;

- Improved network operations
- Promoting local employment and services
- Working/shopping from home
- Peak spreading
- Car sharing systems
- Effect of increasing road congestion, parking difficulties and fuel prices on mode choice
- Effect of demand management, road pricing to reduce congestion.

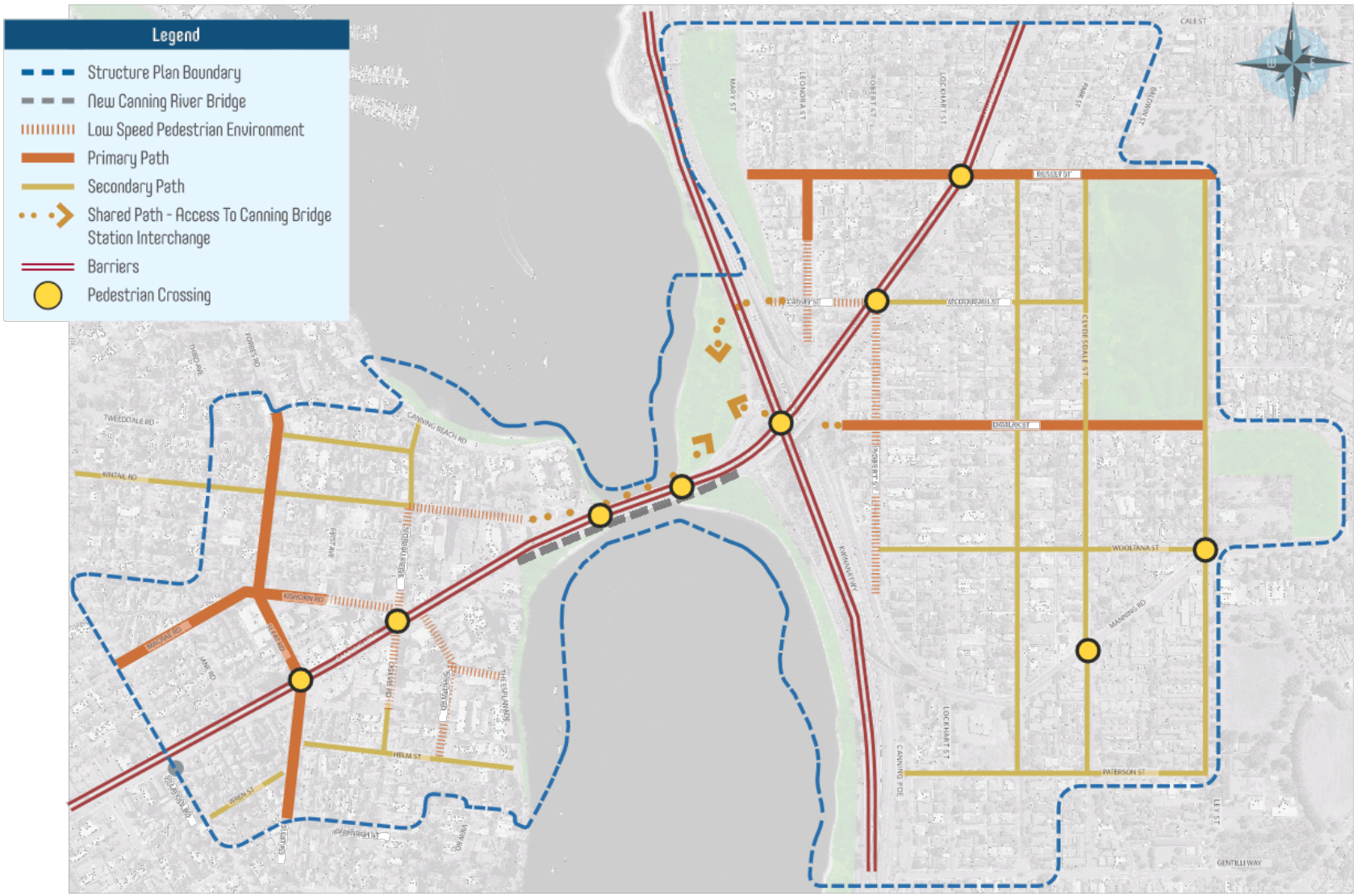


Figure 23 Pedestrian Network Plan

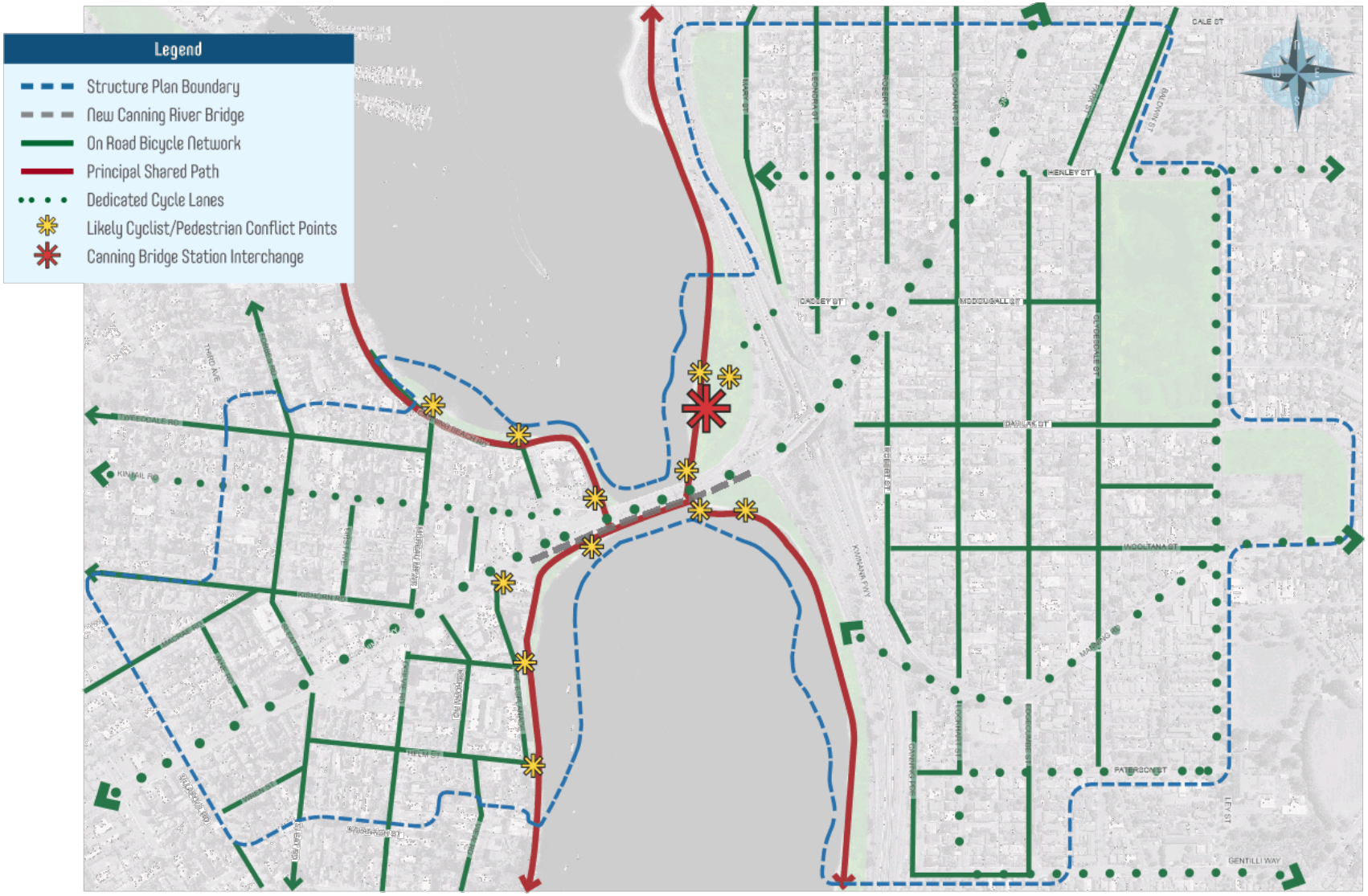


Figure 24 Cycle Network Plan

5 Activity

5.1 Land Use Activity

5.1.1 Existing

The CBSP area is a diverse precinct with a mix of primarily residential, commercial office space and supporting retail and entertainment amenities. Currently, the CBSP area includes approximately 1,900 dwellings, with approximately 37,417 square metres of non-residential floor space in 2008.

Table 2 Non-residential Land Use Activities - Existing

Land Use Activity	m²	% of Total Floor Space
Manufacturing/Processing/Fabrication	231	0.62
Storage / Distribution	200	0.53
Service Industry	584	1.56
Shop / Retail	4,714	12.60
Other Retail	710	1.90
Office / Business	25,232	67.43
Health / Welfare / Community Services	662	1.77
Entertainment / Recreation / Culture	5,041	13.47
Utilities and Communications	43	0.11
Total	37,417	100

Due to the maturity of the centre there is a good mix of uses between commercial, retail, residential and community and there is no specific intervention required to increase diversity, although there is a reasonably low proportion of retail offered. The growth of the centre is predicted to result in a distribution of uses consistent with the current situation although there is likely to be some reductions in land uses such as manufacturing and storage due to the increased density and land values.

There are currently a number of community, civic and cultural facilities within the precinct providing a high level of amenity, especially on the western area of the precinct. These are expected to be supported by facilities established on the Eastern Quarters as development occurs in the future.

Future retail offerings should maximise pedestrian benefit by locating new retail along linking pathways (see Figure 1) and in areas that can support high footfall. This objective is supported by the design guidelines developed in conjunction with the CBSP.

5.1.2 Future (Vision)

The development of the precinct is expected to achieve considerable levels of growth in the following decades and will result in changes to distribution and diversity of land uses, as shown below in Table 3.

