

Great Eastern Highway Urban Corridor Strategy

BACKGROUND REPORT



DOCUMENT HISTORY AND STATUS

GREAT EASTERN HIGHWAY CORRIDOR STRATEGY BACKGROUND REPORT

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EXECUTIVE SUMMARY

The Great Eastern Highway Urban Corridor Strategy is being prepared to assist in facilitating growth of the Great Eastern Highway Corridor (Corridor) as one of Perth's key Urban Corridors. The Strategy will provide a framework for gradual transformation into a Corridor that will offer a diversity of new homes and new economic opportunities within a growing, changing City.

This Background Report (report) provides the necessary background information to inform the Urban Corridor Strategy.

The report includes an analysis of the study area, including Activity Corridor examples, locational and historical context, planning framework and the socioeconomic summary.

The report considers the physical characteristics of the study area and includes an assessment of the opportunities and constraints of the Corridor in terms of land use, built form, public realm and movement, as well as an assessment of the redevelopment potential of the study area.

An overview of infrastructure funding opportunities is also included which will inform the Implementation Framework in the Great Eastern Highway Urban Corridor Strategy.



An existing landscaped portion of the Great Eastern Highway Corridor.

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1. INTRODUCTION

This report has been prepared to inform the preparation of a comprehensive strategic plan for the redevelopment of the Great Eastern Highway Corridor spanning from the Graham Farmer Freeway in Rivervale to just east of Ivy Street.

The proposed plan will guide the preparation of the Great Eastern Highway Urban Corridor Strategy, and ultimately the redevelopment of public and private landholdings within the study area as shown in **Figure 1**.

This report provides analysis and information to inform the planning of this area, inclusive of:

- **Activity Corridor Characteristics**, to realise what the Urban Corridor Strategy should be aiming to achieve for the Corridor;
- The **Planning Framework**, including regional and local planning previously undertaken that will inform the future redevelopment of the subject area;
- **Socio-Economic Analysis** of the study area, identifying key trends and forecasts for the population and the likely implications on the Urban Corridor Strategy;
- **Physical Site Description** of the study area;
- An **Opportunities and Constraints Analysis** of the study area, identifying key issues and opportunities that will inform redevelopment potential; and
- The **Infrastructure Funding Options** to be considered in the implementation of the Urban Corridor Strategy.

The ideas included in this report are intended to provide background and context to the **Great Eastern Highway Urban Corridor Strategy**.

1.1 ACTIVITY CORRIDOR CHARACTERISTICS

The ideal activity Corridor would typically be characterised by the following traits:

- High density residential facilities (i.e. townhouses, terraces and apartments), sometimes as a component of mixed use development;
- A variety of non-residential uses, including retail, commercial, food and beverage, health, short-stay accommodation and education facilities, in a street-based built form or series of nodes;
- With major destinations or attractions as anchors at each end;
- Maximum intensity of development along the primary Corridor, with a gradual reduction in intensity behind the Corridor;
- A rail-based form of high frequency public transport along the length of the Corridor;
- Buildings that address the street, with minimal front setbacks and parking excluded from the front setback area;
- On-street parking provided, enabling convenient access to businesses and limiting vehicle traffic speeds to promote safe non-vehicle movement (i.e. walking and cycling);
- Street trees and awnings to provide climatic relief;
- Generous footpaths and cycle paths on both sides of the main Corridor and connecting with the surrounding area to encourage walking;
- Regular, safe and formalised pedestrian crossings;

- Parallel rear laneways and local streets (but not continuous along the length of the Corridor) that provide for efficient vehicle access. Direct vehicle access is ideally not provided to the activity Corridor.

The planning for the future of the Great Eastern Highway provides the opportunity to see these traits and characteristics incorporated as redevelopment occurs.

1.1.1 ACTIVITY CORRIDOR EXAMPLES

The following examples illustrate a number of existing or potential Activity Corridors, which have been drawn upon to highlight the importance of incorporating nodes of activity to create a vibrant urban environment, supported by high quality public realm and a robust public transport network and strong pedestrian and cycling facilities.

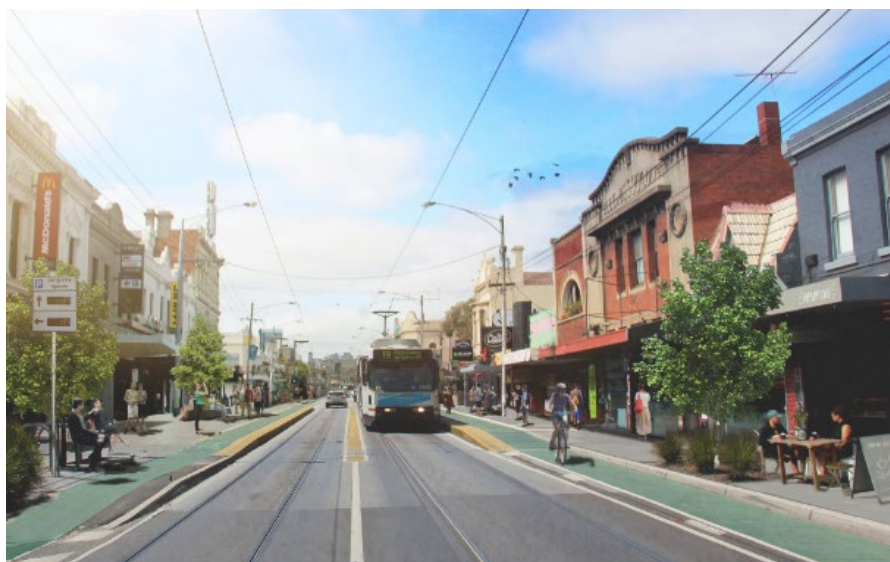
A prime example is Portland Mall, a legacy project and icon for progressive urban planning and design, which has been transformed into a Great Street. Today it extends the entire length of downtown Portland, mixes multiple modes of transportation, stimulates adjacent development and re-establishes itself as Portland’s civic spine. A new benchmark in design, placemaking and infrastructure for the 21st century, the design is a formal, powerful order of widened sidewalks, transit lanes, trees, lights and sidewalk. Stainless steel is used in new amenities for its refined surface and highly-durable finish. A comprehensive system of graphic and written information unifies the transit system environment for all users. A highly engineered design for flexible-set brick pavers allows for continuity of the pedestrian system at intersections. Shelter architecture was deliberately designed for openness and transparency. Roof and windscreen elements are minimal. Low-energy, LED lighting is incorporated into column cladding and ridge beam for enhanced night use.

Portland Mall	
Location	Portland, Oregon USA
Length	Approximately 9km
Proximity to CBD	Downtown Portland
Anchor Centres / Nodes	University District, Retail Core, Civic/Office Cultural, Hotel/Financial, Old Town/Chinatown
Key Land Uses	Commercial, residential, offices, retail, ground floor activation, residential campus environment
Residential Density	Pockets of high density in core areas
Public Realm Features	High quality of public realm, including widened sidewalks, transit lanes, street trees, lighting and street furniture to encourage use
Key Transportation Features	Multiple modes of transportation, including bus and light rail, new bus shelters, transit lanes, continuity of flexible set brick pavers allows for continuity of the pedestrian system at intersections



Provision of high-quality public realm featuring landscaping, shade and street furniture

Sydney Road	
Location	Brunswick, Victoria Australia
Length	Approximately 2.5km
Proximity to CBD	1km
Anchor Centres / Nodes	Neighbourhood activity centre, core light industrial precincts, residential precinct, civic and cultural precinct
Key Land Uses	Retail, residential, industrial, commercial, active uses on the ground floor.
Residential Density	Precincts of higher density areas 5-8 storeys, other areas 1-3 storeys
Public Realm Features	Public realm improvements include pedestrian priority streets connecting to Corridor, green streets connecting to Corridor, improved pedestrian links, enhanced tram stops, enhanced access to train platforms connecting to crossing streets
Key Transportation Features	Railway line, multiple train stations, tram line.



Active street fronts incorporating public transport and cycle infrastructure.

St Kilda Road	
Location	Melbourne, Australia
Length	Portion of road approximately 3km long
Proximity to CBD	3km
Anchor Centres / Nodes	6 sub-precincts, each with a different function including high density residential, mixed use, public domain, and lower scale residential transitioning into surrounding areas.
Key Land Uses	Residential, mixed use, office
Residential Density	High density
Public Realm Features	Adjacent to major open spaces, formal tree lined landscaped boulevard and avenues which create a 'park like' setting, a variety of street widths which create a range of distinctly difference streetscape experiences.
Key Transportation Features	Tramline, extensive bike paths and pedestrian paths



High quality landscaping to provide shade to bike riders and pedestrians.

1.2 PRECINCT ANALYSIS

1.2.1 LOCATION AND EXTENT

The Corridor is centred on the existing Great Eastern Highway road reserve. The portion of the Great Eastern Highway included in the study area is a 6.7 km long, running from the Graham Farmer Freeway in Rivervale to east of Ivy Street and includes the lots fronting or siding onto the Great Eastern Highway as depicted in **Figure 1 – Study Area**.

The centre of the Corridor is located approximately 6km north-east of the Perth CBD and 3.5 km south-west of the Perth Airport. The Belmont Mixed Business Area fronts the southern side of the Great Eastern Highway. The Burswood Activity Centre is located west of the Corridor, on the western side of the Graham Farmer Freeway.

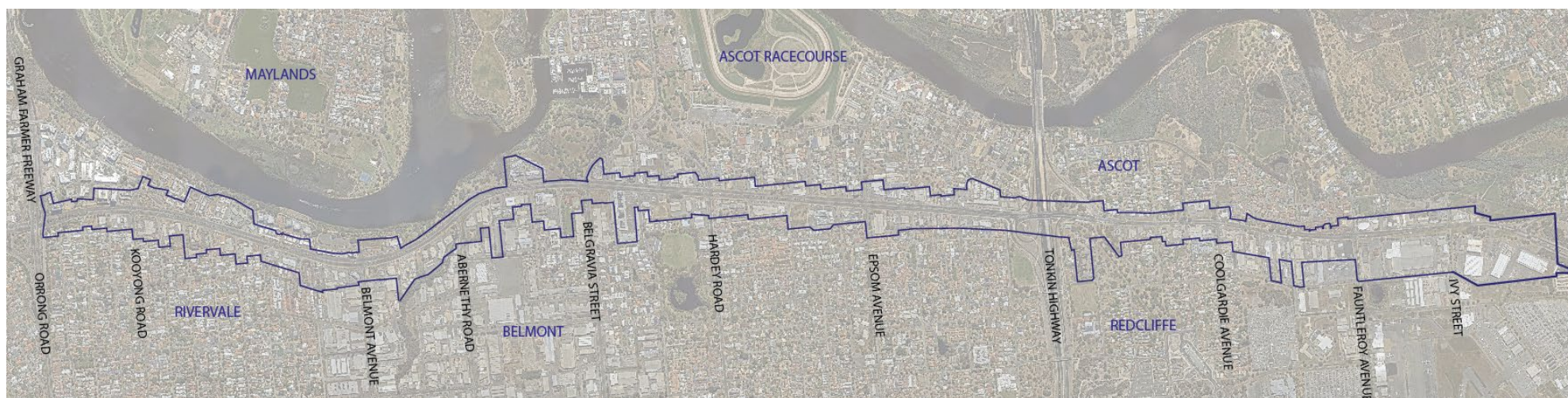


Figure 1 Study Area

1.2.2 LOCAL CONTEXT

The Great Eastern Highway provides a vital connection from the Perth Airport to the Perth Central Business District (CBD) (**Figure 2**). The area also benefits from its proximity to the Belmont Mixed Business Area and connection to the wider road network. Several sites surrounding the Great Eastern Highway are subject to significant redevelopment, including Development Area 6 (DA6) to the east, the Springs located in Rivervale on the western end of the Corridor, Golden Gateway located in the middle of the Corridor immediately north of Great Eastern Highway, as well as a number of Development Control areas as identified in the City of Belmont Local Planning Scheme No. 15 located along the Corridor.

The study area is in proximity to several key international attractions including the Crown Casino, Optus Stadium, Ascot Racecourse, the Swan River as well as the Perth CBD and the Perth Airport.

The importance of the Great Eastern Highway as the main east-west Corridor dominates the landscape of the area. Whilst providing good accessibility, the nature of this major traffic route also acts as a barrier for vehicle, pedestrian and cycle linkages to the surrounding areas. Whilst it is important that development along the Great Eastern Highway is optimised to realise the benefit of exposure to significant volumes of traffic, pedestrian and cycle linkages must also be considered and improved.

1.2.3 HISTORICAL CONTEXT

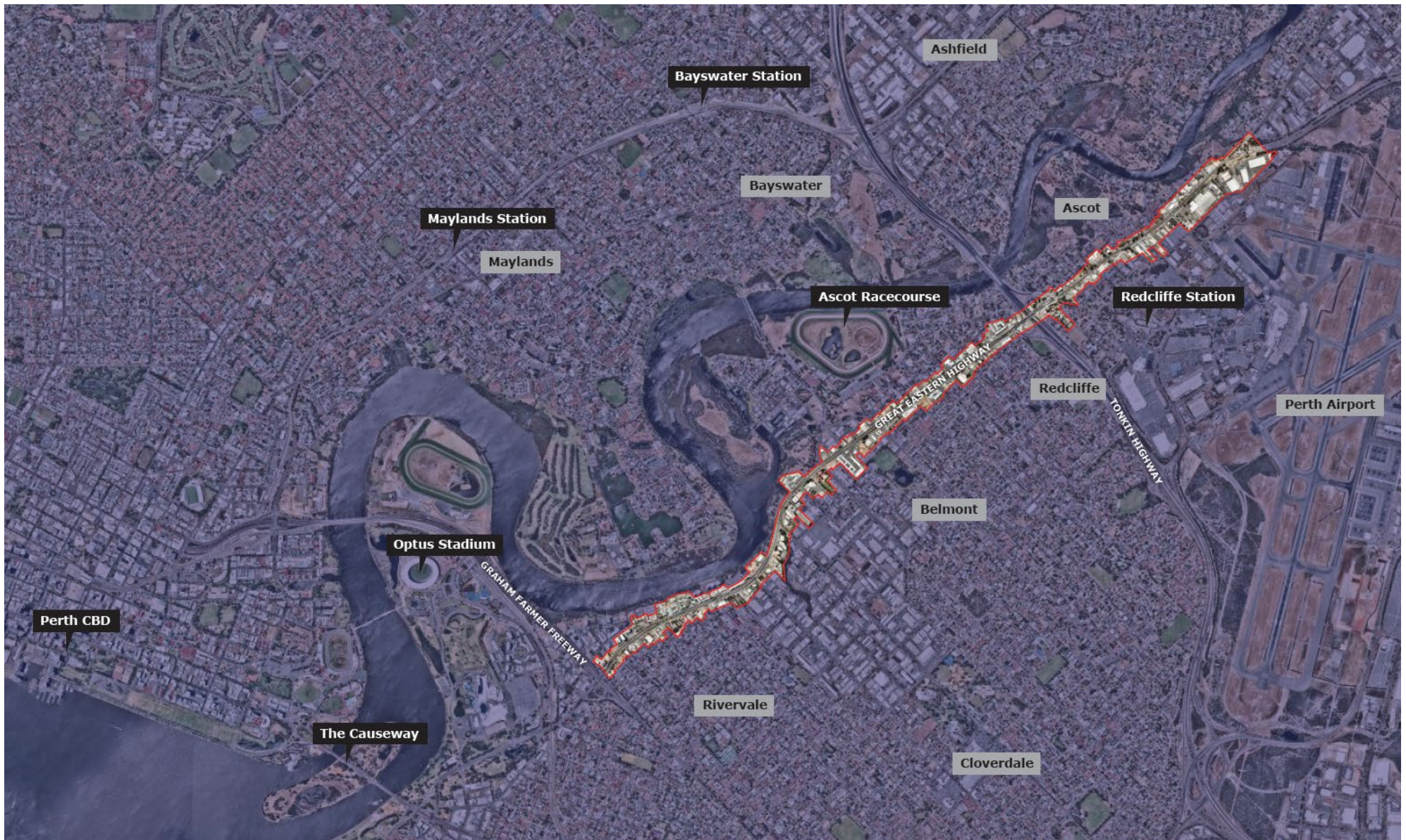
The areas surrounding the Great Eastern Highway were amongst some of the first land grants offered in the newly formed Swan River Colony. In 1830 Captain F. Byrne was allocated Swan Location 34 which he named Belmont Farm after his estate in England. Mark Currie was appointed to survey and allocate parcels of land along the Swan River, managing to reserve Swan Location 28 for himself. The Curries' called their property Red Cliff after the steep red clay banks of the Swan River, clay which was later to be used to make bricks.

The area of Belmont was originally established on 2 December 1898 as a road board with a chairman and councillors under the District Roads Act 1871. It was renamed "Belmont Park Road District" on 4 October 1907. With the passage of the Local

Government Act 1960, all road districts became Shires, with a president and councillors, effective July 1961. On 17 February 1979, the Shire of Belmont became a City, with a Mayor and Councillors.



Great Eastern Highway at Belmont 1953 (City of Belmont, 2015)



6 Figure 2 Study Area Context

2. PLANNING CONTEXT

2.1 STRATEGIC PLANNING CONTEXT

2.1.1 PERTH AND PEEL @ 3.5 MILLION, (WAPC, MAY 2015)

The Western Australian Planning Commission's (WAPC) Perth and Peel @ 3.5 Million Framework is intended as a high-level spatial framework and strategic plan for the Perth and Peel Region, establishing a vision for future growth and guiding the planning and delivery of housing, infrastructure and services necessary to accommodate a rapidly expanding population. The Strategy is intended to realise the vision encapsulated in *Directions 2031 and beyond* and the *State Planning Strategy 2050*.

The Great Eastern Highway falls within the Central Sub-region of Perth and Peel @ 3.5 Million Framework. In the context of the Great Eastern Highway, Perth and Peel @ 3.5 Million provides the following guidance:

- The Great Eastern Highway is identified as a Corridor, providing a connection between Burswood Activity Centre and Perth Airport. Corridors are identified as providing significant opportunities to accommodate increased medium-rise higher density residential development.
- Corridors provide connections between activity centres and maximise the use of high-frequency public transport.
- Corridors should be protected from incompatible urban encroachment and avoid buffers to promote a system where land use developments and transport infrastructure are mutually compatible.
- Corridors should be the focus for investigating increased densities and a greater mix of suitable land uses.
- A high-quality public transport service is important, where one or more modes of travel are used in combination to:

- Provide high levels of service frequency at all times of the week and generally high frequency in peak periods;
 - Provide access to a reasonable variety of destinations including through multi-modal links; and
 - Operate with a high level of priority over private vehicles wherever possible.
- Future development should be focused in and around station precincts and these precincts should be promoted as attractive places to live and work by optimising proximity to public transport.

The Framework also identifies a target of an additional 215,000 dwellings to be accommodated within the metro central region, with an allocation of 10,500 dwellings to be accommodated within the City of Belmont.

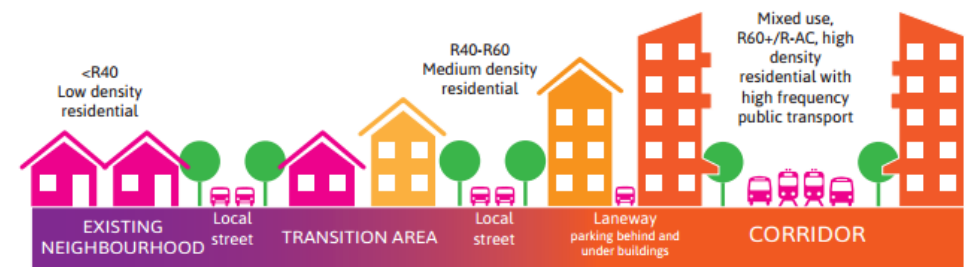


Figure 3 Cross Section Illustrating Proposed Interface from Corridors to Neighbourhood Area (Perth and Peel @ 3.5 Million)

2.1.2 PERTH AND PEEL @ 3.5 MILLION (THE TRANSPORT NETWORK 2018)

Perth and Peel @ 3.5 Million Strategy (The Transport Network) was released by the Department of Transport in 2018 to guide transportation planning and infrastructure investment to coincide with land use and development planning under Perth and Peel @ 3.5 Million. The Transport Strategy is intended to be a vision for generational change of Perth's transport network and aims to achieve maximum efficiency in the way in which people move about the metropolitan area.

Of significant relevant to the Great Eastern Highway, the Transport Strategy identifies:

- The Great Eastern Highway as a High Priority Public Transit Corridor;
- The Great Eastern Highway is classified as a freight road.
- Bridges to improve connectivity across the Swan River which are proposed to be located between Herrison Island and Maylands.
- The Forrestfield Airport tunnel will cross the Great Eastern Highway at the Tonkin Highway interchange, with a new Redcliffe Station proposed to the south-east of this interchange; and

2.1.3 PERTH AIRPORT MASTER PLAN (PERTH AIRPORT, 2020)

The Perth Airport Master Plan was prepared as a blueprint for future development, covering a planning period of 20 years.

The Master Plan details the plans to expand Terminal 1 and a new runway, which is anticipated to be operational by the end of the decade.

The Master Plan divides the Perth Airport into five precincts, two of these which will be solely aviation related, and three which will have a mix of aviation and non-aviation uses and commercial development.

Of relevance to the Great Eastern Highway Corridor, the Perth Airport Master Plan notes:

- The Forrestfield-Airport-Link, which services Perth Airport passengers and employees;
- All terminals are serviced by taxis, and Perth Airport's Connect shuttle bus service currently operates between the terminals, and to and from the Perth Airport.

2.1.4 STATE PLANNING POLICIES

State Planning Policy 4.2 - Activity Centres (WAPC, July, 2023)

State Planning Policy 4.2 sets out the principles and design criteria for the planning and development of activity centres. It deals with the distribution, function, land use and urban design of activity centres and their integration with public transport. It also seeks to provide an even distribution of jobs, services and amenities throughout the Perth and Peel region. In doing so, the document establishes an activity centre hierarchy that categorises activity centres based on their function and characteristics. Although Great Eastern Highway is not classified as a formal activity centre in SPP 4.2, it provides access to the Perth Airport which is classified as a Specialised Centre, Burswood which is classified as a District Centre and the Belmont Town Centre which is classified as a Secondary Centre. Therefore, many of the activity centre principles are applicable to activity Corridor development.

Development along the Corridor should complement development within each of the centres. Each of the centres should be characterised by the following:

- Bus network hub (with buses traversing the Corridor);
- Typical retail types of discount department stores, supermarkets, convenience goods, small-scale comparison shopping, personal services, some speciality stores, district-level office development and local professional services;
- Minimum residential density target per gross hectare of 20, and desirable target of 30; and

- Mix of land uses as a proportion to the centre’s total floor space.

