City of Cockburn
wetlands to waves

Integrated Transport Plan

Strategy Report

Contents


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Mayor's foreword

Transport is a critical part of our life. We travel using different modes to commute to and from work, school, and any other destination we choose. It is important that we can access road, bike and pedestrian networks to allow us to travel safely and efficiently.

The City's population is expected to grow by 27% by 2031 to 139,950. As urban development increases, so do the traffic impacts generated development. The growth of our neighbouring Cities will further make traffic congestion an issue for the growth of our City.

Traffic congestion was identified as one of the community's highest concerns during the most recent Community Perception Survey.

To address this, the City's vision on transport contained in the Strategic Community Plan is to have **a robust, safe and integrated network that meets people and industry needs while minimising environmental impacts**. To help achieve this vision the City has a strategy for the delivery of road infrastructure upgrades, improvements, and extensions but it will become increasingly less possible to address traffic growth by providing more road capacity.

Sustainable transport is the smarter way of the future. This transport involves walking, riding, or using public transport to get around. A change in travel patterns has the potential to reward us in a number of ways with better health; a better environment; a reduction in personal transport costs and, better engagement with our local community.

Higher density residential areas will create vibrant activity centres with a high frequency of public transport services. The City has already begun planning in areas such as Cockburn Central, Cockburn Coast and Port Coogee. These precincts will provide residents with a high frequency of public transport services.

The City is working to further its vision for sustainable transport. To do this the City is developing this Integrated Transport Strategy through the feedback received during the community and stakeholder consultation. Your voice has helped shape the direction and actions contained in this report. A big thank you to our community for the significant number of contributions to the collaborative mapping process.

I encourage you to read this strategy to understand the direction that our City is taking to our transport needs. I challenge you to start making a difference by thinking about how you can personally contribute to the solutions.

Yours sincerely

Mayor Logan Howlett JP

Executive summary

The City of Cockburn engaged Arup to develop an Integrated Transport Plan (ITP) for the Cockburn Local Government Area (LGA). The ITP has been developed in close collaboration with the City of Cockburn and involved liaison with the Department of Transport (DoT), Department of Planning (DoP), the Public Transport Authority (PTA) and Main Roads Western Australia (MRWA).

As a precursor to the ITP, the City updated the District Traffic Study (DTS) and associated traffic model in order to understand the potential impacts of forecast population growth, land use changes, employment creation, extrapolation of current mode shares and committed/ planned changes to the road network.

The DTS highlighted that it will not always be economically viable or sustainable to increase road network capacity to alleviate forecast congestion. It indicates that a mode shift away from private vehicle travel (which made up 84% of trips in the base year of 2011 for all trip types) will be required for travel to/ from and within the City in order to sustain population and employment growth.

The ITP sets the vision and framework for a transport network that will be able to provide realistic alternative mode choices to reduce the dependency on making trips by private car. The ITP identifies the current and expected future transport situation through examination of 'Cockburn of Today' and 'Cockburn of Tomorrow'.

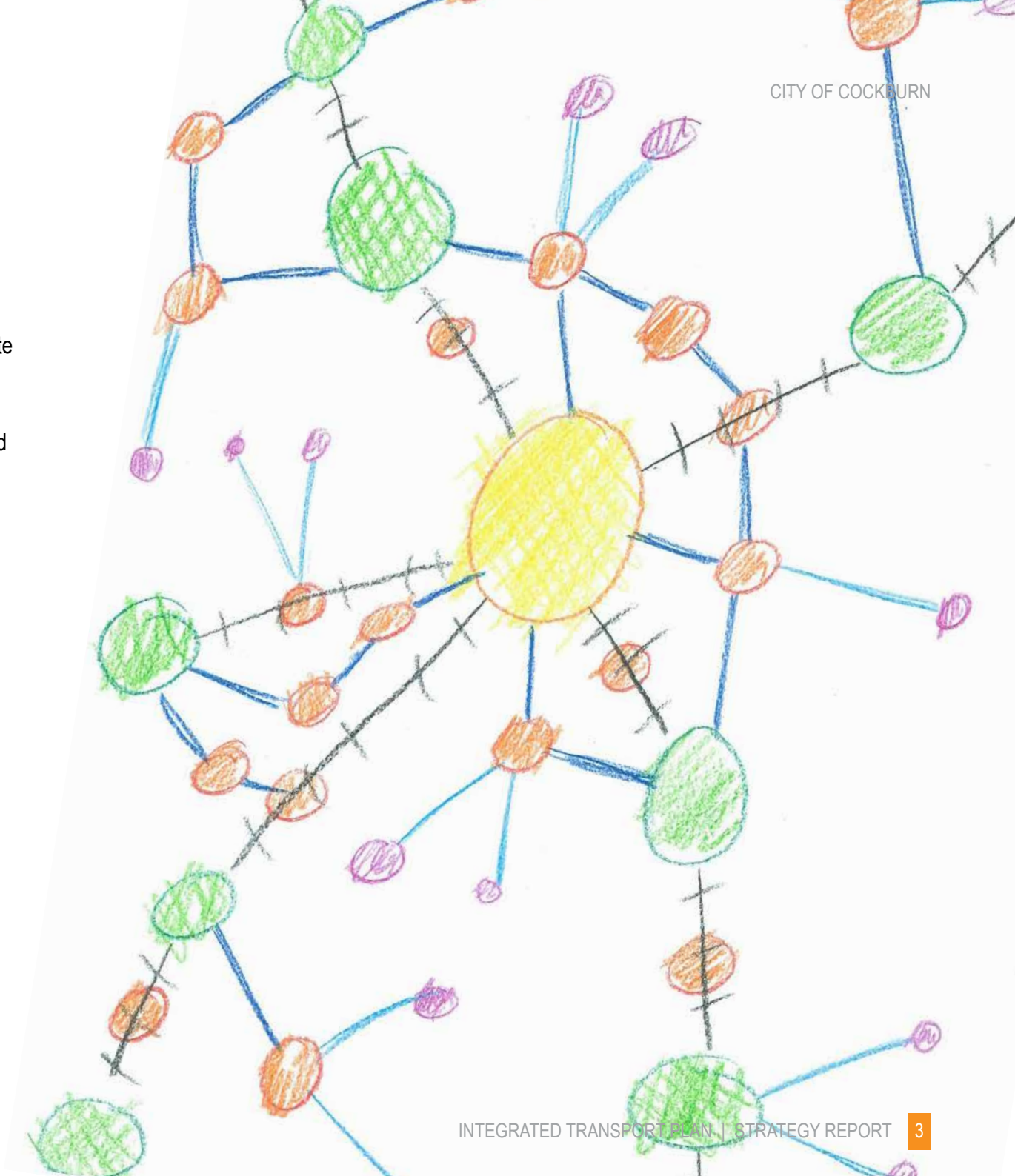
The objectives of the ITP are:

- To have a transport system that efficiently integrates with land use, enables multi-modal trips, and allows flexible management of the City's road space.
- To provide an efficient and highly connected movement network for pedestrians and cyclists that caters for and encourages healthy active transport travel for trips of any length.
- To provide a transport system that is safe and efficient, accepting that a level of traffic congestion will always exist, and is planned to meet the long-term transport needs of a growing city.
- To have a legible, well-structured arterial road network that provides efficient routes for local heavy vehicles and general traffic for intra-city and regional trips.
- To provide infrastructure and promote behaviour that encourages patronage of public transport in a sustainable manner and creates efficient and prioritised movement for public transport and other high occupancy vehicles.

- To raise community awareness of transport alternatives to private cars, and keep them regularly updated on transport issues in Cockburn.

An implementation plan containing 41 actions has been developed with short, medium and long term horizons for measures noting that a significant focus is required in the short term on improving sustainable travel modes. This is to create a more balanced transport system but needs to be matched by travel demand management to discourage unnecessary private vehicle use. Identified measures include new infrastructure, behaviour change approaches and policy change.

It is intended that this ITP be a live document that is actively implemented and updated every three to five years.



1 Introduction

1.1 Overview

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The DTS highlighted that it will not always be economically viable or sustainable to increase road network capacity to alleviate forecast congestion. It indicates that a mode shift away from private vehicle travel (which made up 84% of trips in the base year of 2011 for all trip types) will be required for travel to/ from and within the City in order to sustain population and employment growth. This mode share is consistent with the combined car driver and car passenger category in the 2011 Census (Journey to Work trips). This high car driver mode share cannot be sustained and a shift to more sustainable modes is a key focus of this ITP.

A mode shift away from private vehicle trips cannot be achieved without having the supporting infrastructure and services for public transport, walking and cycling in order to encourage these forms of travel to be taken up for trips for work, education, shopping and recreation.

This ITP identifies the current and expected future transport situation through examination of 'Cockburn of Today' and 'Cockburn of Tomorrow'. The research process has included:

- A literature review
- Examination of existing transport infrastructure and travel patterns
- Review of transport and land use policy
- Feedback from the community on existing transport issues.

The ITP is structured to consider the future transport vision for Cockburn through the following:

- Articulation of the future transport vision for the City
- Development of a set of objectives aimed at achieving the vision
- Investigation into forecast future demographic and land use changes across the City and how these changes need to be catered for to achieve the ITP objectives
- Development of an implementation plan, which identifies soft and hard measures to achieve the ITP vision and objectives.

This ITP has been developed in close collaboration with the City of Cockburn and involved liaison with the Department of Transport (DoT), Department of Planning (DoP), the Public Transport Authority (PTA) and Main Roads Western Australia (MRWA).

1.2 District Traffic Study

In 2006 the City undertook a District Traffic Study (DTS), aimed at developing traffic forecasts for the years 2016 and 2031. This DTS was then updated in 2013 to consider future transport conditions in years 2020 and 2031 based on anticipated growth in land use, population and employment but additionally through traffic trips as forecast by the MRWA Regional Operations Model (ROM). The DTS model took into account forecasted trips from significant development including the Cockburn Central area, Murdoch Activity Centre, Jandakot Airport Development, Latitude 32, Australian Marine Complex and Cockburn Coast development.

The DTS model was also used to test future possible road network upgrades such as the North Lake Road Bridge across Kwinana Freeway, Bartram Road overpass of Kwinana Freeway and Roe Highway Stage 8 extension.

Travel mode share has a significant bearing on the overall vehicular trips on the road network. For the purposes of the DTS a combined car driver and car passenger mode share of 84%[1] was adopted which equates to the following additional vehicular trips on the road network:

- 100,000 to 115,00 additional daily car trips on the network between 2012 and 2020[2]
- 170,000 to 200,000 additional daily car trips on the network between 2012 and 2031

This is a significant number of new trips to be absorbed onto the City's network. These trips that have an origin or destination within the City and do not take into account any growth in through traffic trips which is also highly likely.

The outcomes of the modelling show that despite significant investment in road network upgrades, it is not possible to solve the City's congestion and related safety issues. These were the two areas of primary concern raised by the community as part of the collaborative mapping exercise. Congestion was defined as a volume to capacity ratio of 80% or greater and level of service 'D' (refer to **Table 1**).

1.3 Community engagement

1.3.1 Approach

AA month-long community engagement period during August 2013 was held in the course of the ITP preparation. The community input was solicited using an online e-engagement tool called Collaborative Map.

Collaborative Map is a mapping application that is viewed in a standard internet browser and uses the Google Maps interface as its source of mapping data. It allows people to participate in engagement activities and provide information from their own computers, thus broadening the reach of engagement programs.

[1] The Mode share proportions were kept constant at 2012 levels.
[2] 15,000 trips per day difference depends on the number of employment trips generated from within versus outside the city.

Table 1 Level of Service definitions *(Source AustRoads 2009)*

	LoS	DESCRIPTION
	A	A condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.
	B	In the zone of stable flow where drivers still have reasonable freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is a little less than with LoS A.
	C	Also in the zone of stable flow, but most drivers are restricted to some extent in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience declines noticeably at this level.
	D	Close to the limit of stable flow and approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.
	E	Traffic volumes are at or close to capacity, and there is virtually no freedom to select desired speeds or to manoeuvre within the traffic stream. Flow is unstable and minor disturbances within the traffic stream will cause breakdown.
	F	In the zone of forced flow, where the amount of traffic approaching the point under consideration exceeds that which can pass it. Flow breakdown occurs, and queuing and delays result.

The Collaborative Map was set up in close collaboration with the City's Communications and Engineering teams. Input was invited via information circulated with Rates Notices, the Cockburn Soundings Newsletter, the local newspaper and the City's website and Facebook page.

The map enabled the following information to be collected:

- Spatially referenced comments on existing transport conditions and issues under the following categories:
  - Congestion
  - Road safety
  - Parking
  - Freight
  - Public Transport
  - Cycling
  - Walking

Users were able to add an unlimited number of comments to the map by category and were able to 'agree' or 'disagree' with comments posted by others on the map. All comments were visible to all visitors to the site.

- Travel pattern statistics and preferences. A short questionnaire was administered, asking the following questions:
  - What transport mode(s) you use most often to get to work or place of education:
  - Why do you use this mode?
  - What is the postcode of your workplace/ place of education?
  - If you travel by car - what would make you consider changing to public transport, walking or cycling?
  - If you travel by car, how much per week do you estimate your commute to work costs (fuel and parking costs)?
- Details of the individual posting the comment, including postcode and email address.

Whilst the feedback received during the Collaborative Map process included comments of a strategic nature, there were many comments about operations issues. All feedback has been collated will be reviewed in detail by the City officers and actioned as necessary.

1.3.2 Outcomes

Over the month-long engagement, a total of 612 unique comments were posted, there were 938 visits to the website and 2,360 votes (i.e. agree or disagree) were made on the comments. The spatial distribution of the 612 comments posted by category is shown in **Figure 1.**

Figure 2 shows the distribution of the comments across the seven categories. The most popular categories were Road Safety and Congestion with 30% and 26%; respectively.

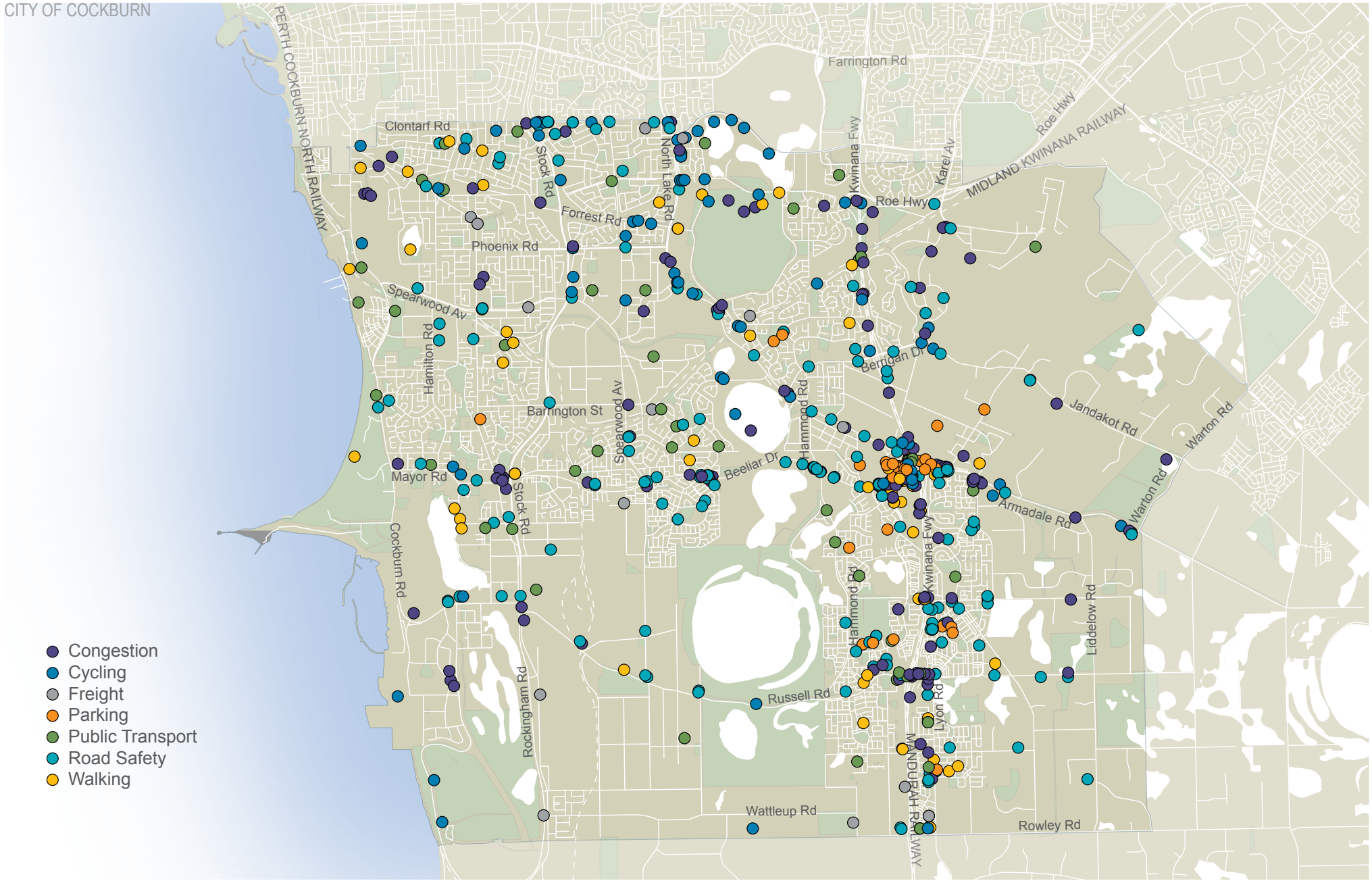

Figure 1 Spatial distribution of comments received using the Collaborative Maps

Figure 1 shows a good distribution of comments across the City although the greatest concentration in comments occurred at, and in the vicinity of, Cockburn Central. The nature of these comments was centred on congestion issues. Congestion is at the root cause of issues in the area affecting other modes. This includes difficulty in pedestrians crossing Beeliar Drive to walk between Cockburn Central Station and Cockburn Gateway shopping centre and delays to drivers exiting the station's Park 'N' Ride facilities. There have been no provisions made for bus priority through Cockburn Central and there is therefore only limited advantage in accessing the station by this mode. A lack of parking at Cockburn Central was also cited as a popular issue although clearly there is a relationship between parking supply, traffic generation and congestion which cannot be overlooked.

The need for a connection across the Kwinana Freeway at Bartram Road has strong support on the basis it would provide an alternative to Beeliar Drive/ Armadale Road for local east-west trips. For the same reasons, the exercise also showed there is community support for the North Lake Road connection across the Kwinana Freeway. Kwinana Freeway is being increasingly seen as a barrier to east-west movements.

The community picked up strong linkages between traffic congestion and road safety issues including poor driver behaviour such as risk taking, issues for pedestrians crossing busy arterial roads and rat-running.

Public transport issues were also centred on access to Cockburn Central Station and concern was raised around potential congestion at the proposed Aubin Grove Rail Station at Russell Road/ Gibbs Road if not proactively planned for. Other public transport issues centred on the desire for more bus services in the northern suburbs of the City to provide direct connections to Murdoch Station and a need to improve bus service coverage to industrial employment centres such as Spearwood, Bibra Lake and Henderson.

Parking was not seen as a widespread issue across the City but rather a localised issue mostly at Cockburn Central but also around schools.

There were only limited comments received around freight, indicating it is not a key issue for the community at present but may emerge as an issue with increased industrial developments such as Latitude 32 and the Australian Marine Complex. Brownfield development in areas such as Cockburn Coast is expected to see more people living nearby freight routes.

Further discussion on the feedback is contained in Section 2 'Cockburn of Today'. Appendix A also contains the full set of tabulated comments from the collaborative mapping exercise. Names and contact details of responses have been removed for privacy reasons.

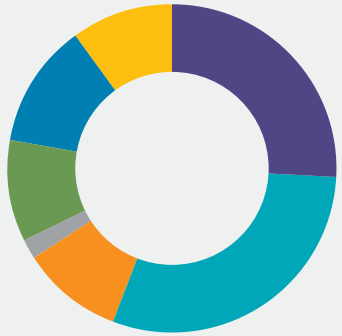

Figure 2 Community feedback on transport issues, by category

The DTS clearly directs that options to curb the growth of private vehicle trips on the road network need to be explored as part of an integrated transport plan. This is the purpose of this ITP which is underpinned by the following objectives:

ITP objectives:

- To have a transport system that efficiently integrates with land use, enables multi-modal trips, and allows flexible management of the City's road space.
- To provide an efficient and highly connected movement network for pedestrians and cyclists that caters for and encourages healthy active transport travel for trips of any length.
- To provide a transport system that is safe and efficient, accepting that a level of traffic congestion will always exist, and is planned to meet the long-term transport needs of a growing city.
- To have a legible, well-structured arterial road network that provides efficient routes for local vehicles and general traffic for intra-city and regional trips.
- To provide infrastructure and promote behaviour that encourages patronage of public transport in a sustainable manner and creates efficient and prioritised movement for public transport and other high occupancy vehicles.
- To raise community awareness of transport alternatives to private cars, and keep them regularly updated on transport issues in Cockburn.