Table 3 Non-residential Land Use Activities - Future

Land Use Activity	m²	% of Total Floor Space
Storage / Distribution	5,154	3
Service Industry	8,590	5
Shop / Retail	25,771	15
Other Retail	3,436	2
Office / Business	94,494	55
Health / Welfare / Community Services	17,181	10
Entertainment / Recreation / Culture	8,590	5
Utilities and Communications	8,590	5
Total	171,808	100

5.2 Diversity Target

The diversity target (the ratio of retail compared to other activities) which is applied to the CBSP under SPP 4.2 is exceeded substantially, with more than 80%

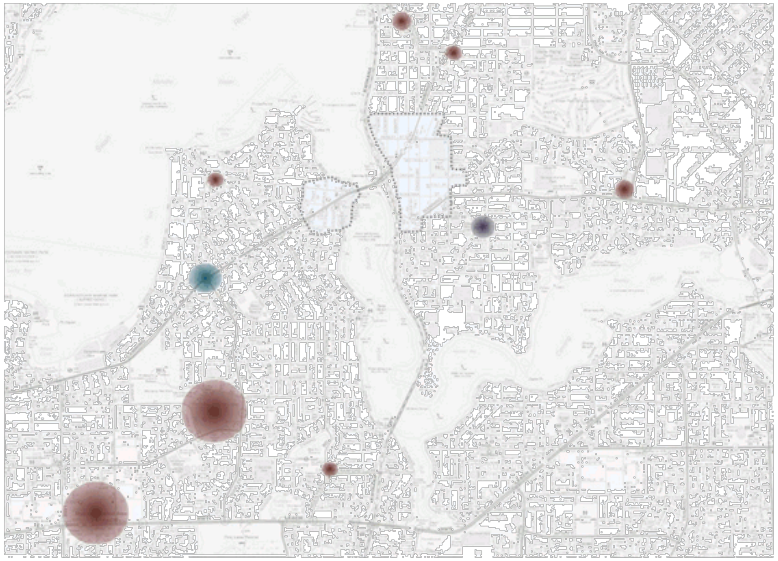


Figure 25 Retail Offer in proximity to the Canning Bridge Structure Plan Area

of the non-residential offer comprising uses other than retail. This does indicate that additional retail offerings could be accommodated, although the challenges of the location (access and parking) and the natural advantage of the CBSP area for attracting office, entertainment and residential uses may compete with larger retail uses.

5.3 Retail Sustainability

Presently the precinct exceeds the non-retail performance targets set out in State Planning Policy 4.2 for a District Centre and this is not expected to be affected by implementation of the CBSP. The CBSP area has evolved as a sustainable commercial and residential based centre that has a small level of retail that supports local needs. There are a number of centres in close proximity to the CBSP area that meet a large proportion of retail needs, especially for larger retailers (in particular; Booragoon – see Figure 25).

The growth in the retail offerings of the precinct are expected to grow proportionately with the growth in housing and commercial activity. The retail offering is proposed to be increased from approximately 13% to 17% of all non-residential land use activity.

5.4 Employment Self Sufficiency

There are approximately 1,700 jobs located within the CBSP area. It is expected that with changes to the area over time there will be an increase in service, community and entertainment jobs thus providing a better diversity of employment opportunities. Table 4 below illustrates the changes in employment numbers over time.

Table 4 Employment

Timeframe	Employment	Estimated Floor Space
2014 - Current	1,700	37,417
2031 - Directions 2031 (Central Sub Regional Strategy)	2,000	45,000
2031 - Canning Bridge Structure Plan	2,400	55,000
2051	7,881	140,000
Ultimate Employment	9,272	171,808

Employment distribution for the precinct zone is estimated in Table 5 below for the sub-regional areas.

Table 5 Employment by Quarter

Quarter	Future Employment	Non-residential (m^2)
Applecross	4,022	72,423
Mount Pleasant	2,925	54,878
Como	863	15,458
Manning	1,118	22,131
South Manning	344	6,918
Total	9,272	171,808

This indicates the high proportion of jobs which will be based in the Western Quarters as opposed to the Eastern Quarters and suggests that over the longer term higher self-sufficiency in the Eastern Quarters will need to be achieved (taking into account the employment generators proposed in South Perth and Curtin University Precincts).

5.5 Housing Density

The CBSP area is being planned to include a large residential component. Table 6 shows the projected increase in dwelling and residential population for the coming decades.

Table 6 Estimated Dwellings and Residential Population

Timeframe	Dwellings	Population
2014 - Current	1,900	3,800
2031 - Canning Bridge Structure Plan (26%)	4,100	8,000
2051 (78%)	12,106	19,000
Ultimate capacity	15,522	24,215

It is expected that the high density nature of the CBSP area will continue to attract low ratios of persons per dwelling into the future, which can be seen in the persons per dwelling targets. A challenge for the CBSP will be to attract a diversity of demographic groups to ensure the area provides the greatest possible variety of economic activities and employment types. Key to this attractiveness will be physical spaces and entertainment and enjoyment activities which need to be encouraged through the planning process.

6.1 and 6.2 River and City Views

6 Urban Form

Superb natural assets are immediately apparent when considering the urban environment of the CBSP area. In considering the future of the centre, it is both a driver of design and the reason why the CBSP growth targets will be achievable.

It is important to identify the primary competitive advantage that this centre possesses; the physical location of the CBSP area provides outstanding access to river views and the Perth CBD. The views are accessible from most parts of the CBSP area and the topography of the landform supports recurrent viewpoints heading upwards away from the river foreshore. Both business and residents alike will have access to these views, making development of the centre desirable and economically viable.

Conversely, however, an overall observation of the existing built form of the centre is that its commercial development is ageing and in various states of repair, and its housing, whilst comprising of some very new development, is generally characterised by low density grouped housing stock from the 1970s to 1990s.

6.1 Place Vision

As noted in Chapter 2.3, the CBSP area has been considered in its entirety, with the outcome being the identification of six distinct Quarters, each with an existing urban form which defines the historical and current character of the place. Each of the Quarters has a specific sense of place and dominant land use. This sense of place and land use has been respected and reflected in the principles for ongoing development of each Quarter. In the case of the Q6, where no discernable quality was identified, a fresh new way of connecting the Quarter with its surrounding centre has been enabled.

Whilst the overall vision for development of the entire centre was set during the Canning Bridge Precinct Vision, the development of the CBSP has allowed for a more detailed vision for urban form based on the distinct place represented by each Quarter. A variety of concepts, including differing options for height and public open space, were considered with the community during preparation of the CBSP. The final CBSP has responded to all of the comments, input and feedback from both the community and key stakeholders, to provide a vision for urban form which responds to short and long term needs of the centre in a respectful and coherent manner.

6.1.1 Q6

Q6 will be developed over a period of time, with initial stages comprising the bus station upgrade. The bus station will be elevated at approximately the level of Canning Highway over the Freeway and its visual presence will be offset by high quality design features in the form of architecturally designed roof features and an open concourse allowing views through from lower levels in the Q3 area.

The Canning Bridge Station Interchange should bear the signage of 'Canning Bridge Station'; visible from all directions to identify the station as the unmistakeable central public transport arrival point of the CBSP area.

6.3 Q6 Concept

It will be very important for the long term planning of the Quarter for the design of the bus station to provide for the greatest flexibility of the surrounding foreshore land. Desirable uses include cafes, restaurants, retail shops and civic and entertainment facilities. Some car-free development in taller building forms may be desirable in the long term.

The station itself should comprise travel and ticketing information booths, options for refreshments, storage facilities, shade and shelter and seating. Careful thought towards providing for planting (particularly trees) would be desirable in the design of the elevated bus station structure.

6.4 Gardens on elevated structures

6.5 and 6.6. Hard and Soft Landscapes

The adjacent foreshore should be developed comprising a series of terraces which allow for universal access, casual seating and potential amphitheatre style events. Hard and soft landscapes can be used to great effect, providing both programmed and incidental leisure opportunities.

Linkages along the foreshore to the north and south are important parts of the regional pedestrian and cyclist network, and thought should be given to providing well planned stopping, viewing and refreshing areas comprising shade, water, incidental exercise equipment and seating.

In addition, the large expanse of foreshore southwest of the existing interchange has the opportunity to be developed into a highly desirable yet 'restful' alternative to the activity proposed in the north-western foreshore. An opportunity exists here to partner with the local community and historians to re-create a wetland rivers edge which reflects the past use of the land.

Critically, connectivity to both western and eastern Mixed Use areas will need to be improved. Pedestrian and cyclist overpasses and bridges will be critical to ensuring the long term enjoyment and safety of the Quarter. The development of a bus bridge to the east, currently planned in the Cassey Street area, is a critical connection for Q3 and Q4, which are currently very badly serviced despite their proximity.

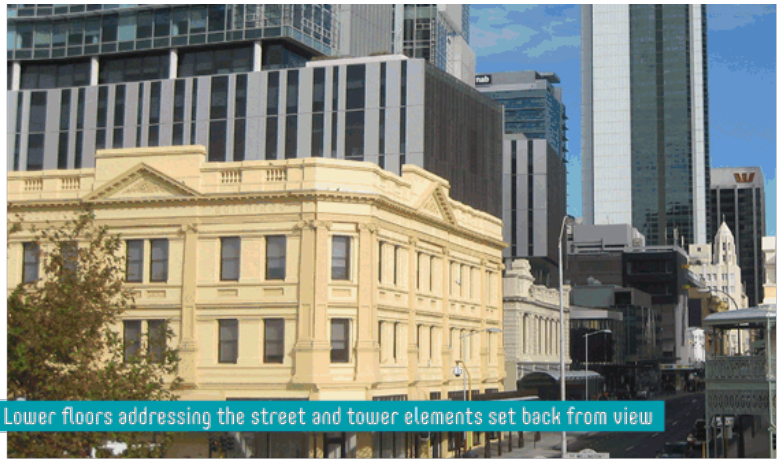
To the west the development of new bridges across the Canning River for Canning Highway will enable the re-use of the existing heritage listed wooden bridges for a shared public transport and pedestrian and cycle pathway. Examples such as the Pyrmont Bridge across Darling Harbour in Sydney provide good reference. Well planned shade and shelter, small cafes or pop-up outlets, and a safe and secure pathway will ensure this linkage becomes an active and enjoyable connector for the CBSP area community.