The development framework for the Corridor should be cognisant of the development proposed within the adjacent centres.

State Planning Policy 5.1 – Land Use Planning in the Vicinity of Perth Airport (WAPC, July 2015)

The State Planning Policy 5.1 (SPP 5.1) applies to land in proximity to Perth Airport which is, or may be in the future, affected by aircraft noise. The purpose of the policy is to provide guidance to Local Governments in the vicinity of the Perth Airport and the WAPC when considering developments on land adjacent to the airport.

The subject site is predominantly outside of the 20 Australian Noise Exposure Forecast (ANEF), with the exception of the eastern end of the Corridor, east of Fautleroy Avenue.

There is no restriction on zoning or development within areas below the 20 ANEF.

For the portion of the subject site within the 20 ANEF, development will occur in accordance with the requirements within SPP 5.1.

State Planning Policy 5.4 - Road and Rail Noise (WAPC, September 2019)

State Planning Policy 5.4 Road and Rail (SPP 5.4) identifies necessary considerations and measures to mitigate the impacts of the operation of major road and rail infrastructure on noise sensitive development. This is particularly applicable for the Great Eastern Highway, which carries between 41,500 and 69,500 vehicles per day throughout the study area.

The consideration of greater intensification of development, particularly of noise sensitive uses such as residential, immediately adjacent Great Eastern Highway, will require a range of considerations to mitigate the impact of noise on this development. Some of the measures outlined in the policy include:

- Using distance to separate noise-sensitive land uses from noise sources;
- Building design, such as locating outdoor living areas and indoor habitable rooms away from noise sources;
- Building construction techniques, such as upgraded glazing, ceiling insulation, sealing of air gaps and mechanical ventilation; and
- Planning and design of the road or rail project such as the use of low-noise road surfaces.

2.1.5 CITY OF BELMONT LOCAL PLANNING STRATEGY (CITY OF BELMONT, OCTOBER 2011)

The City of Belmont Local Planning Strategy identifies the Great Eastern Highway as the only major regional road that provides direct access to many individual commercial properties. The strategy recognises that the Corridor's dual role as a traffic mover and access street has resulted in many sections of the Corridor having traffic and amenity problems. In these sections of the Corridor, it is difficult to access properties by car and very hazardous to pedestrians.

The objectives for Great Eastern Highway identified in the Strategy are:

- Limit access points off GEH to minimise traffic conflict;
- Encourage the provision of appropriate public transport;
- Facilitate the upgrade of GEH at the earliest opportunity;
- Facilitate promotion of GEH as an activity Corridor Strategy; and
- Work with appropriate State Government agencies to achieve objectives.

The Corridor Strategy seeks to achieve these objectives.

2.1.6 CITY OF BELMONT LOCAL HOUSING STRATEGY (CITY OF BELMONT, NOVEMBER 2008)

The City of Belmont Local Housing Strategy is intended to provide a direction for the future planning for residential development, densities and housing types within the City, which informed the basis for residential zonings and provisions for the City's current Local Planning Scheme No. 15 (LPS 15). The Strategy aims to promote long term sustainability of the City by encouraging an increase in the City's population through the provision of residential land and housing. The Strategy recognises the importance of providing a range of housing types, which will attract and meet the needs of a diverse range of age groups.

2.2 STATUTORY PLANNING CONTEXT

2.2.1 METROPOLITAN REGION SCHEME

The Metropolitan Region Scheme (MRS) provides the statutory framework for land use in the Metropolitan Region. The Great Eastern Highway road reserve is identified as a 'Primary Regional Road'. There are access roads connecting to the Great Eastern Highway reserved as 'Other Regional Roads'. Land to the immediate north and south of Great Eastern Highway comprises land reserved for 'Parks and Recreation' and land zoned 'Urban', which is land 'in which a range of activities are undertaken, including residential, commercial, recreational and light industry'. Further south of the Corridor is land zoned 'Industrial', which is where the Belmont Business Park is located. The Perth Airport land is a Commonwealth Government Reserve for 'Public Purposes' **Figure 4 – Existing MRS.**

2.2.2 CITY OF BELMONT LOCAL PLANNING SCHEME 15

The 'Primary Regional Road', 'Other Regional Road', 'Public Purposes' and 'Parks and Recreation' reservations under the MRS are reflected in the City of Belmont LPS 15. The land to the north of the Great Eastern Highway comprises land reserved 'Parks and Recreation' and zoned 'Mixed Use', 'Residential and Stables', 'Residential R20', 'Residential R100'. The land to the south of the Great Eastern Highway comprises land reserved 'Parks and Recreation: Water Supply Sewerage and Drainage', 'Public purposes – Primary School', and zoned 'Mixed Use', 'Mixed Business', 'Commercial', 'Service Station', 'Industrial', and 'Residential R20 and R20/R40' **Figure 5 – LPS 15.**

Clause 4.19 of LPS 15 identifies matters which the City is required to have regard to in considering applications for multi-storey buildings along Great Eastern Highway, which are:

- a) The purpose of the proposed building;
- b) The bulk and height of adjoining and nearby buildings;
- c) Potential impact of overlooking and/or overshadowing;
- d) Potential impact of the proposal on the existing and proposed streetscape; and
- e) The effect of the proposed building on the amenity of adjoining and nearby properties.

In addition, Clause 4.19.2 requires the City to have regard to the requirement for a limited number of crossovers to the Highway and shall require any applicant to gain approval of a vehicular access plan by the responsible authority.

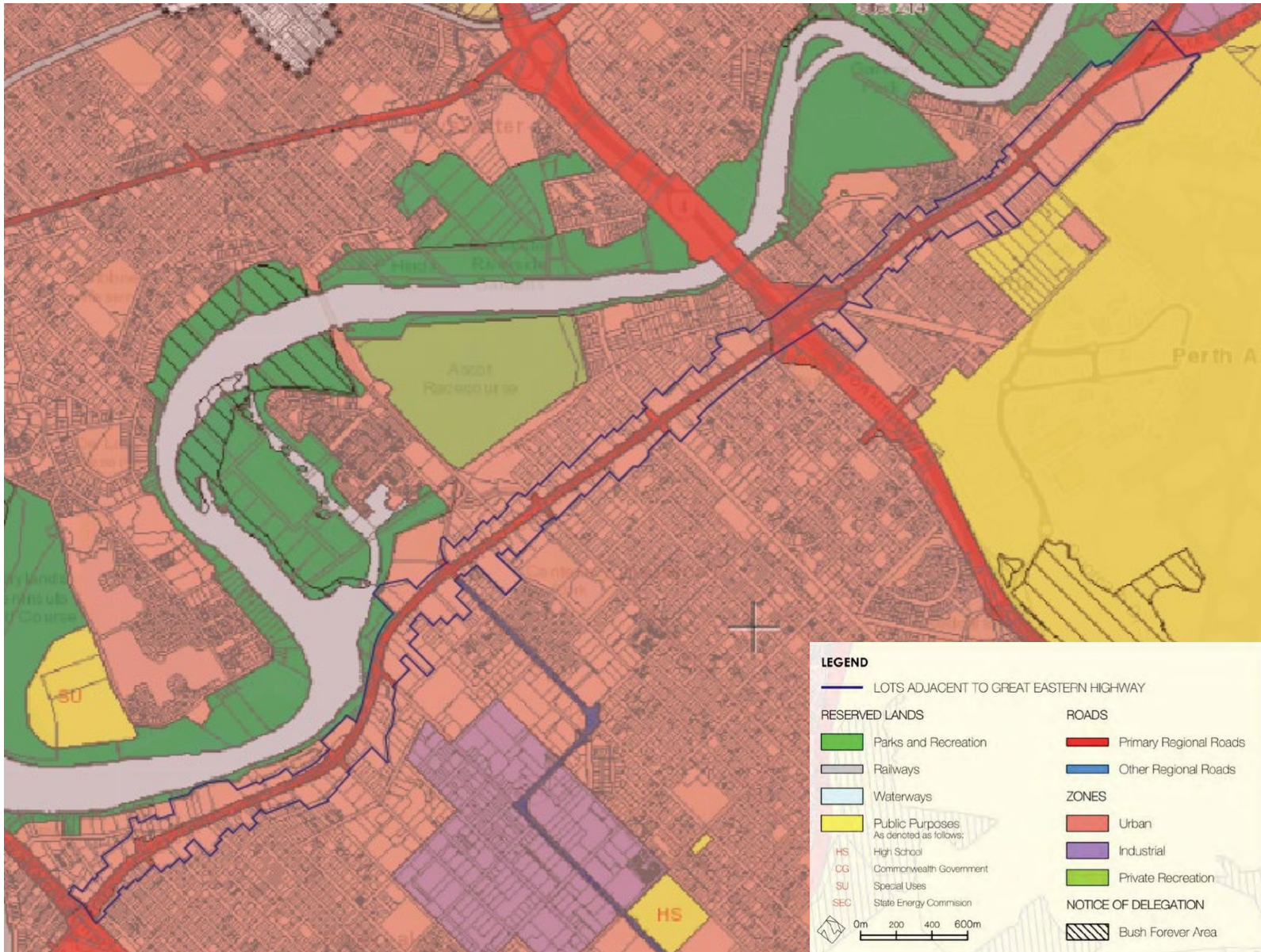


Figure 4 Metropolitan Region Scheme

Figure 5 City of Belmont LPS 15

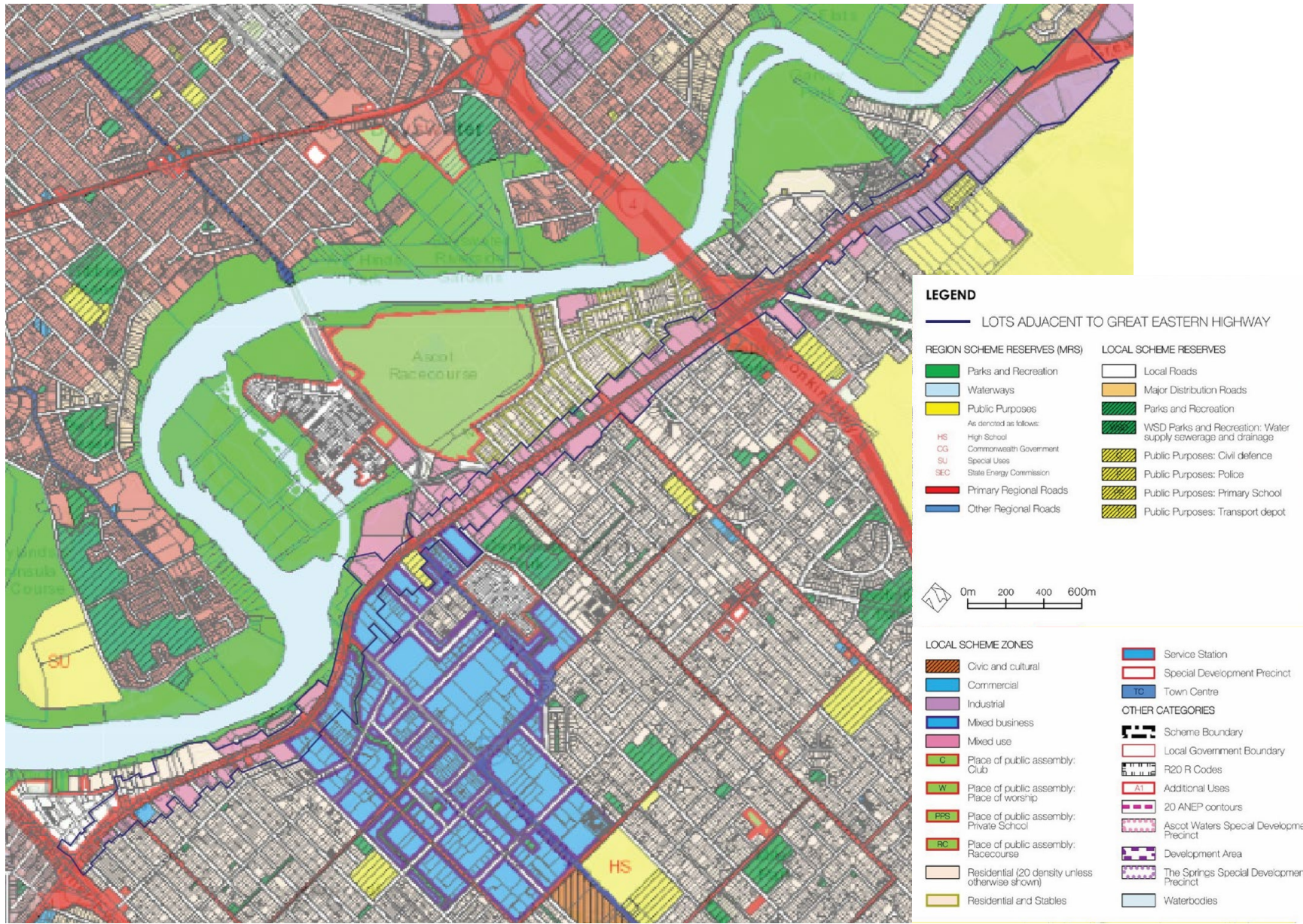


Figure 5 City of Belmont LPS 15

2.2.3 LOCAL PLANNING POLICIES

The following Local Planning Policies (LPPs) are relevant to the subject site:

Local Planning Policy No. 10 Residential Land uses in the 'Mixed Business' Zone (LPP 10)

The basis for LPP 10 is to ensure that residential uses are compatible with existing and future businesses within the 'Mixed Business' zone and stipulates where residential land uses may be considered in the Mixed Business Zone, and the development standards. LPP 10 identifies areas where 'Residential' land uses may be considered appropriate within the 'Mixed Business' zone, and the standard of development which must be adhered to in such instances. There are two portions of land in the study area located between Abernethy Road and Belmont Avenue and between Hehir Street and Abernethy Road which are identified in LPP 10 as being within the 'Mixed Business' zone, though 'Residential' development may be considered appropriate.

Local Planning Policy No. 16 Service Stations (LPP 16)

LPP 16 was prepared to guide future development of Service Stations within the City of Belmont, in responses to a growing number of service station proposals received by the City. The Policy assists the City in assessing proposals for service station development within the City of Belmont Local Government Area.

Local Planning Policy No. 7 The Springs Design Guidelines (LPP 7)

LPP 7 applies to 'The Springs' in Rivervale, approximately 13.6 ha of land bounded by the Graham Farmer Freeway, the Great Eastern Highway, Brighton Road and the Swan River foreshore. The Design Guidelines guide and control development within the Springs locality, which abuts the Great Eastern Highway.

Local Planning Policy No. 13 Vehicle Access for Residential Development (LPP 13)

The purpose of LPP 13 is to ensure that vehicle crossovers for residential development within the City of Belmont do not adversely impact on the neighbourhood safety and amenity while providing appropriate access to residential properties.

This policy applies to all 'Residential' zoned land, or land zoned under LPS 15 on which the Council may approve residential development.

Local Planning Policy No. 14 Development Area 6 Vision (LPP 14)

The objective of LPP 14 is to articulate the City of Belmont and Perth Airport Pty Ltd.'s vision for Development Area 6. Development Area 6 is the area bound by Great Eastern Highway, Tonkin Highway, Fauntleroy Avenue and the Coolgardie Avenue, Redcliffe Road and Perth Airport Precincts 1A and 1B. The Policy will assist in providing direction for the future planning and progressions of detailed structure planning for the precinct.

2.3 PREVIOUS STUDIES

Belmont on the Move (City of Belmont, July 2016)

The City of Belmont prepared an Integrated Movement Network Strategy - Belmont on the Move to set out a framework for how the City will plan ahead over the next 10 years to ensure people can move safely, conveniently and comfortably around the City of Belmont. This document identifies the requirement of a Corridor Study, commencing with Great Eastern Highway to examine the potential outcomes and access arrangements for development with the Corridors identified in Perth and Peel @ 3.5 million.

Branding Strategy (City of Belmont, 2014)

The City of Belmont commissioned a Branding Strategy to be undertaken on the Mixed Business Area on Great Eastern Highway in 2014. The Strategy recommends that this area be renamed 'Belmont Business Park', with the associated identity statement – Gateway to Opportunity. The strategy also suggests a vision statement for the area which is 'Belmont Business Park will be the preferred location for a mix of innovative and successful businesses seeking premises that allow them easy access to the Perth CBD, the Airport and their customers'. The Urban Corridor Concept reflects the vision for the Belmont Business Park.

2.4 COMMUNITY CONSULTATION

Two Vision and Design workshops were held with members of the community in November 2017 to inform and assist in crafting an overall shared Vision and design for the Corridor. Engaging diverse viewpoints, the planning discussions helped to ensure a process that was inclusive, and that incorporated leading edge thinking on the most challenging issues facing the City.

The workshops focused on identifying principles and themes to inform an overall Vision based on the community members desire for specific development outcomes. The Vision and design principles were then used to guide the design scenarios for the Corridor.

A complete copy of the Outcome Summary Report is included in **Appendix 1**.

The community's Vision for the area includes:

- A Corridor which is a gateway to the Perth CBD;
- An improvement to the public realm with better parks and gathering places, more trees and vegetation in the streets, wider, shady footpaths and less impact from car parking and traffic speed;
- Greater connectivity to the river;
- Redevelopment of an appropriate human scale which enables growth of the community;
- Diversity of housing stock to provide an opportunity for older people to retire locally and for young families to settle;
- The opportunity for improved access to community places within the area and growth and diversity in the local centres.



Vision and Design Workshop at the City of Belmont Administration Centre

3. SOCIO-ECONOMIC ANALYSIS

To understand the existing community profile along the Great Eastern Highway Corridor, a review and comparison of the Australian Bureau of Statistics (ABS) and .id forecast has been undertaken. This analysis has generally been undertaken at a Local Government Area level and where available, a State Suburb level within the City of Belmont based on the 2011 to 2021-time series and community profiles. Comparisons have then been drawn to the Greater Perth statistical area for context.

The State Suburbs (suburbs) are an ABS approximation of localities gazetted by the Geographical Place Name authority. At this point in time using suburbs to compare data was considered appropriate due to the availability of the census data, as well as the location of suburbs along the study boundary which best represents the study area Boundary. Additionally, ABS data exists for the same suburbs from the 2016 as well as the 2021 Census, allowing comparisons to be undertaken with ease.

Statistical Area Level 2 (SA2) areas have not been analysed due to lack of existing information which has been released from the ABS, as well as the relatively large SA2 areas within Belmont, making it harder to extract specific information relative to the study area boundary.

The topics included in the socio-economic analysis include:

- Population Estimates and Forecasts
- Age Profile
- Ethnicity
- Languages Spoken at Home
- Qualifications
- Household Types
- Household Size
- Need for Assistance
- Housing Stock
 - Distribution of Housing Stock by Suburb
 - Dwelling Size
 - Distribution of Dwelling Size by Suburb
 - Tenure
 - Housing Payments
- Economy and Employment
 - Place of Employment
 - Employment Status
 - Mode of Travel to Work
 - Employment Industry
 - Occupation
 - Household Income

The analysis is summarised and the implications on the Urban Corridor Strategy is outlined at the end of **Section 3**.

The suburbs which have been analysed are Belmont, Ascot, Redcliffe and Rivervale (**Figure 6**).

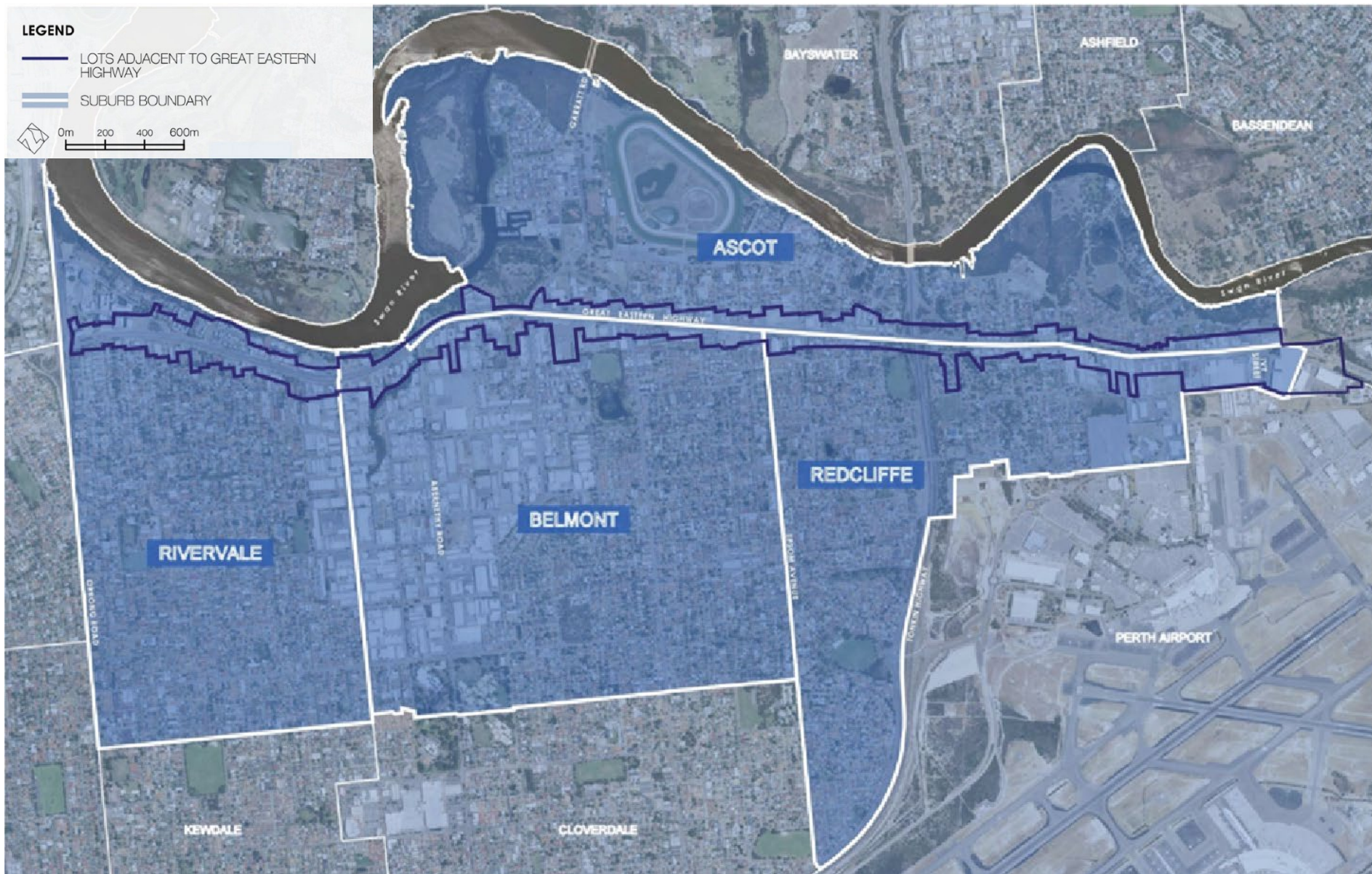


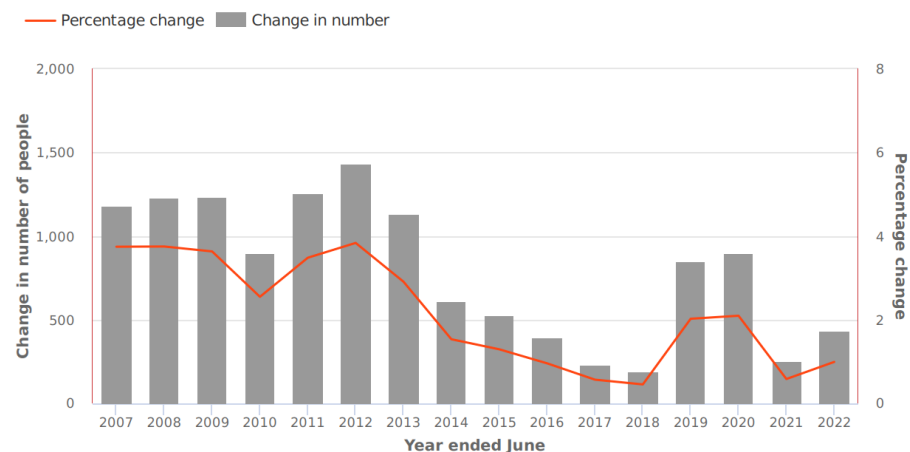
Figure 6 Suburbs within the Study Area

3.1 POPULATION ESTIMATES AND FORECASTS

As of 2021, 42,257 people live in the City of Belmont (ABS 2021). The populations of each of the suburbs identified are:

- Belmont: 6,959 people
- Ascot: 3,095 people
- Rivervale: 10,897 people
- Redcliffe: 5,030 people

Census data from the Australian Bureau of Statistics shows an increase of 7,048 persons from 2011 to 2021 in the City of Belmont. Rates of growth were relatively steady reaching a peak in 2012, then noticeably slowing in 2013 to 2018. The population increased noticeably in 2019 before reducing again in 2021 (Figure 7).