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The City of Cockburn is located approximately 24km south of the Perth CBD, and 8km south of Fremantle.

- The City covers an area of approximately 170 square kilometres. Land usage is predominantly for residential and industrial purposes, with some commercial areas.
- The City is located between the Cockburn Sound coast to the west and a north-south chain of wetlands to the east.
- Cockburn is home to approximately 103,000 residents in 39,000 dwellings.
- The City has an employment self sufficiency of 77%[3].
- 38%[4] of residents live and work within the City.
- Most residents in Cockburn travel to work by car.
- Major employment destinations outside the City include the Perth CBD, Fremantle, Canning and Melville.
- Private car travel is declining but remains higher than the Perth metropolitan average.
- In 2006 public transport accounted for 7% of trips and in 2011 this increased to 12%.

(Source: 2006 and 2011 Census)

2 City of Today

There are some locations within the City that are not identified as primary freight routes but carry a notable percentage of heavy vehicles such as Barrington Street in Bibra Lake (over 16% heavy vehicles) and Wattleup Road (over 20% heavy vehicles).

2.1 Transport infrastructure and services

2.1.1 Roads

The City of Cockburn's road network is 907km in length (refer to **Figure 3**). Kwinana Freeway is a State-controlled primary distributor road that acts as the major north-south connection through Cockburn. Other major routes that connect Cockburn to different parts of the region are Roe Highway, Stock Road, Armadale Road, Rockingham Road, Carrington Street, Cockburn Road, Karel Avenue and North Lake Road.

As discussed in sections 1.1.1 and 2.2.3, the traffic modelling and collaborative mapping have raised congestion and safety issues in different parts of the road network.

2.1.1.1 Freight

Existing and future primary freight roads and rail routes within the City of Cockburn are illustrated in **Figure 3**. These are routes as noted in the State Planning Policy 5.4 (Road and Rail Transport Noise and Freight Considerations in Land Use Planning). Routes are defined as a primary road or rail route due to their role and importance for the movement of freight to and within the Perth Metropolitan Region, not necessarily due to the volume or percentage of heavy vehicles they carry.

Table 2 shows the freight roads by jurisdiction. While some of these routes are under State Government jurisdiction, many strategic freight routes fall within the City's control.

There are some locations within the City that are not identified as primary freight routes but carry a notable percentage of heavy vehicles such as Barrington Street in Bibra Lake where 16.6% of traffic using this route are heavy vehicles. This is largely due to the industrial land uses located within Bibra Lake and so this percentage is not unexpected. Another example is Wattleup Road where more than 20% of the vehicles using this route are heavy vehicles. This is not unexpected due to the connectivity this route provides between Rockingham Road and Kwinana Freeway however this route is also characterised by frequent spacing of driveways, adjacent rural residential land uses and rural road standards (lack of turning lanes and shoulders are unsealed). Rowley Road is expected to transfer to Main Roads WA's jurisdiction as part of the future Latitude 32 development. The extension of Rowley Road is expected to provide relief to Wattleup Road.

[3] Employment self sufficiency (ESS) measures the quantity of jobs available in a given area as a proportion of that area's labour force. Cockburn has a 77% employment self sufficiency (2011 Census) meaning that 77% of the local labour force have the potential to gain a job there.

[4] Source: Census 2011 Journey to Work data.

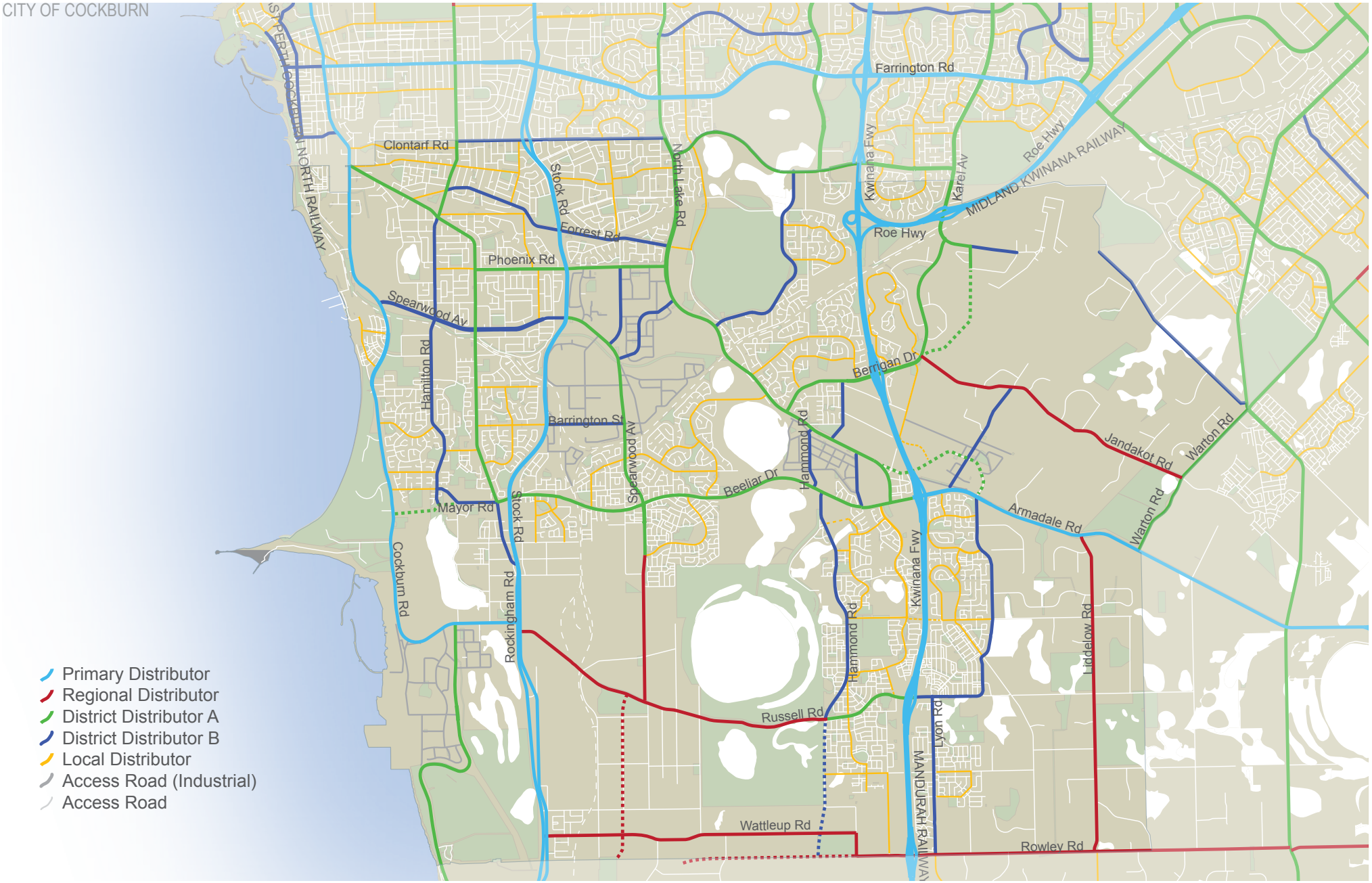

Figure 3 Existing road hierarchy

Primary Freight Road – Main Roads WA jurisdiction	Primary Freight Road – City of Cockburn jurisdiction
• Kwinana Freeway • Armadale Road • Roe Highway • Stock Road • Russell Road West • Rockingham Road (south of Stock Road) • Rowley Road (west of freeway)	• Beeliar Drive • Cockburn Road (south of Russell Rd West) • Russell Road East • Rowley Road (east of freeway) • North Lake Road • Phoenix Road (Stock Road – North Lake Road) • Warton Road

Table 2 The City's Primary Freight Roads

During the collaborative mapping engagement exercise the freight category did not attract many comments. The limited comments relating to freight are summarised as follows:

- Noise/amenity issues from freight traffic in residential areas (including the freight rail line)
- Freight traffic passing through the east-west roads in Cockburn to access Fremantle Port
- Desire for more freight movements to be made by rail
- Heavy vehicles parking informally in inappropriate locations (e.g. residential streets).

Specific consultation with industry groups has not been undertaken as part of the preparation of this ITP but based on general sentiment from industry and businesses across metropolitan Perth, key concerns are expected to include:

- Growing congestion, not just in the traditional peak hours but notable portions of the day
- Travel time variability
- Growing conflict between heavy and light vehicles on the road network
- Freight routes not meeting desirable standards for the proportions of heavy vehicles using them. Some local roads are substandard when it comes to lane and shoulder widths and surfaces
- Deficiency of convenient rest stops for freight drivers in/between industrial areas. This is a safety issue for the driver and other road users, and also results in amenity issues for the community when heavy vehicle drivers park in inappropriate locations.

In the 2013 Royal Automobile Club (RAC) BusinessWise and Chamber of Commerce and Industry WA (CCIWA) congestion survey (published in September 2013), 83% of businesses noted that congestion was affecting their productivity. The survey also found that eight out of 10 businesses were using alternative roads/ routes to reduce the impact of congestion on their bottom line.

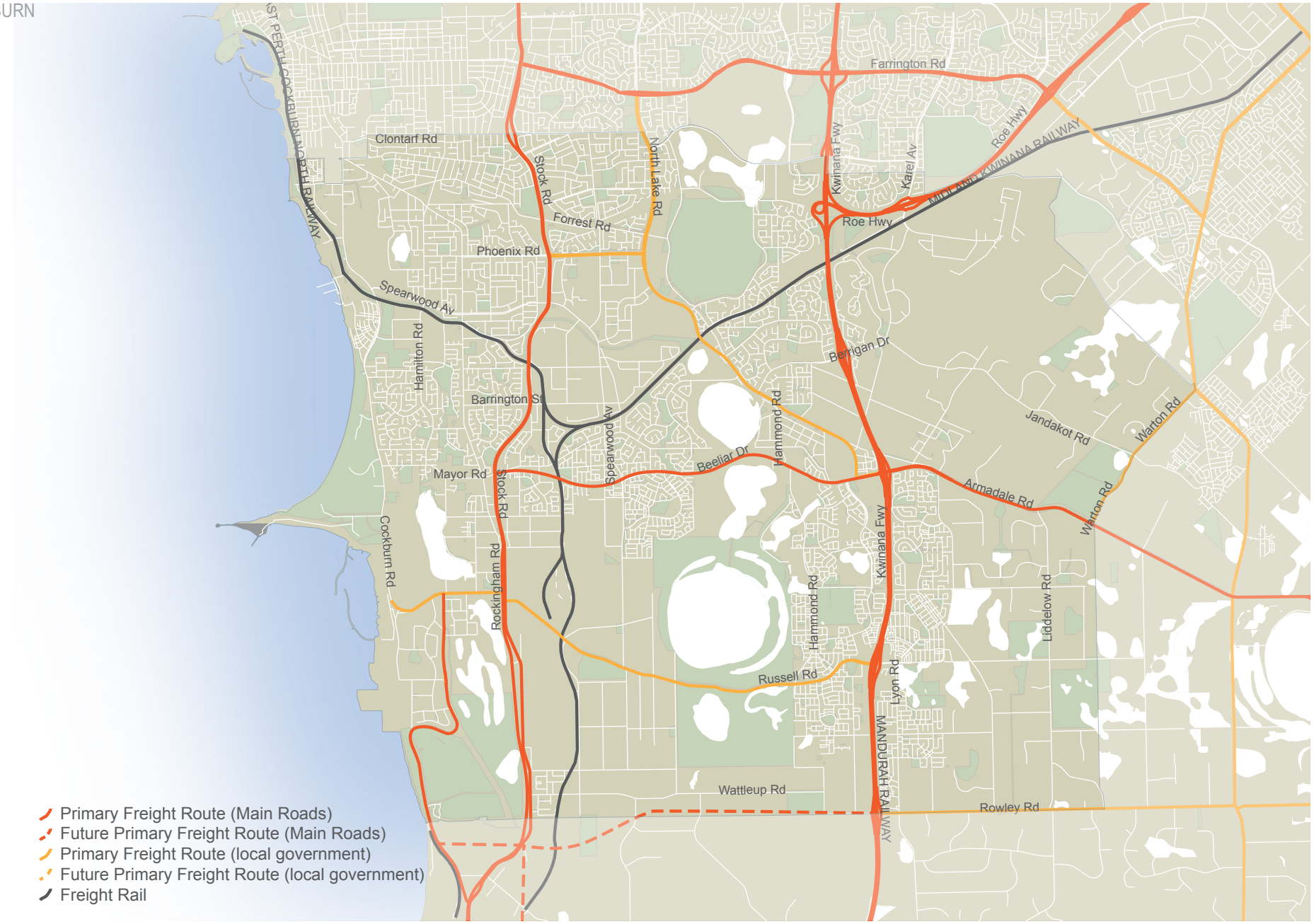

Figure 4 Existing and future primary freight network *(Source: Western Australia Planning Commission)*

2.1.2 Parking

Historically car parking provision within the City of Cockburn has been plentiful and available for use free of charge. However rapid population growth in the City has placed pressure on parking supply especially in relation to the Park 'N' Ride car parks associated with Cockburn Central Station. These car parks fill to capacity on most typical weekdays between 7 and 8am. Congestion is commonplace, particularly in the PM peak period with lengthy delays of approximately 20-30 minutes regularly experienced by drivers exiting the Knock Place car parks.

Issues raised in relation to parking within the City focused on

- Cockburn Central Station Park 'N' Ride operating at capacity and long delays to exit
- Lack of Park 'N' Ride facilities encouraging people to drive to the city
- Insufficient all day parking for local workers
- Illegally parked cars – footway parking
- Cockburn Gateway shopping centre staff parking
- Inconsiderate or illegal outside school entrances at school drop off and pick up times

2.1.3 Public transport

The City of Cockburn is currently serviced by buses and rail, as shown in **Figure 5**. Cockburn Central Station is on the Perth-Mandurah rail line and has bus feeder services and a large Park 'n Ride facility. Approximately 13 bus services operate to/ from the station in addition to school services. The bus interchange is located on the western side of the station and accessed via Beeliar Drive.

SmartRider data provided by the PTA shows that there has been a 64% increase in passengers alighting or boarding train services at Cockburn Station between 2009 and 2012 fiscal years. This is a significant increase and helps to explain why there have been pressures on access to the station by car and bus modes develop in recent years.

Figure 5 shows the current bus network coverage in Cockburn. This shows gaps in provision mostly in the southern and eastern areas of the Cockburn local government area. These are typically growth areas and/ or non-residential zoned land. The lakes and parkland south of Beeliar Drive form a natural barrier to east-west travel and means that some bus routes are more circuitous than desirable. The network coverage map shows that there is a need to plan for new bus services as areas to the east of the Kwinana Freeway continue to develop.

There has been a 64% increase in passengers alighting or boarding train services at Cockburn Station between 2009 and 2012.

Source: Transperth SmartRider data

The station's Park 'N' Ride car parks are located east and west of the station, north of Beeliar Drive and Armadale Road. There is significant pressure on the existing Park 'N' Ride bays with the car parks filling to capacity on most typical weekdays between 7 and 8am. Congestion is commonplace, particularly in the PM peak period with lengthy delays of approximately 10 minutes experienced by drivers exiting the Knock Place car parks.

Public transport was a key focus of the community during the collaborative mapping exercise. **Figure 6** shows the 'hot spot' locations where clusters of comments were raised. The dark circle/ point, shows the greater number of comments. There are clear pockets/ locations where there was the greatest focus. The issues raised at these locations can be summarised as follows:

- Cockburn Central Station: congestion on the road network around the station, Park 'N' Ride operating at capacity and long delays to exit, poor pedestrian connections between the station and Cockburn Gateway shopping centre and conflict between cyclists and pedestrians using the Principal Shared Path near the station
- Proposed rail station at Aubin Grove (near Russell Road): strong desire for the rail station here in order to avoid using Cockburn Central Station. Some concern regarding existing and potential future growth in traffic congestion on Russell Road/ Gibbs Road/ Kwinana Freeway interchange
- Henderson: desire for additional bus services including a direct connection to Cockburn Central station
- Port Coogee: desire for passenger rail services to operate on the freight rail line, connecting between Cockburn Central and Fremantle
- Bibra Lake: lack of public transport services to this employment node. Similar comments have been raised in other industrial areas such as Spearwood and Wattleup.

Other general issues raised included 'long travel times' and limited service coverage at evenings and on weekends. The community has also raised concerns of limited public transport services to and from the following locations:

- Jandakot Airport
- Between Cockburn Central and Armadale to the east
- Between northern suburbs in Cockburn such as North Coogee to Murdoch Station (rather than diverting to Cockburn Central Station)
- Southern part of Cockburn (e.g. south of Russell Road, Hammond Park and Aubin Grove).

The desire for a train link between Fremantle and Perth Airport/ Welshpool via Cockburn Central was also raised by the community.