6.7 Pyrmont Bridge, Darling Harbour

6.1.2 The Mixed Use Zones

The Mixed Use area of the CBSP will be developed as high density, active urban space. Following on from examples throughout Perth, such as the urban form of Forrest Chase, development in West Perth and parts of East Perth, the form will provide for pleasant and unimposing streetscapes at ground level, with taller tower elements set back. Heights will be as indicated on the Land Use, Built Form and Zones Plan (Figure 26) and shall be further guided by the Design Guidelines. Ten to fifteen storey development is encouraged in the Mixed Use Zones.

A mix of overall heights will be encouraged between 10 and 15 storeys, and some buildings will have additional height where exemplary design or provision of community infrastructure is provided.



6.8 Lower floors addressing the street and tower elements set back from view

6.9 and 6.10 Streets with active frontages and awnings for enhanced pedestrian enjoyment

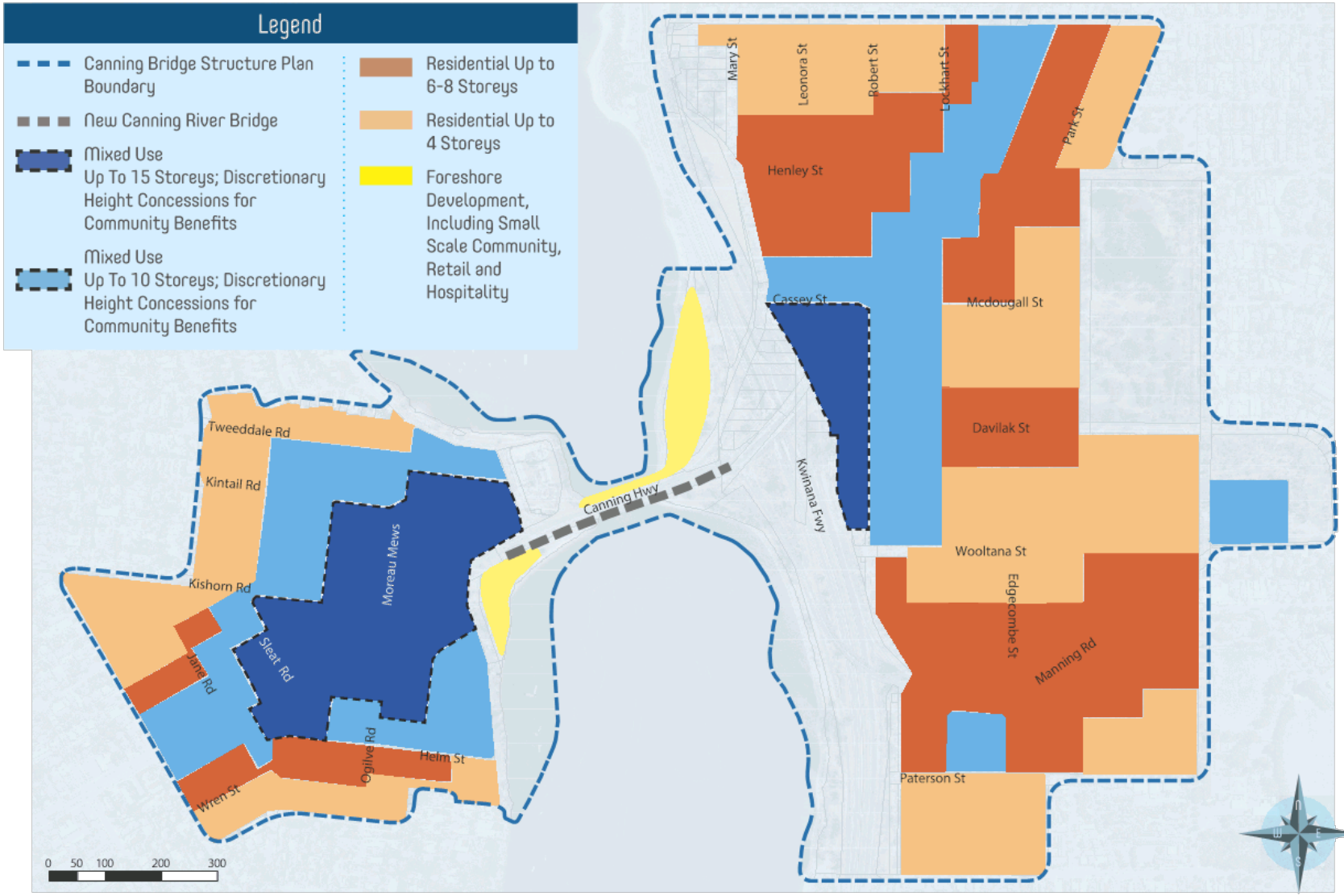


Figure 26 Land Use, Built Form and Zones

Identified key pedestrian routes will be addressed more specifically; land uses and design requirements will reinforce the nature of these streets as desirable pathways, with a focus on retail and entertainment uses along these streets, whilst office and apartment entrances may prevail on other streets.

Street setbacks will include awnings for shelter and special consideration will be made for building entrances near to public transport stops. Frontages will be open, with extensive glazing ensuring a clear interaction between the internal and external spaces of buildings. Spaces which blur the line between private and public will be encouraged to create a sense that the entirety of the centre is part of the public realm.

More specifically, it is expected that the Western Mixed Use area (compared to the Eastern Mixed Use area) will comprise a generally taller and denser built form. It will generally be dominated by commercial and entertainment uses, with residential uses prevailing in the urban fringe areas.

6.11 Pedestrian walkways linking between buildings

6.12 and 6.13 Space within the private realm that appears 'public' by design

Kintail Road, a key pedestrian spine, will be an intimate and active public space, where vehicles yield to people

Key landmark buildings will be encouraged near the intersection of Sleat Road and Canning Highway where the 'through' commuter first comes upon the rise in Canning Highway affording views across the centre, and the existing Raffles building will form the landmark and wayfinding feature of the river's edge. An additional opportunity does exist, subject to an alignment of planning and design of private development, to establish a pedestrian walkway spanning across Canning Highway between buildings at approximately the location of the existing overpass. Whilst challenging, this would be an outstanding outcome for the CBSP area.

In the Eastern Quarters, taller buildings will be confined to a much more compact core surrounding and including the Canning Bridge Station Interchange. Residential and commercial uses will be mixed and landmark buildings will be located at the point where the centre meets Q6.

The western end of Davilak Street, where pedestrians intersect before heading to and from the Q6, will be an enjoyable meeting space.

The Eastern Quarters are proposed to be more closely associated with their residential origins, allowing some change to land use along key linking pathways through the CBSP area, but generally encouraging increased residential housing

opportunities and choice. It is likely that the Eastern Quarters Mixed Use Zone will take longer to develop, with much more fragmented land ownership across multiple strata dwelling developments.

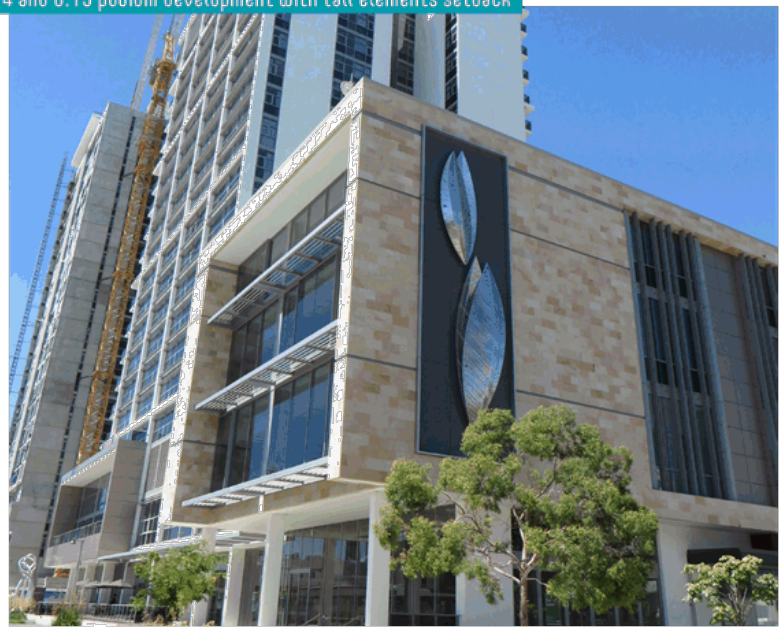
Development in both Mixed Use areas will respect the scale of the street at the base of development, and the dominant form of development will be 2-3 storey podium style development with tower elements set back an adequate distance so as to be visually unimposing.

6.1.3 The Residential Zones

The residential urban surrounds in all Quarters will be a blend of 4-8 storey buildings, allowing for a good cross section of dwelling types and styles in each Quarter. The extent of density in each of the Quarters reflects the general extent of the study area; that is, the Western Quarters are quite compact, and the surrounding urban frame will also be compact yielding very rapidly to the surrounding low density suburban area, whilst the Eastern Quarters are much more spread and allows for a far wider urban frame to develop.

Closer to the Mixed Use Zone, it is expected that the form of the residential frame will start to mimic the ground level styles of Mixed Use Zone buildings, whilst further away from the Mixed Use Zones, the building form may reflect almost exactly what is currently being developed in the area.