Source: Australian Bureau of Statistics, Regional Population Growth, Australia (3218.0). Compiled and presented by .id (informed decisions)



Figure 7 Population Change in the City of Belmont (Source: .idcommunity)

The State Governments Official Population Report No.11 (Western Australia Tomorrow, 2019) forecasts a population of between 46,660 and 52,430 within the City of Belmont by the year 2031, dependant on five different possible growth scenarios. It is generally accepted practice to use Band C for future forecast purposes, giving an anticipated population of 49,650 by 2026 (**Table 1**).

Table 1 City of Belmont Population Forecasts (Source: WA Tomorrow 2019)

Year	Band				
	A	B	C	D	E
2016	39,630	40,690	41,650	42,410	43,850
2021	40,760	42,450	42,940	43,810	45,420
2026	43,800	45,870	46,620	47,350	49,580
2031	46,660	48,580	49,650	50,410	52,430

The population by suburbs in the Corridor compared to the City of Belmont is illustrated in **Table 2**:

Table 2 Population by Suburbs (Source: ABS 2011, 2016, 2021)

Location	Population (2021)	2016 to 2021 % change	Population (2016)	2011 to 2016 % change	Population (2011)
City of Belmont LGA	42,257	6.5%	39,682	12.7%	35,209
Belmont (Suburb)	6,959	2.6%	6,785	8.3 %	6,263
Ascot (Suburb)	3,095	20.33%	2,572	13.4%	2,268
Rivervale (Suburb)	10,897	5.12%	10,366	23.4%	8,402
Redcliffe (Suburb)	5,030	1.23%	4,969	4.4%	4,759

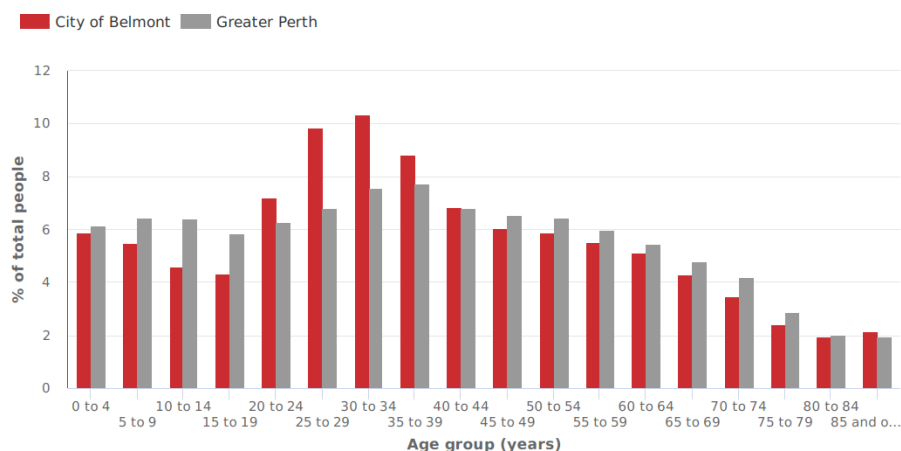
Ascot and Rivervale had the greatest population increase over recent years, with a 20.33% increase in Ascot’s population from 2016 to 2021, and Rivervale’s 23.4% population increase between 2011 and 2016. Rivervale’s growth is likely to reflect development within the Springs precinct, which has resulted in several new apartment buildings.

Ascot’s population growth since 2011 has also been higher than the City of Belmont’s. It is considered that this has largely been attributed to development within the Ascot Waters Estate. The development of Golden Gateway in coming years is also expected to result in an increase in the population of Ascot.

3.2 AGE PROFILE

The age structure of an area’s population is generally indicative of an area’s residential role and function and provides key insights into the level of demand for housing, services and facilities.

The 2021 census outlined that the City of Belmont has a noticeably lower proportion of 5–19-year-olds and a significantly higher proportion of 20–39 year olds compared with Greater Perth, as evident in **Figure 8** below. The largest age group in the City of Belmont was 30–34 year olds (10.3%), followed by 25–29-year-olds (9.9%). This suggests there are a greater number of young households without children and younger households with babies and pre-schoolers in the area. There is a lower proportion of people aged between 45 to 79 years old in the City of Belmont compared to Greater Perth.



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 8 Five-year age groups 2021 (Source: ABS Community Profiles 2021)



Land uses along the Corridor should cater to the needs for the high proportion of 20–39-year-olds in the City of Belmont

At the suburb level, Rivervale had a higher proportion of 20–24-year-olds (8.3%), 25–29-year-olds (12.6%) and 30–34 year olds (13.2%) compared to the surrounding suburbs, the City of Belmont and Greater Perth (**Table 3**). This may reflect the availability of affordable housing within Rivervale, accommodating a younger population group.

Redcliffe had the highest proportion of 0–4-year-olds (6.3%) compared to the surrounding suburbs, the City of Belmont and Greater Perth, which may indicate the growing requirements of young families for associated facilities in this suburb.

Ascot had the largest proportion of residents aged between 50 – 84 years, indicating the presence of a more mature population entering into retirement or who are presently retired.

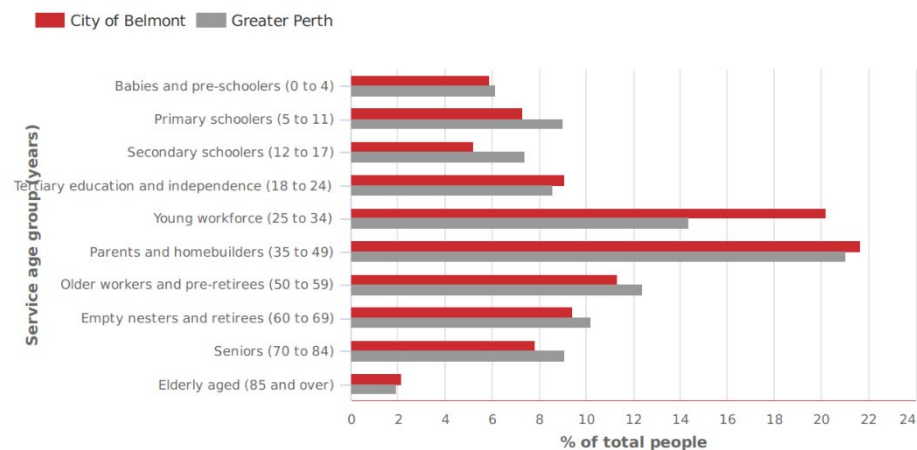
Table 3 Population by five-year age groups and suburbs 2021 (Source: .idcommunity)

	Greater Perth %	City of Belmont %	Belmont %	Ascot %	Rivervale %	Redcliffe %
0-4 years	6.1	5.9	5.6	4.4	5.6	6.3
5-9 years	6.4	5.5	5.3	4.3	4.3	5.9
10-14 years	6.4	4.6	4.4	3.2	3.7	5.6
15-19 years	5.8	4.3	4.1	4.7	3	4.5
20-24 years	6.3	7.2	7.7	6	8.3	5.4
25-29 years	6.8	9.9	10	6	12.6	7.9
30-34 years	7.6	10.3	10.4	7.2	13.2	7.9
35-39 years	7.7	8.8	8.9	6.7	9.6	8.3
40-44 years	6.8	6.8	7.2	5.6	7	7.1
45-49 years	6.5	6	6.5	6.7	5.5	6.5
50-54 years	6.4	5.8	5.7	7.4	5.1	6.5
55-59 years	5.9	5.5	5.4	7.7	5.4	5.8
60-64 years	5.4	5.1	4.9	8.1	5.1	5.4
65-69 years	4.8	4.3	4.6	6.3	4	4.3
70-74 years	4.2	3.5	3.4	5.7	3	3.7
75-79 years	2.9	2.4	2.3	3.6	1.9	2.9
80-84 years	2	1.9	1.5	2.8	1.6	2.2
85 years and over	1.9	2.1	1.9	3.6	1.2	3.8

Analysis of the service age groups of the City of Belmont in 2021 compared to Greater Perth shows that there was a lower proportion of people in the younger age groups (0 to 19 years) as well as a lower proportion of people in the older age groups (45-80 years) (Figure 9).

The biggest differences between the City of Belmont and Greater Perth were:

- A smaller percentage of 'Secondary schoolers' (5.2% compared to 7.4%)
- A smaller percentage of 'Primary schoolers' (7.3% compared to 9.0%)
- A smaller percentage of 'Older workers & pre-retirees' (11.4% compared to 12.4%)
- A larger percentage of 'Young workforce' (20.2% compared to 14.4%)
- A larger percentage of 'Elderly' (2.1% compared to 1.9%).
- Residents are of all different age groups within the four suburbs along the Corridor, although the suburbs have different proportions of particular age groups.



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 9 Age Structure - Service Age Groups, 2021 (Source: .idcommunity)

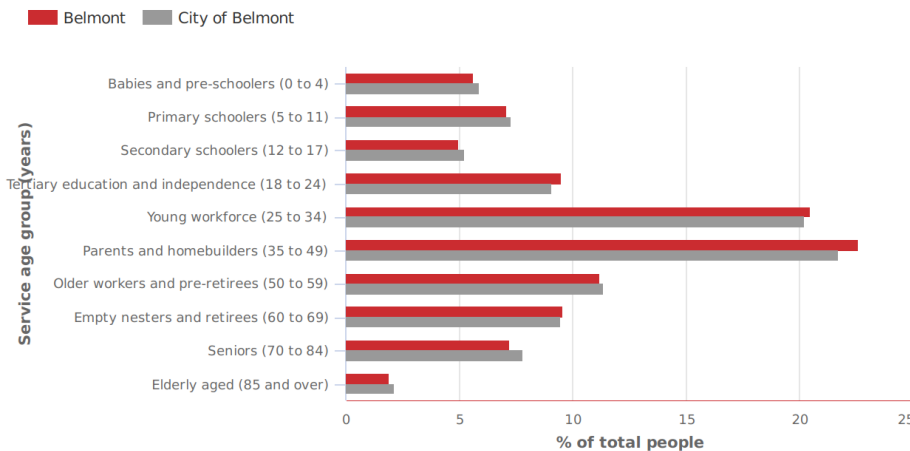
Analysis of the Service Age Groups in the suburbs along the Corridor compared to the City of Belmont showed the biggest differences were:

Belmont (refer **Figure 10**)

- Belmont has a larger percentage of 'Tertiary education & independence' (9.5% compared to 9.1%)
- Belmont has a larger percentage of 'Parents and Homebuilders' (22.6% compared to 21.7%)

Age structure - service age groups, 2021

Total persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



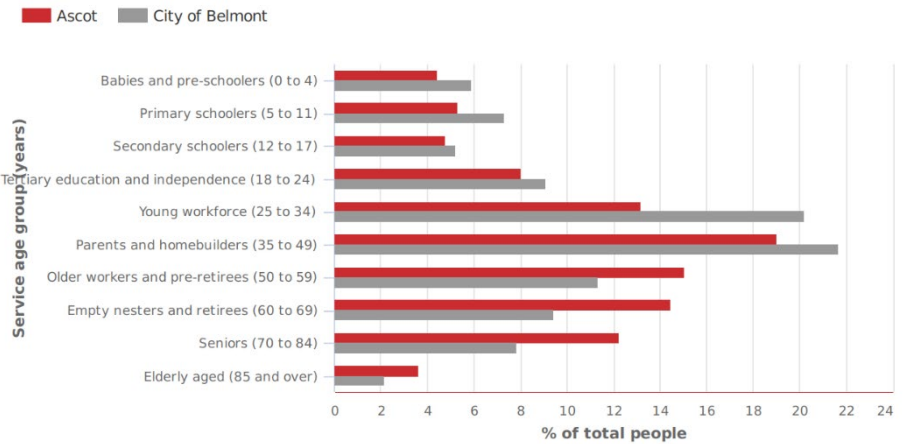
Figure 10 Age Structure - Service Age Groups 2021 Belmont (Source: .idcommunity)

Ascot (refer **Figure 11**)

- Ascot has a larger percentage of 'older workers and pre-retirees' (15.1% compared to 11.4%)
- Ascot has a larger percentage of 'empty nesters and retirees' (14.4% compared to 9.4%)
- Ascot has a larger percentage of 'seniors' (12.2% compared to 7.8%)
- Ascot has a smaller percentage of 'Young Workforce' (13.2% compared to 20.2%)

Age structure - service age groups, 2021

Total persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 11 Age Structure - Service Age Groups 2021 Ascot (Source: .idcommunity)

Redcliffe (refer Figure 12)

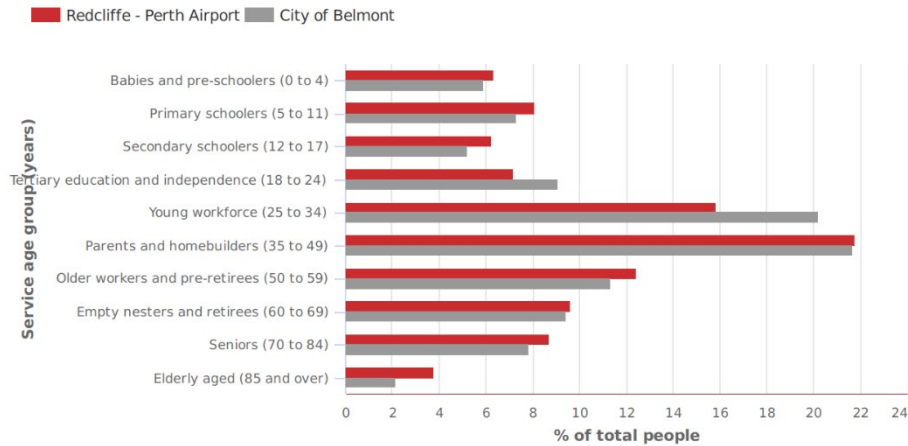
- Redcliffe has a larger percentage of 'elderly aged' (3.8% compared to 2.1%)
- Redcliffe has a smaller percentage of 'Young workforce' (15.8% compared to 20.2%)
- Redcliffe has a smaller percentage of 'Tertiary education & independence' (7.2% compared to 9.1%)

Rivervale (refer Figure 13).

- Rivervale has a larger percentage of 'Young workforce' (25.8% compared to 20.2%)
- Rivervale has a smaller percentage of 'Seniors' (6.5% compared to 7.8%)
- Rivervale has a smaller percentage of 'secondary schoolers' (3.7% compared to 5.2%)

Age structure - service age groups, 2021

Total persons



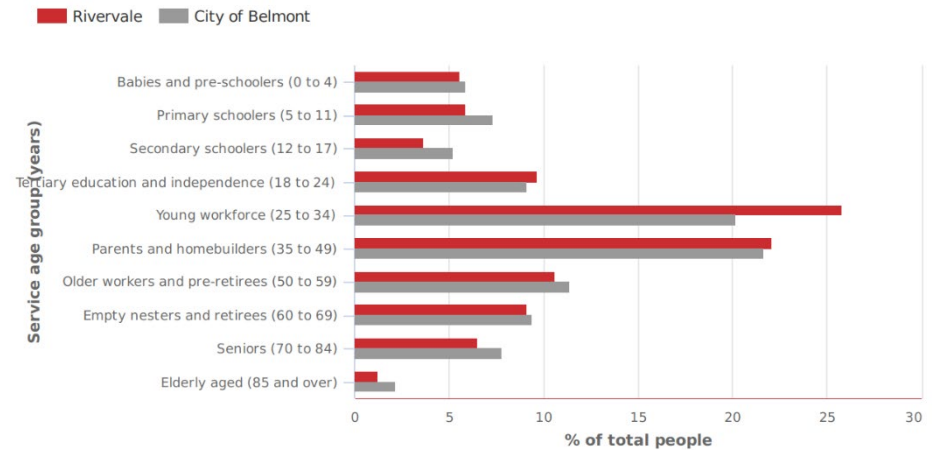
Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 12 - Age Structure - Service Age Groups 2021 Redcliffe (source: id.community)

Age structure - service age groups, 2021

Total persons



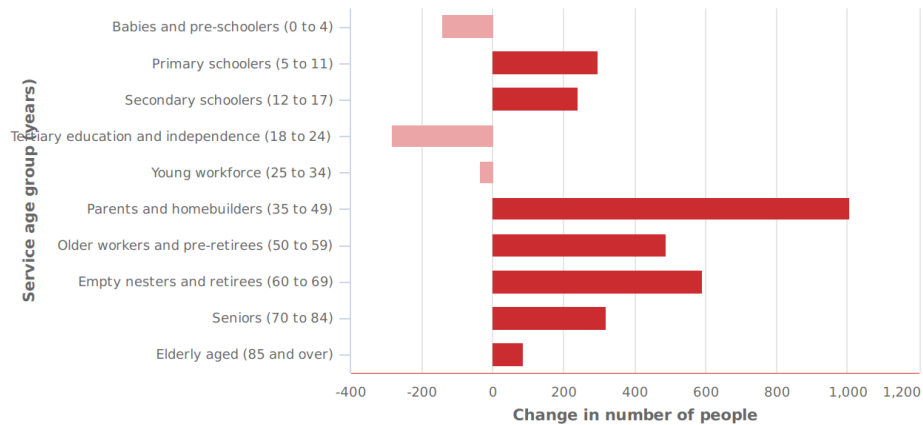
Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 13 Age Structure - Service Age Groups 2021 Rivervale (Source: .idcommunity)

Growth was experienced between 2016 and 2021 in all of the service age groups in the City of Belmont, apart from babies and pre-schoolers, tertiary education and independence and the young workforce age groups.

Change in age structure - service age groups, 2016 to 2021
City of Belmont - Total persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2016 and 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 14 Change in age structure 2016-2021 (Source: .idcommunity)

The largest growth changes in the age structure in the City of Belmont between 2016 and 2021 were in the age groups:

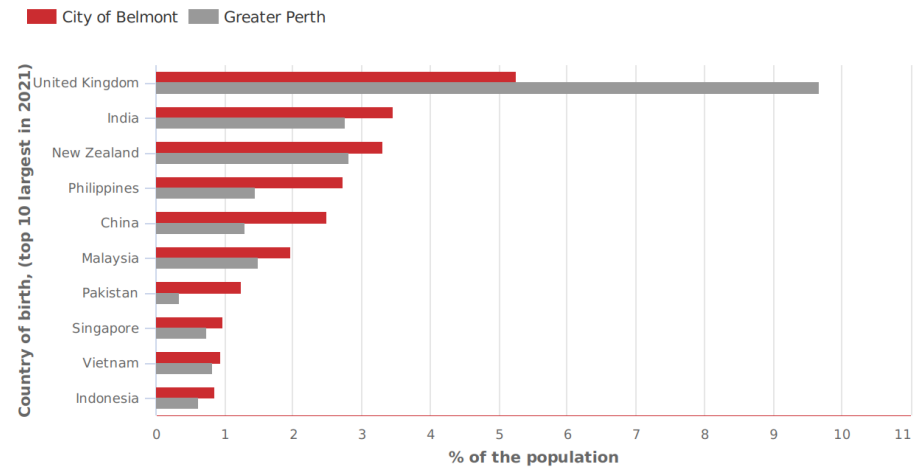
- Parents and homebuilders (35 to 49) (+1,005 people)
- Empty nesters and retirees (60 to 69) (+589 people)

This will have a direct impact on forward planning in the Corridor as there will be increased demand for facilities for the younger working force population, as well as the increasing population of empty nesters and retirees. This demand will be particularly relevant to hard infrastructure/recreational provisions and training and employment requirements and diversity in the Corridor’s housing stock.

3.3 ETHNICITY

Analysis of the country of birth of the population in the City of Belmont in 2021 compared to Greater Perth shows that there was a larger proportion of people born overseas, as well as a larger proportion of people from a non-English speaking background in the City of Belmont (Figure 15).

Birthplace, 2021



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 15 Birthplace 2021 (Source: .idcommunity)

Overall, 40.9% of the population was born overseas, and 28.9% were from a non-English speaking background, compared with 36% and 19.3% respectively for Greater Perth.

The largest non-English speaking country of birth in the City of Belmont was India, where 3.5% of the population, or 1,459 people, were born.