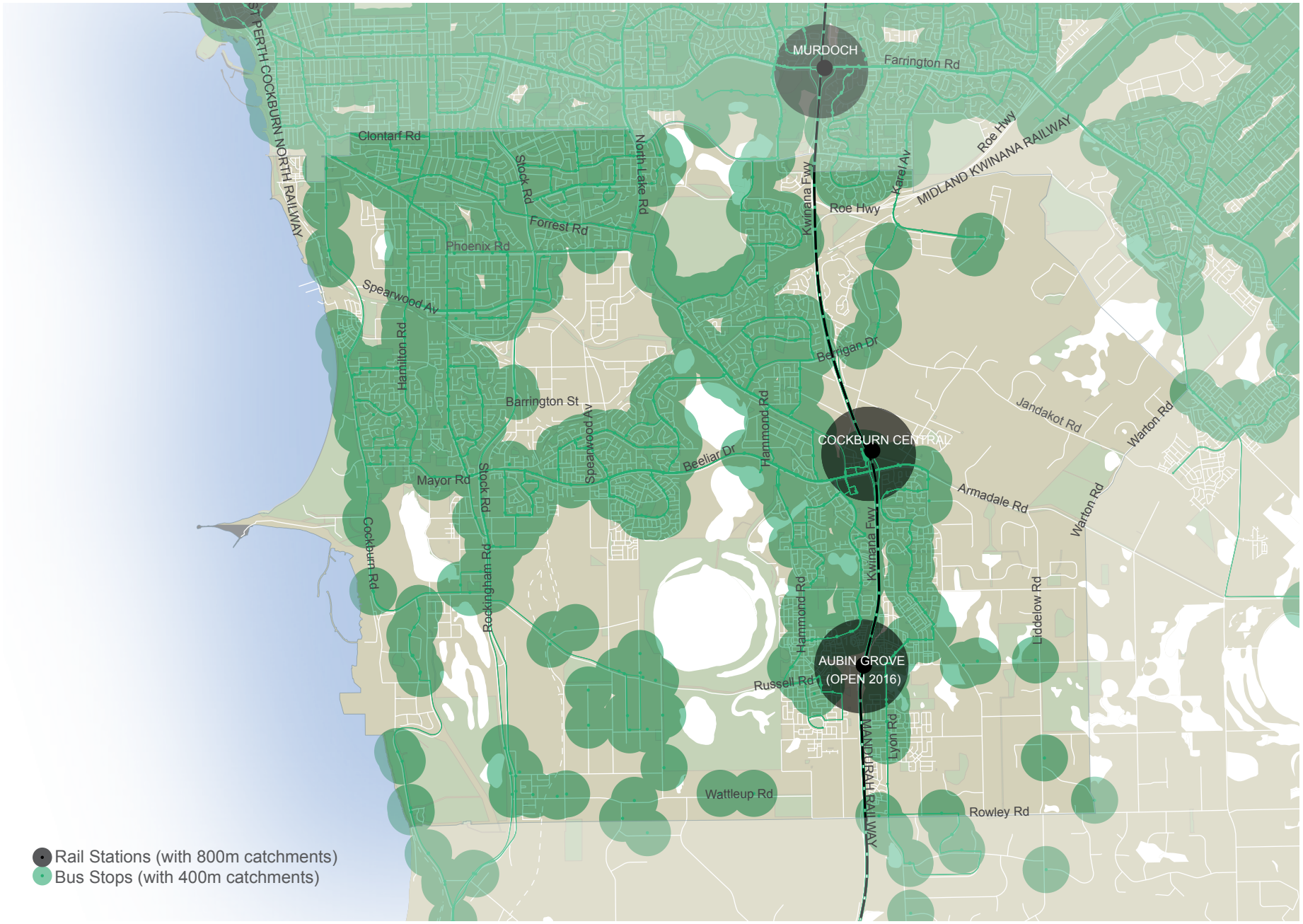

Figure 5 Current public transport network

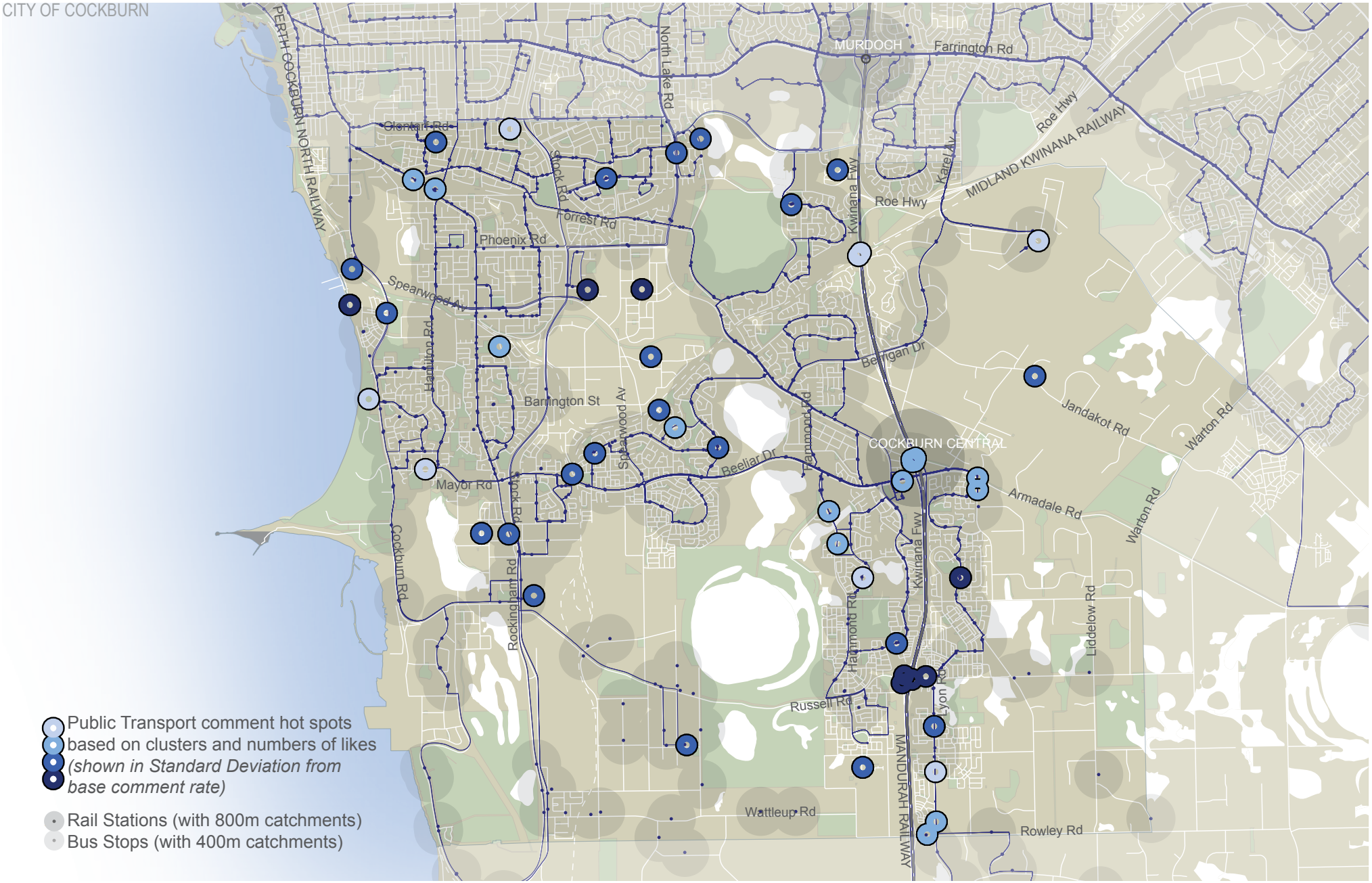

Figure 6 Collaborative map – Public transport comments overlaid with the existing public transport network

2.1.4 Cycling

The City of Cockburn has a combination of on and off-road cycling facilities as shown in **Figure 7**. A Principal Shared Path (PSP) along the western side of Kwinana Freeway serves as a major north-south connection for Cockburn cyclists. There are continuous signed routes throughout Cockburn that are part of the Perth Bicycle Network (PBN).

The City of Cockburn is proactive at promoting cycling for commuting, recreation and fitness. In 2010 the City adopted the City of Cockburn Bicycle Network and Footpath Plan. The plan identifies a range of built and non-built recommendations for improving the network. The City also has a dedicated TravelSmart Officer responsible for promoting cycling. Examples of existing measures to encourage and promote cycling by the City of Cockburn are detailed in Section 2.2.2.

The community has raised concerns that there is currently a lack of east-west connection to the PSP on Kwinana Freeway. The desired connections include Farrington Road, Hope Road, Armadale Road, Forrest Road (via Bibra Lake and Hope Road), Rowley Road and across North Lake Road.

In addition, there is a need to improve cycling access to key coastal destinations, particularly Woodman Point and Coogee Beach. A continuous path from Beeliar Drive on to Mayor Road and to the AMC Henderson Marine Facility was also identified as an item of interest.

Other concerns include the following:

- Cycle lanes terminating short of intersections
- Lack of maintenance on existing pathways
- Desire for continuous paths on busy arterial roads, such as North Lake Road, Stock Road, Cockburn Road and Russell Road
- Rails/U-bars restricting access to paths.

Figure 8 shows the cycling 'hot spots' that are of particular concern for the community from the collaborative mapping analysis.

The City applies for PBN funding on an annual basis and is relatively successful at obtaining grant funding to implement cycling infrastructure in Cockburn. The 2013/14 PBN grants program has included a shared path on North Lake Road in two sections - between Discovery Drive and Masefield Avenue and from Forrest Road to Tait Place. This will go some way to address the gaps identified in the current network.

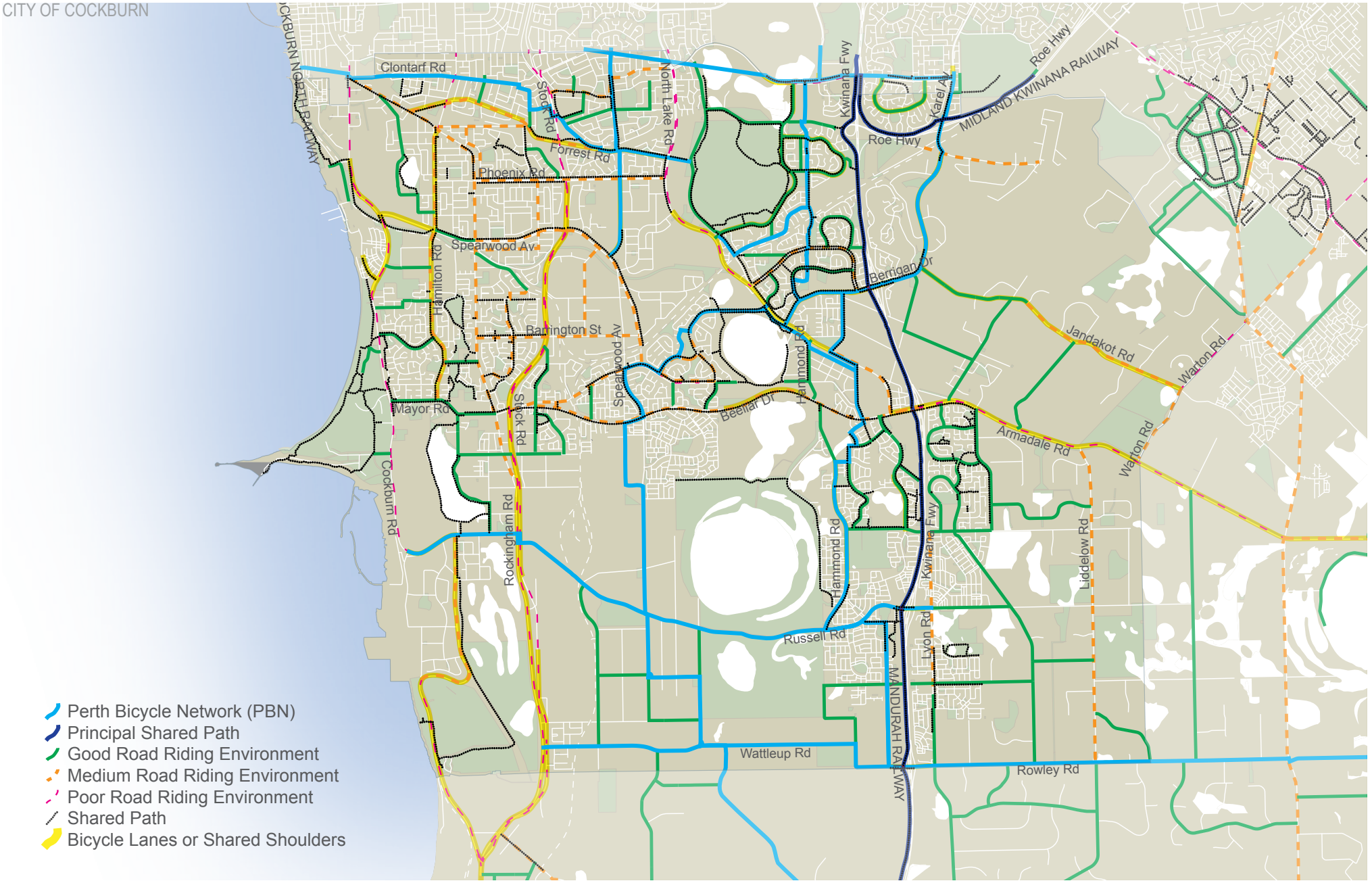

Figure 7 Perth Bicycle Network in Cockburn *(Copyright: Department of Transport, 2009)*

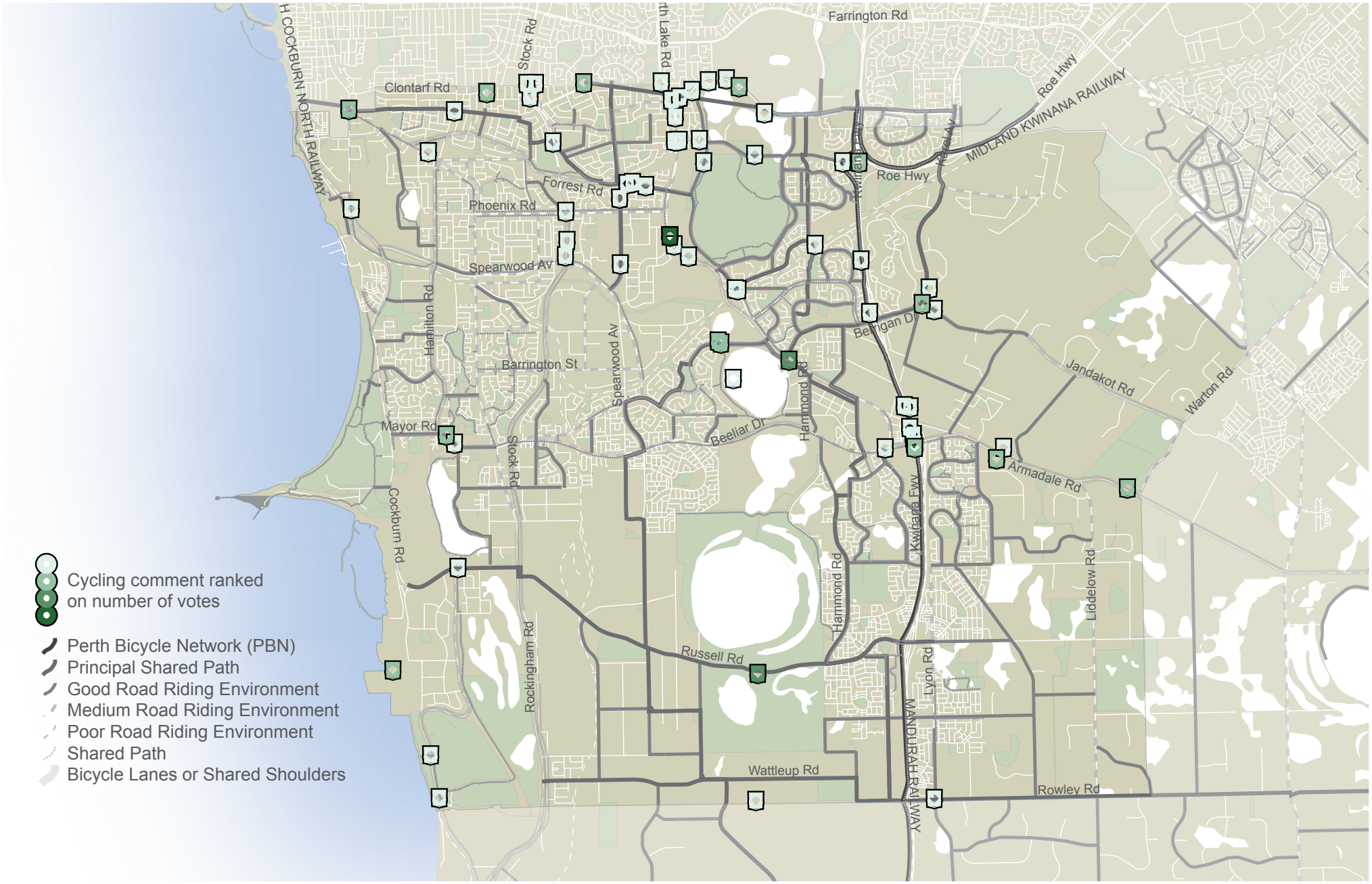

Figure 8 Collaborative mapping - cycling results

2.1.5 Walking

The City of Cockburn has an extensive network of footpaths and pedestrian facilities. Notable pedestrian routes include north-south connectivity to Fremantle by means of a coastal shared path and a good quality east-west shared path along Beeliar Drive. Shared and pedestrian footpaths are present along many existing roads, reserves, gardens, parks, lakes and Cockburn Coast.

The City of Cockburn is proactive at promoting walking for commuting, leisure and fitness. The provision of new path infrastructure is guided by the City's Bicycle Network and Footpath Plan. This is complemented by the City's Trails Masterplan, adopted in 2013, which sets out the range of improvements required on existing trails and proposed future trails, to establish a comprehensive network of recreation facilities available to all residents and visitors to the area. The City also has a dedicated TravelSmart Officer responsible for promoting walking. Examples of existing measures to encourage and promote walking by the City of Cockburn are detailed in Section 2.2.2.

From the collaborative mapping exercise, the community has expressed concerns with the existing pedestrian networks in Cockburn. They include the following:

- Difficulties crossing busy arterial roads, particularly Beeliar Drive in Cockburn Central, Russell Road at Hammond Park (Success Primary School) and Armadale Road
- Suggestions for a pedestrian overpass across Beeliar Drive to get to Gateway Shopping Centre for safety and better connectivity
- Lack of pedestrian infrastructure particularly in new development areas (e.g. Aubin Grove and access to Aubin Grove Primary School)
- Roundabouts provide no pedestrian priority and therefore present safety issues for these users
- Conflict between cyclists and pedestrians using the PSP near Cockburn Station
- Poor lighting along pathways in recreational areas and reserves.

Figure 9 illustrates that the major concerns with the community are particularly in Cockburn Central, Atwell and Aubin Grove.

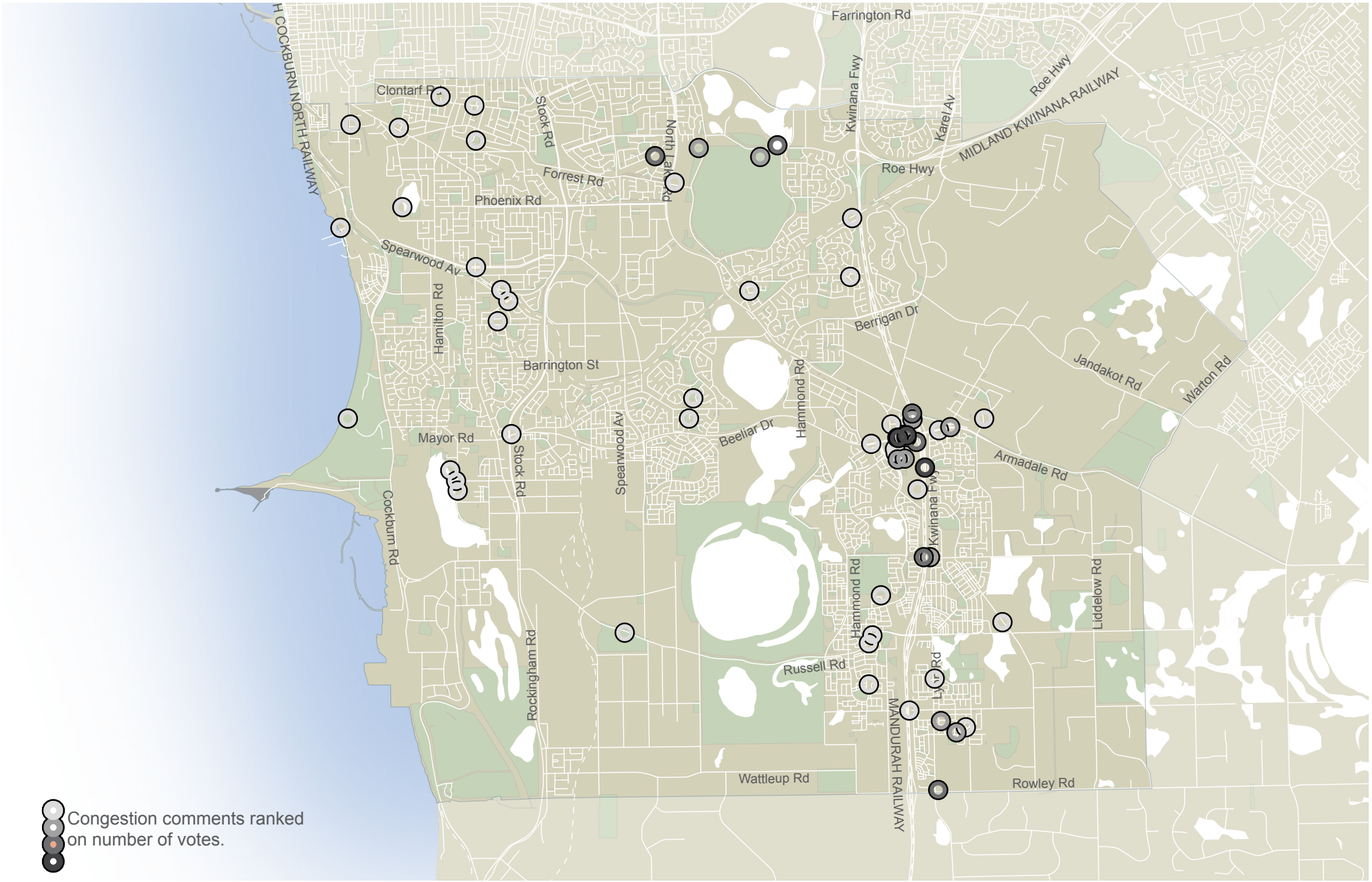

Figure 9 Collaborative mapping – walking results

Between the 2006 and 2011 Census' there has been a 3% reduction in car driver mode share for journeys to work originating in Cockburn.

2.2 Travel behaviour, patterns and issues

2.2.1 How do people currently travel?

Journey to Work (JTW) data and results from the Collaborative Map survey were used as tools to gain an understanding of the current travel behaviours of City of Cockburn residents.

The JTW data was based on the 2011 Census and indicates that residents of the City of Cockburn rely predominantly on the private car for commute trips, as shown in **Figure 10**. In 2011, approximately 85% of residents reported car driver to be their primary mode for the journey to work (including motorbikes/ scooters), compared to 12% and 2% using public and active transport, respectively. **Figure 11** shows the 2006 JTW analysis results and it illustrates that there is a decreasing trend in car usage and an increase in public transport usage. A major factor in the increase of public transport usage, particularly train, was the opening of the Mandurah rail line in 2007.