VIEW 2 – A Visualisation of the Davilak Street 'Main Street' piazza



6.14 and 6.15 podium development with tall elements setback

6.17 and 6.18 Lower scale residential development

6.19 and 6.20 and 6.21 Medium density development reflecting the style of the Mixed Use (M10) areas

6.22 Spaces within private development which comprise 'public' areas

6.23 Private spaces where the public are invited to congregate

6.24 Green walls and roofs creating enjoyable private space which can be seen from the public realm

6.24 Incidental public art which contributes vibrancy

6.1.4 Public Realm

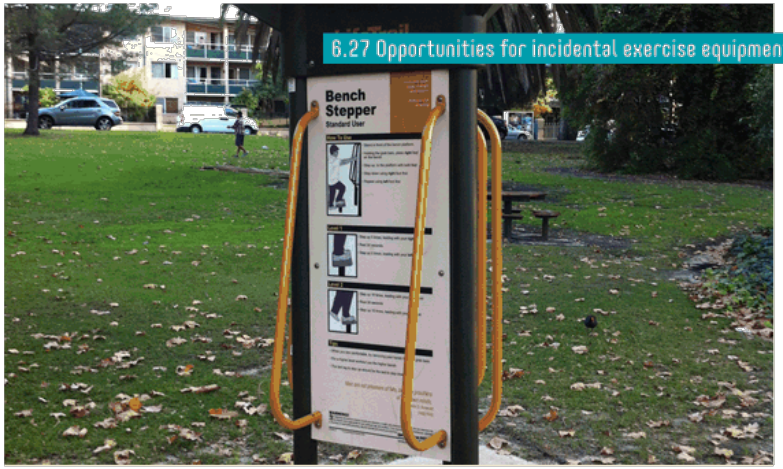
The CBSP area is quite obviously lacking in large expanses of green open space, with the notable exception being the large expanse of open space which is the Swan and Canning Rivers. It is therefore critical that the public realm of the centre be carefully considered.

In considering the centre and determining the purpose and expectation for each of the Quarters, a vision for the use of the public realm has been established. It is the responsibility of all landowners, public and private, to contribute to the public spaces which enliven the centre.

Rather than attempting to re-introduce open playing fields, the CBSP seeks to celebrate the urban spaces which contribute to the sense of place and the feeling of the centre. Small, intimate spaces are recommended. Areas within the private realm that converse well with the adjacent street will be encouraged; open piazzas which envelope café seating and retail entries adjacent to nearby bus stops, or areas for youth play are highly desirable. A series of these connecting

6.26 Re-created wetland edges which contribute to the public realm and provide opportunity for environmental improvement

6.29 Interesting temporary use of space – taking back the roads



6.27 Opportunities for incidental exercise equipment

6.30 Street trees add significant comfort and improvement

6.28 Programming of spaces

6.31 Shelter along walkways can encourage greater use and improve overall accessibility

small spaces will make each of the spaces more intimate, but also contribute to the whole experience.

Buildings which incorporate green elements will be similarly supported; from green roofs to green walls and any permeation where the sense of outdoor space can be observed by others.

Some large areas do exist where the Local and State Government can play a role in delivering more active spaces. The river can become part of a series of re-created wetlands including walking trails and education signage. The Tivoli Theatre and Library area should be the community heart of the Western Mixed Use area, with a multi user civic facility developed around an intimate plaza providing space for local events and market places.

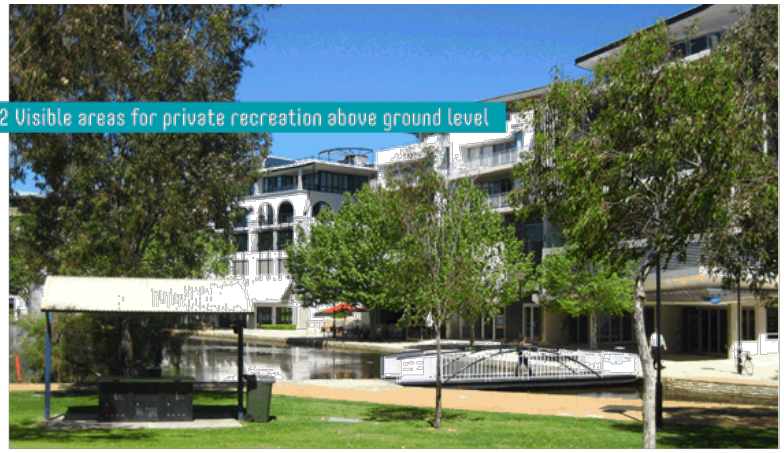
A small, active square is envisaged at the end of Davilak Street which leads to the Q6 and it would also be desirable to seek to increase the community activation of MacDougall Park with additional small scale café or community spaces.

Opportunities for public art should be considered as part of a public art scheme within the centre.

Comfort in the public realm is also important and it should be recognised that shade and shelter play a big role in the walkability of the centre. Street trees will play a big part in maintaining the current spaciousness of the street networks, even after development is complete. The pedestrian and cycle way connecting across the river must be provided with some opportunity for shelter from wind, rain and intense sunshine.

6.1.5 Private Spaces

The public realm will need to be supported by private entertaining and recreation spaces. This is commonly occurring in significant developments throughout the Perth metropolitan area and many examples can be referenced. Areas which comprise good quality recreation opportunities, or allow for planted vegetation



6.32 Visible areas for private recreation above ground level

6.33 Private spaces comprising active and leisure opportunities above ground level

which can also be seen and/or accessed from the street will be encouraged, as this strengthens the sense of activation and passive surveillance around the centre.

6.2 Urban Form Guidelines

Part One of the CBSP provides statutory provisions for design which are specific

to the CBSP area. Consideration is included for elements such as form and mass, street setbacks, heights, site cover, parking, safety and bonuses which may be obtained for exemplary design or substantial development of community facilities.

6.3 Performance Bonuses

For properties within the Mixed Use Zones consideration of additional height or variations to side setbacks or other standards may be approved where exemplary design standards are met or exceeded and/or where the development includes the provision of a significant benefit to the community.

Design bonuses or benefits to the community may include:

- Exemplary design of key landmark buildings as they interface with the adjacent road network and provide for quality wayfinding in the centre
- Exemplary design which recognises access to sunlight and views from adjacent buildings
- Exemplary design generally, which reflects the desired character of the centre
- Design which attempts to limit overshadowing on adjacent properties, in particular, overshadowing of private recreation and outdoor spaces.
- World class provision of sustainable building design, including recycling capabilities and vertical and horizontal green elements
- Exceptional quality street interface, including creation of quality private/ public spaces
- Access to public spaces on podium development
- Community facilities such as community hall spaces or multi user spaces, rest places and public facilities such as toilets, bike lockers and showers
- Public parking facilities by way of unbundled parking or reciprocal parking provisions
- Educational facilities
- Hotel uses
- Aged care and affordable housing provision

7 Sustainability and Resource Conservation

A separate Sustainable Infrastructure Study and Preliminary Environmental Impact Assessment have been completed as part of the CBSP and can be found in the Appendices. This Chapter provides a summary of key outcomes from those reports.

7.1 Environment and Heritage Management

A preliminary environmental impact assessment (PEIA) was undertaken as part of the CBSP. The PEIA considers the impacts from those elements of the structure plan which may impact on environmental matters, including:

- Development of Q6;
- Upgrade of the Canning River Bridge;
- Change to high density housing;
- Re-creation of wetlands along the foreshore; and
- Removal of existing buildings.

7.1.1 Flora and fauna

Overall, impacts to flora and fauna were found to be quite limited given the poor quality of existing vegetation. The re-creation of the wetland habitats along the river is likely to improve the river ecosystem and is highly desirable from both an environment and amenity perspective.

Impacts to vegetation associated with the Swan and Canning River Environmentally Sensitive Area (ESA) may occur on a minor level during the construction of the foreshore development areas, Q6 and the new Canning River Bridge. Impacts to the ESA should be discussed with the Department of Environmental Regulation (DER) and a Construction Environmental Management

Plan (CEMP) developed for the Canning River Bridge and Q6 projects to mitigate any impacts associated with construction including sediment plumes from piling.

A more in-depth impact assessment is recommended for individual projects adjacent to the River prior to construction.

7.1.2 Water resources

Impacts to the estuarine environment may also result from development of jetties and the like. The type of development should also be the subject of a separate impact assessment once any construction footprint and facility design has been established.

Surface water impacts will need to be considered during the works associated with the CBSP, to prevent contaminated runoff entering the Swan River. Future developments are also required to identify and manage the risk of disturbance of acid sulfate soils, contaminated sites and dewatering where necessary, and liaise with the local government authority and appropriate agencies including DER, Department of Water and the Department of Parks and Wildlife as relevant to the project.

7.1.3 Contamination

The management of contamination needs to be undertaken in accordance with the *Contaminated Sites Act 2003* dependent upon the final use of any site. Contaminated sites will need to be taken into account during the development works and remediated as required.

Hazardous materials, such as asbestos must also be taken into account during the upgrade or demolition of old buildings. Any hazardous materials that will be disturbed as a result of development in the CBSP area needs to be removed and disposed of in an appropriate manner so as not to cause potential contamination.

7.1.4 Air quality

The PEIA considers air quality impacts due to potential increases in transport – including vehicles – associated with the CBSP implementation. Although the modelling suggests the CBSP will allow an increase in private vehicle trips overall, the type of movement appears to shift from private vehicle trips to other forms of transport or technology. The predicted shift to more sustainable forms of transport is likely to offset an increase in movement volume resulting in limited net change in air quality

7.1.5 Heritage

There may be Native Title implications associated with use and development of land within the study area and discussions with the Department of Aboriginal Affairs and the Native Title Claimants at an early stage is recommended for major infrastructure projects, such as the replacement of the Canning River Bridge.

7.2 Climate Change and Sea Level Rise

Flooding of the Swan and Canning River catchments is considered to be significant enough to cause property damage as often as every ten years or as infrequently as every 2000 years. In reality the last significant flood event was in 1830 when the Swan River was measured at 6 metres above its normal level.