Between 2016 and 2021, the number of people born overseas increased by 1,248 (7.8%),

The major differences between the countries of birth of the population in the City of Belmont and Greater Perth were:

- A larger percentage of people born in Philippines (2.7% compared to 1.5%)
- A larger percentage of people born in China (2.5% compared to 1.3%)
- A smaller percentage of people born in United Kingdom (5.2% compared to 9.7%)

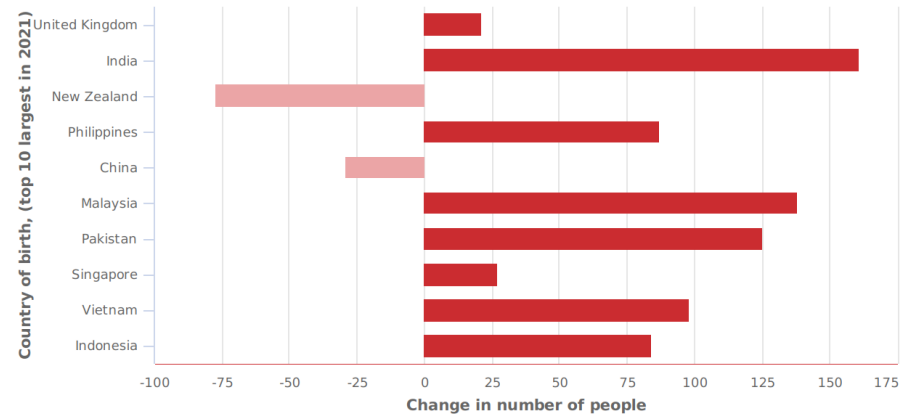
The largest changes in birthplace countries of the population the City of Belmont between 2016 and 2021 were for those born in **(Figure 16)**:

- India (+161 persons)
- Malaysia (+138 persons)
- Pakistan (+125 persons)
- New Zealand (-77 persons)
- China (-29 persons)

The implications for the provisions of community facilities are that a multicultural society may have very diverse preferences for sport and recreation, may require additional assistance locating activities, may require additional community facilities and may require specific communication in languages other than English.

Change in birthplace, 2016 to 2021

City of Belmont



Source: Australian Bureau of Statistics, Census of Population and Housing, 2016 and 2021 (Usual residence data). Compiled and presented in profile.id by .id (Informed decisions).



Figure 16 Change in Birthplace, 2016-2021 (Source: .idcommunity)

Table 4 Country of Birth by Suburb (2021) (Source: ABS Community Profiles 2021)

Suburb:	Ascot		Belmont		Redcliffe		Rivervale	
	No.	%	No.	%	No.	%	No.	%
Australia(b)	1712	55	3686	53	2833	56	5777	53
Country of Birth Not stated	337	11	487	7	407	8	619	6
England	206	7	270	4	219	4	461	4
New Zealand	78	3	256	4	207	4	308	3
Born elsewhere(e)	109	4	309	4	218	4	636	6
China	71	2	174	3	82	2	323	3
India	52	2	259	4	154	3	329	3
South Africa	58	2	54	1	35	1	113	1
Ireland	30	1	72	1	52	1	75	1
Vietnam	33	1	65	1	45	1	100	1
Malaysia	46	1	111	2	77	2	237	2
Singapore	48	2	75	1	37	1	130	1
Scotland	24	1	50	1	48	1	66	1
Italy	18	1	55	1	28	1	68	1
Sri Lanka	17	1	54	1	36	1	85	1
Indonesia	26	1	58	1	35	1	107	1
Netherlands	13	0	12	0	16	0	13	0
Philippines	19	1	191	3	100	2	196	2
Germany	10	0	32	0	14	0	38	0

Korea, Republic of (South)	8	0	51	1	7	0	118	1
Myanmar	15	0	46	1	29	1	52	0
United States of America	14	0	20	0	15	0	35	0
Thailand	7	0	59	1	22	0	68	1
Canada	7	0	9	0	3	0	24	0
North Macedonia	8	0	0	0	4	0	5	0
Hong Kong (SAR of China) (c)	14	0	45	1	24	0	67	1
Iran	10	0	34	0	8	0	54	0
Mauritius	5	0	34	0	13	0	60	1
France	3	0	16	0	7	0	17	0
Ireland	30	1	72	1	52	1	75	1
Wales	4	0	7	0	5	0	18	0
Afghanistan	0	0	23	0	18	0	39	0
Pakistan	12	0	83	1	47	0	104	1
Poland	3	0	20	0	13	0	39	0
Zimbabwe	18	1	21	0	12	0	72	1
Fiji	0	0	14	0	7	0	12	0
Malta	3	0	4	0	8	0	0	0
Taiwan	11	0	45	1	16	0	74	1
Nepal	8	0	30	0	35	1	116	1
Iraq	6	0	16	0	11	0	28	0
Papua New Guinea	0	0	9	0	0	0	13	0
Japan	0	0	18	0	9	0	32	0

Croatia	5	0	9	0	4	0	17	0
Turkey	0	0	10	0	3	0	18	0
Egypt	6	0	18	0	4	0	8	0
Bangladesh	0	0	15	0	19	0	19	0
Lebanon	0	0	7	0	13	0	16	0
Chile	0	0	5	0	5	0	6	0
Greece	0	0	0	0	0	0	38	0
Bosnia and Herzegovina	0	0	6	0	5	0	12	0
Cambodia	0	0	4	0	0	0	8	0
Brazil	13	0	15	0	0	0	47	0
Samoa	0	0	3	0	9	0	4	0
TOTAL BORN OVERSEAS	1038	35	2786	41	1790	36	4501	42

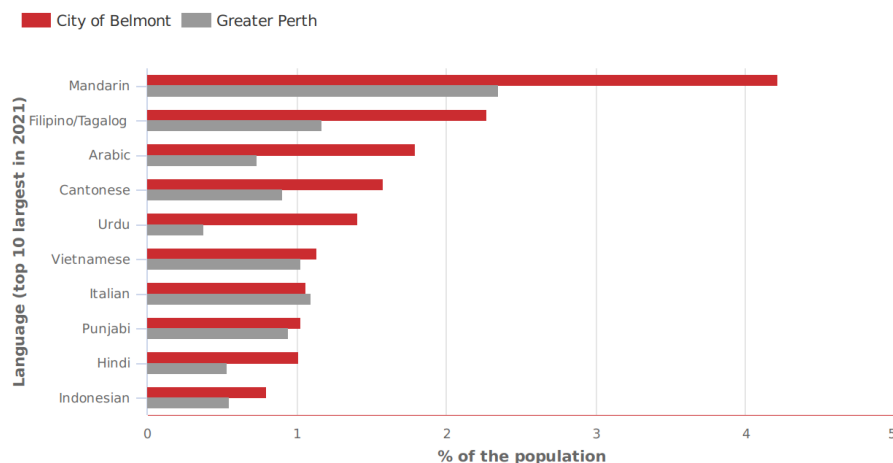
3.4 LANGUAGES SPOKEN AT HOME

Analysis of the language spoken at home by the population of the City of Belmont in 2021 compared to Greater Perth shows that there was a smaller proportion of people who spoke English only, and a larger proportion of people speaking a non-English language (either exclusively, or in addition to English). Overall, 61.8% of the City of Belmont population spoke English only, and 31% spoke a non-English language, compared with 74% and 20.9% respectively for Greater Perth.

The dominant language spoken at home, other than English, in the City of Belmont was Mandarin, with 4.2% of the population, or 1,779 people speaking this language at home (Figure 17).

Between 2016 and 2021, the number of people who spoke a language other than English at home increased by 1,401 or 12%, and the number of people who spoke English increased by 2,218 or 9.3%.

Language used at home, 2021



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (Informed decisions).



Figure 17 Language Spoken at Home 2021 (Source: .idcommunity)

Analysis of the languages spoken at home of the suburbs along the Corridor compared to the City of Belmont shows Belmont, Ascot, Rivervale and Redcliffe had a higher proportion of the population who spoke English only at home compared to the City of Belmont.

The dominant language spoken at home, other than English was Mandarin in all four suburbs.

3.5 QUALIFICATIONS

Analysis of the qualifications of the population in the City of Belmont in 2021 compared to Greater Perth shows that there was a lower proportion of people holding formal qualifications (Bachelor of higher degree; Advanced Diploma; or Vocational qualifications), and a similar proportion of people with no formal qualifications. Overall, 54.5% of the population aged 15 and over held educational qualifications and 35.1% had no qualifications, compared with 56.6% and 35.6% respectively for Greater Perth.

Analysis of the share of the population attending educational institutions in the City of Belmont in 2021 compared to greater Perth shows that there was a lower proportion attending primary school, a lower proportion attending secondary school and a higher proportion engaged in tertiary level education. Overall, 6.5% of the population were attending primary school, 4.7% were attending secondary school institutions and 8.2% were learning at a tertiary level, compared with 8.4%, 6.7% and 7.2% respectively for Greater Perth.

3.6 HOUSEHOLD TYPES

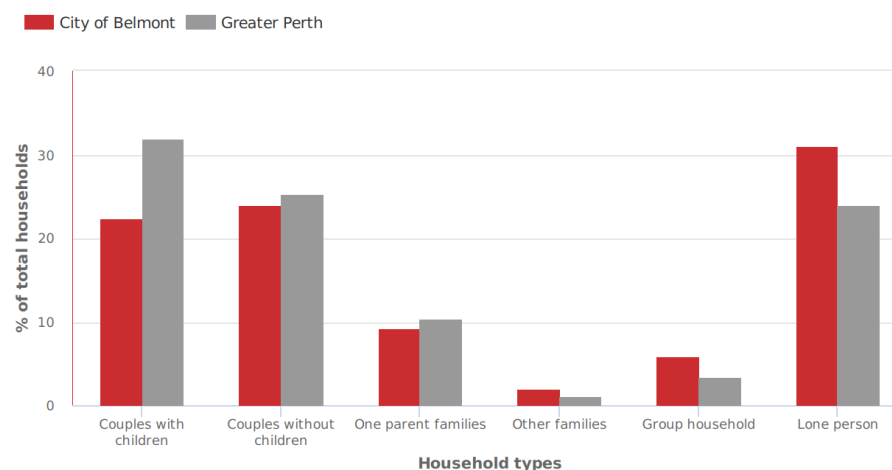
The study area’s household and family structure are one of the most important demographic indicators which reveals an area’s role and function and provides insights into demand for services and facilities. The number of households in the City of Belmont grew by 1,647 (10.1%) between 2016 and 2021 (**Table 5**).

Table 5 Household Types 2016, 2021 (Source: id Community)

City of Belmont - Total households (Enumerated)	2016			2021			Change
	Number	%	Greater Perth %	Number	%	Greater Perth %	
Households by type	Number	%	Greater Perth %	Number	%	Greater Perth %	2011 to 2016
Couples with children	3,627	22.2	32.3	4,025	22.4	32	+398
Couples without children	3,828	23.4	25.4	4,299	23.9	25.4	+471
One parent family	1,494	9.1	9.8	1,672	9.3	10.3	+178
Other families	310	1.9	1.3	354	2	1.1	+44
Group household	1,060	6.5	3.8	1,066	5.9	3.4	+6
Lone person	4,353	26.6	21.7	5,596	31.1	24	+1,243
Other not classifiable household	1,453	8.9	4.8	769	4.3	2.9	-684
Visitor only households	217	1.3	1.0	0.8	1.2	1	-9
Total households	16,342	100.0	100.0	17,989	100.0	100.0	+1,647

Analysis of household/family types in the City of Belmont compared to Greater Perth shows that there was a lower proportion of both couple families with or without children as well as a lower proportion of one-parent families. Overall, 23.0% of total families were couples without children, and 9.3% were one-parent families, compared with 25.4% and 10.3% respectively for Greater Perth (**Figure 18**).

Household type, 2021



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Enumerated data). Compiled and presented in profile.id by .id (informed decisions).



Figure 18 Household Types 2021 (Source: .idcommunity)

There was a higher proportion of lone person households with 31.1% in the City of Belmont compared to 24% in Greater Perth. The lone households and couples without children make up 55% of the City of Belmont’s households.

The largest changes in household types in the City of Belmont between 2016 and 2021 were lone person households (+1245), couples without children (+471 households), couples with children (+398 households), and one parent families (+178).

Analysis of the household types across the suburbs along the Corridor (**Table 6**) shows Redcliffe has the highest proportion of couple families with children (25.6%). Rivervale has the highest proportion of lone persons (36.7%) compared to the other suburbs.

Table 6 Household Types by Suburb, 2021 (Source: .idcommunity)

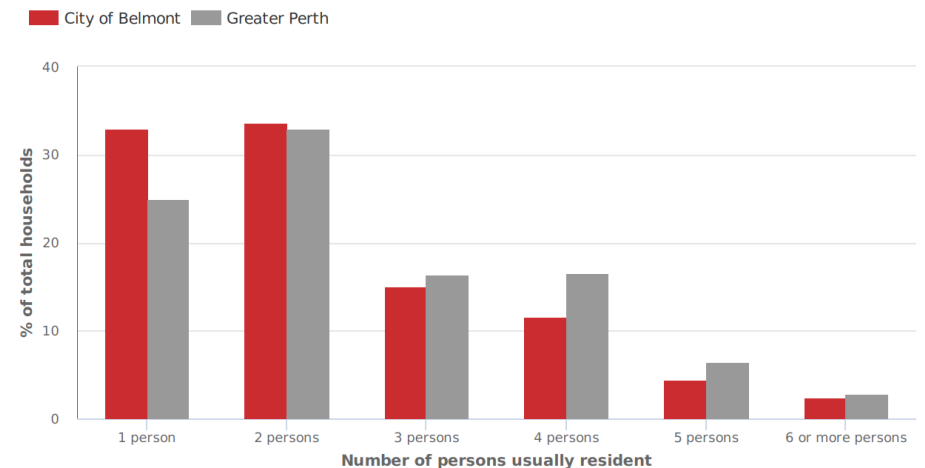
Suburbs - Total households (Enumerated)	Belmont	Ascot	Rivervale	Redcliffe	City of Belmont	Greater Perth
Households by type	%	%	%	%	%	%
Couples with children	20.7	22.3	17.3	25.6	22.4	32
Couples without children	23.3	33	25.2	21.7	23.9	25.4
One parent family	9.4	6.2	7.1	116	9.3	10.3
Other families	2	2.5	2.1	1.3	2	1.1
Group household	6.5	4.1	7.1	4.5	5.9	3.4
Lone person	32	23.7	36.7	29.2	31.1	24
Other not classifiable household	4.4	5.4	3.5	5.2	4.3	2.9
Visitor only households	1.6	2.8	1.1	0.8	1.2	1
Total households	100	100	100	100	100	100

3.7 HOUSEHOLD SIZE

The size of households in general follows the lifecycle of families, from early marriage through to families with children and then smaller households once the children have left home. However, household size can also be influenced through trends such as multi-generational or extended families or the sharing economy/multiple households under one roof. Household size in Australia has gradually declined since the 1970s but remained stable from 2006-2016. An increasing or stable household size can be an indicator of lack of affordable housing but may also reflect the trend towards larger properties.

The profile of household size in the City of Belmont is smaller than Greater Perth, with a higher proportion of one (1) person and two (2) person households, and a lower proportion of three (3), four (4) and five (5) person households compared to Greater Perth (**Figure 19**).

Household size, 2021



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Enumerated data). Compiled and presented in profile.id by .id (informed decisions).

Figure 19 Household Size 2021 (Source: .idcommunity)

Rivervale had the highest proportion of one (1) person households (38.5%) out of the suburbs in the City of Belmont, which can be attributed to the large number of apartment buildings in this area. Ascot had a large proportion of two (2) person households (42.8%) compared to the City of Belmont and the other suburbs (**Table 7**).

Key changes in the number of persons usually resident in a household in the City of Belmont between 2016 and 2021 were:

- Increase in 1 person households (+1,238 households)
- Increase in 2 persons households (+773 households)
- Increase in 3 persons households (+226 households)
- Increase in 4 persons households (+153 households)

Table 7 Household sizes 2021 (Source: ABS Community Profiles 2016)

Number of persons usually resident	% of total households					
	Belmont	Ascot	Rivervale	Redcliffe	City of Belmont	Greater Perth
1 person	34	25.7	38.5	31.4	32.9	24.9
2 persons	32.5	42.8	35.3	31.1	33.7	32.9
3 persons	16.1	14.9	12.4	16.2	15.1	16.4
4 persons	11.1	11	9.6	13	11.6	16.5
5 persons	4.6	4.1	2.6	5.5	4.4	6.4
6 or more persons	1.7	1.5	1.6	2.8	2.4	2.9

3.8 NEED FOR ASSISTANCE

Analysis of the need for assistance of persons in the City of Belmont compared to Greater Perth shows there was a slightly higher proportion of persons who reported needing assistance with core activities living in the City of Belmont.

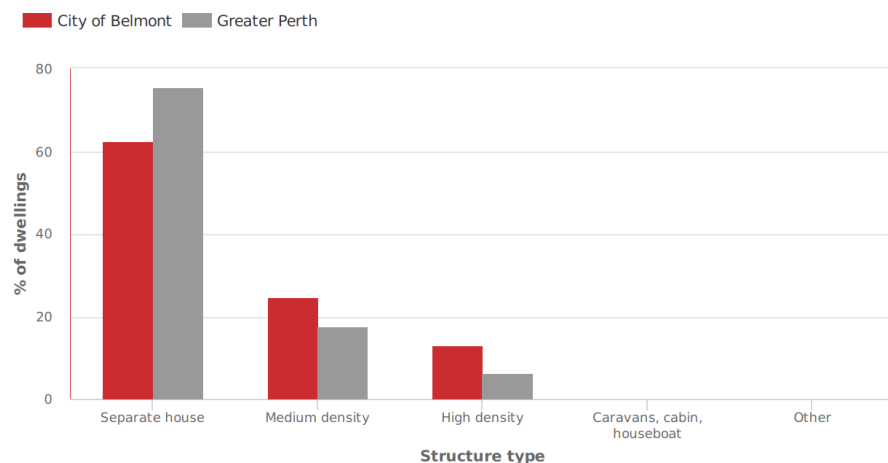
Overall, 4.8% of residents in the City of Belmont reported needing assistance with core activities, compared with 4.6% for Greater Perth. The largest proportion of age groups requiring assistance was 75 years and above.

3.9 HOUSING STOCK

It is important to understand the makeup of the Corridor's housing stock as an indicator of the Corridor's residential role and function and to determine whether the stock is compatible with future forecasts of population and household growth and dynamics.

Analysis of the types of dwellings in the City of Belmont in 2021 shows that 62.3% of all dwellings were separate houses; 24.6% were medium density dwellings, and 12.8% were high density dwellings, compared with 75.6%, 17.6%, and 6.1% in Greater Perth respectively (**Figure 20**).

Dwelling structure, 2021



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Enumerated data). Compiled and presented in profile.id by .id (Informed decisions).



Figure 20 - Dwelling Structure, 2021 (Source: .idcommunity)

Between 2016 and 2021, there been an overall increase in the number of dwellings by 1,888 (10.2%) in the City of Belmont. The 2021 census data reveals the following trends since 2016:

- The proportion of separate houses has reduced (64.2% to 62.3%); and

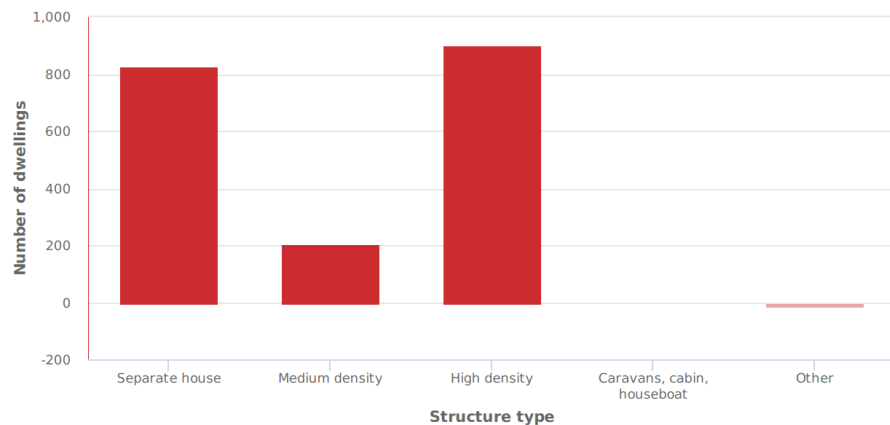
The proportion of high-density housing has increased (9.2% to 12.8% respectively) (**Table 8, Figure 21**).

Table 8 - Dwelling Structure (Source: .idcommunity)

City of Belmont – Total Dwellings (Enumerated)	2016		2021			Change	
	Number	%	Greater Perth %	Number	%		Greater Perth %
Dwelling type	Number	%	Greater Perth %	Number	%	Greater Perth %	2016 to 2021
Separate house	11,827	64.2	74.6	12,653	62.3	75.6	+826
Medium density	4,784	26.0	19.6	4,990	24.6	17.6	+206
High density	1,692	9.2	5.1	2,592	12.8	6.1	+900
Caravans, cabin, houseboat	36	0.2	0.3	32	0.2	0.3	-4
Other	31	0.2	0.2	17	0.1	0.2	-14
Not stated	65	0.4	0.2	39	0.2	0.1	-26
Total Private Dwellings	18,435	100.0	100.0	20,323	100.0	100.0	+1,888

Change in dwelling structure, 2016 to 2021

City of Belmont



Source: Australian Bureau of Statistics, Census of Population and Housing, 2016 and 2021 (Enumerated data). Compiled and presented in profile.id by .id (informed decisions).



Figure 21 - Change in dwelling structure, 2021 (Source: .idcommunity)

3.9.1 DISTRIBUTION OF HOUSING STOCK BY SUBURB

Over the past decade, there has been steady growth in the number of dwellings in all of the suburbs within the Corridor with a total increase of 26.3% from 2016 to 2021 (**Table 9**). The suburb with the largest increase in number of dwellings was Rivervale, in which there was a 29.6% increase from 2011 to 2016 and a 45.9% increase from 2016 to 2021. This is likely to reflect recent developments within the Springs.

The smallest growth was in Redcliffe, increasing 5.8% from 2011 to 2016 and 8.2% from 2016 to 2021. This may indicate there is further potential to increase the housing stock in this suburb.