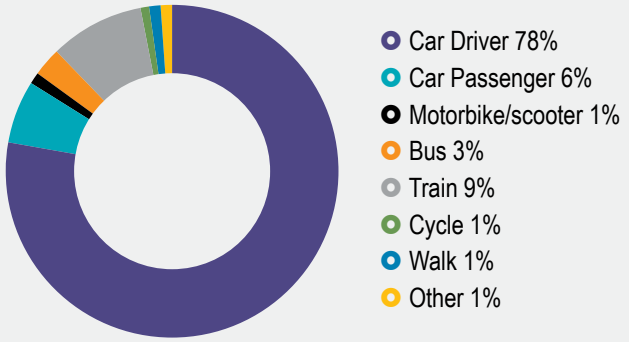

Figure 10 2011 Census Journey to Work - City of Cockburn LGA

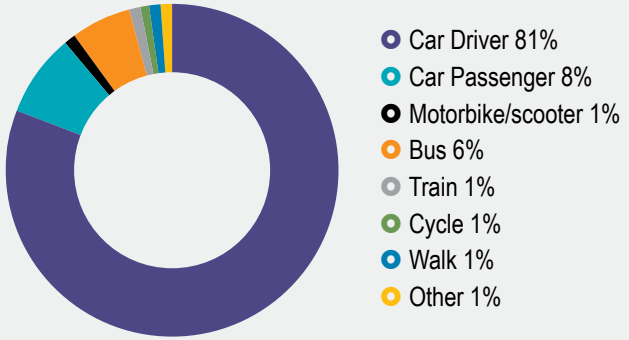

Figure 11 2006 Census Journey to Work – City of Cockburn LGA

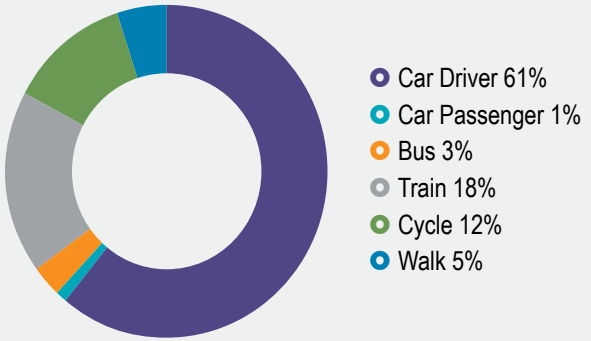

Figure 12 Collaborative Mapping - Travel Mode

A large number of the City's residents work within Cockburn Central and improvement to public and active transport servicing this area could help reduce car usage.

The community collaborative mapping results on travel mode share for work/ education trips, shown in **Figure 12**, indicate different travel patterns compared to **Figure 10**. The surveyed residents have a greater propensity to use public transport and active travel modes which is a promising sign of what can be possible. It should be noted that the sample size is considerably smaller than the JTW data set but could indicate a growing shift towards sustainable travel modes. Also it may indicate that the collaborative map was used by a cross section in society who more regularly use active and public transport modes, may live in more transit accessible locations or may relate to socio-demographic characteristics.

Trip origin and destination data recorded in Collaborative Map was interrogated. Results show that the majority of trips with an origin in the Cockburn LGA are destined for Cockburn Central and Perth CBD (postcodes 6164 and 6000, respectively), as shown in **Figure 13**. This indicates that a large number of the City's residents work within Cockburn Central and improvement to public and active transport servicing this area could help reduce car usage but can work best if partnered with potential disincentives for car use such as parking pricing or restricting the supply of parking.

Origin and destination data were also derived from the Journey to Work dataset and are illustrated in **Figure 14** and **Figure 15**. The data shown correlate with the Collaborative Mapping results, illustrating that a high percentage of commute trips occur internal to the City of Cockburn.

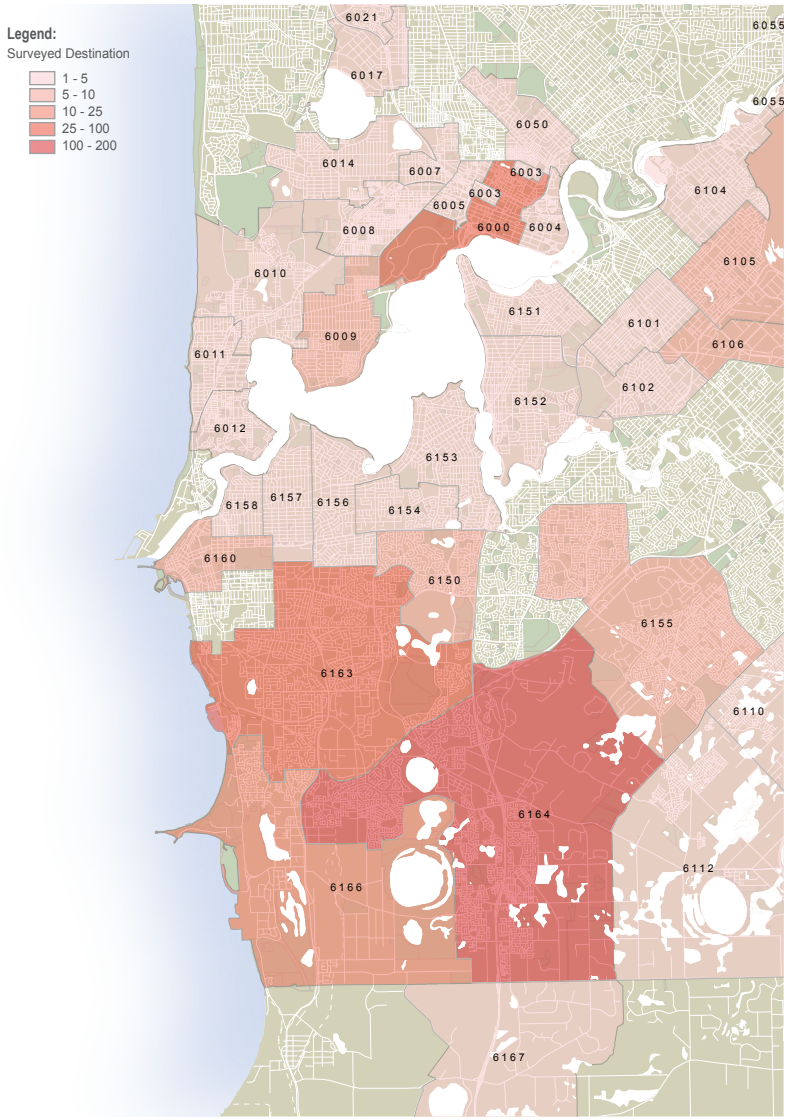

Figure 13 Collaborative mapping - destination of work/ education trips by postcode from Cockburn LGA

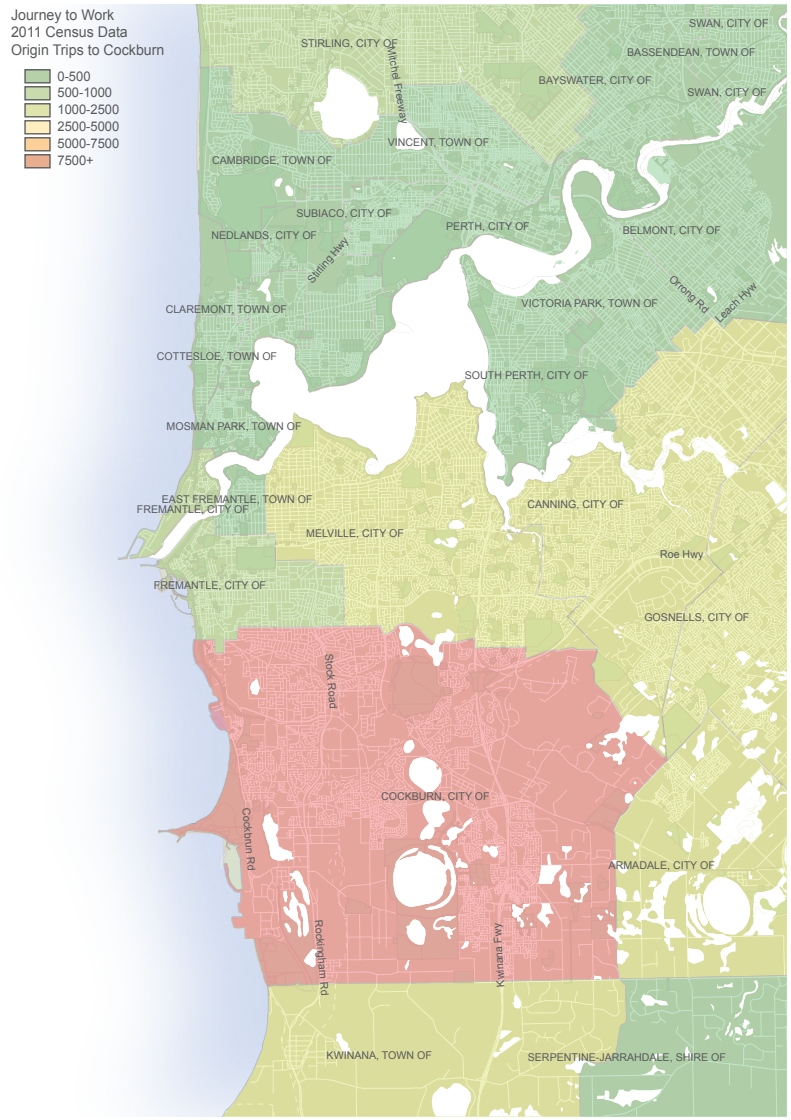

Figure 14 2011 Census Journey to Work - Origin Trips to Cockburn

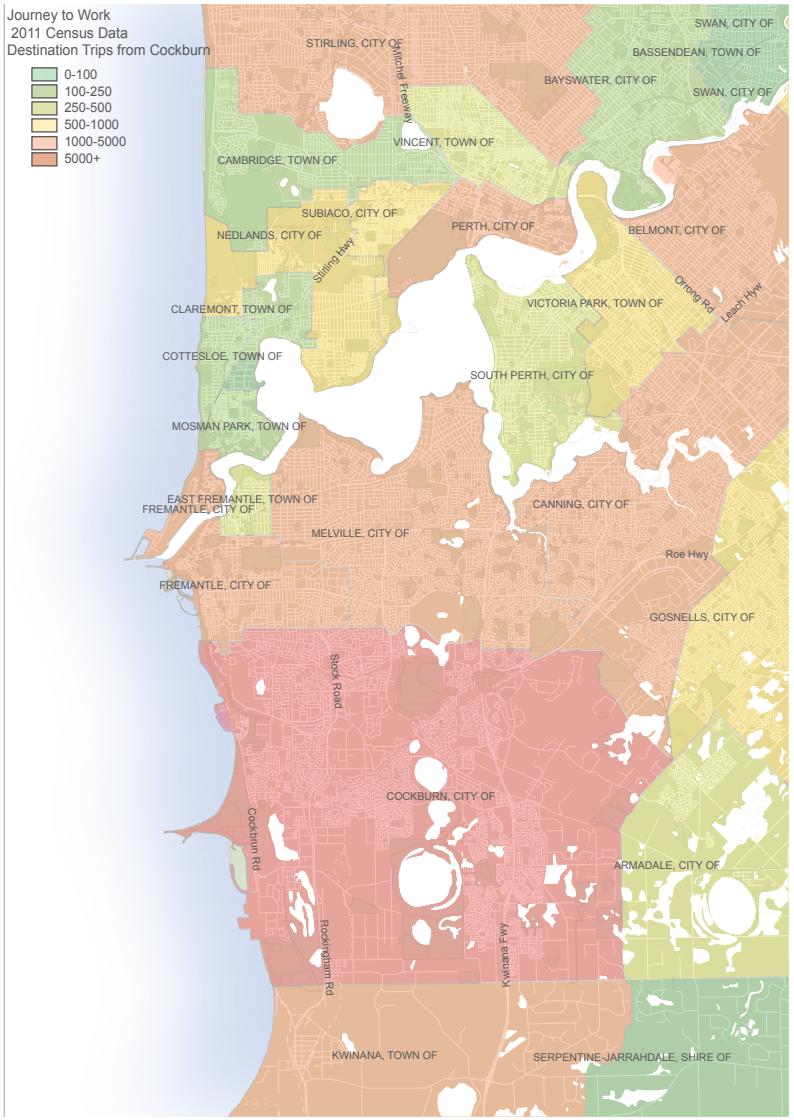

Figure 15 Census 2011 Journey to Work - Destination Trips from Cockburn

2.2.2 Behaviour change programs in the City

TravelSmart and Your Move are two programs instrumental in inspiring local residents to opt for active travel modes for short trips in and around the City. TravelSmart, a state government initiative, is provided at a local level by the City's TravelSmart Officer and provides a suite of initiatives and events to City employees, local schools and the local community.

The City's TravelSmart Officer has worked closely over the last 18 months with staff from the Department of Transport, Department of Sport and Recreation to see the development and provision of 'Your Move'. 'Your Move' will see 10,000 Cockburn households set personalised goals to motivate them to switch car trips to active modes and increase physical activity by providing highly personalised information, feedback and support.

'Your Move' has been delivered by 14,576 phone calls to participants, through distribution of 14,645 fitness centre and bike shop vouchers, 144 free outdoor fitness sessions, 40 bike education sessions and 6 bike maintenance sessions at 6 local primary schools, 10 community bike education and bike maintenance sessions provided in four different locations throughout the City and a four week beginners bike education course for Seniors. 28% of households have set goals to walk instead of drive, 17% plan to take the train, 8% plan to catch a bus and 7% ride instead of driving. These trips are planned from home to the local shops (14%), around Perth (10%), within the City (7%) and to work (4%).

The programs formal evaluation will be completed by September 2014 but ongoing qualitative results show a community who is extremely supportive of Your Move as a program that has encouraged participants to get motivated and get more active.

The City's TravelSmart Officer has close contact with many primary schools by engaging them with the 'TravelSmart to School' program. The City supports schools to engage their teachers, parents and children in becoming more active for the school day commute by leaving family cars at home. Children who ride, scoot, walk and take public transport to school benefit in many ways – additional minutes of physical activity, engage with their surroundings, have a sense of confidence and connectedness to the communities and also develop an understanding and an interest in the concepts surrounding sustainability. Parents who accompany their children by bike or on foot act to reduce the congestion on local roads and make roads safer for their school communities. The City TravelSmart program provides small grants to schools to hold special event days to promote National Ride to School Day, Walk Safely to School Day and Walk Over October – Walk to School Day to inspire and celebrate year round achievements of families who opt for active travel.

The 2013-14 financial year has seen 10 schools awarded with Connecting Schools Grants, funded equally by the City's TravelSmart Program and Department of Transport. Schools have improved or installed brand new cycling infrastructure including new sheds, new covered structures with bike parking, scooter and skateboard racks, signage at school entrances to celebrate active travel and one school has installed a sensory bike path complete with a set of miniature road traffic signs so students can be taught bike education at school. These grants are complimentary to the Perth Bicycle Network grants that are managed by the City's Engineering team seeing priority items from the City's Bike Plan co-funded by Department of Transport.

TravelSmart local resources including two maps that are printed bi-annually that feature the cycling network – including cycle friendly streets, bike parking, bike repair stations, reserves and places of interest and on the reverse public transport routes around the City and their links to Cockburn Central train station. These resources are complemented by (524) way finding signs that have been installed around the suburbs prompting locals to walk to destinations close by; they provide a directional arrow and an approximate time to walk. Two new bicycle repair stations have been installed, one at Cockburn Central train station and within the City's civic complex for riders to do quick repairs.

Events are an important part of community engagement – TravelSmart has a presence at many of the City's Summer of Fun events and provides specific events for Bikeweek, Walk Over October and a summer series of bike maintenance programs.

2.2.3 Congestion

The Cockburn District Traffic Model (DTM) was developed for the City using a cordon from the MRWA Regional Operations Model (ROM) for forecast future years. The modelling purpose was to forecast traffic volumes on key routes throughout the City. This is aimed at assisting decision making on future road network improvements and management of the arterial/ distributor road network. While this model is more refined than ROM, MRWA uses the ROM in their strategic road network planning.

The model is a tool that can be used to confirm or identify the current congestion issues within the City of Cockburn. The model run for the 2011 base year identified congestion hotspots at multiple locations throughout the city.

Current traffic conditions in the City of Cockburn involve pronounced peak traffic conditions during weekday commuter peaks and in the lead up to long weekends due to people travelling south along Kwinana Freeway. North-south heavy vehicle flow between western industrial areas such as Henderson and Fremantle, and east-west between the Kwinana Freeway and Fremantle also affect the overall congestion within the transport network in the City of Cockburn.

The collaborative mapping results showed that there is a correlation between the traffic modelling results and congestion locations raised by the community. Significant sites include:

- Gateway Shopping Centre access
- Beeliar Drive
- North Lake Road
- Armadale Road
- Cockburn Station Park 'N' Ride access
- Roe Highway / Kwinana Freeway interchange
- Russell Road / Gibbs Road around Kwinana Freeway ramps
- Kwinana Freeway.

Figure 16 illustrates the congestion hot spots in the City of Cockburn based on the collaborative mapping results.

The DTS identified current congestion issues at:

- Kwinana Freeway throughout the City of Cockburn
- Armadale Road (between Tapper Road and Warton Road)
- Stock Road (various stretches but mostly concentrated to south of Phoenix Road)
- Beeliar Drive (at Cockburn Central and west of Hammond Road)
- Farrington Road (especially between North Lake Road and Bibra Drive and west of Karel Avenue)
- Berrigan Drive (north of Jandakot Road) Jandakot Road (east of Berrigan Drive).

The Moving People Network Plan (MPNP) being developed by the Department of Transport has highlighted the presence of eight congestion hotspots throughout the City of Cockburn. It is understood that these locations have been identified on the basis of current issues through stakeholder consultation. Four of the locations, as listed below, correlate with the collaborative map results:

- Rockingham Road/ Cockburn Road/ Hampton Road intersection
- Roe Highway/ Kwinana Freeway interchange
- Roe Highway/ Karel Avenue intersection
- Beeliar Drive/ Armadale Road/ Kwinana Freeway interchange

While there may be a few isolated comments raised on the collaborative map for the remaining sites, there were no concentrations of user comments. These locations are:

- Murdoch Drive/ Farrington Road intersection
- Berrigan Drive/ Kwinana Freeway interchange
- Berrigan Drive/ Jandakot Road intersection
- Russell Road/ Rockingham Road intersection.

There were a number of isolated comments around Russell Road/ Rockingham Road/ Sparks Road raised in the collaborative mapping exercise. Further development at the Australian Marine Complex and Latitude 32 may see these areas emerge as future congestion hotspots.

The sites cited in the MPNP that do not correspond with the collaborative mapping feedback highlight that these are possibly emerging congestion locations for consideration in the ITP but also that there are other locations that have been raised through the collaborative mapping which need to be elevated in status with key agencies. These locations are namely:

- Hope Road, north of Bibra Lake
- North Lake Road/ Poletti Road
- Hammond Road/ Beeliar Drive
- Bartram Road adjacent to the Kwinana Freeway. Bartram Road currently terminates on each side of the freeway. An overpass in this location would help to relieve congestion on adjacent east-west routes (Armadale Road/Beeliar Drive, Russell Road/Gibbs Road) and provide more direct local access to Atwell College.