The actual risk to the CBSP area due to climate change and sea level rise is difficult to quantify as much of the research either focuses on flooding of the Swan and Canning River catchments or sea level rise along Perth's coastline. The combined effect of both sea level rise and flooding is not typically considered, although the impact of this combined climate occurrence would be more substantial than each event itself.

Severe winds have become more common in Perth over recent years and also have a significant property damage cost implication. Effectively, any location near to a waterway (although Rivers to a far lesser extent than the Ocean) will be at risk of severe winds.

It would be prudent for any developer within the CBSP area to undertake the relevant due diligence and in particular consider the appropriate engineering requirements for building resilience.

7.3 Services Infrastructure

In terms of future redevelopment and staging strategy it is important to understand the implication that this growth will have on the current systems and its capacities, and also how the future upgrades for each service type will be triggered based on the relevant servicing strategy, and surrounding growth outside of the CBSP area that also contributes to the need for infrastructure upgrades.

7.3.1 Water

The Cities of Melville and South Perth are connected by a 610 mm diameter steel pressure main, and are reinforced by the Melville Reservoir on French Road. It is anticipated that this 610 mm pressure main may be sufficient for a good portion of the CBSP area redevelopment, but it is not only these areas that influence the sizing of this pressure main. Due to the central location of this pressure main within the CBSP area, it is envisaged that further distribution and reticulation can be undertaken from this pipeline.

It is uncertain what infrastructure will need upgrading until a proper infrastructure review is undertaken, but it can be assumed that there will be some upgrades in the network, particularly some of the smaller pipelines. Water efficiency within buildings will be a high priority to avoid large scale upgrades. Ongoing Liason with Water Corporation is required; current indication is that the development can be serviced adequately.

7.3.2 Wastewater

Canning River divides the City of Melville and City of South Perth sewer catchment areas. Whereas City of Melville has only two separate sewer catchments west of the river, the City of South Perth has at least six sewer catchments within the boundary of the CBSP area. These sewer catchments are typically landlocked, and each catchment needs to pump wastewater to the next downstream catchment. This complex system of interdependent sewer catchments will make it difficult to forecast future upgrade requirements to the wastewater system. There are at least seven wastewater pump stations within the CBSP area along with local distribution infrastructure and major wastewater distribution and treatment infrastructure outside of the CBSP area (Figure 27).

It is uncertain what infrastructure will need upgrading until a proper infrastructure review is undertaken, but it can be assumed that there will be some upgrades in the network, particularly some of the smaller pipelines, and also the pump stations and pressure mains as they are all indeed small in capacity. Water efficiency within buildings will be a high priority to avoid large scale upgrades, with some view to recycling within buildings.

Western Quarters

Pump stations may have minor capacity to accommodate organic growth in the surrounding area, but it is foreseen that any redevelopment activities will require upgrades to the wastewater infrastructure.

Eastern Quarters

The sewer catchment arrangement for the Eastern Quarters is a complex system with similar interdependencies as for the Western Quarters. Redevelopment in the Eastern Quarters may require upgrade/replacement of pump stations.

7.3.3 Power

In terms of electricity, the CBSP area is located on the outer edge of the Western Power infrastructure area, resembling an "end-of-line" scenario. There is no power connection across the Canning River Bridge, and redevelopment on either side of Canning River will require substantial system upgrades.

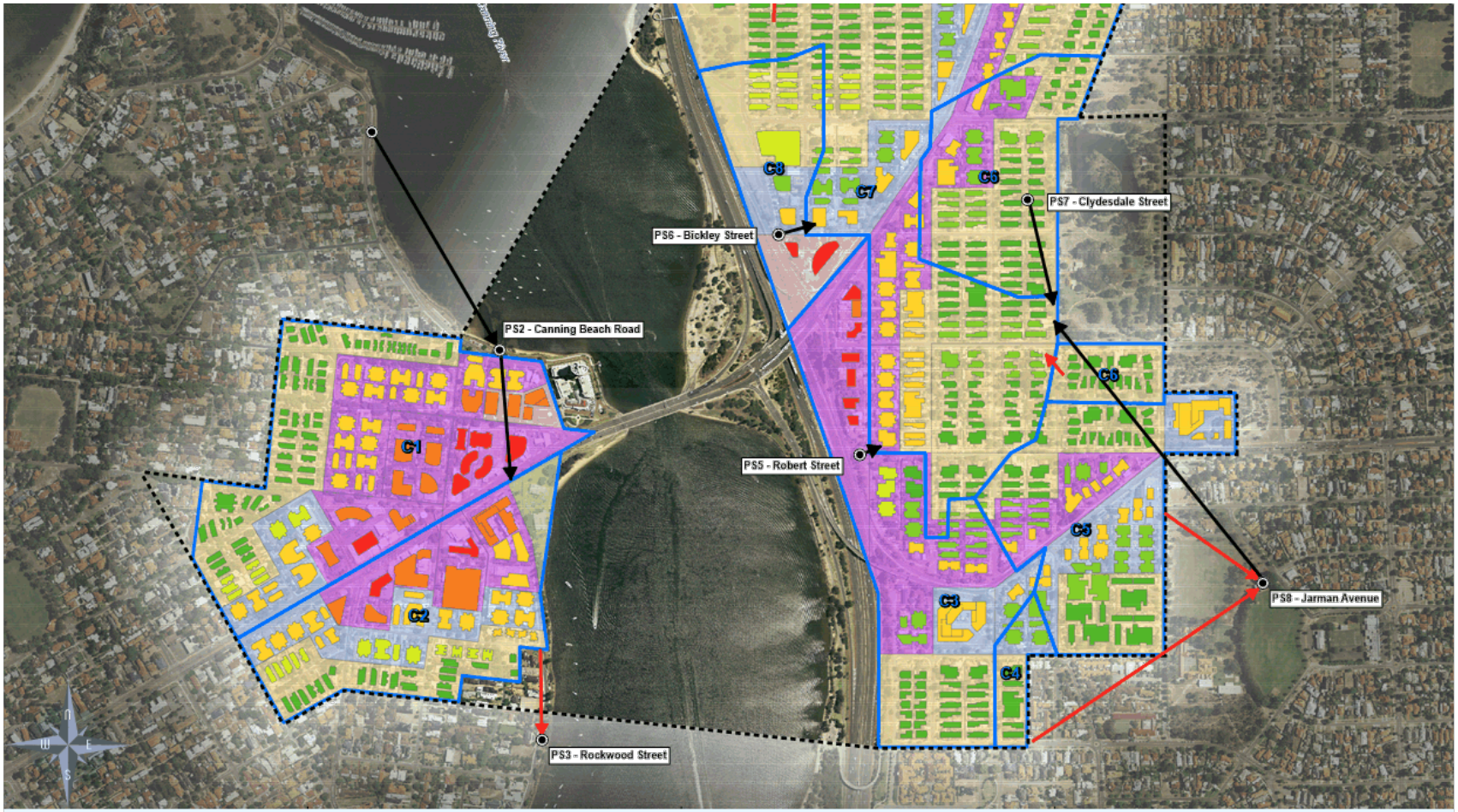


Figure 27
Wastewater catchments

Pump Station

Transfer Direction
- Gravity Wastewater
- Pressure Wastewater
- Sewer Catchment
- Study Area

Building Heights (Approx.)
- Mixed Use zones 15 - 20 storeys
- Mixed Use zones to 15 storeys
- Mixed Use zones to 10 storeys
- Residential development to 8 storeys
- Residential development to 6 storeys
- Residential development to 4 storeys

Yield Land Use (Approx.)
- Residential Only
- Residential, Retail
- Residential, Commercial
- Residential, Commercial, Retail
- Open Space

Western Quarters

The existing high voltage network currently supplying this area is likely to be unable to service future developments. It is expected that Western Power will require new extension of 22 kV express feeder cables into the CBSP area.

Additional transformers and high voltage ring main units are required to service the proposed development area.

Eastern Quarters

The Eastern Quarters are serviced via a substation running at 11 kV. The 11 kV voltage network has supply limitations compared with a 22 kV network and as such additional feeders will be required to service the development areas. It is likely the headworks costs would be required relatively early to ensure the network is able to supply the future development.

7.3.4 Non-essential Services

The "non-essential" services such as communications and gas typically expand as areas are developed and redeveloped. It is anticipated the authorities for these services will be able to adopt a growth plan that will support the redevelopment within the CBSP area. The focus will be on the reinforcement of existing bulk supply services, and subsequent distribution and reticulation of services. The National Broadband Network has planned infrastructure throughout the CBSP area.

7.4 Precinct Wide Sustainability

A sustainable infrastructure strategy has been prepared to investigate opportunities and potential cost benefits of utilising alternative and sustainable servicing strategies within the CBSP area.

The study has dual objectives:

1. To define energy efficiency performance for the built form and to establish economically efficient energy delivery systems that together will deliver a significantly lower energy and greenhouse gas footprint for the CBSP area than for conventional development.
2. To complement the base requirements of the local water management strategy with a comprehensive approach to water efficiency and the substitution of scheme water with alternative sources.

7.4.1 Context

The National Urban Policy (Our Cities, Our Future) is aimed at ensuring we have a productive, sustainable and liveable future. This document includes sustainability objectives and priorities, including:

- reduce greenhouse gas emissions and improve air quality; and
- manage our resources sustainably .

State Planning Policy (SPP) 4.2 also recognises the importance of reserves conservation (Section 5.5).

The planning of activity centres should contribute to the conservation of resources, in particular a reduced consumption of energy and water.

The demand for energy and water is significantly driven by the urban and built form. The infrastructure required to provide these services in a resource efficient manner needs to be embedded in urban design and reflected in structure planning. The deferment of infrastructure considerations to stages beyond structure planning will lead to more 'business as usual outcomes', because essentially it will then be too late to introduce innovations.

This report aims to identify how sustainable infrastructure can be incorporated directly into the CBSP area, and in doing so establish a new benchmark for integrating urban and infrastructure planning.