Table 9- Distribution of private dwellings by suburb (Source: ABS Quick Stats 2011, 2016, 2021)

	Number of Private Dwellings (2011)	Number of Private Dwellings (2016)	Number of Private Dwellings (2021)	Percentage Change (2011-2016)	Percentage Change (2016-2021)
Belmont	2,860	3,176	3,418	+11%	+7.6%
Ascot	1,125	1,248	1,421	+10.9%	+13.9%
Rivervale	4,114	5,331	5,991	+29.6%	+12.4%
Redcliffe	2,004	2,121	2,165	+5.8%	+2.1%
Total	10,103	11,876	12,995		

3.9.2 DWELLING SIZE

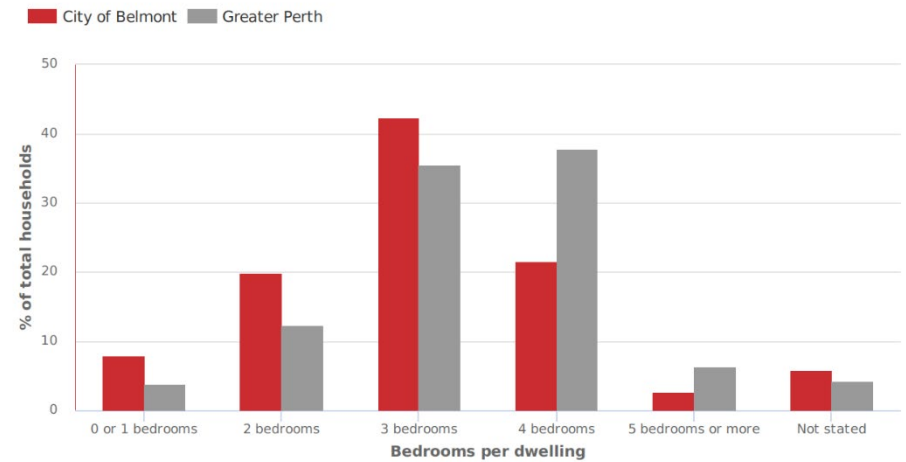
The City of Belmont has a higher proportion of zero (0) or one (1), two (2) and three (3) bedroom houses, and a smaller proportion of four (4) and five (5) bedroom or more houses compared to Greater Perth (**Figure 22**). In the City of Belmont, houses with three (3) bedrooms make up the largest proportion of houses (42.4%), compared to Greater Perth where the largest proportion is four (4) bedroom houses (37.9%).

This dwelling profile provides an insight into the role the Corridor plays in the housing market. For example, dwellings with one and two bedrooms are likely to attract students, single workers and young couples. Accommodation with two (2) and three (3) bedrooms may attract more families and 'empty nesters'.

The largest changes in the number of bedrooms per dwelling in the City of Belmont between 2016 and 2021 were:

- An increase in 2 bedroom dwellings (+1,233)
- An increase in 4 bedroom dwellings (+903)
- An increase in 0 or 1 bedroom dwellings (+731)

Number of bedrooms per dwelling, 2021



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Enumerated data). Compiled and presented in profile.id by .id (informed decisions).



Figure 22 - Dwelling sizes 2021 (Source: .idcommunity)

3.9.3 DISTRIBUTION OF DWELLING SIZE BY SUBURB

Analysis of the dwelling size distribution by suburb reveals that Rivervale has the highest proportion of zero (0) or one (1) bedroom dwellings (15.4%) and two (2) bedroom dwellings (29.2%) out of all suburbs adjacent to the corridor. In addition, the suburb has a larger proportion of 0 or 1 and 2 bedroom dwellings than the City of Belmont, which is reflective of the existing apartment buildings in Rivervale (**Table 10**).

Redcliffe has the highest proportion of four (4) bedroom dwellings (31.7%) compared to the City of Belmont (21.4%) and the surrounding suburbs identified.

The largest change in the number of bedrooms per dwelling between 2016 and 2021 in each suburb was:

Belmont:

- Increase in 3- bedroom dwellings (+110 dwellings)
- Increase in 2-bedroom dwellings (+125)

Ascot:

- There were minimal differences in Ascot between 2016 and 2021.

Rivervale:

- Increase in 2-bedroom dwellings (+407 dwellings); and
- Increase in 0- or 1-bedroom dwellings (+210 dwellings).

Redcliffe:

- There were minimal differences in Redcliffe between 2016 and 2021.



The Springs contributes to Rivervale's high proportion of 1 and 2-bedroom dwellings.

Table 10 - Distribution of Dwelling Size by Suburb (Source: ABS Community Profiles 2021)

Suburb	2021			Greater Perth %
	No.	%	City of Belmont %	
Belmont				
0 or 1 bedrooms	147	4.8	7.8	3.8
2 bedrooms	533	17.6	19.8	12.3
3 bedrooms	1,440	47.5	42.4	35.6
4 bedrooms	636	21	21.4	37.9
5+ bedrooms	94	3.1	2.7	6.3
Not Stated	182	6	5.9	4.2
Total Households	3,032	100	100	100
Ascot				
0 or 1 bedrooms	96	7.6	7.8	3.8
2 bedrooms	169	13.3	19.8	12.3
3 bedrooms	470	37	42.4	35.6
4 bedrooms	389	30.7	21.4	37.9
5+ bedrooms	67	5.3	2.7	6.3
Not Stated	78	6.1	5.9	4.2
Total Households	1,269	100	100	100
Rivervale				
0 or 1 bedrooms	784	15.4	7.8	3.8
2 bedrooms	1,491	29.2	19.8	12.3
3 bedrooms	1,762	34.5	42.4	35.6
4 bedrooms	745	14.6	21.4	37.9
5+ bedrooms	79	1.5	2.7	6.3

Not Stated	245	4.8	5.9	4.2
Total Households	5,106	100	100	100
Redcliffe				
0 or 1 bedrooms	126	6.4	7.8	3.8
2 bedrooms	250	12.6	19.8	12.3
3 bedrooms	804	40.6	42.4	35.6
4 bedrooms	628	31.7	21.4	37.9
5+ bedrooms	40	2	2.7	6.3
Not Stated	132	6.7	5.9	4.2
Total Households	1,980	100	100	100

3.9.4 TENURE

Analysis of the housing tenure of the population of the City of Belmont in 2021 compared to Greater Perth shows that there was a smaller proportion of households who owned their dwelling outright and with a mortgage and a larger proportion of rentals (Figure 23 and Figure 24).

At the suburb level, Rivervale had a significantly higher proportion of rented dwellings (53.1%) compared to the City of Belmont and Greater Perth (Figure 25). Ascot was the only suburb along the Corridor which had a higher proportion of dwellings owned outright (34.5%) compared to Greater Perth (28.5%). Ascot also had the smallest proportion of dwellings that were rented (30.6%) however this was still higher than Greater Perth (26.6%).

The City of Belmont has a higher proportion of State housing compared to Greater Perth. Out of the occupied dwellings in the City of Belmont, 6.5% are rented from the State Housing Authority, compared with 2.9% in Greater Perth. Out of the total dwellings which were rented in the City of Belmont, 15.4% were rented from the State Housing Authority compared with 11.1% in Greater Perth (.idcommunity, 2021).

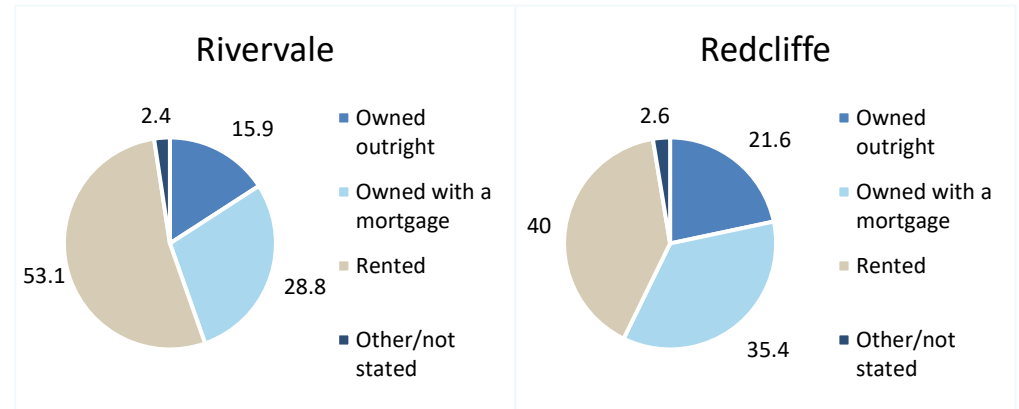


Figure 25 Rivervale Tenure

Figure 26 Redcliffe Tenure

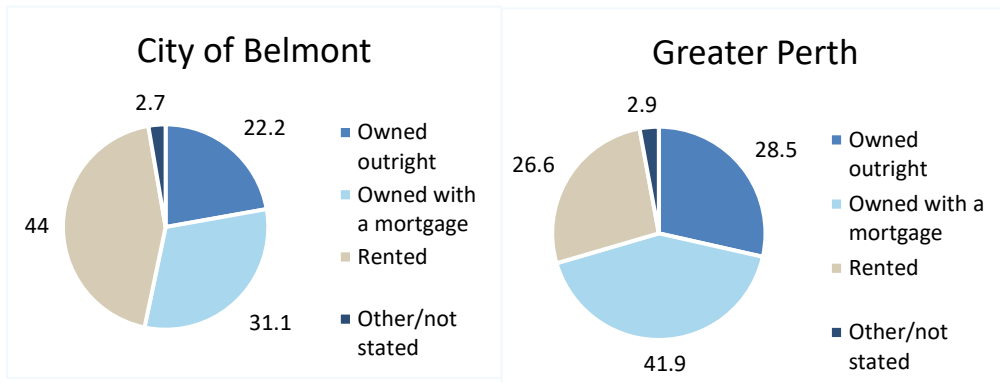


Figure 23 City of Belmont Tenure

Figure 24 Greater Perth Tenure

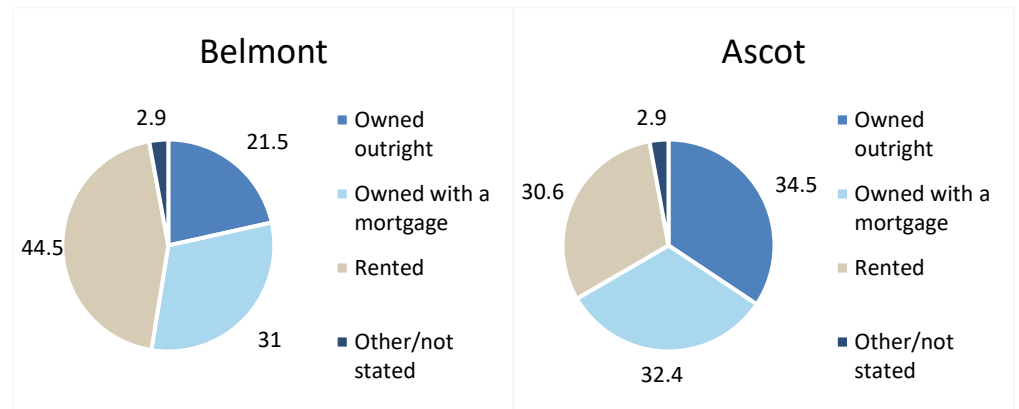


Figure 27 Belmont Tenure

Figure 28 Ascot Tenure

Source: ABS Community Profiles, 2021

3.9.5 HOUSING PAYMENTS

Analysis of the monthly housing loan repayments within the City of Belmont in 2021 shows that 18.1% of households were paying high monthly mortgage repayments (\$2,600 and over), and 20.7% were paying low (less than \$1,200) repayments, compared with 23.2% and 17.9% respectively in Greater Perth.

Analysis of the weekly rental payments of households in the City of Belmont shows that 14.3% of households were paying high rental payments (\$450 per week or more), and 23.3% were paying low payments (less than \$250 per week), compared with 19.3% and 16.5% respectively in Greater Perth.

3.10 ECONOMY AND EMPLOYMENT

3.10.1 PLACE OF EMPLOYMENT

In 2021, 45,901 people worked in the City of Belmont. Approximately 4,689 (10.2%) of the workforce resides in Belmont (**Table 11**). A large proportion of the workforce travel to the City of Belmont from the adjacent Local Government Areas of Swan (10.3%) and Canning (5.6%). The remainder of the workforce travel into Belmont from further Local Government Areas, including Stirling (8.7%), Gosnells (7.9%) and Wanneroo (7.1%).

Table 11 Residential location of local workers (Source: .idcommunity)

City of Belmont	2021	
Location	Number	%
Live and work in the area	4,689	10.2
Work in the area, but live outside	41,212	89.8
Total workers in the area	45,901	100

Of the City of Belmont residents who work, approximately 4,689 (21.4%) work in the City of Belmont, whilst 74% travel to the local government areas of Perth (17.9%), Canning (7.7%), Victoria Park (6.7%), and Swan (5.3%).

Table 12 Employment location of resident workers (Source: .idcommunity)

City of Belmont	2021	
Location	Number	%
Live and work in the area	4,689	21.4
Live in the area, but work outside	16,218	74
No fixed place of work	1,000	4.6
Total employed residents in the area	21,907	100

This indicates there is a larger proportion of workers travelling into the City to work, compared to residents travelling out of the City to work.

3.10.2 EMPLOYMENT STATUS

Employment status is linked to a number of factors including age structure, which influences the number of people in the workforce; the economic base and employment opportunities available in the area; and the education and skill base of the population. The table Employment Status (**Table 13**) illustrates the City's employment profile.

At the time of the 2021 census, the employment rate within the City of Belmont was high with 94.4% of the labour force employed, 11.2% unemployed and looking for full time or part time work. This compares to 94.7% and 10.6% for Greater Perth respectively.

Table 13 Employment status (Source: .idcommunity)

City of Belmont - Persons (Usual residence)	2016			2021			Change
	Number	%	Greater Perth %	Number	%	Greater Perth %	
Employment status	Number	%	Greater Perth %	Number	%	Greater Perth %	2016 to 2021
Employed	18,591	91.2	91.9	21,966	94.4	94.7	+3,375
Employed full-time	12,089	59.3	56.4	13,924	59.8	56.8	+1,835
Employed part-time	5,506	27.0	30.6	6,776	29.1	32.5	+1,270
Unemployed (Unemployment rate)	1,792	8.8	8.1	1,306	5.6	5.3	-486
Looking for full-time work	1,150	5.6	4.8	753	3.2	2.7	-397
Looking for part-time work	642	3.1	3.3	553	2.4	2.6	-89
Total labour force	20,383			23,272			2,289

3.11 MODE OF TRAVEL TO WORK

The method of travel to work for residents in the City of Belmont is dominated by the car (as a driver), with a proportion the same as Greater Perth (62%). **Table 14** demonstrates that a higher proportion of Belmont residents travelled by bus to work, (7.2%) compared to Greater Perth (3.5%), though a smaller proportion walked (1.4% compared to 1.6%) or caught the train (2.3% compared to 4.9%). In addition, a smaller proportion of Belmont residents worked at home compared to Greater Perth (5.7% compared to 7.6%).

Method of travel to work has not changed greatly since 2016, however, there was an increase in the proportion of residents driving to work and an increase in the proportion of those catching the bus.

The low proportion of residents travelling by bicycle or walking to work is reflective of the poor cycle and pedestrian environment which exists along the Corridor and improving the cycle and pedestrian environment along and surrounding the Corridor will provide the opportunity for residents to either walk or cycle to work.

Table 14 Method of travel to work 2016, 2021 (Source: .idcommunity)

City of Belmont - Employed persons (Usual residence)	2016			2021			Change
	Main method of travel	Number	%	Greater Perth %	Number	%	
Train	543	2.9	6.1	507	2.3	4.9	-36
Bus	1,559	8.4	4.1	1591	7.2	3.5	+32
Tram or Ferry	3	0.0	0.0	4	0	0	+1
Taxi	81	0.4	0.2	186	0.8	0.4	+105
Car - as driver	11,992	64.5	64.1	13,612	62	62	+1,620
Car – as passenger	992	5.3	4.6	1,157	5.3	4.4	+165
Truck	100	0.5	0.7	91	0.4	0.5	-9
Motorbike	107	0.6	0.5	62	0.3	0.3	-45
Bicycle	207	1.1	1.0	144	0.7	0.6	-63
Walked only	335	1.8	2.1	305	1.4	1.6	-30
Other	389	2.1	1.9	567	2.6	2.1	+178
Worked at home	460	2.5	3.9	1,241	5.7	7.6	+781
Did not go to work	1,619	8.7	9.9	2,354	10.7	11.7	+735
Not stated	207	1.1	1.0	126	0.6	0.4	-81
Total employed persons aged 15+	18,594	100.0	100.0	21,947	100	100	3,353

3.12 EMPLOYMENT INDUSTRY

In 2021, the key industry sectors in which City of Belmont residents were employed in include Health Care and Social Assistance (12.5%), Retail Trade (8.2%) and Accommodation and Food Services (8.1%) as highlighted in **Figure 29** below.

Industry sector of employment, 2021

Total employed persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



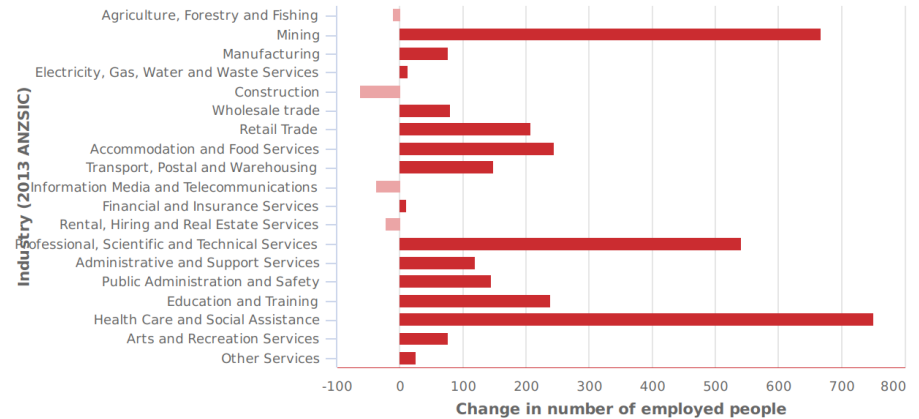
Figure 29 Industry Sector of Employment, 2021 (Source: .idcommunity)

The City of Belmont’s Arts and Recreation Services (2.7%), Transport, Postal and Warehousing (6.6%), and Mining (7.8%) industry sectors were higher than Greater Perth (1.8%, 4.5% and 6.6%, respectively).

From the previous census in 2016, the most growth was in Health Care and Social Assistance services, Mining and Professional, Scientific and Technical Services sectors. There was some decline experienced in the Construction, Information Media and Telecommunications, Agriculture, Forestry and Fishing and Rental, Hiring and Real Estate Service sectors (refer **Figure 30** below).

Change in industry sector of employment, 2016 to 2021

City of Belmont - Total employed persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2016 and 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 30 Change in industry sector of employment, 2016 to 2021 (Source: .idcommunity)

3.13 OCCUPATION

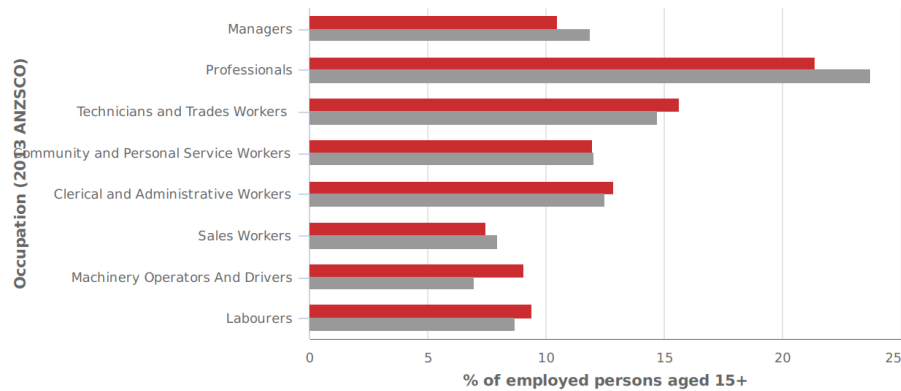
City of Belmont residents were employed in the following key occupations in 2021: Professionals (21.3%), Technicians and Trade Workers (15.6%) and Clerical and Administrative Workers (12.8%). The proportions of Machinery Operators and Drivers and Technicians and Trades Workers compared to Greater Perth are significantly higher; (9% and 15.6% compared to 7% and 14.7% in Greater Perth).

A smaller proportion of persons are employed as Professionals and Managers (21.3% and 10.5% compared to 23.7% and 11.9% in Greater Perth), as can be seen in **Figure 31** below.

Occupation of employment, 2021

Total employed persons

City of Belmont Greater Perth



Source: Australian Bureau of Statistics, Census of Population and Housing, 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).

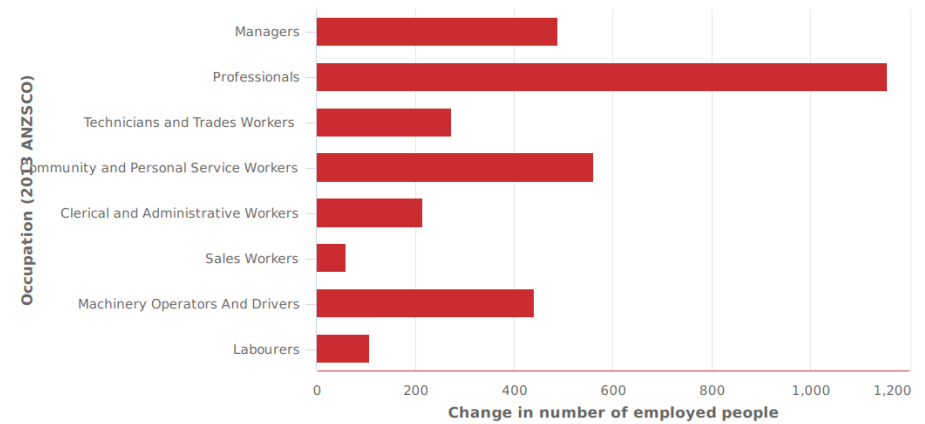


Figure 31 Occupation of Employment, 2021 (Source: .idcommunity)

Over the period 2016 – 2021, the greatest change in occupation of employment was growth in Professionals, Community and Personal Service Workers and Managers, and no decline in any occupations, as shown in **Figure 32** below.

Change in occupation of employment, 2016 to 2021

City of Belmont - Total employed persons



Source: Australian Bureau of Statistics, Census of Population and Housing, 2016 and 2021 (Usual residence data). Compiled and presented in profile.id by .id (informed decisions).



Figure 32 Change in Occupation of Employment 2016 to 2021 (Source: .idcommunity)

3.14 HOUSEHOLD INCOME

Analysis of household income levels across the City of Belmont shows that there were a greater proportion of households in the lowest income quartile, and a lesser proportion of households in the highest income quartile compared to Greater Perth (**Figure 33**). The City of Belmont has 26.4% of households earning in the lowest income group compared to 24% in Greater Perth. There were 19.8% of households in the City of Belmont which earned in the highest group, compared to 26.1% of households earning in the highest group in Greater Perth.