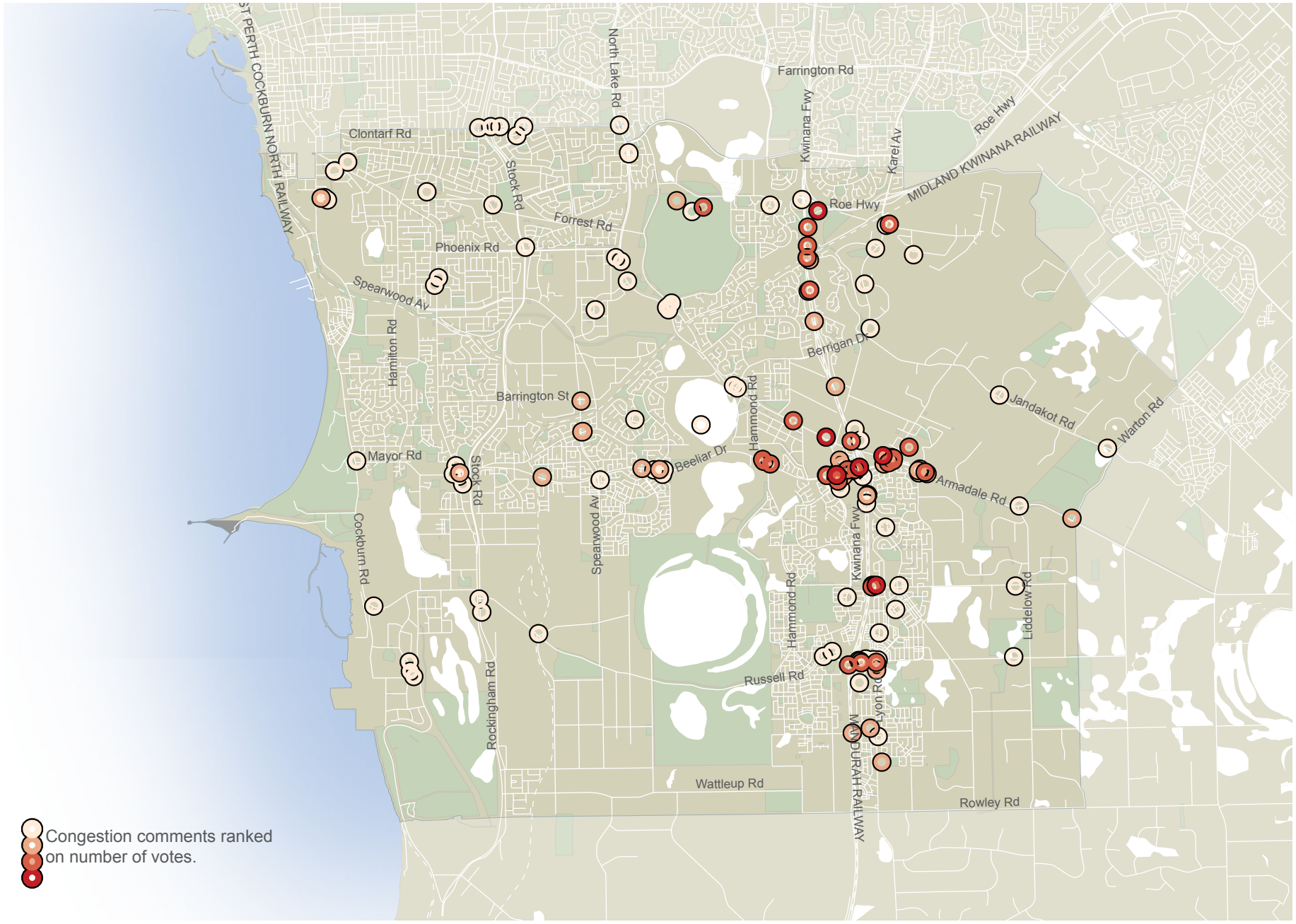

Figure 16 Collaborative mapping - congestion hot spots

2.2.4 Safety and security for all transport system users

The community has expressed concerns that there are security and road safety issues in the City of Cockburn. These are as follows:

- Speeding on residential streets
- Lack of pedestrian footpaths and pedestrian crossings
- Close intersection spacing and poor traffic signal coordination causing rear-end collisions
- Issues around schools, such as vehicles parking on footpaths, motorists exceeding 40km/h in school zones and a need for more dedicated off-street parking
- Localised issues where roundabouts, stop signs, turn pockets or signals need to be introduced
- Poor road geometry, such as blind corners and motorists speeding around curves
- Long delays to access busy roads such as Beeliar Drive, Cockburn Road, Russell Road and Berrigan Drive from side streets
- Maintenance issues relating to road surfaces and the obstruction of sight distances by roadside vegetation
- "Hooning" behaviour in residential streets, including Fawcett Road, Lesueur Pass, Beenyup Road and The Grange.

Figure 17 shows the locations of the road safety comments raised by the community overlaid on the last five years of actual crash data (sourced from MRWA).

This shows a clear correlation between community views on locations where road safety is an issue and actual crash occurrences so community perceptions are generally validated by the crash data. A comparison with **Figure 16** also shows that there is a connection between crash locations and community views on congestion hotspots. This result is not surprising given that congestion can lead to safety issues mainly stemming from driver impatience and frustration. Examples include travelling too close to the vehicle in front (ie tailgating), speeding through signalised intersections during the green phase, running amber/ red signals, picking insufficient gaps to enter the major traffic stream from side streets/ driveways and traffic queues blocking intersections.

The City annually applies for, and is successful in obtaining, Black Spot Program grant funding from Main Roads WA for road safety improvements. Projects recently completed under the Black Spot Program include:

- Realignment and signalisation of Beeliar Drive/Hammond Road intersection
- Installation of signal mast arms on North Lake Road at three intersections

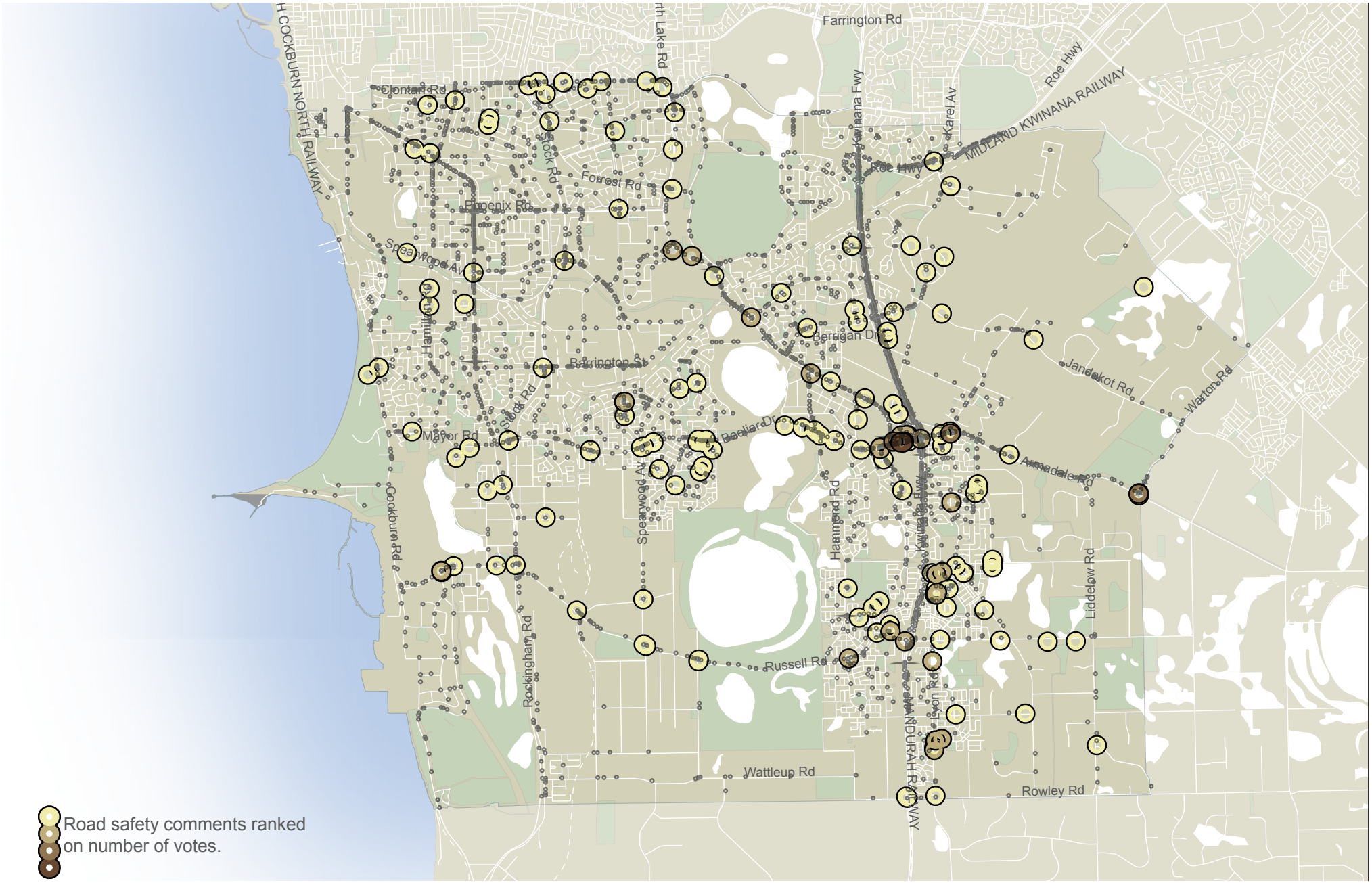

Figure 17 Collaborative mapping road safety comments overlaid on MRWA crash records (for 2008-2012)

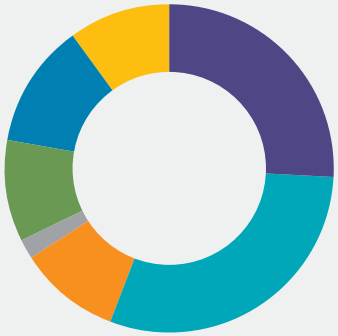

Figure 18 Summary of the proportions of community comments by category

2.3 Summary of key issues

The feedback from the collaborative map has revealed the key transport concerns facing the community at present. **Figure 18** shows the percentage of responses by topic.

The transport issues facing the city are numerous; however, a few key issues are highlighted below:

- Congestion, particularly around Cockburn Central, the Kwinana Freeway and the Kwinana Freeway interchanges
- Busy arterial roads forming barriers to walking and cycling
- General lack of pedestrian crossing facilities
- Growing road safety issues and evidence of a strong correlation between congestion and actual road safety issues
- Lack of bus priority, particularly problematic at Cockburn Central where numerous bus services converge
- Some key employment locations are not currently serviced, or well serviced, by public transport
- Community perception that bus services are infrequent and have a limited service span
- Kwinana Freeway forms a barrier between communities and concentrates traffic flows to a few, heavily congested locations.

2.3.1 What are the impediments to using sustainable transport modes?

The collaborative mapping exercise included a brief questionnaire on current travel patterns and reasons for using a chosen travel mode. The results from this survey revealed the following:

- Of the people who currently travel by car only (as driver or passenger), 65% stated that they use that mode because *'Public transport is not available or not an option between my trip origin and destination or at the times I need to travel'*. 16% state that they use the car 'for convenience'. Other factors for using private vehicle included the supply of free parking at the workplace, needing a car for employment, or their workplace is too far to use active modes
- For bus and train users, this mode is chosen because it is convenient and it is too far to walk or cycle
- The majority of cyclists use that mode due to convenience
- Similarly, the majority of walkers stated that they use that mode for convenience.

This information reveals two key lessons:

- Car use is high because motorists do not have public transport as an available alternative. This is either a perception requiring more information on available public transport options to be made available or a fact with no/ limited public transport options existing
- Convenience is a strong reason why some people chose non-car travel modes.

WA Tomorrow (2012) predicts that the City of Cockburn could have between 121,900 and 141,600 residents by 2026. The population is expected to age with the greatest proportional increase in population in the over 55 years group.

- The City of Cockburn has a large supply of undeveloped and underdeveloped urban and urban deferred zoned land at approximately 1,170ha (at 2012) which indicates that the majority of growth will be via new greenfield sites but this could be expected to run out around 2020/21.
- Brownfield development will also have a role with two major projects underway at Cockburn Coast and Port Coogee.
- Achieving the *Directions 2031 and Beyond* targets for employment self-sufficiency in the South-West sub-region (Cockburn, Kwinana and Rockingham) will require the creation of approximately 41,000 additional jobs by 2031.
- Directions 2031 sets aspirations that *'all people should be able to easily meet their educational, employment, recreation, service and consumer needs within a reasonable distance of their home'.*
- Major transport projects in planning for the City of Cockburn include rapid transit connecting Fremantle, Cockburn Coast and Cockburn, a new rail station at Aubin Grove (Russell Road) and the westerly extension of Roe Highway.
- Road infrastructure will come under increasing pressure due to traffic generated by major projects. Farrington Road and Kwinana Freeway (driven by the Fiona Stanley Hospital), Russell and Rowley Roads (outer harbour and intermodal terminal), Cockburn Road, Rockingham Road, Spearwood Avenue and Hampton Road (associated with the Cockburn Coast development) are likely locations.

3 City of Tomorrow

3.1 Strategic planning directions

A review of the State and local planning policies provides the strategic framework for the ITP. Key documents and their relevance to the Cockburn ITP are discussed below.

(National) Department of Infrastructure and Transport – Our Cities, Our Future (2011)

Our Cities, Our Future is the National Urban Policy document that sets an agenda on the future of Australian cities. The document defines principles, goals and objectives and breaks the document into the four defined themes of productivity, sustainability, liveability and governance.

Relevant objectives to this ITP include:

- Integrate land use and infrastructure
- Improve the efficiency of urban infrastructure
- Improve accessibility and reduce dependence on private vehicles
- Support community wellbeing
- Improve the planning and management of our cities
- Evaluate progress.

Relevant priorities under 'Integrate land use and infrastructure', notes productive capacity of cities can be improved with more effective integration of land use and infrastructure. This can include maximising yields on land use, improving productive capacity and leveraging investments in infrastructure.

Western Australian Planning Commission – Directions 2031 and Beyond (2010) and Draft Outer Metropolitan Perth and Peel Sub-region Strategy

Directions 2031 proposes that new growth occur in a more balanced way around a diverse network of activity centres, linked by a robust movement network and supported by a green network of parks, conservation and biodiversity areas so as to achieve a connected city scenario.

The 'connected city' is a medium-density development scenario, which targets 47% of dwellings (154,000) are to be delivered through medium density housing. Central to this are the following outcomes that are sought:

- Reducing the need to travel
- Support travel choice for travel to services, facilities and employment
- A more energy efficient urban form.

> By 2031 the Perth and Peel region will have a population of 2.2 million people. This represents over half a million new residents to be housed in 328,000 new dwellings and needing 353, 000 new jobs.

Developments such as the Hamilton Hill Revitalisation Strategy, Cockburn Central TOD and Cockburn Coast will help deliver infill targets and the wider objectives of a compact city. Two of these sites however are currently not well serviced by high quality public transport services such as rail or rapid transit. Hamilton Hill and Cockburn Coast developments should be an impetus for investment in rapid transit.

A total of 41,000 additional dwellings are required in the south west metropolitan area by 2031 according to the Draft Outer Metropolitan Perth and Peel Sub-region Strategy. Specifically Cockburn is to contribute an additional 11,100 dwellings by infill and a further 18,280 dwellings by greenfield and brownfield development. The principal urban expansion areas are:

- Munster
- Banjup

Cockburn Central has been identified as a “Secondary Centre” in the Activity Centres hierarchy while Cockburn Coast and Spearwood are District Centres. Jandakot Airport is recognised as a specialised centre with a primary function of aviation and logistics services.

The Australian Maritime Complex and Western Trade Coast are recognised as strategic industrial centres while Bibra Lake, Cockburn Central, Jandakot Airport and North Coogee are recognised as existing industrial centres.

Fremantle, a regional centre, and Murdoch, a specialised centre, are also in close proximity to Cockburn and will continue to be major attractors for employment, education, retail and major health services.

Western Australian Planning Commission - State Planning Policy 4.2 – Activity Centres for Perth and Peel

The main purpose of the Activity Centres Policy is to specify broad planning requirements for the planning and development of new activity centres and the redevelopment and renewal of existing centres in Perth and Peel. The policy objectives of greatest significance to this ITP are as follows:

- Increase the density and diversity of housing in and around activity centres to improve land efficiency, housing variety and support centre facilities
- Ensure activity centres provide sufficient development intensity and land use mix to support high-frequency public transport
- Maximise access to activity centres by walking, cycling and public transport
- Plan activity centre development around a legible street network and quality public spaces
- Concentrate activities, particularly those that generate high numbers of trips, within activity centres.

CITY OF COCKBURN

For Cockburn Central, the target is to achieve a minimum 25 dwellings/ha and a desirable 35 dwellings/ ha residential density target within 400m catchment of the rail station. The policy also stipulates details on parking supply including maxima, promoting an efficient supply of car parking by a suitable allocation of on-street, off-street public and shared parking. Use of mechanisms such as cash-in-lieu and reciprocal / shared use arrangements are also supported.

Department of Transport - Moving People Network Plan (yet to be released)

The Department of Transport is in the process of developing the Moving People Network Plan that together with the proposed Moving Freight Plan will provide the overall strategic direction for multi-modal transport planning in Perth. The Public Transport Network Plan, WA Bicycle Network Plan and CBD Transport Network Plan will all sit under the framework of the Moving People Plan. It is understood that the Moving People Plan covers the following themes:

- Invest in public transport
- Optimise road network efficiency
- Expand the road network
- Demand management
- Future planning and integration.

The plan is aimed at identifying preferred functions for key roads within metropolitan Perth – this concept is referred to as SmartRoads and is based on the VicRoad's model, and recognises that roads cannot fulfil all functions equally rather it is best to focus/ prioritise certain functions on certain routes. Preferred future routes within Cockburn include:

- Traffic: Roe Highway extension (to Stock Road), Rowley Road (possible future route), Power Avenue (possible future route), Bartram Road (between Hammond Road and Tapper Road) and new connections to/ from/ around Jandakot Airport
- Public Transport: Phillips Road/ Power Avenue, Cockburn Road, Hamilton Road, North Lake Road, Phoenix Road, Forrest Road, Winterfold Road, Berrigan Drive, a number of routes through Aubin Grove/ Atwell and new networks around Jandakot
- Cycle: Forrest Road, Hamilton Road, Rockingham Road, Stock Road, Cockburn Road, an off road coastal path and connections to Jandakot Airport.

Two possible future traffic routes in the south – Power Avenue and Rowley Road are expected to be in response to the proposed Latitude 32 development and further growth at AMC. No new 'preferred pedestrian' routes have been designated.

The City of Cockburn considers that Stock Road should be highlighted as a preferred traffic route.

It is evident that the emphasis of the plan is on improving the permeability of the public transport and active mode networks. Greater detail is required regarding the planning and management of these future preferred routes consistent with their intended function.

The Moving Freight Plan is yet to be released for comment.

Department of Transport – Draft Public Transport Plan for Perth in 2031

The draft document provides the framework for the future public transport network in metropolitan Perth. It focuses on required upgrades to 2031 but also identifies long term plans for post 2031. The plan focuses on a three-tier transit network comprising:

- Heavy rail
- Light rail (LRT)
- Bus rapid transit (BRT)

Projects to be delivered as part of stage one of the plan (prior to year 2020) includes BRT along Rockingham Road/ Hampton Road, connecting from Beeliar Drive to Fremantle Rail station. This picks up brownfield developments at Port Coogee and Cockburn Coast.

In 2031, the preferred scenario for public transport involves daily patronage on the Mandurah rail line through Cockburn increasing from 10 – 30,000 passengers per day (ppd) currently to 30 – 50,000ppd.

Stage Two projects, to be implemented between 2020 and 2031, include a new station on the Mandurah line at Aubin Grove (State Government has since announced will be delivered in late 2016), extension of BRT southward to connect along the coast between Fremantle and Rockingham, picking up a large catchment through Cockburn including industrial areas that are not presently well served by public transport. A new-east west BRT service; connecting between Fremantle (via the coastal BRT and Beeliar Drive) and Cockburn Station is proposed. No BRT is planned in Cockburn pre-2031 east of the rail line.

The plan also outlines the following principles to support public transport service provision and use:

- *Concentrate development in centres particularly designated strategic centres* - Develop concentrated centres containing the highest appropriate density housing, employment, services, retail and public facilities within an acceptable walking distance (400 – 1,000 metres) from major public transport nodes such as railway stations and high frequency bus routes with at least a 15 minute frequency at peak times.
- *Align centres within corridors* - Concentrate high density mixed use, accessible centres along major public transport corridors within urban areas
- *Connect streets* - Provide street networks with multiple connections to public transport services and efficient access for road based public transport
- *Improve access* - Provide walkable environments and give priority to pedestrians including people with disabilities. Ensure that pedestrian access to public transport is direct and pleasant with good lighting and natural surveillance from adjacent uses
- *Manage parking supply* - Use the location, availability and supply of parking to discourage car use
- *Improve road management* - Improve transport choice and promote an integrated transport approach by managing road traffic flow and protect and promote priority public transport routes.

In 2031, the preferred scenario for public transport involves daily patronage on the Mandurah rail line through Cockburn increasing from 10 – 30,000passengers per day (ppd) currently to 30 – 50,000ppd. Clearly congestion issues around Cockburn Central Station and good forward planning for access to the proposed Aubin Grove Station will be needed to help achieve this growth.

The Plan also outlines the proposal for extension of the Thornlie heavy rail line to the Mandurah Line. This has the potential to change service patterns through Cockburn/ Aubin Grove, increase rail capacity through the corridor but also increase passenger transfers at Cockburn Station.

Parsons Brinckerhoff (on behalf of LandCorp, along with Cities of Fremantle, Cockburn and Melville) - Southwest Metro Rapid Transit Network Study - Recommendations Report

This report investigates the future needs for a rapid transit network, specifically considering both BRT and LRT. Of interest to Cockburn are proposed linkages From Fremantle to Cockburn Central via Cockburn Coast and Phoenix Road Shopping Centre but also another trunk line connecting Fremantle and Murdoch along South Street via Kardinya Park Shopping Centre.

The study recommended BRT on all the corridors forming the Southwest Metro Rapid Transit Network (See **Figure 19**), with the Fremantle to Murdoch and Cockburn Coast to Fremantle corridors also recommended for incremental staging from BRT to LRT at 2031. Specifically the section between Cockburn Coast and Cockburn Central was recommended as BRT rather than LRT in line with the forecast patronage and employment growth. This corridor would potentially pick up patronage in Spearwood and Bibra Lake. The section between Cockburn Coast and Fremantle was identified as warranting upgrading from BRT to LRT at 2031. The report notes that further work is required to define the preferred operating routes.