7.4.2 Existing system capacity and future demand

Electricity Supply

An assessment of demand at full development has been complete as outlined below, assuming 'business-as-usual' energy efficiencies apply.

Table 7 Energy Demand

Peak power demand	45 MVA
Annual electricity demand	160,000 MWh
Annual greenhouse gas emissions	100,0000 tCO_2-e

Water

Water Corporation has indicated that the existing water network has sufficient capacity at present, and that the existing servicing is adequate for the current zoning from a planning perspective. No upgrades are planned to accommodate increased density, and any upgrades will be driven by the approval of a Scheme/ Structure Plan.

Future demand at ultimate development will rise from the present 0.5 GL pa to around 2.5 GL pa, assuming conventional demand patterns.

Wastewater

According to the Water Corporation most of the current system has sufficient capacity to cope with the existing demand. Planning work carried out for the City of South Perth in 2010 indicated that there are already a couple of short sections of sewer that are at capacity. Their long term planning includes a doubling of the flow in the main sewer from existing levels, and this would require duplication of many sections of the existing sewer. Implementation of the CBSP will likely impact the South Perth Main Sewer.

7.4.3 Required Infrastructure Upgrades

The capital cost estimates here are both preliminary and very approximate. They are intended to inform the analysis of servicing options rather than predict capital costs. These costs will be incurred over the development period.

Table 8 Infrastructure Upgrade Cost Estimates

		Description	2014 ($m)
Power	Generation	Additional capacity on the SWIS	85
	Distribution	Substation, feeder and local network upgrades	17
		Subtotal	102
Gas	Distribution	Local upgrades	3
Water	Source	Upgrades to IWSS source	54
	Distribution	Local upgrades	4
	Reticulation	Local upgrades	12
		Subtotal	70
Wastewater	Treatment	Upgrades to WWTPs	30
	Distribution & pump stations	Local upgrades	10
	Reticulation	Local upgrades	20
		Subtotal	60
		Total	235

7.4.4 Potential Sustainability Initiatives

The Sustainable Infrastructure Strategy provides a series of recommendations that could mitigate some of the challenges of the 'business as usual' approach in the CBSP area. These are summarised as follows:

- **Demand Management**
- **Decentralised Infrastructure**

The upfront capital cost of all the alternatives discussed in the Sustainable Infrastructure Strategy is significantly greater than the cost of business-as-usual. However the savings in building costs (capex and opex) mean that the decentralised options (tri-generation and geothermal, non-drinking water recycling etc) will ultimately be cheaper than the other options over the long term.

On the basis of this preliminary assessment, it appears that the decentralised options offers the best emissions performance at the lowest economic cost with fully integrated solutions offering a significant value if recommendations can be implemented ahead of development.

8 Implementation

This chapter sets out the tasks which will be required to implement the CBSP. The implementation of the CBSP is not expected to happen in the immediate future – rather it will occur over time.

The preferred option is for implementation of the CBSP to be delivered through the provisions of the respective local planning schemes which may require Scheme Amendments by the City of Melville and the City of South Perth.

8.1 Statutory Planning Context and Operation

This structure plan has been prepared in accordance with the *State Planning Policy 4.2 Activity Centres for Perth and Peel* (2010) and with reference to the guidelines in the WAPC's *Structure Plan Preparation Guidelines* (2012).

The CBSP has implications for the Metropolitan Region Scheme and the local planning schemes for the City of Melville and City of South Perth, as outlined in Figure 28.

	Stages	Status	Approval Authority
Planning studies / processes	MRS Amendment ▼	Not yet commenced	Western Australian Planning Commission; Minister for Planning
	Developer contribution scheme ▼	Not yet commenced	Cities of Melville and South Perth; Western Australian Planning Commission; Minister for Planning
Development Control	TPS amendments ▼	Not yet commenced	Cities of Melville and South Perth; Western Australian Planning Commission; Minister for Planning
	Development applications and subdivisions		Cities of Melville and South Perth; Development Assessment Panels

Figure 28 Statutory Implementation Pathway

This structure plan shall come into operation when it is endorsed by each of the Councils of the City of Melville and the City of South Perth. It will then be adopted by the Western Australian Planning Commission (WAPC). Implementation of the CBSP shall be via a range of Metropolitan Region Scheme and Local Planning Scheme Amendments, along with various infrastructure projects.

8.1.1 Amendments to the Metropolitan Region Scheme

In order to accommodate road widening along Canning Highway through the CBSP area, an amendment will be required to the Metropolitan Region Scheme (MRS).

The MRS amendment will be a key step in implementing the recommendations of the CBSP and to facilitate a mode shift from private car use to alternative modes of transport such as public transport, walking and cycling.

8.1.2 Amendments to the local planning schemes

In addition to Scheme Amendments required to enable the City of Melville and the City of South Perth to endorse the CBSP (CBSP, Part 1), both Local Governments will also be required to undertake a series of Scheme Amendments which reflect the CBSP.

The zones within the CBSP area will require review to ensure that the uses permitted under each zone are appropriate and align with the intent and vision of the CBSP. This may highlight the need to amend the zonings within the CBSP area or the uses permitted within zones. Uses not listed in the local planning schemes, such as small bars, could be included in the zoning table to facilitate this form of development in appropriate locations.

8.1.3 Special Consideration Areas

Canning Highway

It is very important to note that a detailed cross section design is currently being undertaken for the section of Canning Highway between Glenelg Road and Henley Street which runs through the CBSP area. In the interim, and so that new development does not restrict the implementation of the planned widening and broader use of Canning Highway, it is recommended that a Planning Control Area be placed over the Canning Highway corridor, effectively requiring a greater setback than that which is currently required by the MRS for Canning Highway. The Planning Control Area would be made redundant at such time as the full MRS amendment is gazetted.

Cassey Street

The future bus station is located on a raised structure in Q6. Long term connectivity (for public transport only) of the bus station is being designed currently, with a view to providing a Freeway overpass for bus movements which will join into Cassey Street. The levels and grades have not yet been determined, but it is expected that there will be a difference in level between the overpass as it ties in to Cassey Street and the existing road. A design for this section of the network is also currently being undertaken by MRWA.

It is recommended that a Development Control Area be established for those lots which are immediately adjacent to Cassey Street and all lots between Cassey Street and Canning Highway to the south. Once the detailed design of this future overpass is complete, a detailed design for this area will be required.

In principle, development of those lots which abut Cassey Street would be well served by providing parking facilities at the existing ground level and having first floor development addressing a new overpass/busway. The overpass could tie into the upper levels of a structure which provides access to the parking areas below. It is noted that the overpass is not intended for private vehicle traffic

8.1.4 Amendments to the Canning Bridge Structure Plan

The CBSP has been prepared over an extensive period of time with substantial stakeholder input. Notwithstanding, a plan which is developed to consider growth over a 40 year period *should* be subject to review and refinement over that time.

Amendments to the structure plan may be considered where, in the opinion of either the City of Melville or the City of South Perth the proposal has merit, is consistent with the Vision for the CBSP area and has community support.

Such proposals would require an amendment to the CBSP as per the enabling town planning schemes of the time. Such proposals would require further community engagement for the affected area including formal advertising.

8.2 Land Use and Development

Land use and development shall be in accordance with the guiding principles set out in the CBSP and more specifically in accordance with the Requirements and Desired Outcomes of the Design Guidelines.

To ensure that the development within the CBSP area is of a high quality and standard, it is recommended that a Design Advisory Group be formed to provide professional advice on the design aspects of the building. It will be mandatory that development applications for all new development and major alterations and additions be considered by the Design Advisory Group.

It should be noted that many applications will be approved by a Development Assessment Panel (DAP) due to the scale of the developments proposed in the centre. As the local government still undertakes the preliminary assessment and consultation of the DAP application, consideration by the Design Advisory Group will still be required.

8.3 Development Staging

Development stages reflect both infrastructure and built form staging. The delivery of built form is dependent on a range of services, transport, and community infrastructure prioritised in Section 8.4. Logical groupings of areas that would be subject to or benefit from collections of services improvements – based on existing services catchments – are described as "Infrastructure Stages".

In the short term (development within 0 to 10 years) infrastructure investment should facilitate development staging that focuses on the Mixed Use Zones closest to the Canning Bridge Station Interchange and existing commercial activity. This will be predominantly within Q1 and Q2 where existing market demand and availability of appropriate development sites will create the most demand for investment. In addition to a focus on the Mixed Use Zone, short term staging will encourage development of the suburban interface – prioritising appropriate, lower scale development along the suburban edge to create a built form buffer to height and intensity in the Mixed Use Zone.

In reality, some new development is likely to occur immediately as it is understood that developers are awaiting the outcome of the CBSP. Whilst the CBSP contemplates a 'short term' and 'medium term' stage, it is recognised that some development will occur in the very near future.

Medium term staging (development within 11 to 20 years) will continue to consolidate the Mixed Use Zone, and facilitate expansion of intensity and development of the high density residential surrounds.

In the long term, ongoing development will continue to consolidate the CBSP area as a high functioning centre, with continued improvements in services and infrastructure.

The staging is illustrated in Figure 30 and Figure 31 which represent the Eastern and Western Quarters respectively. The earlier development which is expected to be seen is shown in the first image whilst the surrounding urban form remains. The second graphic in each series shows the short term development areas and the third graphic shows the final stages of build out. Development will not be uniform such as shown in these images; however, these images represent a preferred scenario of sensitive interface development whilst developing a high density urban core.

Development staging is further described in Table 9.