Household income quartiles, 2021

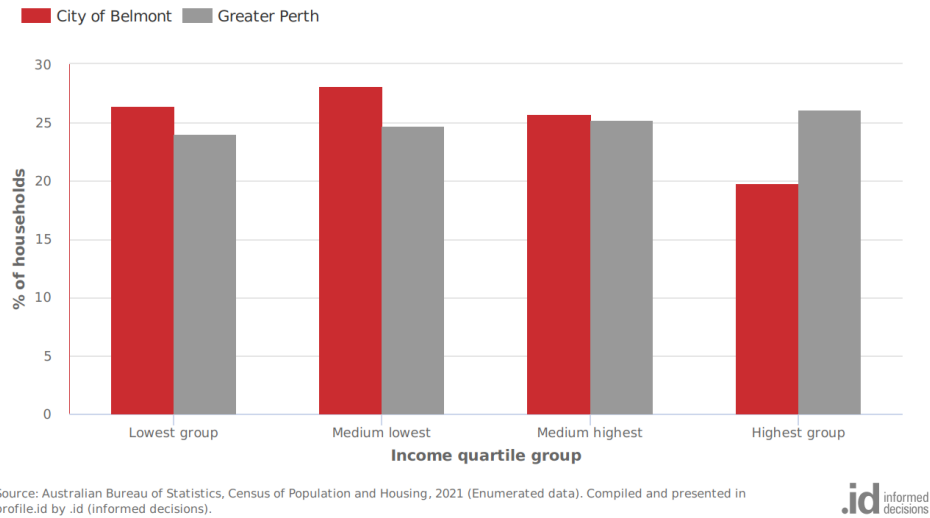


Figure 33 Household income quartiles, 2021 (Source: .idcommunity)

Analysis of household income levels across the suburbs along the Corridor shows Redcliffe has the highest proportion of households in the lowest income group (30%), which is a larger proportion compared to the City of Belmont and Greater Perth. Ascot has the largest proportion of households in the highest income group (31.2%) which is a higher proportion than the City of Belmont and Greater Perth (**Table 15**).

The most significant change in the City of Belmont between 2016 and 2021 was the medium lowest quartile which showed an increase of 889 households (**Figure 34**).

Change in household income quartile, 2016 to 2021

City of Belmont

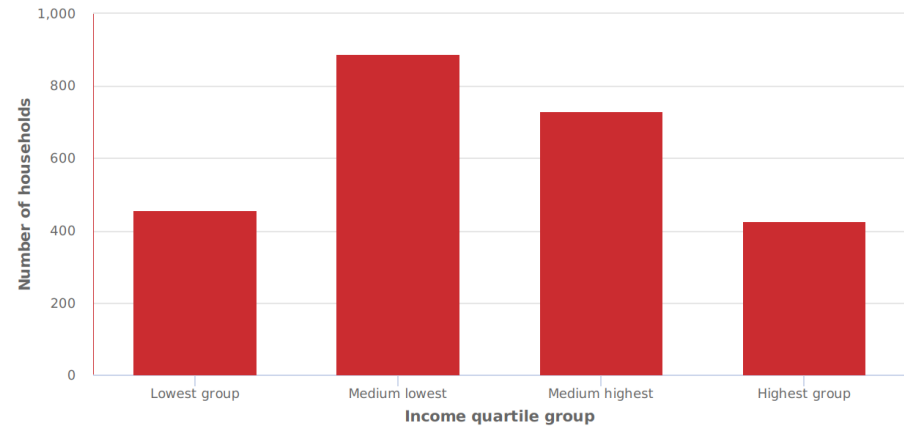


Figure 34 Change in household income quartile, 2016 to 2021 (Source: .idcommunity)

Analysis of the household income of the suburbs along the Corridor show:

- Ascot had a higher proportion of high-income households (31.2%) and a lower proportion of low-income households (19.1%) compared to the City of Belmont.
- Belmont had a similar proportion of high-income households (19.2%) and a higher proportion of low-income households (28.8%) compared to the City of Belmont.
- Redcliffe had a smaller proportion of high-income households (18.6%) and a higher proportion of low-income households (30%) compared to the City of Belmont
- Rivervale had a higher proportion of high-income households (21.2%) and a lower proportion of low-income households (24.2%) compared to the City of Belmont.

The household income quartiles are depicted in Table 15.

Table 15 Household income quartiles 2021 (Source: .idcommunity)

	% of households					
Quartile Group	Belmont	Ascot	Redcliffe	Rivervale	City of Belmont	Greater Perth
Lowest group	28.8	19.1	30	24.2	26.4	24
Medium lowest	27.6	24.4	26.4	28	28.1	24.7
Medium highest	24.5	25.3	25	26.6	25.7	25.2
Highest group	19.2	31.2	18.6	21.2	19.8	26.1

3.15 SUMMARY AND IMPLICATIONS

A summary of the key statistics outlined in this section is included below in Figure 35.
















			 City of Belmont	 Greater Perth	 Western Australia	 Australia
AGE		median age	36	37	38	38
INCOME		median weekly household income	\$1,641	\$1,865	\$1,815	\$1,746
FAMILY COMPOSITION		couples with children	38%	46%	45%	44%
		couples without children	42%	38%	39%	39%
DWELLING TYPE		medium and high density housing	37%	24%	21%	28%
HOUSING COSTS		households with a mortgage	31%	42%	40%	35%
		median weekly rent	\$350	\$350	\$340	\$375
		households renting	44%	27%	27%	31%
LANGUAGE		non-English speaking households	33%	24%	21%	25%
EDUCATION		university attendance	18%	16%	14%	15%
		vocational attendance	11%	8%	7%	8%

Figure 35 Summary of Statistics

Without more area specific analysis being undertaken the following impacts are noted:

Additional housing and infrastructure provision required for growing population and expected future population growth

The City's population increased by approximately 5% over the 2016 to 2021 period and 11.7% in the period 2011 to 2016. This follows a period of population stagnation over the 1990's. The City's population is expected to increase by approximately a further 45% to 63,729 people by 2041 (forecast id).

Growing proportions of young professionals, parents and homebuilders, empty nesters and retirees and elderly population

- There is a high proportion of the young workforce population within the suburbs along the Corridor.
- There is a trend of lone person households increasing, as this has already increased from 26.6% in 2016 to 31.1% in 2021.
- The existing high proportions of babies and pre-schoolers is likely to result in a growth in primary schoolers and secondary schoolers over the next 10 years.
- Relatively higher proportion of people ages 85 and older in comparison to Greater Perth.

Demand for a diverse housing stock

- The growing, diverse population will require increased housing diversity options along the Corridor, including:
 - Smaller households for the high proportion of lone residents.
 - Medium-larger size households for the growing population of parents, and couples with children.
 - Aged housing and retirement housing and services for the proportion of elderly and nearing retirement population.

- Need to consider the robustness of housing stock so as to accommodate changing household structure and tenures, as the family cycle evolves.

Need to consider affordable housing options

- Need to consider affordable housing options to accommodate large proportion of young professionals, in addition to the higher proportion of lower income households in the City of Belmont. Indicators of the demand for affordable housing include:
 - High proportion of young professionals in the City of Belmont.
 - Lower household incomes compared to the Greater Perth.
 - Significantly higher proportion of the community renting in the City of Belmont.
 - Lower rental repayments and lower mortgage repayments compared to the City of Belmont.
 - The City of Belmont has a larger proportion of smaller houses, with a large proportion of 1, 2 and 3 bedroom dwellings compared to Greater Perth.
- Affordable housing options should be considered in appropriate locations along the Corridor, which are easily accessible to public transport, and are in proximity to areas of amenity. Pedestrian and cycling connections to surrounding areas of amenity should be enhanced so residents can easily access shops, cafes and open space, reducing car dependency.

Community facilities required to accommodate the greater mix of ethnicities along the Corridor

- The City of Belmont has a larger proportion of non-English speaking households, people born overseas and people from non-English speaking backgrounds, indicating the need to provide for a range of community facilities to cater for the community members' needs, which will allow different people to meet and interact, gain support and create a sense of belonging. Such uses may include a range of sporting clubs, community halls, family support centres, health services and a range of meeting spaces.

Need to increase opportunities for City of Belmont residents to work within the City of Belmont

- A large proportion of City of Belmont residents travel outside the City of Belmont to work, as well as a large number of the Greater Perth population travelling into the City of Belmont. This increases the demand on infrastructure such as roads and public transport.
- Providing opportunities for jobs within the City of Belmont will improve the opportunities for residents to live, work and play within the City, allowing people to travel shorter distances to work, whilst activating Belmont's local economy.
- Need to accommodate the growing industries of Health Care and Social Assistance, Mining and Professional, Scientific and Technical Services, whilst recognising the decline in Construction, Information Media and Telecommunications and Rental, Hiring and Real Estate Services.

Improvements to pedestrian, bike rider and public transport facilities required

- The method to travel to work for residents in the City of Belmont is overwhelmingly dominated by car, with few residents cycling and walking to work. Improved pedestrian and cycling networks and amenity will encourage residents to cycle or walk to work.
- The City has a relatively high proportion of residents who travel to work by bus, though with improved facilities such as sheltered bus stops, accessible bus stops, and convenient bus routes, supported by a robust pedestrian path network, will contribute to greater usage of busses, utilising the Corridors access to the Priority Rapid Public Transport Route.
- The City has a relatively low proportion of residents who travel to work by train, so it is essential the Corridor has safe and convenient connections to Redcliffe Train Station.

4. PHYSICAL SITE DESCRIPTION

4.1 LAND USE AND LOT CHARACTERISTICS

4.1.1 LAND USE

The majority of the land along the Corridor currently comprises a variety of non-residential land uses including fast food outlets, liquor stores, motels, hotels, offices, restaurants, cafes, taverns, massage parlours, service stations, shops, industrial, showrooms and warehouses as depicted in **(Figure 36, 37, and 38)**. It is noted that Figure 37 is sequential to Figure 36, and the location of the images on Figure 38 are identified on Figure 36 and 37.

Some existing land uses are inconsistent with the zoning in LPS 15; particularly in areas zoned Mixed Business, Mixed Use, with several non-conforming uses which have been approved under old planning legislation. Examples included motor vehicle hire, vehicle sales and industry located within in the Mixed Use zone.

The majority of the non-residential land uses are located in the vicinity of the Belmont Mixed Business Area in the centre of the Corridor and the Redcliffe Industrial area at the eastern end of the Corridor.

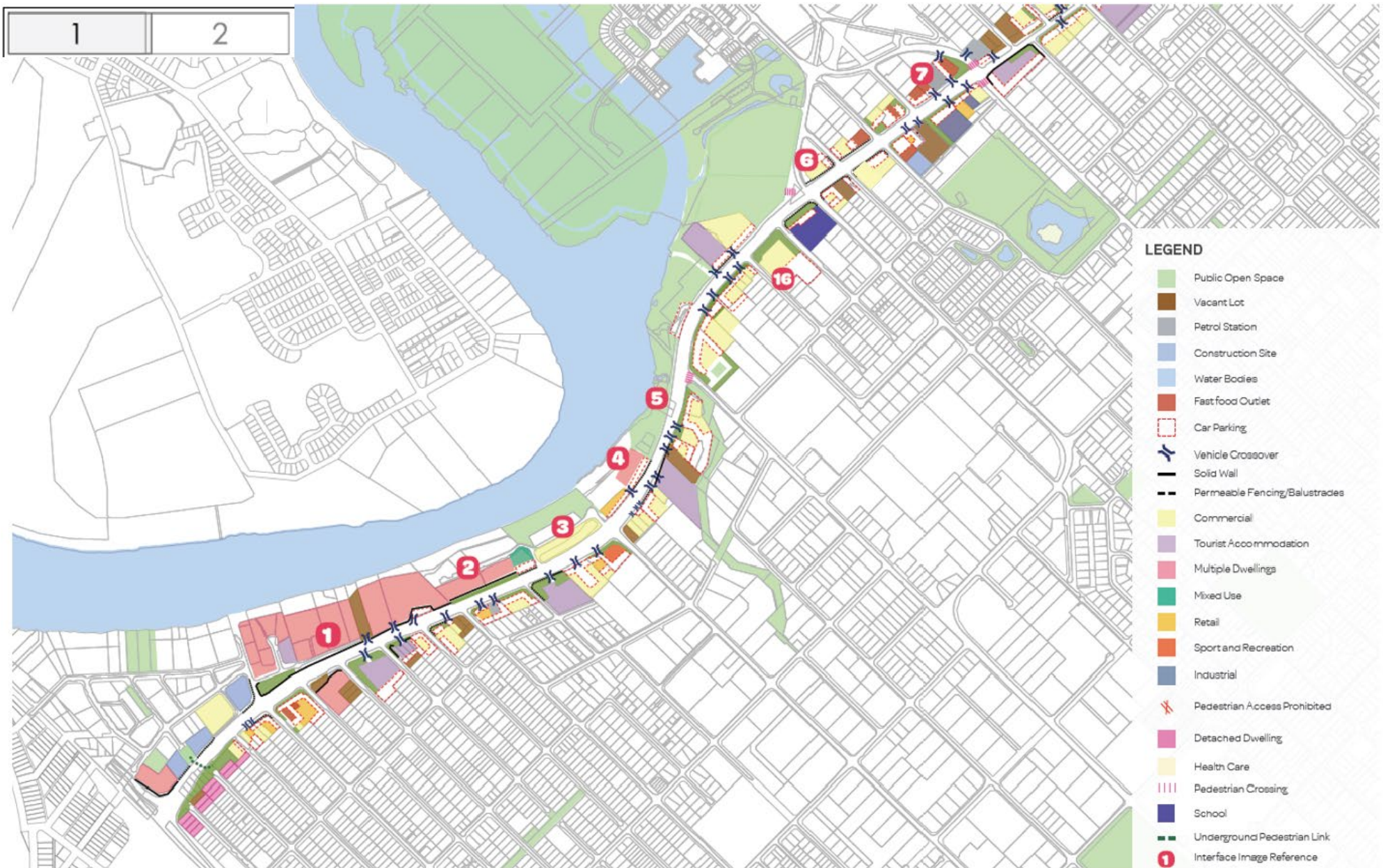
A number of tourist accommodation sites are scattered along the Corridor capitalising on the close proximity to both the Perth Airport, Crown Casino and greater entertainment precinct.

The Corridor also accommodates different forms of residential development in the form of single, grouped and multiple dwellings. It is noted in conjunction with the upgrade of Great Eastern Highway, the majority of existing residential development abutting the Corridor have had noise walls constructed between as to provide noise amelioration.

There is only a small number of health care and sporting facilities along the Corridor and one School, being the Belmont Primary School. It is highlighted the Department of Education.

There are also a number of public open space areas along both sides of and abutting the Corridor. There are more areas located to the northern side as the Swan River meanders along in parallel and particularly in the places in close proximity to the Corridor i.e. mid-section.

A small number of sites also appear to be vacant along the Corridor.



48 Figure 36 Great Eastern Highway Corridor Edge Interface 1

Figure 37 Great Eastern Highway Corridor Edge Interface 2





Figure 38 Great Eastern Highway Corridor Interface Images

4.1.2 LOT SIZES

Figure 39 - Lot Sizes Plan identifies the spatial distribution of lot sizes and includes a statistical breakdown of different lot sizes within the study area. The study area has been broken into two segments in Figure 39 for legibility purposes. There are 266 lots included within the study area, and a total lot area of 75.32 hectares. The average lot size is 2831m², with the majority of lots being between 1001m² - 3000m² (37.9%).

4.1.3 LAND OWNERSHIP

The majority of the lots along the are privately owned freehold lots. There are multiple strata lots, predominantly located on the northern edge of the Corridor between the Graham Farmer Freeway and Belgravia Street. There are also various government freehold lots along the Corridor (refer **Figure 40 – Land Ownership Plan**). The study area has been broken into two segments in Figure 40 for legibility purposes.

4.1.4 HERITAGE

European

A review of the Heritage Council's Heritage inherit database identified the following site within the study area which is included on the State Heritage Register:

- Tampina – 517 Great Eastern Highway, Redcliffe (Place number 03123). The site is single-storey brick and iron residence constructed in 1906 in the Federation Queen Anne style, and has cultural significance for the following reasons:
 - The construction of the place was as a direct result of the growth and development of the horse racing industry in Perth and in Belmont in particular in the 1890s and early 1900s;
 - The place displays aesthetic qualities characteristic of the Federation period and exhibits some fine decorative design detailing, particularly the joinery, tuck-pointing and richly varied roof form;
 - The place has associations with the horse racing industry and prominent racing identity, J. F. G. Robinson;
 - The place has associations with the RAAF during World War Two, including fighter pilot and war hero, 'Bluey' Truscott;

- The place was used as a hostel for mentally and physically disabled children; and,
- The place contributes to the local community's sense of place as one of the few large residences remaining from the turn of the century development of the Redcliffe/Belmont area.

Aboriginal Heritage

A review of the Department of Planning, Lands and Heritage Inquiry System identified the following sites within the subject site registered under the *Aboriginal Heritage Act 1972*;

- Site ID: 3753, Site Name: 'Perth', Type: Historical, Mythological, Hunting Place, Named Place, Natural Feature
- Site ID: 17061, Site Name: 'Old Campsite 1', Type: Camp

The following registered sites are located adjacent to the subject site:

- Site ID: 16694, Site Name: 'Redcliffe Wetland', Type: Historical, Mythological, Camp, Meeting Place, Natural Feature, Water Source
- Site ID: 3536, Site Name: 'Swan River', Type: Mythological


City of Belmont Local Heritage List

A review of the City of Belmont's Local Heritage List identified the following sites within the study area:

- Cellars – 88 Great Eastern Highway, Rivervale (Place number 8646)
- Brisbane & Wunderlich Park Buildings – Devils Elbow, Great Eastern Highway, Belmont (Place number 8653)
- Belmont Primary School – 213 Great Eastern Highway, Belmont (Place number 6124)
- Invercloy Park – 11 Wedderburn Place, Ascot (Place number 25910)
- Tampina – 517 Great Eastern Highway, Redcliffe (Place number 3123)

Heritage sites have been considered in the Redevelopment Potential Analysis Plan.



 STUDY AREA

Size	LOT YIELD		LOT AREA		
	No. Lots	% Total Lots	Average Size	% of Total Area	Area
160m ² - 300m ²	17	6.39%	291m ²	0.66%	4947m ²
301m ² - 500m ²	13	4.89%	360m ²	0.62%	4681m ²
501m ² - 700m ²	29	10.90%	626m ²	2.41%	18165m ²

701m ² - 1000m ²	35	13.16%	867m ²	4.03%	30355m ²
1001m ² - 3000m ²	101	37.97%	1804m ²	24.20%	182288m ²
3001m ² - 5000m ²	30	11.28%	3791m ²	15.10%	113749m ²
5001m ² - 30000m ²	41	15.41%	9732m ²	52.98%	399051m ²
Total Number of Lots	266				
Minimum Lot Size 264m ²			Average Lot Size 2831m ²		
Maximum Lot Size 36281m ²			Total Lot Area 753236m ²		



STUDY AREA

PRIVATE FREEHOLD

GOVERNMENT FREEHOLD

85 STRATA / No. OF UNITS

SURVEY STRATA

- 1 STATE HOUSING COMMISSION
- 2 STATE OF WA - Dept. Planning, Lands & Heritage
- 3 WATER CORPORATION
- 4 STATE OF WA - Minister for Education
- 5 BELMONT PARK ROAD BOARD
- 6 CROWN RESERVE
- 7 COMMISSIONER OF MAIN ROADS

53 Figure 40 Land Ownership Plan

4.2 BUILT FORM

The built form of the area comprises a variety of single storey industrial buildings, commercial buildings, offices, multiple dwellings, grouped dwellings and single storey housing. The height of buildings ranges from single storey dwellings and commercial uses with apartment and office buildings ranging from 2-4, 4-6, 6-8 storeys, up to 14-16 storeys.

- **Residential**

The residential development is predominately multiple and grouped dwellings. Majority of the residential development is separated from Great Eastern Highway by noise amelioration walls. The majority of the multiple dwellings are 4-6 storeys, with the grouped dwellings predominantly 1-2 storeys. There are also several single storey single dwellings on the eastern end of the Corridor with the majority to the north side east of Tonkin Highway.

There are several modern apartment buildings constructed in the last 10 years, ranging from 14-16 storeys, located on the western end of the Corridor closer to the Graham Farmer Freeway.

The material of the residential buildings includes brick veneer, concrete and glass, with roofing predominantly tiles and Colourbond.

- **Commercial and Non-Residential**

The commercial and non-residential built form varies in age and style. There are some constructed developments, consisting of 2-3 storey concrete offices. A number of buildings are tourist accommodation and area far ranging in both age and aesthetics. Several non-residential buildings are set back from Great Eastern Highway, with car parking located in front of buildings.

4.3 PUBLIC REALM

The public realm within the area can be described by the following:

- Lack of pedestrian amenity – pedestrian paths are constructed to varied quality and width. There is a lack of regular safe crossing points, and the paths offer little sense of safety from the high traffic volumes
- There is a general lack of street vegetation and trees resulting in pedestrians and properties having little protection from the sun and busy road
- Poor connectivity of public realm network to surrounding Public Open Space
- The variety of existing built form results in an inconsistent streetscape
- Inconsistent building setbacks result in an inconsistent streetscape with no uniform character.
- Facilities for busses are not consistent the whole way though, with a lack of bus shelters at all bus stops.

4.3.1 STREETSCAPES

The existing streetscape within the area can be described by the following:

- **Physical Condition**
 - Verge clutter, minimal vegetation, lack of street furniture.
 - Some paving has been upgraded and is in good condition, other parts of pavement are older, degraded and in need of repair.
 - There are several different footpath types and widths. Some areas without footpaths.
 - A number of footpaths are not well connected to the greater pedestrian network system.

- **Character and Sense of Place**

- Corridor is orientated towards cars and is a hostile environment for pedestrians.
- No uniform character and lacking a sense of place.

- **Connectivity and Legibility**

- Lacks connection to the river, with poor connectivity and legibility especially for pedestrians.
- Minimal way-finding markers along Corridor.

- **Pedestrian Environment and Visual Amenity**

- Lack of harmonious streetscape and elements.
- Lack of shelter and shade especially along footpaths/shared paths directly abutting the Corridor for pedestrians.
- There is a limited amount of crossing points across the Corridor forcing unnecessary lengthy walking distances for pedestrians.

- **Public/Private Interface**

- Some parking on verge of residential lots and a small number of decked parking structures provided.
- Generally, the car parking areas are poorly landscaped and are simply bituminised areas only.