Figure 19 Southwest Metro Transit Network *(Source: Parsons Brinkerhoff)*

South West Group of Councils – Travelling Together (2003)

This integrated transport plan has been developed in partnership between the local governments of Cockburn, Melville, Rockingham, East Fremantle and Kwinana. While the document is dated it outlines the desired future vision for transport in the metropolitan south west. This vision and how it may specifically relate to the City of Cockburn is summarised in **Table 3**. Lobbying is underway by the councils to produce an updated ITP.

Vision	Relevance for Cockburn
Balanced multi-modal transport system with an efficient network that links local, district and regional centres and which provides employment, education, shopping and recreational facilities.	Linkages between Cockburn and the Rockingham and Fremantle (Strategic Metropolitan Centres) is possible via bus however the travel times are disproportionate compared to private vehicle travel. Connections between the smaller activity centres within the LGAs are generally not possible by public transport without making at least one change.
Balanced transport system that promotes economic activity by providing a high level of accessibility in all modes.	Industrial areas within Cockburn play a significant role in the economic prosperity of the City and region however there is limited travel choice to these locations.
Multi-modal transport system that sustains and supports healthy lifestyles, offering travel choice with a high level of accessibility.	This highlights that walking and cycling should be promoted as travel modes and not just for recreation.
Sustainable transport system that improves air quality and other environmental standards by actively promoting use of public transport, walking and cycling within safe and convenient networks that link activity nodes within communities.	Congestion and road safety were highlighted as the two greatest issues during the collaborative map engagement, indicating that this vision remains current but clearly more has to be done to realise it.
Transport system that offers affordable and safe accessibility for all social age groups within communities.	This is particularly important noting the aging population and the fact that greenfield development is expected to continue for the foreseeable future where affordable transport options are vital.

Table 3 Relevance of the South West Councils – Travelling Together ITP to Cockburn

City of Cockburn – Strategic Community Plan 2012 to 2022

The City's strategic community planning process seeks to engage the people of Cockburn to examine seven key focus areas. They are; Growing the City, Communities and Lifestyles, A Prosperous City, Environment and Sustainability, Infrastructure, Moving Around, Leading and Listening.

The required outcome of the Plan is to develop road, pedestrian and cycleway networks to facilitate the safe movement of people and goods while advocating improvements to the public transport system. It identifies five key 'wants:

- An integrated transport system which balanced environmental impacts and community needs
- Facilitate and promote healthy transport opportunities
- A safe and efficient transport system
- A defined freight transport network
- Infrastructure that supports the uptake of public transport and pedestrian movement

City of Cockburn - Local Planning Strategy (LPS)

The City's Local Planning Strategy establishes a framework for the future planning and directions of the municipality which are then enacted through the Town Planning Scheme. Transport is a strategy under the LPS which establishes the following directions:

- Maximise development near public transport routes
- Provide for a safe and efficient network of local and arterial roads facilitating access and the distribution of traffic through the area
- Minimise trip lengths in order to maximise public convenience and minimise the impacts of private car users
- Encourage cycling by defining and implementing cycle networks and promoting the provision of end of trip facilities.

City of Cockburn Long Term Financial Plan 2012/13 – 2021/22

The City has identified a range of major and transport infrastructure that it is seeking to deliver over the next 20 years. The Long Term Financial Management Plan contains an updated major road infrastructure program totalling $118.24M over the life of the plan.

City of Cockburn - Local and Commercial Activity Centres Strategy (LCACS), 2012

LCACS sets the vision for the planning and development of the City's commercial centres over the next 10-15 years. It takes into account State Planning Policy No. 4.2 Activity Centres for Perth and Peel (SPP 4.2) and Directions 2031 and beyond: Metropolitan planning beyond the horizon (Directions 2031). This document sets nine objectives for the outcomes sought from the strategy and includes *to facilitate the optimization of access to and within centres*. The current levels of accessibility to centres was not established as part of the strategy but clearly is a worthwhile action in future. It does set a framework for the desired level of accessibility for centres as follows:

- Activity centres that facilitate multiple purpose/multiple occupancy trips in alignment with its defined role
- Activity centres that encourage active transport options for users when accessing and moving within activity centres
- A highly efficient movement network at the local, district and regional level.

The strategy requires access to be considered at either one or all of the following approval steps: structure planning, detailed areas planning and significant development applications at neighbourhood and local centres. Access targets are to be established for secondary, district and neighbourhood centres. This could include a certain proportion of trips to be made by sustainable modes.

Cockburn Disability Access and Inclusion Plan (DAIP) 2012 – 2017

The intention of the DAIP is to assist with the coordination of planning and activities conducted by the City of Cockburn to ensure that all community members have equitable access to services, events, and public spaces and buildings. Delivery is coordinated by a Disability Access and Inclusion officer (DAIO).

The City has set up a Disability Reference Group (DRG) which consists of an open membership of Councillors, Council Officers, service provider representatives, people with disabilities and carers. The DRG provides advice and input in a range of issues, and receives regular reports from the DAIO on progress of the DAIP. The reference group has been consulted on major projects in the region, such as the Cockburn Central and Port Coogee developments.

City of Cockburn - District Traffic Study, 2013

Further details on the 2013 District Traffic Study are provided in Section 1.2 of this report.

Roe Highway Stage 8

The State Government is committed to the extension of the Roe Highway, west of the Kwinana Freeway to Stock Road in Coolbellup. However, the City of Cockburn opposes the extension on the grounds that it will impact adversely upon environmentally sensitive wetland areas between North Lake and Bibra Lake.

City of Cockburn Bicycle Network and Footpath Plan, 2010

The City of Cockburn Bicycle Network and Footpath Plan provides a review the City's existing network of cyclist and pedestrian infrastructure. The plan identifies improvements to the existing cyclist and pedestrian networks and potential non-built solutions to enhance existing networks, their maintenance and future provision.

City of Cockburn Trails Masterplan, 2013

The City of Cockburn Trails Masterplan compliments the Bicycle Network and Footpath Plan and sets out the range of improvements required on existing trails and proposed future trails to establish a comprehensive network of recreation facilities available to all residents and visitors to the area.

3.2 Major capital works program

The Long Term Financial Plan 2012/13 – 2021/22 presents the City's planned major road projects (refer to **Figure 20)**.

Congestion was raised by the community as a significant issue facing the City. It is recommended based on this feedback that the City's major road works program be reviewed based on congestion and road safety feedback through the ITP. This plan should identify tier 1 (high priority) and tier 2 (normal priority) projects. Feedback from the ITP has identified the following high priorities:

- North Lake Road extension and Verde Drive construction
- Bartram Road overpass.
- Gibbs Road/ Russell Road upgrade: needed before Aubin Grove station is operating
- Jandakot Road.
- Encourage MRWA to undertake a review of traffic signal timings and phasing at the following locations:
- Armadale Rd and the following intersections: Tapper Rd, new intersection proposed Verde Drive, Kwinana Freeway Ramps
- Beeliar Drive and the following intersections: North Lake Road/ Wentworth Parade/ Kwinana Freeway Ramps

Major capital works

Congestion	✓
Road Safety	✓
Parking	
Freight	✓
Public Transport	
Cycling	
Walking	

Other major works

- Congestion ✓
- Road Safety ✓
- Parking
- Freight ✓
- Public Transport
- Cycling
- Walking

3.3 Other major works

A recent study by the RAC has indicated that improving traffic signal sequencing and timings can reduce congestion by as much as 27% (refer to media release dated 21 October 2013). Considerations should be given to cycle lengths, coordination between sets of signals along key routes and opportunities to include filtered right turns.

The following actions are recommended:

- Encourage MRWA to introduce managed freeways on the Kwinana Freeway with priority locations: Beeliar/ Armadale, Berrigan Drive, Roe Highway and Russell/ Gibbs and working with the City of Cockburn regarding adverse impacts on the local road network
- Undertake an advocacy role to lobby the State Government for funds for Kwinana Freeway widening and Armadale Road widening and safety improvements.
- Lobby MRWA for Beeliar Drive to be upgraded to a 'Primary Regional Road' on the basis of the forecast traffic volumes (up to 51,000 vpd in 2020 and over 60,000vpd without North Lake Rd overpass). This should apply as a minimum to the section of Beeliar Drive between the Freeway and Wentworth Parade and ultimately for the full length from the Freeway to Stock Road.

The DTS highlights that other roads may also be worthy of categorisation to primary regional road status such as Farrington Road (between North Lake Road and Kwinana Freeway; particularly should a northbound off ramp be introduced), North Lake Road (noting that in 2031 sections of North Lake Road are forecast to carry higher volumes than Stock Road). The City should work with MRWA to define a monitoring plan.

- Work with the DoP to identify roads requiring a review of the MRS reservation. A formal request must be made and roads recommended for review based on the DTS forecasts include Warton Road, Berrigan Drive/ Karel Avenue, Farrington Road, Jandakot Road, Russell Road and Phoenix Road.

These roads do not have regional road status however 2031 forecasts suggest they should be considered and road reservation widths reviewed. These reviews should also, as a priority, consider future public transport priority needs. The following roads are designated 'other regional roads' but are forecast to carry notable traffic volumes in future (as per the DTS 2031 forecasts) and accordingly their reservations should be reviewed: North Lake Road overpass/ Verde Drive (the need for widening at Solomon Rd), North Lake Road and Russell Road ('blue' road, but the road reserve indentified in the MRS is inadequate for a dual carriageway).

- Liaise with the DoT to ensure that the planning of identified future 'preferred traffic' routes under the Moving People Plan is not compromised through approvals of new developments

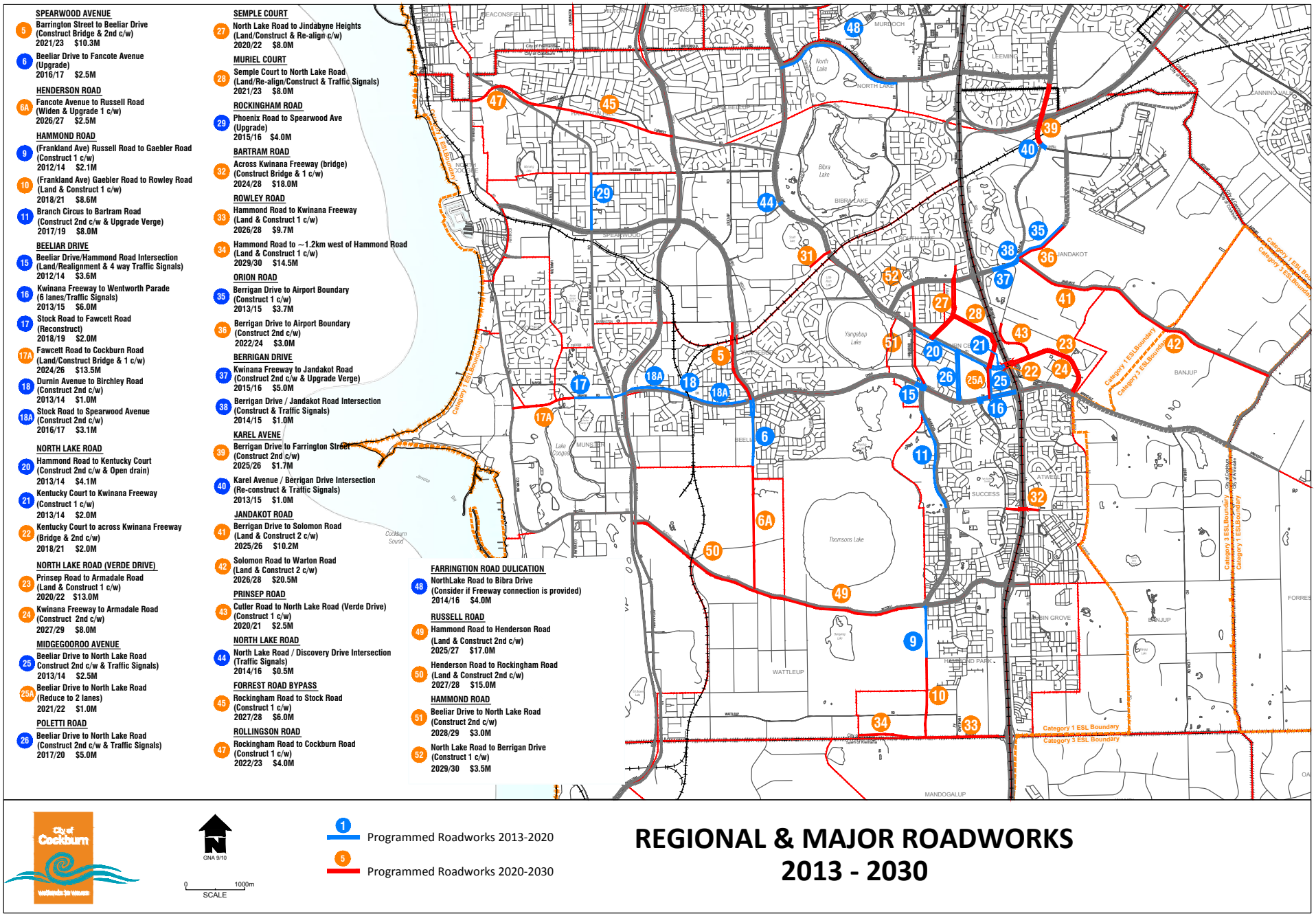

Figure 20 Major Road Projects *Source: City of Cockburn*

- Require all Transport Assessments for structure plans and subdivisions and any other developments generating more than 100 trips in a peak hour to use forecast traffic volumes from the DTS to assess the future impacts of developments on the future road network.
- MRWA is progressing planning of Roe Hwy extension to Stock Road. It is understood that the City of Cockburn does not support this project. To 'Do Nothing' is not a realistic option as this will increase traffic in the Hamilton Hill area and pressures on other parallel routes such as Farrington Road, Phoenix Road and Forrest Road. The impacts of not extending the Roe Highway have been investigated as part of the DTS. It is recommended that, without Council support for the Roe Highway extension, an alternative plan be identified and presented to MRWA. This plan should include public transport improvements such as the BRT route between Fremantle and Murdoch identified in the Southwest Metro Rapid Transit Network Study.

3.4 Leading practice in land use integration and travel demand management

Perth has experienced unprecedented levels of population growth in recent years. Much of this growth has taken place in Perth's suburbs; however, the Perth CBD continues to be the metropolitan area's most significant employment, entertainment and leisure hub providing around 25% of white collar and 18% of all metro jobs.

Congestion is a growing issue for the city and there is realisation that this cannot be addressed solely through adding capacity to the road network (refer to **Figure 21**). Recent evaluation of peak hour congestion undertaken by the Royal Automobile Club (WA) showed that the lowest levels of service is experienced on trunk routes, particularly on approach to and around the CBD.

The 2013 Congestion Index developed by TomTom shows that Perth is now ranked second worst of major Australasian Cities behind Sydney[4]. This growth in congestion has clearly impacted City of Cockburn residents and business with congestion ranking as the most commented issue during the community engagement exercise.

Some locations in Perth are embracing travel demand management through measures that include paid parking, restricting parking supply, using revenue from parking or developer contributions to fund public transport and encouraging use of sustainable travel modes through travel plans and integrated transport plans.

Leading practice in land use integration and travel demand management

Congestion	✓
Road Safety	
Parking	✓
Freight	
Public Transport	✓
Cycling	✓
Walking	✓

[4]TomTom (2013) *TomTom Australia & New Zealand Traffic Index*, TomTom International BV, 12pp..

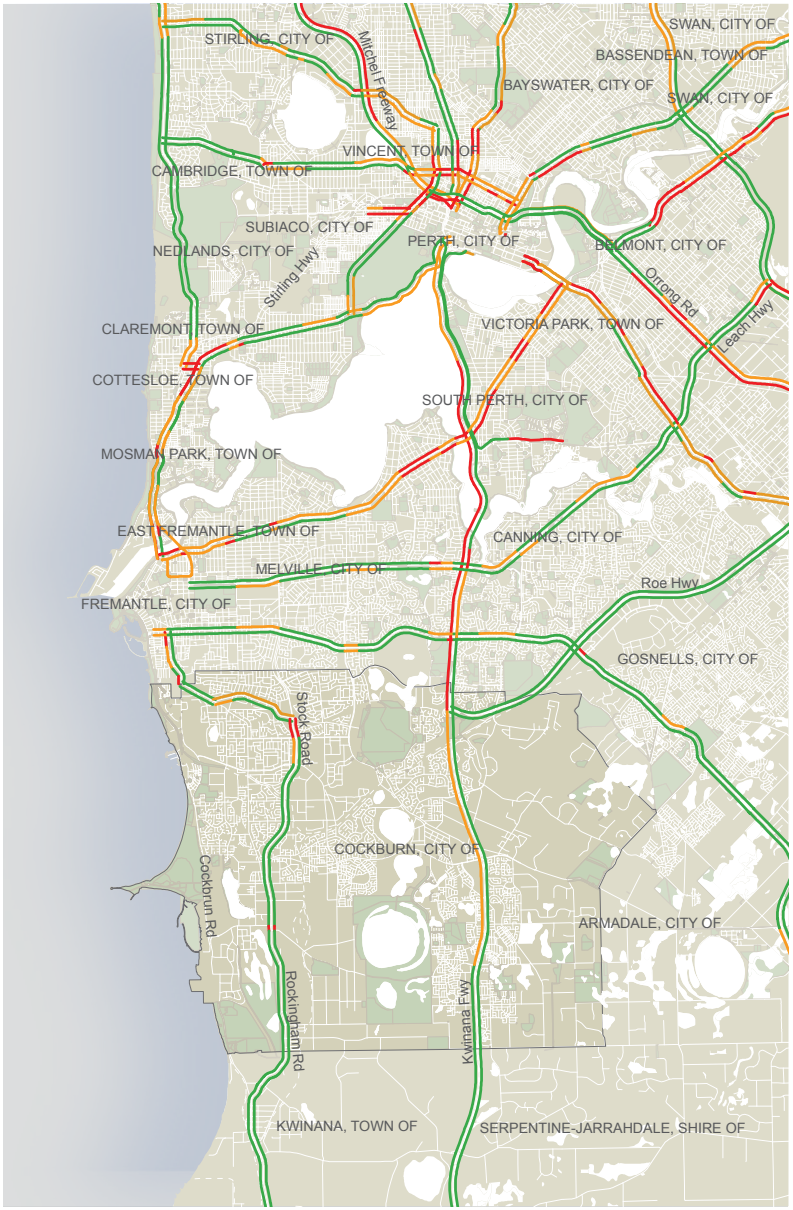

Figure 21 RAC's congestion evaluation outcomes

RAC's congested evaluation outcomes - Posted Speed (kph)

		Arterials/Highways		Freeways/Highways	
		50-70 kph	80-90 kph	80 kph	100 kph
Observed Average Speed (kph)	< 25	< 25	< 33	< 40	< 40
	25-40	25-40	33-49	40-65	40-75
	> 40	> 40	> 49	> 65	> 75

On an international scale these measures, while effective, are a step removed from leading practice.

Congestion and access management initiatives may be grouped broadly into two categories: vehicle access controls and investment in non-car modes. Examples are provided in **Table 4**.

3.4.1 Vehicle access controls

There is a strong correlation between the supply and cost of car parking verses car use. Easily available cheap car parking is a key driver towards car dependency. The control of parking, especially located within Cockburn Central and other key areas, is therefore paramount to encouraging use of alternative modes of transport and ensuring existing parking supply is used efficiently.

Parking controls include:

- Paid parking – parking priced based on location and duration of stay (long term/short term)
- Duration of stay restrictions – short-term parking in areas where high turnover is preferred i.e. shopping areas and the control of long-term commuter parking

ITS is being used more often in the control of parking and can play an important role in the efficient use of supply and collection of revenue.

The City of Perth has developed a mobile app for smartphone and tablet devices which enables users to find available car parking spaces in the city.

The app provides users with real time availability as well as fee and time restriction information. This app assists in reducing traffic congestion by reducing the time spent by vehicles circulating on the CBD road network while looking for an available parking bay.

A common measure used nationally and internationally is the use of in-ground parking sensor technology. An in-ground sensor is a device that is buried underground within a parking bay and records when a vehicle arrives and departs from a parking bay. Once a vehicle has overstayed the permitted time limit in a parking pay, plus a grace period of five minutes, a signal is sent from the sensor in the bay to the nearest parking officer's hand-held device. The parking officer will check to see if a parking offence has occurred before issuing a parking ticket.