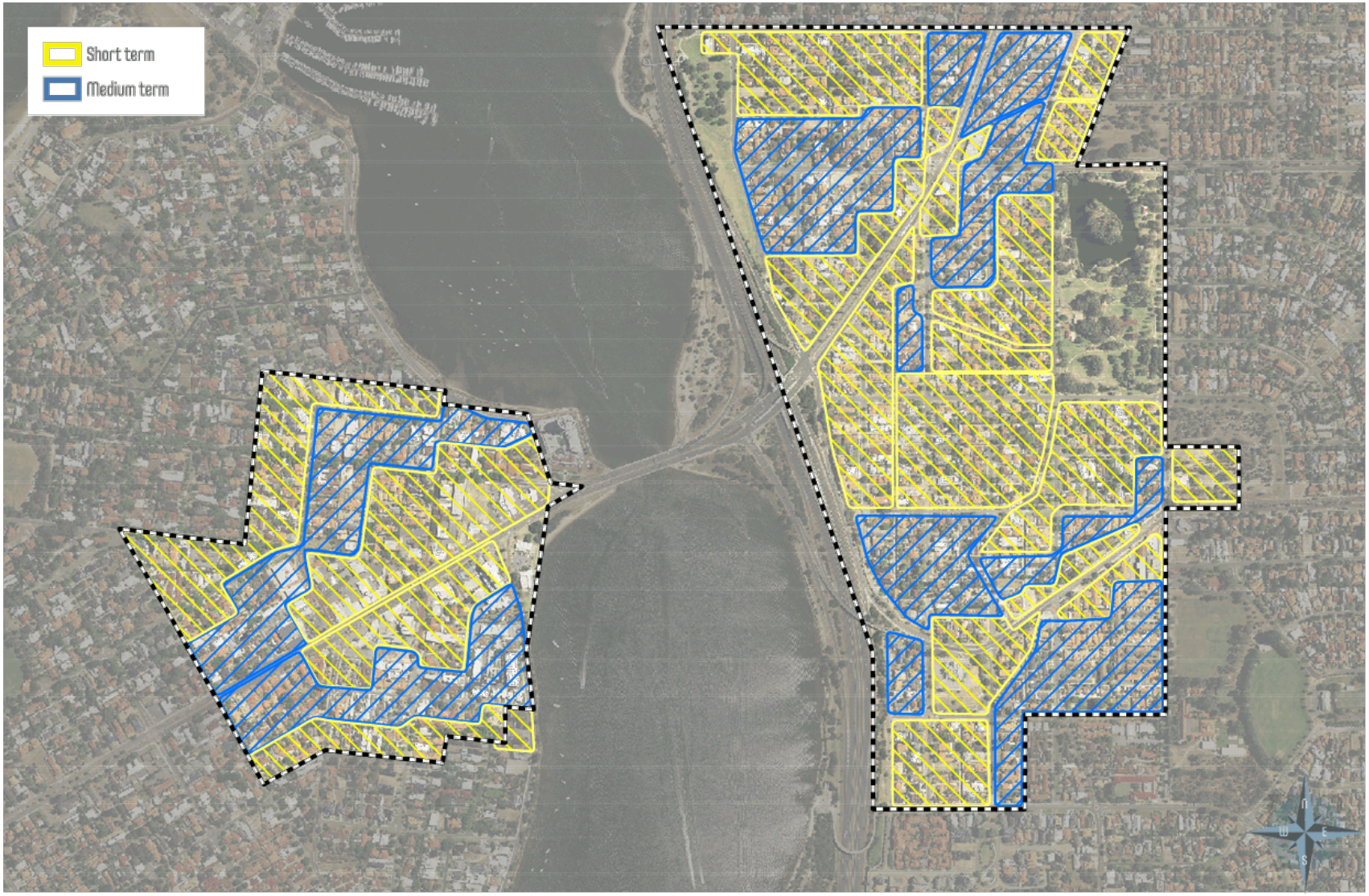
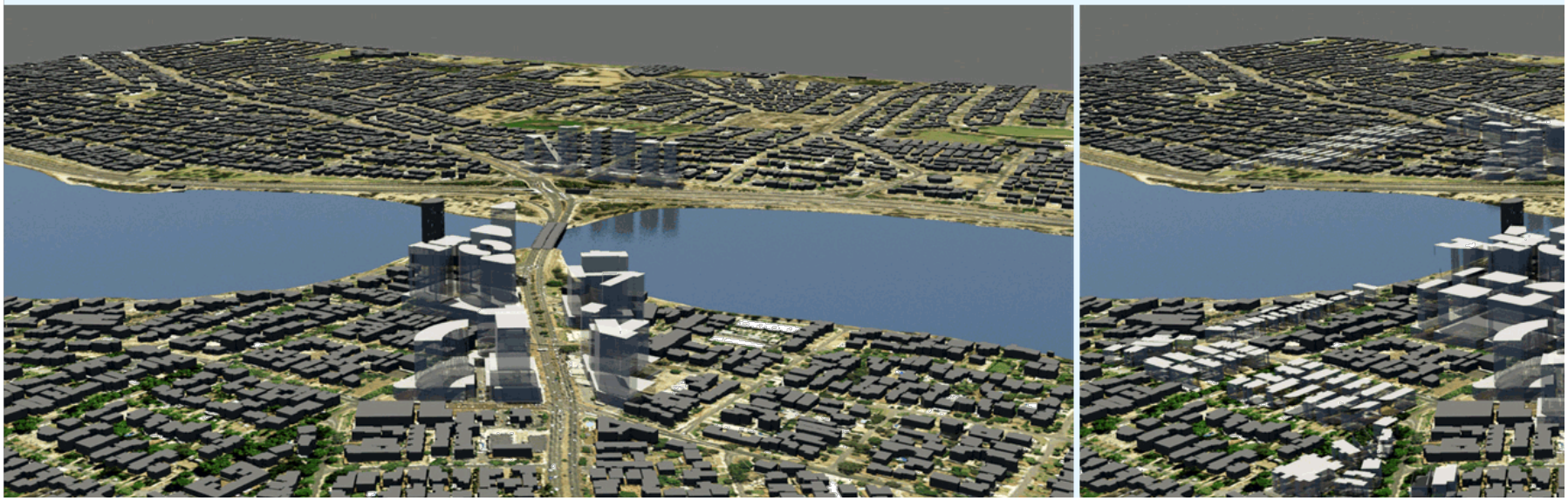
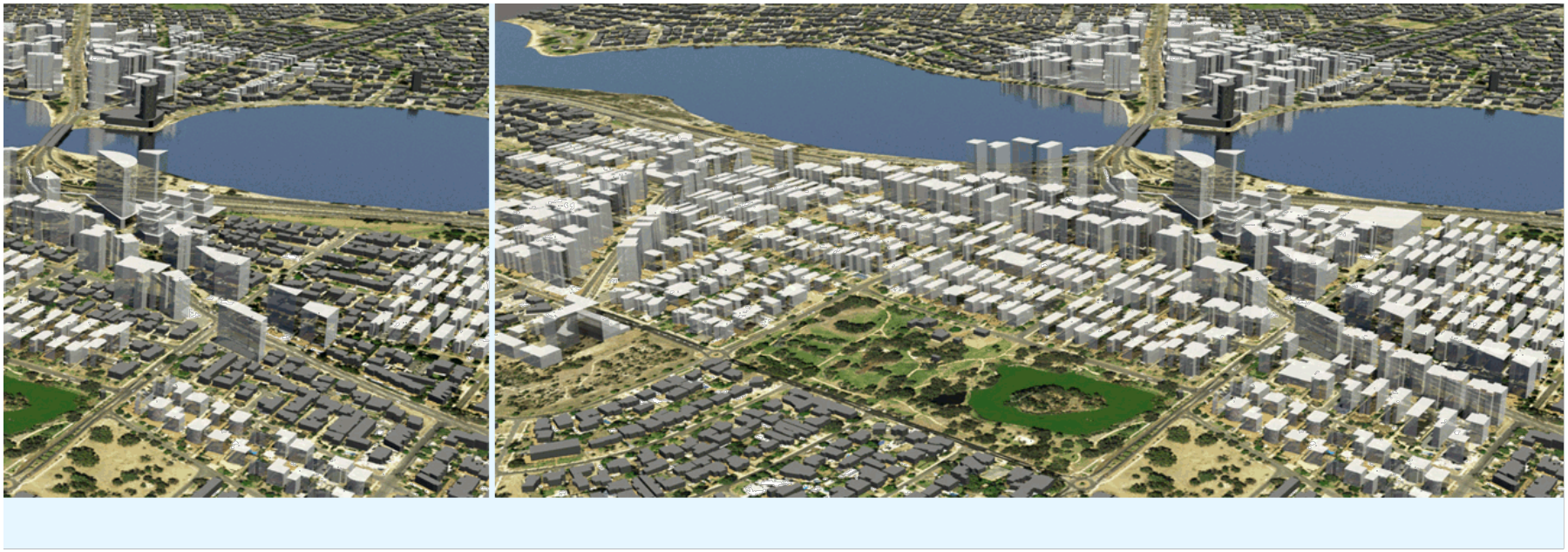