- **Infrastructure and Servicing Integration Issues**

- Featureless road with minimal landscaping within median and/or verges. Lighting is provided generally in the central median with minimal lighting provided on verges and/or along footpaths/shared paths.
- Underground power is generally provided.

- **Designing Out Crime (CPTED)**

- High noise amelioration walls in close proximity to Graham Farmer Freeway creating long barricaded sections of verge.
- Buildings set back from street front with car park interface between.
- Poor lighting along verges, footpaths/shared paths and in areas of open space particularly, where the Swan River is in close proximity to the Corridor i.e. mid-section.
- Single residential lots closer to Ivy street generally have untidy verges with overgrown vegetation and no fences.
- Residential area in Ascot is setback from Great Eastern Highway with noise amelioration walls, with no interface.

- **Management and Maintenance Issues**

- Minimal public realm landscape to maintain.

4.4 MOVEMENT NETWORK

4.4.1 GREAT EASTERN HIGHWAY

The Great Eastern Highway ranges from four to six lanes and is classified as a Primary Distributor under the Main Roads WA hierarchy, carrying between 44,500 and 69,500 vehicles per day between the Graham Farmer Freeway and east of Ivy Street. This is forecast to increase to between 63,600 and 97,100 vehicles per day by 2031.

4.4.2 SURROUNDING STREET NETWORK

The street network surrounding Great Eastern Highway comprises the Graham Farmer Freeway, Tonkin Highway and Brearley Ave which are classified as Primary Distributors, as well as a mix of Distributor A, Distributor B, Local Distributor and Access Roads in the Main Roads WA Road Hierarchy. The use of rear laneways surrounding the site is minimal. The network is generally a traditional grid pattern.

There are signalised intersections along the Highway at the following intersections:

- Graham Farmer Freeway
- Kooyong Road
- Belmont Avenue
- Abernethy Road
- Belgravia Street
- Hardey Road
- Epsom Avenue
- Tonkin Highway
- Coolgardie Avenue
- Fautleroy Avenue

Many of the remaining intersections along the Highway consist of left-in, left-out access arrangements.

4.4.3 PEDESTRIANS NETWORK

As part of the 2011 – 2013 upgrade works along the Corridor between Kooyong Road and Tonkin Highway, 3.0 metre footpaths were installed on both sides of the Corridor. The footpaths are located adjacent to the on-road bike lanes with no buffer between the footpath and the on-road bike facility, creating an unpleasant environment for pedestrians.

Along the southern side of the Corridor between Orrong Road and Tonkin Highway there is typically a planted buffer between the footpath and property boundary.

Along the norther side of the Corridor between Orrong Road and Tonkin Highway there is typically no buffer between the footpath and the property boundary, and the footpath typically runs adjacent to a property fence, wall or sound wall.

Along the northern and southern sides of the Corridor between Tonkin Highway and east of Ivy Street the footpath is older and narrower – typically 1.5m wide. For the majority of this section of the Corridor there is a planted buffer between the footpath and the road.

There are at-grade pedestrian crossing facilities at traffic signal-controlled intersections, and grade-separated pedestrian underpasses. Some signalised intersections require pedestrians to make three crossings in order to cross from one side of the Highway to the other. Pedestrian connection to the river is minimal in most locations.

4.4.4 BICYCLE NETWORK

Dedicated on-road cycling facilities are located from the Graham Farmer Freeway to the Tonkin Highway. Typically, the cycle lanes are 1.5 metres wide, adjacent to the kerb and the bus lanes.

Bicycle connection to the Swan River is poor. The cycle path adjacent to the Swan River is disconnected in some locations.

4.4.5 PUBLIC TRANSPORT

The Great Eastern Highway has multiple bus routes that travel along the length of the Corridor or travel along parts of Corridor in the study area, in addition to the Circle Route bus that crosses the Corridor between Resolution Drive to Hardey Road. The bus network provides access to the Perth CBD, Kings Park, the Perth Airport, Belmont Forum, Redcliffe Station, Midland, High Wycombe, Guildford.

During the weekday AM peak period buses along the Highway travel to Perth CBD approximately every 5-8 minutes and towards Redcliffe Station approximately every 10-12 minutes.

During the weekday PM peak period, buses along the Highway travel to Perth CBD approximately every 10-12 minutes and towards Redcliffe Station every 5-8 minutes.

Not all of the bus stops have existing bus shelters.

5. OPPORTUNITIES AND ISSUES ANALYSIS

5.1 REDEVELOPMENT POTENTIAL

A redevelopment potential analysis has been undertaken based on a subjective assessment of the development potential for land parcels within the subject area and is outlined included below in **Figure 41**.

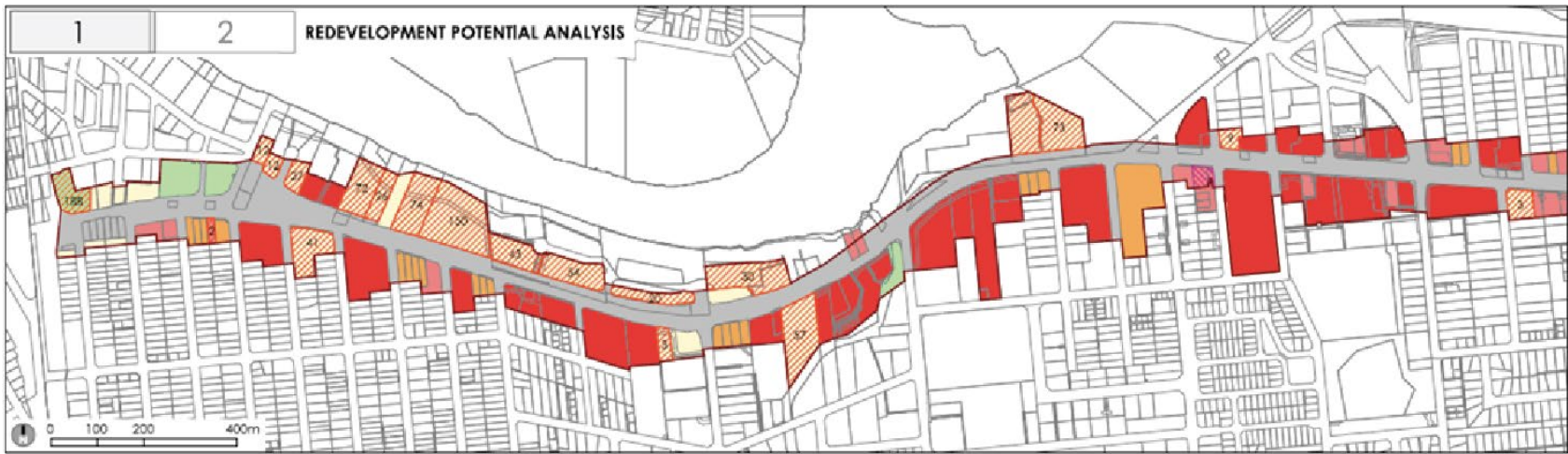
This analysis applies a redevelopment grade to the site in accordance with the following category description:









- **Very Low:** Primarily heritage sites and/or land uses unlikely to change unless a redevelopment outcome that includes retention of heritage features can be found, or demolition/relocation is considered acceptable. Existing buildings have been constructed relatively recently.
- **Low:** Existing residential strata developments with greater than three landowners and newer commercial buildings unlikely to be redeveloped in the medium term. The potential to redevelop will be dependent on willingness to dissolve strata agreements and / or age adaptability of buildings.
- **Moderate:** Smaller green titled residential lots (~1000m²) with equal or less than three landowners. The potential to redevelop will be dependent on land assembly and/or acceptable built form design.
- **High:** Medium sized commercial and residential lots fronting major roads or in close proximity to centres. The potential to redevelop will be dependent on landowner interest and agreement on built form outcomes.
- **Very High:** Generally larger lots (>2000m²) (or those adjacent to larger lots) that front major roads or are in close proximity to centres. The potential to redevelop will be dependent on landowner interest and agreement on built form outcomes.

5.1.1 ASSUMPTIONS OF REDEVELOPMENT POTENTIAL

The assumptions which have been made when considering the redevelopment potential and resulting yield analysis include:

- **Age of development:** it is considered that buildings which have been constructed relatively recently and are considered to be of good condition will have a reduced potential to be redeveloped, whereas buildings which are of an older nature and dilapidated condition are more likely to be redeveloped.
- **Level of capital investment:** it is considered that buildings with higher levels of capital investment are less likely to be redeveloped as opposed to buildings with a relatively lower level of capital investment.
- **Strata reform:** proposed strata reforms aim to provide more flexibility to dissolve strata agreements, increasing the potential to redevelop lots with a large number of strata owners.
- **Downturn in business economy:** downturns in the business economy provide a difficult environment to sustain business which in turn is likely to lead to sales and facilitate redevelopment.
- **Public-Sector lead projects:** various public-sector lead projects in proximity to the study area such as the Forrestfield Airport Link and Optus Stadium are likely to act as a catalyst for redevelopment in the area on potential sites.



- | | | | | | |
|---|-----------------------|---|---|---|---|
|  | STUDY AREA |  | Very High
Generally larger lots (>2000m ²) (or those adjacent to larger lots) that front major roads or are in close proximity to centres. The potential to redevelop will be dependent on landowner interest and agreement on bulli form outcomes. |  | Low
Existing residential strata developments with greater than three landowners and newer commercial buildings unlikely to be redeveloped in the medium term. The potential to redevelop will be dependent on willingness to dissolve strata agreements and/or age and adaptability of buildings. |
|  | STRATA / No. OF UNITS |  | High
Medium sized commercial and residential lots fronting major roads or in close proximity to centres. The potential to redevelop will be dependent on landowner interest and agreement on bulli form outcomes. |  | Very Low
Primarily heritage sites and/or land uses unlikely to change unless a redevelopment outcome that includes retention of heritage features can be found, or demolition/relocation is considered acceptable. |
|  | SURVEY STRATA |  | Moderate
Smaller green filled lots (~1,000m ²) with equal to or less than three landowners. The potential to redevelop will be dependent on land assembly and/or acceptable bulli form design. | | |

5.2 LAND USE

5.2.1 LAND USE PRINCIPLES

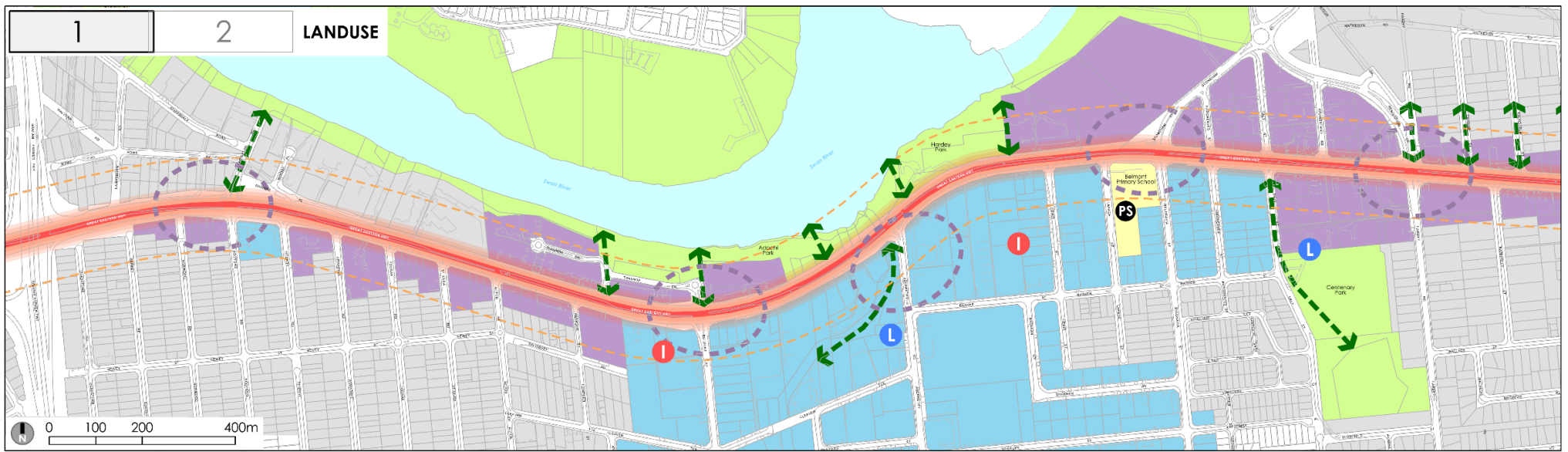
- Enhance and intensify existing centres along the Corridor to ensure they maintain their function in providing goods, services, employment and amenity.
- Acknowledge the highway as a major artery that acts a strategic trade route and gateway linking Perth Airport through to the City Centre

5.2.2 LAND USE OPPORTUNITIES AND ISSUES

An analysis of the land use opportunities and issues has been undertaken and is summarised as follows, with spatial depictions of some of these matters outlined in **Figure 42**.

- There is the opportunity to promote Local Mixed-Use nodes which will support an intensity of land uses.
- There is the opportunity to promote Mixed Use Land uses within existing Mixed Use zoned areas.
- There is the opportunity to promote Mixed Use Land uses within existing Mixed Business zoned areas.
- There is the opportunity to increase residential density in certain locations along the Great Eastern Highway and within 400m of existing activity centre nodes to support the activation of the Great Eastern Highway.
- Non-residential land use intensification will be influenced by considerations including land parcel size, fragmented ownership, traffic volume and access limitations.

- There is a need to consider the extent and scale for transition of land use and development intensity from the activity Corridor to low-density residential land uses.
- There is a need to create and enhance activity nodes on both sides of the Corridor.
- Opportunities should be considered to enhance connections between the Corridor and key attractions such as Ascot Racecourse, the Swan River and Garvey Park.
- Consider opportunities to reduce the physical impact of the highway and the barrier it creates.
- Consider the role, function and relationship of land uses along the Corridor with other nearby centres such as the Belmont Business Park, Redcliffe Industrial Area, and Belmont Forum.
- Laneways provide the opportunity to consider alternate land uses, laneway interface and activation of laneways.



- acknowledge the highway as a major artery that acts a strategic trade route and gateway linking perth airport through to the city centre
- consider opportunities to reduce the physical impact of the highway and the barrier it creates.
- consider extent and scale for transition of land use and development intensity from activity corridors to low-density residential
- promote mixed uses within existing mixed business zoned areas
- promote local mixed use nodes supporting an intensity of land uses
- opportunity to improve amenity and infrastructure within existing parks and recreation areas
- foster land use intensity and redevelopment that can take advantage of proximity to key pos areas and linkages
- consider suitability of different residential density along great eastern highway and within proximity of activity nodes to support activation of great eastern highway
- I non-residential land use intensification will be influenced by considerations including land parcel size, fragmented ownership, traffic volume and access limitations
- L laneways provide opportunity to consider alternate land uses, laneway interface and activation of laneways
- PS consider merits of relocating belmont primary school to better serve the catchment and redevelop school site for high-order uses

Figure 42 Land Use Opportunities and Constraints

5.3 BUILT FORM

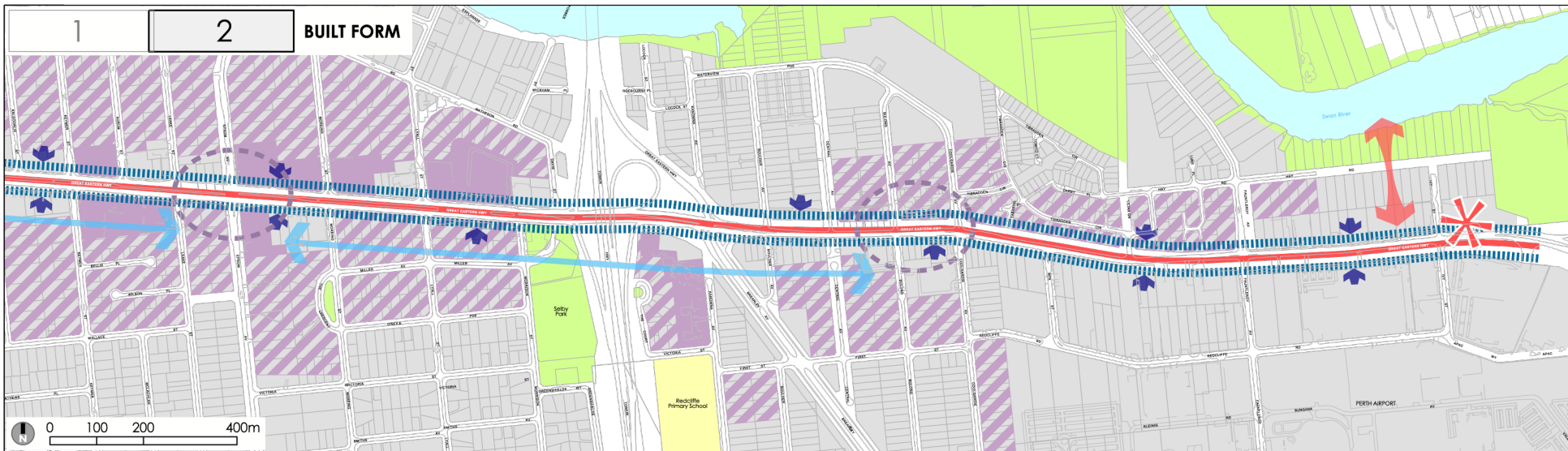
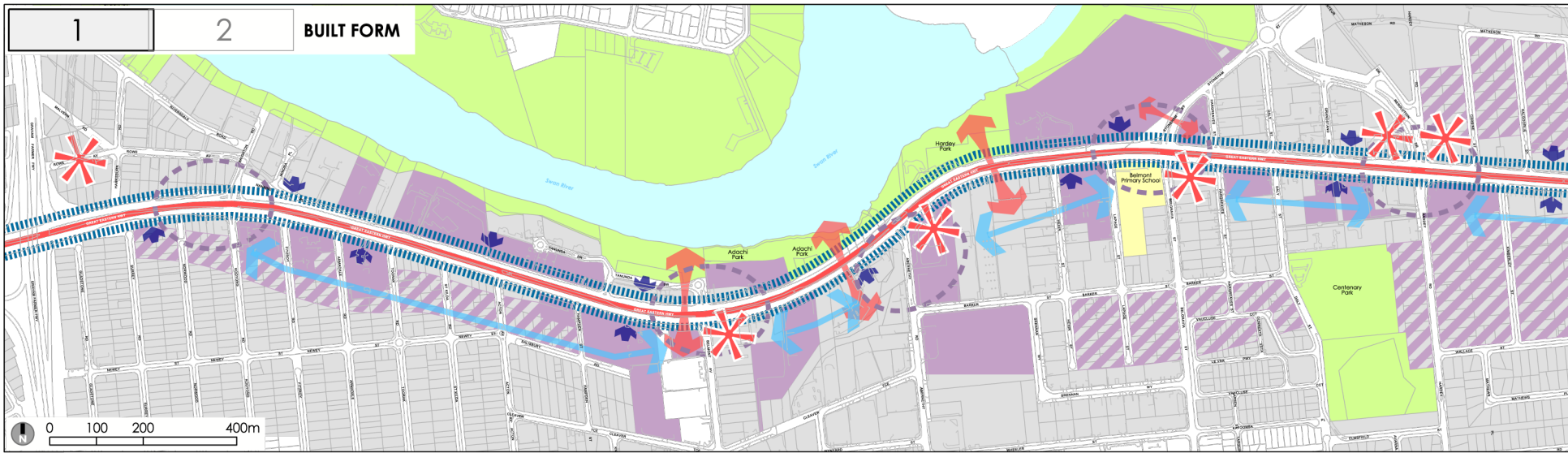
5.3.1 BUILT FORM PRINCIPLES

- Height and scale of new mixed-use buildings should have an appropriate relationship with the surrounding area and transition from the activity Corridor to the existing suburban areas.
- Built form along the Great Eastern Highway needs to be designed so that it embraces the street and is not barricaded from it to the detriment of the public realm.
- Taller buildings along Great Eastern Highway should have an appropriate relationship with adjacent residences.

5.3.2 BUILT FORM OPPORTUNITIES AND ISSUES

An analysis of the built form opportunities and issues has been undertaken and is summarised as follows, with spatial depictions of some of these matters outlined in **Figure 43**.

- The transition of building height and scale from the key roads to lower density residential areas needs to address matters such as dwelling diversity, residential amenity, overshadowing, streetscape and privacy.
- Identify sites and key 'gateway locations' that would be worth considering for development bonuses, subject to performance criteria.
- Large sites provide scope for comprehensive built form and land use outcomes.
- The separation between activity centre nodes enables transition between lower and higher building heights and scale.
- Buildings along Great Eastern Highway need to create a positive ground-level experience, particularly for pedestrians, and ameliorate the traffic-dominated nature of the road.
- A flexible approach to ground level land uses outside of key activity centres should be incorporated in building and site design.











-  consider suitable building heights that may take advantage of river views
-  consider the transition of building height and scale from the key roads to lower density residential areas (needs to address matters such as dwelling diversity, residential amenity, overshadowing, streetscape and privacy)
-  consider sites and key 'gateway' locations that would be worth considering for development bonuses, subject to performance criteria
-  buildings along great eastern highway need to create a positive ground-level experience, particularly for pedestrians, and ameliorate the traffic-dominated nature of the road
-  a flexible approach to ground level land uses outside of key activity centres should be incorporated in building and site design
-  promote appropriate built form outcomes in close proximity to existing parks and recreation areas and schools
-  large sites provide scope for comprehensive built form and land use outcomes
-  the separation between activity centre nodes enables transition between lower and higher building heights and scale

Figure 43 Built Form Opportunities and Constraints

5.4 PUBLIC REALM

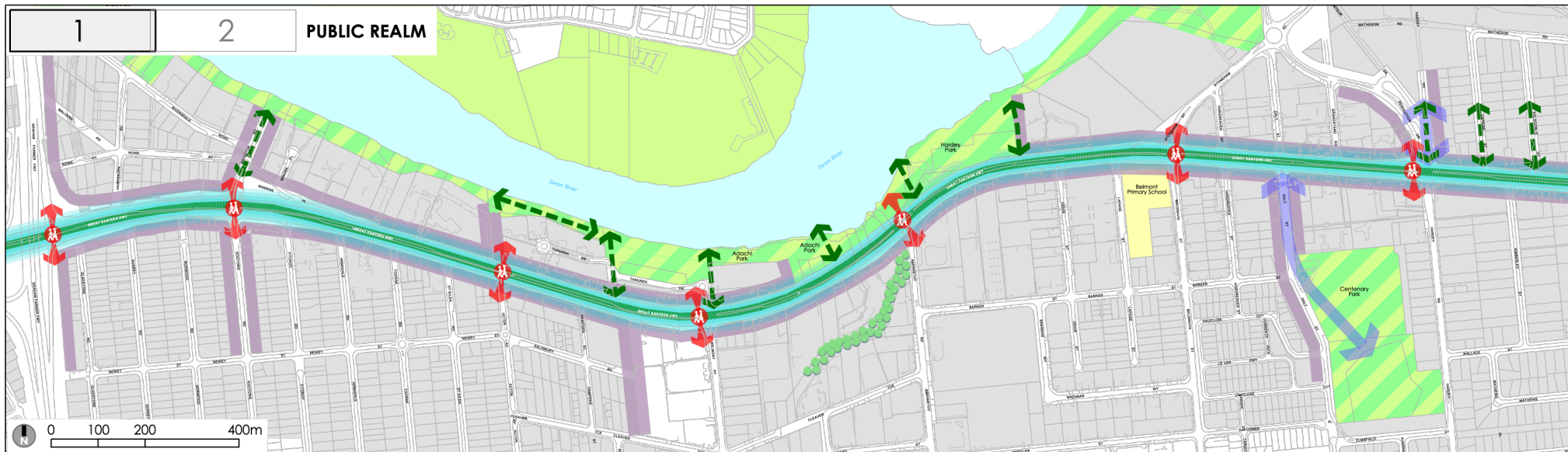
5.4.1 PUBLIC REALM PRINCIPLES




- Create attractive, enjoyable places to live and work, through amenity in parks and streets.
- Diversity of spaces for active and passive recreation.
- Expand upon the tree canopy within streets and parks to offset the loss of canopy within private landholdings.