Vehicle access controls	Investment in non-car modes
Parking supply caps/ reductions	Public transport service enhancements
Parking pricing	Public transport prioritisation
Road capacity constraints/ road diets	Pedestrian realm/ infrastructure investments (e.g. wider footpaths)
Reduced speed limits	Improved cycling links and end of trip facilities.
Reduced vehicle connectivity	Reduced signal cycle times
Traffic management and control	
Reduced through-routing	

Table 4 Types of congestion and access management

Future travel behaviour and patterns in Cockburn

Congestion	✓
Road Safety	✓
Parking	✓
Freight	
Public Transport	✓
Cycling	✓
Walking	✓

3.5 Future travel behaviour and patterns in Cockburn

The City of Cockburn has recently faced unprecedented growth and planning and construction activity. The City is expected to continue to be a highly sought-after place to live and work due to its coastal location, easily commutable distance (travel time) to the Perth CBD, existing and potential for new employment, access to heavy rail, natural assets and available greenfield sites for development. The City will therefore continue to transform as it becomes increasingly urbanised.

Population, employment and land use changes

Key population, employment and land use changes forecast include:

- Growing from a population of 88,599 (2010) to 114,212 by 2020 and to around 130,000 by 2031
- Tapering off of greenfield development post 2020 – 2022
- Reduction in greenfield development will see greater infill development and reducing household sizes and potentially reducing housing affordability
- Families settling in greenfield sites and an aging population in established suburbs
- Greenfield development mostly focussed in the south and east of the City
- Growth in employment opportunities from 22,000 in 2006 to a forecast 55,000 in 2030

Policy directions suggest major residential growth areas will be centred on Aubin Grove, Success, Hammond Park – Wattleup, Coogee-North Coogee and Beeliar. The most significant growth is expected around Hammond Park, Wattleup, Banjup and Munster.

Success, Hammond Park and Aubin Grove are within a reasonable catchment of the Cockburn and future Aubin Grove train stations; however, new public transport infrastructure must be a priority to cater for growth in Coogee/ North Coogee and Beeliar. Issues associated with access to Cockburn station by all modes is a high priority.

Travel opportunities and challenges

How these demographic and population changes translate to opportunities and needs on the transport system could include:

- Greater reliance on public and community transport in locations housing the aging population. Locations include Cockburn Central, Coolbellup and Hamilton Hill
- Greater employment self-sufficiency, potentially leading to people living closer to their workplace and therefore shorter trips that can be catered for by walking and cycling/scooter/ motorbike
- Requirement for improved public transport options to support planned residential development in Coogee/ North Coogee and Beeliar. BRT has been explored and shown to be viable but this planning needs to be progressed

- Trips to industrial areas have historically been difficult to service by public transport however the medium to long term phase of industrial development will be focussed at AMC/ Latitude 32 and Jandakot Airport Precinct. Industrial development of this scale may be able to support improved public transport provision
- Expansion of the public transport network to greenfield developments in the south and east. It will be important for public transport services to new residential subdivisions to be provided upfront/ at an early stage of development to help prevent new residents from forming a car dependency.
- Increased industrial development will lead to additional freight movements to be catered for on the road network and greater mixing of heavy and light vehicle traffic. Increased use of freight rail lines could help to minimise these impacts but noise impacts would need to be assessed given the surrounding residential land use in some locations
- A need to better manage existing transport infrastructure through the employment of intelligent transport systems which may include MRWA's initiative for managed freeways, introducing variable parking pricing (peak and off peak) and introducing parking guidance systems at key locations such as Cockburn Central.

The City will require a suite of interventions to change travel behaviour that will need to be up-scaled over time. For instance provision of additional bus services and localised bus priority in key congestion locations (eg Cockburn Central) will be a first stage of wider corridor upgrades such as BRT and ultimately LRT.

End of trip cycle facilities

Congestion	✓
Road Safety	
Parking	✓
Freight	
Public Transport	
Cycling	✓
Walking	✓

3.6 End of trip cycle facilities

End-of-trip facilities are designated places that support cyclists, joggers and walkers in using alternative ways to travel to work rather than driving or taking public transport.

End-of-trip facilities include:

- secure bicycle parking
- locker facilities
- change rooms
- drying areas

Traditionally end-of-trip facilities have only been available for use by occupants of the building in which they are located. Example of publically available facilities are available however.

The City of Melbourne and the City of Brisbane have both installed publically available end-of-trip facilities within their respective central business districts. The City of Brisbane's Cycle 2 City facility is a fully staffed, secure bike storage facility with showers. Additional facilities include daily fresh towel provision, laundry service and on-site bicycle workshop.

Opportunities for the installation of end-of-trip facilities will be investigated by the City of Cockburn. Potential locations include Cockburn Central and the future Aubin Grove railway station. Providing end-of-trip facilities at key transport interchanges provides opportunities for users to access the public transport network by bicycle rather than driving and utilising limited Park 'N" Ride facilities.

The City will also encourage workplace building owners to install quality of end-of trip facilities for staff use.

CITY OF COCKBURN

4 Key Drivers: Gaps, emerging trends and issues

A review of the City of Today and City of Tomorrow highlights a number of key existing and emerging issues, gaps and trends. These are the key drivers for the ITP to address.

4.1 Issues

Issues of today

- Traffic congestion, primarily centred on Cockburn Central but increasingly being created by other major developments are expected to have notable impacts on the road network including Fiona Stanley Hospital, Murdoch Activity Centre, AMC and Latitude 32 (Wattleup Road)
- Traffic congestion perpetuates further congestion as busy arterial roads become barriers to pedestrian movements and encourage car use for short trips
- Lack of pedestrian facilities to allow safe and convenient crossing of arterial roads
- Growth in road safety issues and a strong correlation between road congestion and road safety issues
- Roads that have been developed to a rural standard now carrying significant traffic volumes on a daily basis. Russell Road and Jandakot Road are clear examples
- A grid network of arterial routes is difficult to achieve in Cockburn due to the presence of natural barriers; however, the road reservations for some strategic arterial roads do not allow for future growth or introduction of bus priority because they are not currently wide enough
- The existing preferred public transport routes under the Moving People Network Plan (Beeliar Drive/ Armadale Road, Rockingham Road) do not have public transport priority and are known congestion locations

Potential issues of tomorrow

- Congestion on the rail network, making it difficult for passengers to board services in the AM peak from Cockburn and Aubin Grove stations
- Congestion and parking shortages around Aubin Grove train station
- Future residential development will involve some infill and brownfield development but is likely to occur in greenfield locations for the most part. It will be important for public transport provisions to be introduced at early stages, which is likely to require developer contributions through levies (such as the Perth Parking Management Act) and rates levies (as is the case in Queensland for the Gold Coast Rapid Transit system). The layout of these areas needs to strongly support the use of public and active travel modes.
- Growth in congestion and parking demands in future growth areas, particularly Cockburn Coast, Jandakot Airport, Aubin Grove Station, Port Coogee, Spearwood, the Muriel Court precinct and Hamilton Hill. Impacts on bus service reliability and travel times

- Roe Highway extension the impacts of building it versus not building it and lack of a well-conceived alternative for future transport needs
- Managing parking demand vs. supply at activity centres and the increased resources needed to manage and monitor parking
- Growth in freight movements. Requirements for designated, purpose-designed, off street heavy vehicle parking.

4.2 Gaps

- Limited public transport provision to industrial areas. Some employment centres such as the Jandakot Airport specialised activity centre is not connected by public transport to the nearby Cockburn Central town centre
- Limited public transport provision to link neighbourhood activity centres with district centres
- Potential lag of BRT provision in growth areas to the east of the municipality e.g. Banjup
- No bus priority and missed opportunities for bus priority around Cockburn Central
- Strategic planning such as the 'Plan for the District' focuses solely on road transport infrastructure for private vehicle travel and should reference the city's cycle and walking plans more strongly and in a more integrated way
- Some major road projects are required to improve the permeability of travel through Cockburn, which is important for local accessibility and to permit the efficient movement of freight
- Funding gaps: numerous road network upgrades have been identified but most require State government funding. Funding has yet to be committed
- Lack of coordinated information on the impacts of significant industrial and logistic related development in Cockburn and clear freight management strategy for Cockburn.

4.3 Emerging trends

- Creation and linkage of activity centres (neighbourhood, secondary, regional)
- Growing employment self-sufficiency and more dispersed trip origins and destinations
- Rapid growth in public transport use since the introduction of the Perth-Mandurah rail line
- Growing interest in healthy communities and opportunities for utilitarian and leisure transport to play a role in improving health and wellbeing
- Further residential growth in areas surrounding Cockburn and how this may influence travel to, from and through Cockburn
- An aging population and providing people with limited mobility with realistic travel choices other than private car.

CITY OF COCKBURN

5 The Future Transport Vision for Cockburn

5.1 Vision

A workshop was held in September 2013 with a select group of officers from the City to discuss the feedback from the community engagement and to identify a vision and objectives for the ITP. The general sentiment at the workshop was that while existing issues raised by the community were important to address; the ITP needed to be visionary. The City wants to be in a position to shape the transport future rather than reacting to existing issues.

It was also acknowledged through the workshop that the ITP needed to help implement and therefore be consistent with the Strategic Community Plan for the City. Drawing on the vision articulated in the Strategic Community Plan, the ITP is underpinned by the following vision:

Our mission is for a robust, safe and integrated transport network that meets the current and future needs of people and industry while minimising environmental impacts.

5.2 Objectives

The key objectives of this ITP are:

- To have a transport system that efficiently integrates with land use, enables multi-modal trips, and allows flexible management of the City's road space.
- To provide an efficient and highly connected movement network for pedestrians and cyclists that caters for and encourages healthy active transport travel for trips of any length.
- To provide a transport system that is safe and efficient, accepting that a level of traffic congestion will always exist, and is planned to meet the long-term transport needs of a growing city.
- To have a legible, well-structured arterial road network that provides efficient routes for heavy vehicles and general traffic for intra-city and regional trips.
- To provide infrastructure and promote behaviour that encourages patronage of public transport in a sustainable manner and creates efficient and prioritised movement for public transport and other high occupancy vehicles.
- To raise community awareness of transport alternatives to private cars, and keep them regularly updated on transport issues in Cockburn.

These objectives translate to the themes shown in **Figure 22** and the implementation plan has been shaped around these themes.

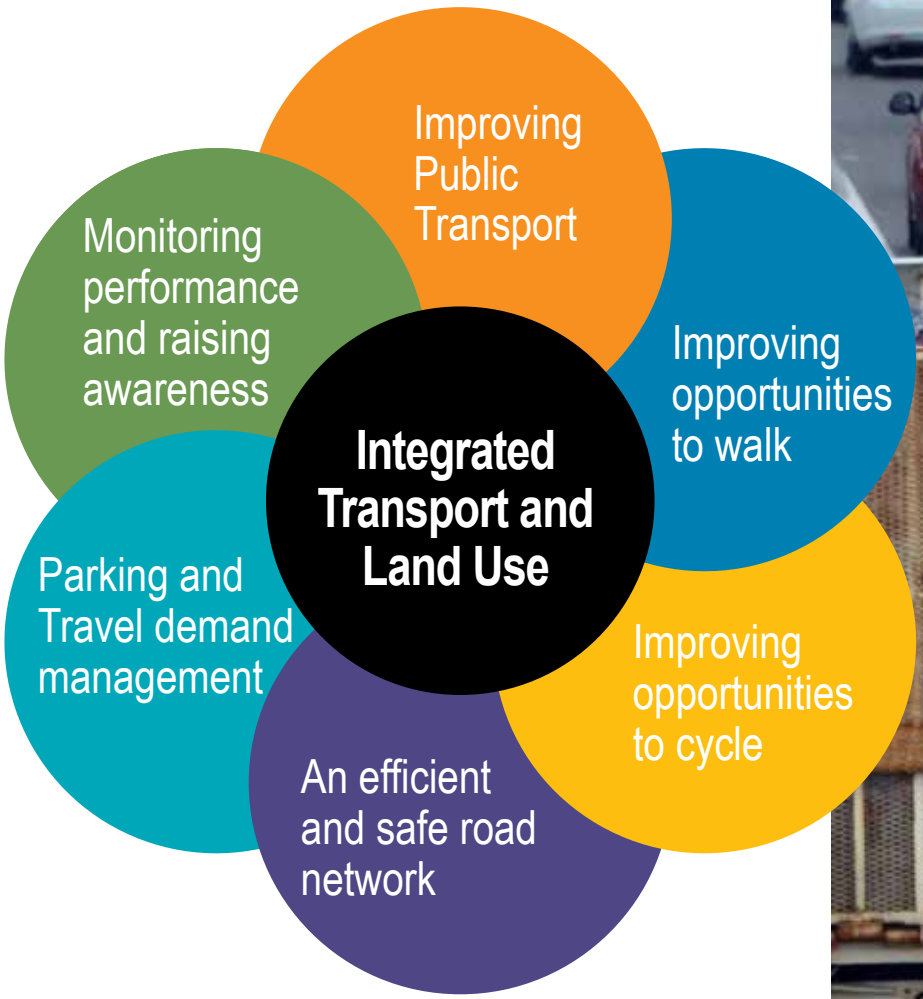

Figure 22 ITP themes

6 Implementation Plan

6.1 Implementation Plan

The implementation plan is presented in the table in this section. Note that specific road capacity upgrades have not been included in the implementation plan but are planned for in the City's Major Capital Works Programme.

The actions within the plan have been given a priority according to the following timescales:

- Short: to 2017
- Medium: 2018 to 2021
- Long: 2022 to 2031.

Actions centred on management, advocacy, policy/strategy development or education have generally been categorised as short term actions, under the assumption that the City will provide sufficient resources to drive these actions forward.

Scale of Cost

0	Operational[5]
$	Low (< $100,000)[6]
$$	Medium ($100,000 - $500,000)
$$$	High (>$500,000)

[5] Sourced from existing budget. Assumed work done in-house using existing staff and funding resources.

[6] May be funded from operational sources if there is capacity for work to be done in-house.

Improving public transport

Action	Description/ justification	Priority	Responsibility	Cost
Improve access to rail	Work with the PTA to review crowding issues on AM peak hour services at Cockburn Station. Understand planned level of service at Aubin Grove Station. Liaise with MRWA to review opportunities to improve the safety and efficiency of access to park and ride bays located off Armadale Road, at Knock Place.	Short	CoC/ PTA (Transperth)/ MRWA	0
Improve connections to the Murdoch Activity Centre	Work with the PTA to provide an efficient access route for the new bus service planned to Murdoch Activity Centre from Spearwood. Identify opportunities for on-street bus priority 0for this service (eg Farrington Road/ M0urdoch Drive) and the location of new stops.	Short	CoC/ PTA (Transperth)	0
Improve bus efficiency	Work with the PTA to investigate the opportunities for bus priority through Cockburn Gateway/ Beeliar Drive and the future North Lake Road overpass as a high priority. Other locations where congestion exists or expected to occur in future should also be investigated (in line with the Moving People Network Plan): • Rockingham Road/ Cockburn Road/ Hampton Road intersection • Murdoch Drive/ Farrington Road intersection • Berrigan Drive/ Jandakot Road intersection • Russell Road/ Rockingham Road intersection. Beeliar Drive bus priority at Cockburn Station/ Gateway would form the first part of the BRT outlined in the (Draft) Long Term Public Transport Plan for Perth	Medium	CoC/ PTA (Transperth)/ DoT/ MRWA	0
	The (Draft) Long Term Public Transport Plan for Perth highlights two parallel BRT routes: Murdoch Station to Cockburn Road (via South St) and Cockburn Station to Cockburn Road via Beeliar Drive. The Southwest Metro Rapid Transit Network Study also recommended BRT between Cockburn Central and Cockburn Coast but noted that the preferred alignment of this corridor needed further investigation. The investigation itself to safeguard the route should be a short term measure.	Short/ Medium	CoC/ DoT/ PTA/ MRWA	0

Action	Description/ justification	Priority	Responsibility	Cost
Improve east-west public transport	Investigate with PTA a potential east-west bus route between Cockburn and Armadale; irrespective of BRT. The Long Term PT Plan Perth identifies BRT between Armadale and Cockburn post 2031. With new developments such as Piara Waters/ Banjup – the need for this service could be earlier than expected (at least from Nicholson Road to Cockburn Station). Feedback from the community has shown interest in this bus route and could link key destinations such as Cockburn Coast (and potential LRT) with Murdoch Activity Centre and/or Cockburn Central. JTW postcode mapping shows propensity for east-west trips to be made by car. Consideration should also be given to the potential impacts on the extension of the Thornlie Rail Line as per the Draft Long Term PT Plan for Perth. This is expected to see a change in service patterns and potentially increased passenger interchange at Cockburn Central Station.	Medium	CoC/ PTA (Transperth)/ MRWA	0
Review bus service span and frequency	Work with the PTA to undertake a review of service span and regularity of bus services on weekends and evenings with a focus on: Coogee, Hamilton Hill and Beeliar.	Short	CoC/ PTA (Transperth)	0
Improve public transport to industrial areas and key employment nodes	Pilot scheme to connect industrial areas with bus services. Work with the PTA to investigate opportunities for peak-only services (mini buses), potential to divert existing services through industrial areas and the potential for demand responsive feeder services.	Short	CoC/ PTA (Transperth)	$
	Work with PTA and Jandakot Airport to investigate the potential for a bus service from Cockburn Station to Jandakot Airport.	Short	Jandakot Airport Holdings/ CoC/ PTA (Transperth)	0
Investigate potential for small Park n Ride facilities.	Investigate potential locations for small Park 'N' Ride facilities (car/bicycle/motor cycle) servicing strategic bus routes, particularly on major roads to reduce longer trips by private vehicle to bus/rail stations	Medium	CoC/ PTA (Transperth)/ MRWA	0
Review existing bus stop infrastructure.	Development of a program to review existing bus stop infrastructure, develop target standards/ policy for same; and commitment of increased annual budget for that purpose.	Short	CoC/ PTA (Transperth)	0
Future taxi ranks	Consult with DoT/ Taxi Industry Board/ Taxi Council of WA regarding current/ future needs for taxi ranks in Cockburn.	Short	CoC/ Taxi Council	0

Improving opportunities to walk

Action	Description/ justification	Priority	Responsibility	Cost
Improve and protect the quality of existing infrastructure	Continue to deliver the actions outlined in the City's Bicycle Network and Footpath Plan (July 2010). Consider categorising the pedestrian routes in activity centres so as to protect (via the planning scheme) the proliferation of crossovers on busy pedestrian routes. A similar categorisation scheme is in place in the City of Perth under the Perth Parking Management Act.	Short	CoC/ WAPC	$$ 0
Improve pedestrian safety and network efficiency	Monitor pedestrian crossing behaviour and safety on Beeliar Drive, at the Cockburn Central Town Centre, to determine the patronage and effectiveness of the underpass (once completed) and the signalised crossing facilities at the North Lake Road (Midgegooroo Avenue) intersection. Investigate length of pedestrian crossing phase at Spearwood Avenue and Rockingham Road and the need for a new pedestrian crossing at Kent Street on Rockingham Road adjacent to the shopping centre. If necessary, consider options to improve the convenience and safety of pedestrians crossing between the Town Centre and Gateway Shopping Centre. One intervention could include reducing signposted speed limits or use of variable speeds (peaks and off peaks). This investigation should involve working closely with the DoT and the team involved in the Connecting Stations project.	Short	CoC/ DoT/ MRWA	0
	Liaise with MRWA for the automatic inclusion of pedestrian walk phases at signalised intersections and reduce the length of signal cycle times to reduce wait times for pedestrians in main activity centres, near schools and recreation facilities. Suggested locations include the following intersections: North Lake Road/ Beeliar Drive, Rockingham Rd/Phoenix Rd, Rockingham Rd/ Spearwood Ave.	Short	CoC/ MRWA	$$

Action	Description/ justification	Priority	Responsibility	Cost
Improve the permeability of the pedestrian infrastructure network	Provide pedestrian footbridge across the Kwinana Freeway linking Gateway shopping centre and Atwell.	Long	CoC/ Perron Group/ MRWA	0
	Actively participate in the review of Liveable Neighbourhoods and ensure that footpaths are mandatory on both sides of the street for all new structure plans and subdivisions and clearer guidance is provided on requirements for a safe and high quality pedestrian environment (i.e. where the use of certain intersection treatments are and are not suitable).	Short	CoC/ WAPC	0
	Work with the DoT to determine whether the preferred pedestrian environments identified in the Moving People Network Plan require any improvements to wayfinding, signage and lighting. Identify future 'preferred pedestrian' routes based on planned/ committed development (eg Hamilton Hill, Cockburn Coast and Port Coogee).	Short	CoC/ DoT	0
Mandatory end of trip facilities	Review the town planning scheme to require mandatory end of trip facilities. This includes lockers and change facilities not just for cyclists but also walkers.	Short	CoC/ WAPC	0
Improve access to rail	Undertake an audit of the cycle and walking network within 1km of the proposed Aubin Grove train station. Work with PTA to implement upgrades to improve quality and permeability of routes and crime prevention through environmental design (CPTED) principles before the station opens.	Short	CoC/ DoT/ PTA	$
Promotion of walking as a travel mode	Work closely with the DoT to reinforce the behaviour change (and behaviour change interest) generated as part of the Your Move, Connecting Schools and Connecting Stations projects. Where not already in existence, encourage schools to develop a safe walking and cycling to school program.	Short	DoT/ DET/ CoC	0
	City of Cockburn to develop a travel plan for the council workplaces and require major workplaces to develop travel plans (as part of development approval processes).	Short	CoC/ WAPC	0
Improving access to recreational facilities, parks and reserves	Undertake a lighting audit of pathways around recreational facilities and reserves (noting that lighting may be intentionally dimmed around reserves to minimise impacts on wildlife).	Short	CoC	$