Figure 29 Development Staging

Figure 30 Eastern Quarters

Figure 31 Western Quarters





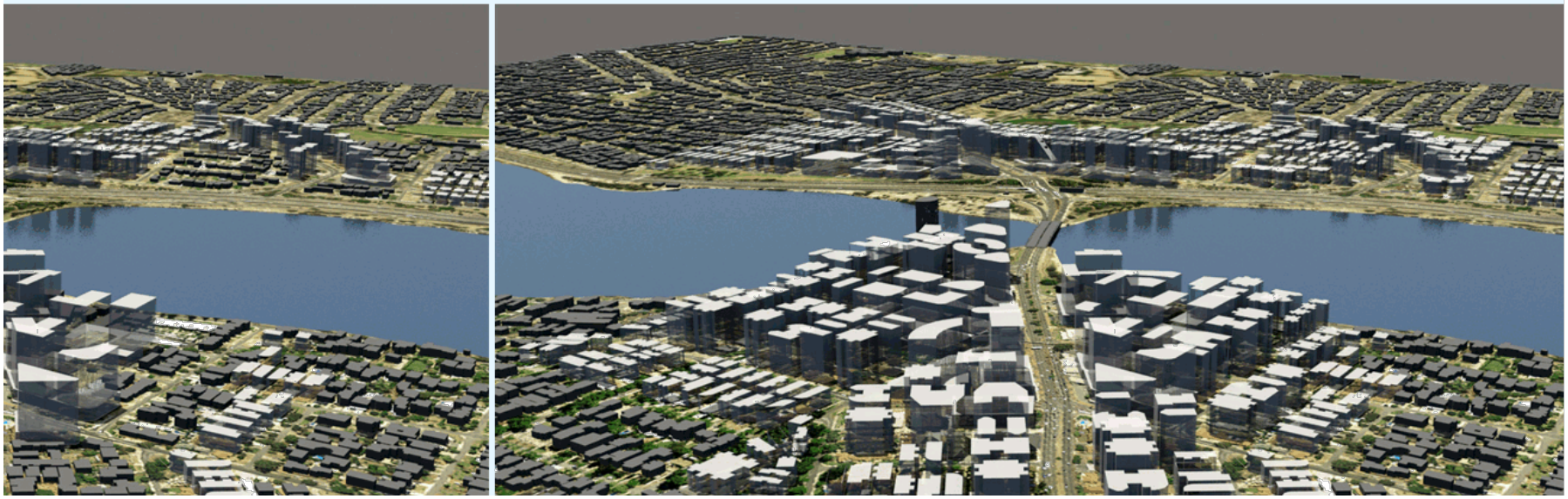


Table 9 Development Staging

Quarter	Infrastructure Staging	Short Term (0-10 years) *Focus on immediate Mixed Use area and create the suburban interface*	Medium Term 11-20 years *Consolidate Mixed Use area, and facilitate expansion of the centre and residential surrounds*	Long Term *Continue to consolidate the CBSP area*
Q1	Any redevelopment in Q1 will have an impact on the servicing requirements of Q2, particularly in terms of wastewater.	Kintail Road development priority Centre Mixed Use up to 15 storey zone Residential up to 4 storey zone	Centre Mixed Use up to 10 storey zone Residential up to 8 storey zone	Ongoing development.
Q2	A holistic approach to services upgrades, particularly in relation to wastewater, is necessary to focus development in the Mixed Use area of the CBSP area, through treating individual catchments as a single infrastructure stage (Melville).	Moreau Mews ped link priority Centre Mixed Use up to 15 storey zone Residential up to 4 storey zone	Centre Mixed Use up to 10 storey zone Residential up to 8 storey zone	Ongoing development.
Q3	Any redevelopment activities within these areas will require downstream infrastructure upgrades, and notably these may all affect the Q3 Quarter directly, particularly in relation to wastewater which connects from outside the CBSP area through this area. Prioritisation of infrastructure upgrades within the Eastern Quarters will focus development on the Mixed Use area, and in closest proximity to the Q6.	Centre Mixed Use areas, Residential up to 4 storey zone within Eastern Quaters	Cassey street area, Centre Mixed Use areas Residential up to 8 storey zone Centre Mixed Use areas, Residential up to 4 storey zone within South Perth 2 infrastructure stage	Ongoing development.
Q4		Centre Mixed Use areas, Davilak public area priority, Residential up to 4 storey zone within the Eastern Quarters infrastructure stage	Centre Mixed Use areas, Davilak public area priority, Residential up to 8 storey zone Centre Mixed Use areas, Davilak public area priority, Residential up to 4 storey zone within Eastern Quarters infrastructure stage	Ongoing development.
Q5		Centre Mixed Use areas, Residential up to 4 storey zone within Eastern Quarters infrastructure stage	Centre Mixed Use areas, Residential up to 8 storey zone Centre Mixed Use areas, Residential up to 4 storey zone within Eastern Quarters infrastructure stage	Ongoing development
Q6	Development within the Q6 will require connection to services; development will likely be dependent on the Eastern Quarters infrastructure stage.	Bus station Light rail Pedestrian connections	Retail development and foreshore establishment. Pedestrian bridge activation.	Cassey street link

Table 10 Critical transport infrastructure (short term, 0-10 years)

Road Infrastructure	Public Transport	Active Transport	Parking
Support planning for Public Transport Boulevards (Department of Transport; Cities of Melville and South Perth)	Establishment of "kiss and ride" facilities for Canning Bridge rail station (Public Transport Authority)	Develop path network (Local Connectors) (Cities of Melville and South Perth)	Develop a Parking Management Plan for the CBSP area, including requirements and guidance for Parking Control and Management Plans by developers as part of the development application process (Cities of Melville and South Perth)
Review modification to Canning Beach Road/Kintail Road/ Canning Highway Intersection (City of Melville)	Construction of new bus station within integrated transit hub, including new pedestrian access (Department of Transport; Public Transport Authority)	Design and construction of cycle and pedestrian access to new bus station (Public Transport Authority)	Implement a residential parking scheme that allows residents access to parking adjacent to their property at all times of the day. (Cities of Melville and South Perth)
Design and construction of Canning Highway road reservation to incorporate: • priority bus lanes in both directions; • dedicated cycle lanes; and • enhanced pedestrian experience (Main Roads, WA)	Consideration of an east-west rapid transit system along Canning Highway (Department of Transport; Public Transport Authority)	Design and construction of pedestrian crossings to Canning Highway (Main Roads, WA)	Ensure motor cycle parking is provided at appropriate locations within the CBSP area. (Cities of Melville and South Perth)
Design and construction of public transport boulevards (Cities of Melville and South Perth)	PTA to review bus services and facilities and improve as required (Public Transport Authority)	Improved pedestrian and cyclist facilities within the CBSP (Cities of Melville and South Perth)	Develop a way finding and parking signage system including real time parking availability signs for the CBSP area, consistent with the broader area to assist drivers to know where car parking facilities are located. (Cities of Melville and South Perth)
Design and construction of local accessways within relevant development stages (Cities of Melville and South Perth)			Implement a controlled parking zone (CPZ) in the CBSP area, particularly timed parking to discourage informal park and ride, and to encourage public transport use, higher turnover of parking bays and discourage long term parking. (Cities of Melville and South Perth)
Water sensitive urban design (WSUD) features within road reserves and public open spaces to treat stormwater runoff (Cities of Melville and South Perth)			Ensure adequate resources are allocated to parking enforcement within the CBSP area. (Cities of Melville and South Perth)

8.4 Infrastructure

The implementation of the CBSP will involve the coordination of a number of activities at State, regional and local level as well as the preparation of a number of key documents. A key task for the CBSP is to set the context for major infrastructure provision by the public sector agencies, in line with key development stages described in Section 8.3. This is shown in Table 10 and Table 18.

NB: It is important to note that whilst the CBSP can recommend infrastructure upgrades be funded and delivered through a variety of measures, State Government agencies are responsible for regional infrastructure and the CBSP can only influence (and Councils encourage) the implementation of the plan.

Table 11 Critical services infrastructure (short term, 0-10 years)

Water		Power		Non-essential services (telecommunications and gas)
Business as usual	*Precinct-wide sustainability*	*Business as usual*	*Precinct-wide sustainability*	
Wastewater				
Local distribution network upgrades (Water Corporation - headworks; developers - reticulation)	Recycled water feasibility study, (Cities of Melville and South Perth with Water Corp)	System capacity upgrades (Western Power)	Solar PV, and geothermal feasibility study (Cities of Melville and South Perth with alternative energy providers)	Connection to the National Broadband Network (NBN Co)
Local pump station upgrades (Water Corporation)		Local upgrades – including additional transformers, switch gear and low voltage distribution (Western Power)		Reinforce existing bulk supply services (Atco Gas)
Upgrade of South Perth main sewer (Water Corporation)				Distribution and reticulation of services (Atco Gas)
Potential upgrade of downstream infrastructure including pump stations and end of catchment wastewater treatment plants (Water Corporation).				
Water				
Local reticulation upgrades (developers)				

Table 12 Critical community infrastructure (short term, 0-10 years)

Urban Spaces	Parks	Schools and Community Facilities
Design and construction of urban spaces and linking spaces shown on Public Open Space plan. (Cities of Melville and South Perth)	Development and implementation of Landscape and Recreation master plans for McDougal Park and Olives Reserve. (City of South Perth)	Review capacity of existing schools, and schedule upgrades if required. Improve public transport linkages to nearby schools. (Department of Education)
Upgrade of active pathway connecting Q1 Quarter to Heathcote Lower area. (City of Melville)	Design and upgrade of Heathcote Lower area for active recreation (City of Melville)	

Table 13 Necessary transport infrastructure (medium term, 11-20 years)

Road Infrastructure	Public Transport	Active Transport	Parking
Design and construction of local accessways within CBSP area (Cities of Melville and South Perth)	PTA to review bus and rail services and facilities and improve as required (Public Transport Authority)	Develop path network (all path and road types) (Cities of Melville and South Perth)	Develop multistorey decked car parks for communal parking in the CBSP area (Cities of Melville and South Perth)
Construction of the southbound Kwinana Freeway on ramp from Manning Road (Main Roads, WA)	Continual improvements to public transport infrastructure in accordance with the Department of Transport's Public Transport Plan for Perth in 2031 (Public Transport Authority)	Enhance regional active pathway network as part of foreshore works (Department of Transport)	Investigate the feasibility and potential location of reserved bays for the future introduction of car sharing schemes (Cities of Melville and South Perth)
Replace Canning River Bridge Traffic Bridge (Main Roads, WA)	Design and construction of light rail link from Curtin University to the CBSP area (Department of Transport; Public Transport Authority)	Redevelop retained northern timber bridge as pedestrian and cycle way (Main Roads, WA)	
Progress development of movement network (Cities of Melville and South Perth)			
Water sensitive urban design (WSUD) features (such as biofiltration swales) within foreshore reserves to treat road stormwater runoff (Cities of Melville and South Perth)			