5.4.2 PUBLIC REALM OPPORTUNITIES AND ISSUES




An analysis of the public realm opportunities and issues has been undertaken and is summarised as follows, with spatial depictions of some of these matters outlined in **Figure 44**.

- There is the opportunity to emphasise the distinct qualities of neighbourhoods on each side of the Corridor.
- Pedestrian and cycle linkages to the Swan River should be enhanced.
- There is the opportunity to influence the landscaping of Great Eastern Highway to ensure that there are greater opportunities for mature trees, landscaping and public realm improvements.
- Consider opportunities to enhance connections between the Corridor and key attractions such as Ascot Racecourse, the Swan River and Garvey Park.
- There is the opportunity to improve key pedestrian crossings throughout the Corridor and the surrounding street network.
- There is currently insufficient existing street tree planting within Great Eastern Highway, and the establishment of more trees should coincide with pedestrian crossing points to provide shade and shelter to pedestrians.
- Pedestrian crossing points should be clearly visible to pedestrians and traffic.
- There is the opportunity to enhance and upgrade the existing stream and Severin Walk.
- There is the opportunity to improve the open space and foreshore reserves adjacent the Corridor.
- Rear access via future laneways allows for greater landscaping opportunities within the verge area.



-  no/insufficient existing street tree planting within great eastern highway
-  opportunity to influence the landscaping of great eastern highway to ensure that there are greater opportunities for mature trees, landscaping and public realm improvements
-  opportunity to emphasise the distinct qualities of neighbourhoods on each side of the corridor

-  consider opportunities to enhance connections between the Corridor and key attractions such as Ascot Racecourse, the Swan River and Garvey Park
-  opportunity to improve key pedestrian crossings

-  opportunity to improve open space and foreshore reserves adjacent the corridor
-  opportunity to improve amenity and connections to existing parks and recreation areas and schools
-  enhance popular pedestrian/cyclist linkages to the Swan River


-  opportunity to enhance and upgrade the existing stream and severn walk

Figure 44 Public Realm Opportunities and Constraints

5.5 MOVEMENT NETWORK

5.5.1 MOVEMENT NETWORK PRINCIPLES

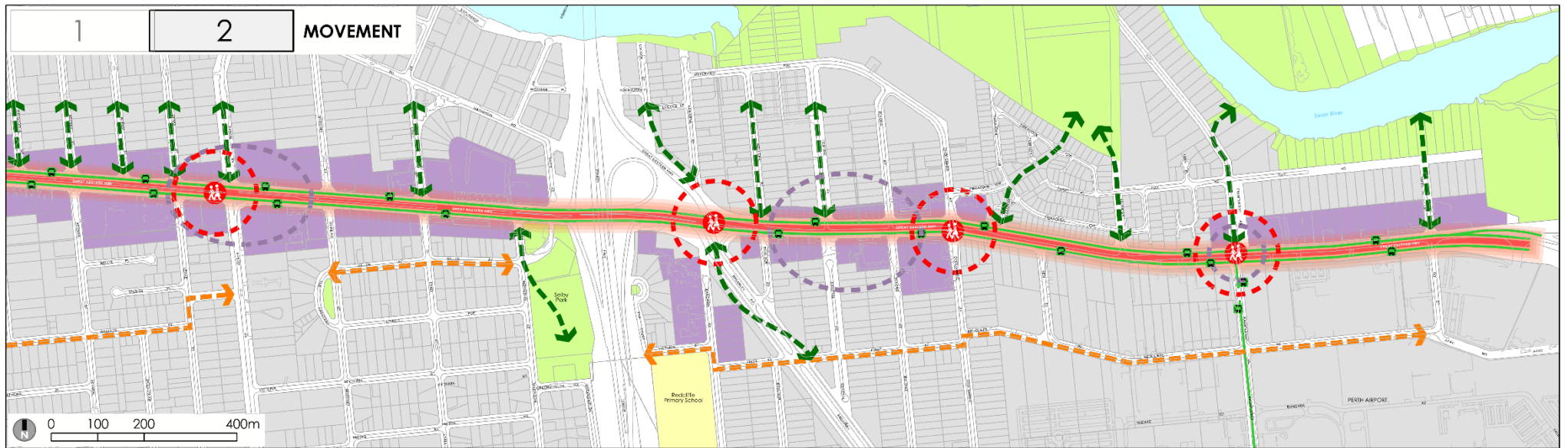
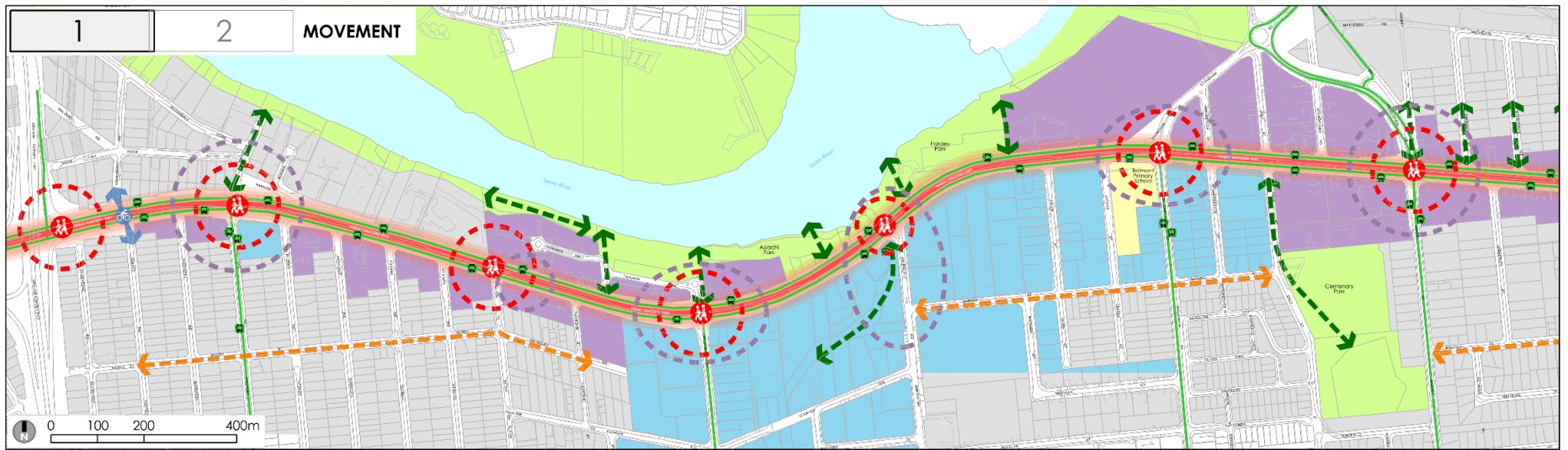
- Acknowledge the highway as a major artery for through traffic.
- The movement of pedestrians and bike riders along and across Great Eastern Highway is to be a greater priority in future upgrades.
- Public transport connectivity, particularly between the Airport and the City should be enhanced.
- Parking should be managed throughout the precinct to encourage commuters to walk, ride and use public transport.

5.5.2 MOVEMENT NETWORK OPPORTUNITIES AND ISSUES

An analysis of the movement network opportunities and issues has been undertaken and is summarised as follows, with spatial depictions of some of these matters outlined in **Figure 45**.

- The opportunity to capture local trade and economic interaction should be considered given the highways function as a major artery for through traffic.
- The Great Eastern Highway is a very inhospitable environment for pedestrians and bike riders. Opportunity to improve pedestrian and bike riders environment, connections and crossing opportunities.
- There is strong public transport availability along Great Eastern Highway Corridor, though opportunities exist to improve the public transport facilities such as sheltered bus stops.
- There is the opportunity to create numerous appealing, popular pedestrian/cycling linkages to the Swan River.

- There is the opportunity to promote access to mixed use, mixed business and residential development (along Great Eastern Highway) to be via secondary streets or laneways.
- Promote parking for mixed use, mixed business and residential development (along Great Eastern Highway) to be at the rear of development.



- acknowledge the highway as a major artery for through traffic
- mostly inhospitable environment for pedestrians and cyclists - lack of shade; safe paths; active land use edges; interesting built form and landscape
- promote parking for mixed use, mixed business and residential development (along Great Eastern Highway) to be at the rear of development
- promote access to mixed use, mixed business and residential development (along Great Eastern Highway) to be via secondary streets or laneways
- consider opportunities to capture local trade and economic interaction
- opportunities to improve pedestrian connectivity at key intersections/attractors
- strong public transport availability along Great Eastern Highway corridor
- underpass - tourist cycle route
- supporting east-west movement system for local traffic
- opportunity to improve pedestrian connections of existing parks and recreation areas and schools
- create numerous appealing, popular pedestrian / cyclist linkages to the Swan River

Figure 45 Movement Opportunities and Constraints

6. INFRASTRUCTURE FUNDING

The funding of infrastructure will be a critical component of achieving development under the Corridor Plan, as increased intensity and diversity of use will create increased demands on a wide range of infrastructure, including:

- Additional land for laneways, road widening, public spaces and parking bays;
- Construction and upgrade of laneways, existing streets, public spaces and transport infrastructure;
- New landscaping and public realm treatments, including tree planting, public art and street furniture; and
- Upgrades and expansion of service infrastructure, including utility services and drainage.

This source of funding for infrastructure will likely be as diverse as the infrastructure required, with a multitude of sources available depending on the demand profile and likely benefits derived from infrastructure provision.

Some of the more common infrastructure funding sources available are outlined as follows for consideration in the preparation of the Corridor Plan. The Corridor Plan will detail the infrastructure funding mechanisms required.

6.1 GOVERNMENT INVESTMENT

The most common form of infrastructure funding is government investment, either through:

- Local Government municipal funds, which would generally cover costs of maintenance and upgrade of local roads, drainage, public open space, community facilities and other localised infrastructure;

- State Government expenditure, which is generally applicable to core infrastructure associated with major roads, public transport and utility infrastructure, and will likely be made available to support growth within the study area as development progresses; and
- Commonwealth Government grants, which may be available to the City depending on the type of infrastructure required and the justification for this infrastructure to be partially funded under a grants programme.

It is anticipated that a mixture of all three of the above investments may support redevelopment within the Great Eastern Highway Corridor.

6.2 DEVELOPMENT CONTRIBUTION PLAN

A Development Contribution Plan is an infrastructure funding mechanism governed by the *Planning and Development (Local Planning Scheme) Regulations 2015* and guided by *State Planning Policy 3.6: Infrastructure Contributions*, which creates a statutory requirement for a specified financial contribution from landowners due payable upon subdivision or development of land within a specified development contribution area.

The principles underpinning the use of Development Contribution requirements are outlined as follows:

1. Need and the nexus

The need for the infrastructure included in the development contribution plan must be clearly demonstrated (need) and the connection between the development and the demand created should be clearly established (nexus).

2. Transparency

Both the method for calculating the development contribution and the manner in which it is applied should be clear, transparent and simple to understand and administer.

3. Equity

Development contributions should be levied from all developments within a development contribution area, based on their relative contribution to need.

4. Certainty

All development contributions should be clearly identified and methods of accounting for escalation agreed upon at the commencement of a development.

5. Efficiency

Development contributions should be justified on a whole of life capital cost basis consistent with maintaining financial discipline on service providers by precluding over recovery of costs.

6. Consistency

Development contributions should be applied uniformly across a Development Contribution Area and the methodology for applying contributions should be consistent.

7. Right of consultation and arbitration

Landowners and developers have the right to be consulted on the manner in which development contributions are determined. They also have the opportunity to seek a review by an independent third party if they believe that the calculation of the contributions is not reasonable in accordance with the procedures set out in the Model Scheme Text.

8. Accountable

There must be accountability in the manner in which development contributions are determined and expended.

A Development Contribution Plan is an increasingly common method of infrastructure funding for development estates throughout Western Australia and is particularly well catered for funding infrastructure within Greenfield estates where a development timeframe is well understood, and the infrastructure delivery schedule is more easily established.

The use of Development Contribution Plans in 'Brownfield' or infill development areas is less common, as there is generally not a single entity available willing to pre-fund the

infrastructure provision due to the significant capital investment required. There is also a lack of certainty associated with the return of the funds given the unknown development timeframes for the development area.

In addition, the upgrade and improvement of services and access could be regarded as general maintenance and provision of service which improves the quality of services to all residents and businesses and not just those landowners who seek to redevelop.

The use of a Development Contribution Plan for the study area requires careful consideration based on an assessment of the infrastructure items required and comparison of funding options available for each item.

6.3 INCENTIVE BASED CONTRIBUTIONS

Incentive based contributions for infrastructure are generally governed by a local planning scheme, whereby a landowner will receive a density or development bonus in exchange for the provision of specified infrastructure or land which contributes to the public benefit.

Items applicable to such arrangements may include:

- The improvement of land ceded for a public purpose, including the construction of roads or laneways or the development of public spaces;
- Provision of public realm improvements such as landscaping, on-street parking, public art or street furniture, or cash in lieu of such provision; and
- Private development which has a community purpose or allows community access, such as internal floor space or external open space which is privately developed and maintained but accessible to the general public.

In exchange for the specified works or land required, the City may offer development bonuses including but not limited to height, plot ratio or residential density coding bonuses, or reduced requirements for onsite parking or setbacks.

Whilst incentive based contributions are a very useful and practical tool in providing infrastructure within an infill setting, they need to be carefully considered to ensure that:

- The benefits are tangible.

- The value of the community benefit is broadly commensurate with the additional development entitlement.
- The provisions of a Scheme are well constructed and enforceable upon developers, and not subject to unreasonable variation or set aside by a determining authority;
- The incentives provided are genuinely desired by land developers, as if they do not provide additional developable yield, they are unlikely to be taken up;
- The cumulative addition of bonuses is understood, and any provisions are well tested against development scenarios prior to advertising and adoption;
- The incremental provision of infrastructure and land is understood by the City, and the potential need to compulsorily acquire land and invest municipal funds to complete a partially constructed public infrastructure project may be required in the future.

6.4 SPECIFIED AREA RATE (SAR)

The *Local Government Act 1995* (LG Act) allows the Shire to impose a Specified Area Rate on rateable land within a portion of its district for the purpose of meeting the cost of a specific work, service or facility, provided that certain conditions are met.

These conditions are that the local government must consider that the ratepayers or residents within that area:

- have benefited or will benefit from;
- have access to or will have to; or
- have contributed to or will contribute to the need for,
- that specific work, service or facility.

The funds that are raised via the Specified Area Rate must be either:

- used for the purpose for which the SAR is imposed in the financial year in which the rate is imposed; or
- placed in a reserve account established in accordance with the Local Government Act in order to be expended for that purpose in a later financial year.

A Specified Area Rate is particularly relevant to immediate, short term funding requirements. It may not be appropriate for projects identified some way into the future and as yet undefined and programmed. It may also not be acceptable to use this in conjunction with the application of a Differential General Rate.

One of the disadvantages with a Specified Area Rate is that the rate of revenue collection can be slow, and it is imposed on all landowners regardless of whether or not they have any redevelopment aspirations in the short to medium term. The slow rate of collection means that there can be a substantial time lag between people paying the levy and the infrastructure being delivered, unless the works can be pre-funded and then repaid over time.

6.5 DIFFERENTIAL GENERAL RATE (DGR)

This option involves the City imposing a higher general rate on certain rateable land within the City's district in order to make up a budget deficiency.

The Policy of the Department of Local Government, Sport and Cultural Industries, which is applied by the Minister in considering whether to approve a DGR (DG Rates Policy), indicates that the imposition of DGR's "*represents a conscious decision by a council to redistribute the rate burden in its district by imposing a higher impost on some ratepayers and a lower impost on others*".

As a result, the imposition of a DGR should follow the 'benefit principle' (i.e. that there is a relationship between the rates received by the City from rates from that type of land and the benefits received by the relevant ratepayers from the City's activities).

The Differential General Rates Policy also contains other principles which should be taken into account when implementing a DGR. These relate to the objective of the DGR (i.e. what is the basis for imposing the DG Rate), fairness and equity, consistency, transparency and administrative efficiency.

The LG Act does not limit how moneys raised through DGRs must be expended; therefore, this revenue may be applied to funding the construction, operation and maintenance of infrastructure. The DGR may be appropriate for infrastructure funding, however, the impost can only make up a budget deficiency. The DGR is not usually associated with specific infrastructure items but rather is allocated across the local government's service portfolio.

TABLE 16 INFRASTRUCTURE FUNDING COMPARISON TABLE

Mechanism	Advantages	Disadvantages	Conclusion and Recommendations
Government Investment (Local, State and Commonwealth)	<ul style="list-style-type: none"> • More politically palatable to rate payers. • No statutory or policy changes are required. • Puts emphasis back on State Government and the Commonwealth to contribute funding to support infill development. 	<ul style="list-style-type: none"> • Reassigns existing rate or tax revenue from local or State government. • The timing of funds being made available may not coincide with development pressures, and as such pre-funding may be required. • Funding may be reduced or discontinued over time depending on political will. • Commonwealth grants often short-term only, and would not be suitable for ongoing funding. 	<ul style="list-style-type: none"> • Potentially viable funding mechanism for State Government owned service infrastructure including water, sewerage, electricity, gas and telecommunications, depending on the timing of planned upgrades by servicing authorities. • Potentially viable funding mechanism for upgrade of Stirling Highway provided that desired improvements can be agreed with the State Government and incorporated into the approved capital works budget for the upgrade. • Potentially viable funding mechanism for local government infrastructure depending on timing of upgrades and consistency with planned maintenance, replacement or redesign of local streets, drainage and public realm features. • Investigation of Commonwealth Grants available for infrastructure upgrade/provision should be undertaken on an ongoing basis to support the project.
Development Contributions Scheme	<ul style="list-style-type: none"> • Provides equitable sharing of infrastructure costs across all landowners who have gained a benefit from increased development potential. 	<ul style="list-style-type: none"> • Likely requires substantial pre-funding by the local government with money to be returned as development occurs over time. • Schemes can become overly complex and often take large amounts of time and money to prepare and finalise. • Are ultimately controlled by the Western Australian Planning Commission rather than the City, which puts the City at risk if the WAPC does not support a Scheme and capital investment has already occurred. 	<ul style="list-style-type: none"> • Potentially viable funding mechanism, but requires careful consideration based on the infrastructure items required and the alternative funding sources available. • Ultimately a DCP may not be the optimal tool due to its complexity and lack of local government control.
Incentive Based Infrastructure Provision	<ul style="list-style-type: none"> • Provides an immediate improvement to the public realm. 	<ul style="list-style-type: none"> • Dependent on incentives appealing to developers. • May be interpreted differently depending on the flexibility of provisions and the determining authority (Council, JDAP, WAPC) 	<ul style="list-style-type: none"> • Potentially viable funding mechanism for local infrastructure items that can reasonably be delivered in a piecemeal approach by individual

	<ul style="list-style-type: none"> Not dependent on political will and support of the State Government. 		<p>developers.</p> <ul style="list-style-type: none"> Not suitable for broader trunk infrastructure upgrades. Requires careful consideration and construction to ensure that provisions are enforceable, appeal to developers and are properly implementable based on the broader infrastructure requirements. Requires further consultation with developers and the Department of Planning.
Specified Area Rate Option	<ul style="list-style-type: none"> Suited to 'brownfield' development; Potential ongoing funding source; Enforcement mechanisms are available; Funds may be raised in advance; Not dependent on political will and support of the State government; and No statutory or policy changes are required. 	<ul style="list-style-type: none"> Possible adverse political reactions from ratepayers; May be challenged within the SAT by ratepayers; Imposition and approval process will need to be repeated each financial year; May not provide upfront a significant pool of funds for capital investment; May not be viable if the SA Rate is to be imposed many years in advance of the RTS becoming operational; May prove inflexible if the 'purpose' is not carefully scoped before the imposition of the SA Rate; If surplus funds are raised via a SA Rate, the City is obliged to provide refunds or credits to affected ratepayers; and 	<ul style="list-style-type: none"> Potentially viable funding mechanism, however, may need to be used in conjunction with other funding mechanisms; May not be able to be justified if a DG Rate is imposed on the same rateable land; City should consider the area in which the SA Rate could be imposed, possible quantum and timing of the SA Rate; and City should undertake consultation with affected ratepayers.
DG Rate Option	<ul style="list-style-type: none"> Suited to 'brownfield' development; Source of funding in financial years before construction; Potential ongoing funding source; Enforcement mechanisms are available; No statutory or policy changes are required. 	<ul style="list-style-type: none"> May only be imposed to make up a budget deficiency, therefore, funds raised in each financial year must be expended or allocated in that financial year; Possible adverse political reactions from ratepayers; Ratepayers can object and basis of DG Rate may be challenged in the SAT; Imposition and approval process will need to be repeated each financial year; May not provide upfront a significant pool of funds for capital investment; Possibly limited scope for further or additional DG Rates. 	<ul style="list-style-type: none"> Potentially viable funding mechanism, however, may need to be used in conjunction with other funding mechanisms; May not be able to be justified if a SA Rate is imposed on the same rateable land; and City should consider the rateable land which could be subject to a DG Rate, possible quantum and timing of the DG Rate.

APPENDIX 1 COMMUNITY WORKSHOPS OUTCOMES REPORT