Action	Description/ justification	Priority	Responsibility	Cost
Review existing footpath plan.	The current Bicycle Network and Footpath Plan is four years old and should be reviewed. Report on the delivery of the existing plan and produce a new plan in 2015 using a Perth Bicycle Network grant. Progress on implementing the revised plan should be reported annually (in line with the Disability, Access and Inclusion Plan).	Short	CoC/ DoT	$
Infrastructure for disabled persons and mobility scooters.	Undertake a review the City's road design standards, subdivision specifications, policies etc. to ensure that a high standard of infrastructure is provided for growing demand for disability access and travel by an aging population.	Short	CoC/ Disability Services Commission	$
Audits	Develop standards/ policy within the City's planning scheme for cycleability and walkability audits of public and private infrastructure, networks and developments.	Short	CoC/ WAPC	0

Improving opportunities to cycle

Action	Description/ justification	Priority	Responsibility	Cost
Improve and protect the quality of existing infrastructure	Deliver the actions outlined in the City's Bicycle Network and Footpath Plan.	Short	CoC/ WAPC	$$
	Review 'footpaths' for width, safety, surface treatment and connectivity to determine whether they can be designated as shared paths and designated on the district cycle plan.			$
	Arterial roads that have shoulders which meet width standards to be designated as cycle lanes. Line mark, colour and stencil, and update district cycle plan accordingly.			$$
	Review the path maintenance regime throughout the City on a regular basis. Community feedback includes poor path surface and trees overhanging pathways.			0

Action	Description/ justification	Priority	Responsibility	Cost
Improve the permeability of the cycling infrastructure network	Improve east-west cycle links to freeway along the following routes: Farrington Road, Hope Road, Armadale Road, Forrest Road, Rowley Road and across North Lake Road.	Medium	CoC/ DoT/ MRWA	$$
	Investigate the opportunities to include separate shared paths along busy arterial routes: North Lake Road, Stock Road, Cockburn Road, and Russell Road. Identify potential constraints (i.e. corridor width, infrastructure and services, significant vegetation, some key roads are MRWA managed) and undertake a review of crash statistics in order to develop priorities, staging plan and costings. This work should be undertaken in partnership with the DoT and MRWA, noting that most of these routes are identified as future preferred cycle routes under the Moving People Network Plan.	Medium	CoC/ DoT/ MRWA	$
	Define an improvements programme and apply for PBN funding through the Department of Transport to expedite capital works. Liaise with the local bicycle user groups to collaboratively develop the list of priorities.	Short	CoC/ WAPC	$
	Actively participate in the review of Liveable Neighbourhoods to make sure that cyclists' needs are considered in their own right.	Short	CoC/ WAPC	0
	Review of arterial road reservations are required on key roads in the City and future cross sections must allow for cycle infrastructure.	Short	CoC/ DoP/ WAPC	0
Mandatory end of trip facilities	Review the town planning scheme to require mandatory end of trip facilities.	Short	CoC/ WAPC	0
Audits	Develop standards/ policy within the City's planning scheme for cycleability and walkability audits of public and private infrastructure, networks and developments.	Short	CoC/ WAPC	0
Freeway Principal Shared Paths	Include an action to lobby MRWA for a Principal Shared Path on the east side of the Kwinana Freeway, adjacent to suburban areas, with connectivity to those suburbs and across the freeway. Highest priority location should be section between Cockburn Central and proposed Aubin Grove stations.	Short	CoC/ DoT/ MRWA	0

Action	Description/ justification	Priority	Responsibility	Cost
Bicycle Break-down services	Lobby RAC(WA) to extend their break down services to bicycles (as per Victoria) and motorcycles. This would provide reassurance to cyclists and motor cyclists, particularly women, and help increase those travel modes.	Short	CoC/ RAC	0
Strategically located end of trip centres	Investigate investment in intermodal/ end of trip facilities at key destinations such as Cockburn Central shopping centre or train station, Murdoch Activity Centre, Aubin Grove Station. These could offer more than just bicycle parking for the public but include for example male and female shower facilities, secure lockers, towel service, ironing facilities and hair dryers, bicycle maintenance service and dry cleaning service. This could be established in partnership with a bicycle hire operator but this is expected to be a longer term prospect due to the limited successes of similar schemes in other Australian cities.	Medium/ Long	CoC/ DoT/ commercial enterprises	$

Parking and travel demand management

Action	Description/ justification	Priority	Responsibility	Cost
Improve management of car parking	Undertake a detailed review of parking within Cockburn Central Town Centre. Consider whether time restrictions require review to better meet demand, the role of enforcement and potential for parking charges. This should be considered in the activity centre structure plan being developed for the centre.	Short	CoC/ DoP/ WAPC	$
	Review parking provision rates in the planning scheme within activity centres, areas well serviced by public transport and where higher density development is proposed (e.g. Hamilton Hill).	Short	CoC/ DoP/ WAPC	0
	Identify short term measures to better manage construction workforce parking in Cockburn Central to free up on street spaces for residents and business visitors.	Short	CoC/ construction contractors	0
	Investigate whether a resident permit scheme may need to be introduced to manage parking around mixed use areas or key nodes that interface with residential areas (e.g. proposed Aubin Grove Rail station).	Medium	CoC/ DoP/ WAPC/ PTA	0

Action	Description/ justification	Priority	Responsibility	Cost
Improve access to and efficiency of existing parking	North Lake Road overpass – to provide alternative options for buses to access the Cockburn Station Bus interchange; bus priority is fundamental. This road should also facilitate another means of access to the Park 'N' Ride facility. Preference is to provide access options rather than channelling traffic to a single location as is currently the case.	High	CoC/ PTA (Transperth)/ MRWA	$$$
	Introduce Intelligent Transport Systems (ITS)/ way-finding solutions for parking, especially at Cockburn Central. Use of dynamic signage systems have been effective in reducing vehicle kilometres travelled by minimising the need for drivers to circulate streets to find available bays.	Short	CoC/ Perron Group	$$
	Increase on-street motorcycle parking provisions in activity centres.	Medium	CoC	0
	Liaise with PTA to introduce priority parking bays for people who car share. This would be used to encourage car share trips to the station. Need to consider how this could be implemented and managed (e.g. the need to swipe two Smartcards registered to two separate people and the tickets print an extra line stating 'car share').	Short	CoC/ PTA	$
Strategic position on parking	Prepare a City wide Parking Strategy (similar to the City of Subiaco's) to guide the management of parking in the City. Primary focus is to address parking on public roads but could include private parking facilities.	Short	CoC/ WAPC	$
Investigate potential induced demand impacts of new road capacity infrastructure	The City needs to strike a balance between new/ upgraded roads to manage congestion or provide for local accessibility against providing additional demand that may induce additional car trips. This test should be considered in partnership with the Department of Planning, using the Strategic Transport Evaluation Model.	As required	CoC/ DoP	0
Accessible parking at community facilities	Review the design and supply of accessible parking bays at all of the City's community facilities, buildings etc. to ensure that they comply, or are upgraded, to current standards and meet the on-going needs of the aging community.	Short	CoC	$

Action	Description/ justification	Priority	Responsibility	Cost
Accessible parking on private property	a. Develop an annual program to provide funding assistance to upgrade accessible parking on private property to the current standard. b. Develop an annual program to provide funding assistance to upgrade accessible parking on private property to the current standard.	Short	CoC	$ $

An efficient and safe road network

Action	Description/ justification	Priority	Responsibility	Cost
Development of a strong freight movement network	Review of Freight Network and Functional Road Hierarchy in consultation with MRWA. This must include an assessment of whether the road reserve can adequately accommodate current/ future needs, the MRS classification (e.g. Jandakot Road should be a blue road based on traffic forecasts) and the ownership of the distributor roads.	Short	CoC/ DoP/ WAPC/ MRWA	$
	Provide input to the DoT on the development of the Moving Freight Plan specific to the future requirements of the City and managing freight access to significant planned development at Latitude 32, AMC and Jandakot Airport.	Short	CoC/ DoT	0
	Consult with relevant industry groups on the findings of this ITP. Together with industry groups, investigate whether there is a need for a heavy vehicle parking/ assembly area to the western side of the Kwinana Freeway in order to address the informal parking issues	Short	CoC/ industry groups	$
	Lobby MRWA for the upgrade of Rowley Road to provide access to the Coast/ proposed Kwinana Outer Harbour	Short	CoC/ DoT/ MRWA	0
	Develop a service vehicle management plan for Cockburn Central.	Short	CoC/ Perron Group	$
	Consult with heavy vehicle drivers and their industry about the need for short term parking facilities for heavy vehicles that are also located close to amenities.	Short	CoC/ industry groups	$

Action	Description/ justification	Priority	Responsibility	Cost
Improve planning for multi-modal access to industrial land	Develop guidelines for the development of transport networks in industrial zones. Current planning does not provide for pedestrian and cyclist access which was highlighted as being desired by workers in industrial areas to provide them with some travel options	Short	CoC/ DoT/ DoP/ WAPC	0
Coordination and focus for road safety improvements and road upgrades	Develop a Black Spot Program funding application priority list drawing on historical crash data in addition to feedback from the community from the collaborative mapping exercise.	Short	CoC/ MRWA	0
	Some 'rural' standard roads are carrying notable traffic volumes (including heavy vehicles) and upgrading the road (e.g. widen or seal shoulders, reseal, introduce lighting, review clear zones to vegetation, introduce pedestrian and cyclist infrastructure) should be a priority. Identify a list of locations and undertake road safety audits. Focus should be on freight routes and busy routes: Wattleup Road, Tapper Road, Jandakot Road and Liddlelow Road, Russell Road, Berrigan Drive (north of Jandakot Road), Rowley Road and Henderson Road.	Short	CoC	0
	Review the City's reported crash history for crashes involving vulnerable road users (pedestrians, cyclists and motor cyclists) to determine if any user group-specific road safety improvements are warranted.	Short	CoC	0
	Liaise with MRWA regarding the rollout of managed freeways and the use of variable speed limits on roads and use of variable message signs to warn motorists of incidents on the road network. Priority routes should be those linking to the Kwinana Freeway.	Medium	CoC/MRWA	0
	Encourage MRWA to introduce managed freeways on the Kwinana Freeway with priority locations: Beeliar/ Armadale, Berrigan Drive, Roe Highway and Russell/ Gibbs and working with the City of Cockburn regarding adverse impacts on the local road network	Short	CoC/MRWA	$
	Undertake an advocacy role to lobby the State Government for funds for Kwinana Freeway widening and Armadale Road widening and safety improvements.	Short	CoC	$

Action	Description/ justification	Priority	Responsibility	Cost
	Lobby MRWA for Beeliar Drive to be upgraded to a 'Primary Regional Road' on the basis of the forecast traffic volumes (up to 51,000 vpd in 2020 and over 60,000vpd without North Lake Rd overpass). This should apply as a minimum to the section of Beeliar Drive between the Freeway and Wentworth Parade and ultimately for the full length from the Freeway to Stock Road.	Short	CoC/MRWA	$
	Work with the DoP to identify roads requiring a review of the MRS reservation. A formal request must be made. Roads recommended for review based on the DTS include Warton Road, Berrigan Drive/ Karel Avenue, Farrington Road, Jandakot Road, Russell Road and Phoenix Road.	Short	CoC/DoP	$
	Liaise with the DoT to ensure that the planning of identified future 'preferred traffic' routes under the Moving People Plan is not compromised through approvals of new developments	Short	CoC/DoT	$
	Require all Transport Assessments for structure plans and subdivisions and any other developments generating more than 100 trips in a peak hour to use forecast traffic volumes from the DTS to assess the future impacts of developments on the future road network.	Short	CoC	$
Raise road safety awareness within the community	Include road safety snapshot post on City's website in order to nominate/ vote for black spot problem locations. The City is to then evaluate these against actual crash stats.	Short	CoC/ WA Police	$
	Include list on website of Black Spot Program funding applications including the status of applications and highlight priority locations where future funding applications will be made.	Short	CoC	0
	Work more closely with schools regarding management of parking and student education on road safety.	Short	CoC/ DET	$
	Work with the ORS to run a campaign on road safety in the local newspaper as this was a priority issued raised by the community. Provide facts and figures on crashes – where are they happening, causes, etc. and provide driver education messages (e.g. adjusting to conditions, speeding, enjoy the ride, etc.).	Short	CoC/ ORS	$

Action	Description/ justification	Priority	Responsibility	Cost
	Create a combined Road Safety Officer/ TravelSmart officer position to promote road safety issues and behaviour change to the community. Increase the existing part-time TravelSmart officer position to a full time role in Engineering.	Short	CoC	$
Focus on eliminating 'hoon' behaviour and speeding	Promote the WA Police "Traffic Complaint Report" to report hoon behaviour. The Community Safety and Crime Prevention Plan (2011 to 2014) recommend cameras in council vehicles to report poor driving and allow prosecution.	Medium	CoC/ WA Police	
	Define, in consultation with MRWA, Office of Road Safety and Police, potential locations for fixed speed cameras/ red light cameras.	Medium	CoC/ WA Police/ ORS	0
	Continue to partner with the WA Police in the Local Government Speed Enforcement Program	Short	Coc/WA Police	0

Monitoring performance and raising awareness

Action	Description/ justification	Priority	Responsibility	Cost
Monitor the performance of transport networks in the region.	It is intended that this ITP be a live document that is actively implemented and updated every three to five years. The document should be made available online, and report upon the progress made towards achieving targeted goals. Monitoring of the status of actions should be formally undertaken every 12 months.	Short	CoC	0
Seek feedback and consultation with community members.	Establish a working group encompassing a broad cross section of the community and stakeholders to meet recurrently with City of Cockburn representatives. These sessions will provide the community with an opportunity to give feedback regarding observed transport conditions.	Short	CoC/ MRWA/ DoT/ DoP	0
Cockburn Central Strategic Plan	The outcomes from this ITP should be considered in the preparation of the Cockburn Central Activity Centre Plan.	Short	CoC	0

Action	Description/ justification	Priority	Responsibility	Cost
Update Travelling Together document	Many transport challenges in Cockburn are not unique to Cockburn and it will be important to work with adjacent Councils to solve issues holistically. Councils should collectively lobby for funding to update the South West Group of Councils – Travelling Together document.	Short	CoC/ City of Kwinana/ City of Rockingham/ Melville (City), East Fremantle (Town)/DoT	$
	Use the outcomes of this ITP to help set the accessibility targets for activity centres as Perth the LCACS.			0

CITY OF COCKBURN

The City of Cockburn desires a significantly different transport future to the current situation. The City will need to drive the implementation of the ITP however to be successful it will need to do so in partnership with state government agencies, businesses/ industry, major institutions, community groups and the wider community.

7 Making it happen: Evolving to an integrated approach to Transport Planning

The plan ultimately relies on many people within the community adopting a change to their travel habits which may include:

- Reducing the need for travel and making fewer trips on a typical day
- Reducing the length of trips
- Increased use of public transport, walking and cycling
- Using more than one mode for a single journey
- Travelling at an alternative time (e.g. outside core peak periods)
- Increased car pooling

This ITP has been informed by engagement with the community to understand transport related issues. As expected, this has mainly focussed on issues of today rather than looking to change the future transport scene.

The next step of implementation should seek support and buy in of the ITP's objectives and the implementation plan before the plan is adopted. This can be done through a number of means including:

- Making the ITP available for public comment
- Further consultation with government agencies and industry bodies with an aim to develop partnerships
- Gaining buy in from whole of government.

7.1 Risks and rewards

The local planning policies, collectively aim to improve land use and transport integration in order to create a better place to live, work and visit. Transport and the implementation of the ITP is clearly central to this outcome and helping to shape a more balanced transport network that delivers on the objectives outlined in Section 5.2.

The ITP however is written as a strategic document and needs to go through the process of being adopted by Council as a formal policy document.

The potential risks or barriers to implementing the ITP are summarised below, in addition to mitigation measures.

Potential barrier/ risk	Description	Possible mitigation
Funding	Lack of obvious available funding sources.	Seek advice from the Department of Transport, Main Roads WA, the Department of Planning or the Western Australian Local Government Association. Investigate potential for private sector partnerships – particularly where these organisations seek to gain substantially from the implementation of the ITP. Other avenues include cash in lieu schemes and special rate levies.
Community engagement	Lack of community interest, buy-in, understanding	'Launch' the ITP and provide regular updates on progress and breakthroughs. Developing an ITP focus group.
Resources	Capacity of officers within the City to drive the plan forward	Monitor officer capacity to deliver the ITP. Appoint new roles to help drive key action areas forward. Regular communications to update officers of progress/changes/ breakthroughs in order to keep officers engaged.
Visibility	Lack of signs that the ITP is having any impact ITP sits on the shelf and not actively implemented	Consider developing targets that can be clearly monitored. Work more closely with the Department of Transport to see how the ITP could dovetail with other initiatives (e.g. *YourMove, Healthy Active By Design*).

7.2 Monitoring

This ITP has not included specific mode share targets however this is something that the City may choose to develop particularly as it helps to understand the impacts of the ITP. It is important that the targets set are realistic and that the impacts of the targets are understood and can be met by the particular mode (either based on existing or planned capacity). For instance a 5% shift to public transport may not be possible within the limits of the capacity of the current system.

It is intended that this ITP be a live document that is actively implemented, updated every three to five years and progress reviewed annually.

8 Conclusion

The City of Cockburn desires a significantly different transport future to the current situation. Rapid population growth in the City has placed pressure on existing transport infrastructure with new infrastructure not keeping pace with this growth in population and associated travel demands. Transport provision in many cases has been reactionary, too focussed on road building and created hostile environments for pedestrians and cyclists to negotiate. This has led to a vicious cycle of more people turning to private vehicles for travel including relatively short trips.

The heavy reliance on private vehicle travel has been borne by a suburban mentality where it is possible to drive from your doorstep to shops or workplace relatively unimpeded and with plentiful, free parking at your destination.

Now the City is facing unprecedented levels of congestion and road safety issues. Over 50% of the comments raised by the community during the engagement process related to congestion and road safety. The District Traffic Study has demonstrated that it is not possible to build the City out of congestion and a range of integrated transport and land use measures are required to create a more balanced transport system and reduce reliance on private vehicle travel.

This ITP seeks a step change in travel behaviour and aims to create a transport system that:

- Efficiently integrates with land use, enables multi-modal trips, and allows flexible management of the City's road space.
- Provides an efficient and highly connected movement network for pedestrians and cyclists that caters for and encourages healthy active transport travel for trips of any length.
- Is safe and efficient, accepting that a level of traffic congestion will always exist, and is planned to meet the long-term transport needs of a growing city.
- Includes a legible, well-structured arterial road network that provides efficient routes for local heavy vehicles and general traffic for intra-city and regional trips.
- Provides infrastructure and promotes behaviour that encourages patronage of public transport in a sustainable manner and creates efficient and prioritised movement for public transport and other high occupancy vehicles.
- Is supported by raised community awareness of transport alternatives to private cars, and keep them regularly updated on transport issues in Cockburn.

It is important for the ITP not simply be reactive to existing transport issues but identify progressive outcomes to avoid these issues from spreading.

An implementation plan has been developed with short, medium and long term horizons for measures noting that a significant focus is required in the short term on improving sustainable travel modes. This is to create a more balanced transport system but needs to be matched by travel demand management to discourage private vehicle use. The tabled measures include new infrastructure, behaviour change approaches and policy change.

The City will need to drive the implementation of the ITP however to be successful it will need to do so in partnership with state government agencies, businesses/ industry, major institutions, adjacent local government authorities, community groups and the wider community. It is intended that this ITP be a live document that is actively implemented and updated every three to five years.

9 Glossary

The following terms and abbreviations have been used throughout this document:

AMC	Australian Marine Complex
CoC	City of Cockburn
DoP	Department of Planning
DoT	Department of Transport
DTS	Cockburn's District Traffic Study (1012)
Fwy	Freeway
Hwy	Highway
ITP	Integrated Transport Plan
MAC	Murdoch Activity Centre
MPNP	Moving People Network Plan
MRWA	Main Roads of Western Australia
ORS	Office of Road Safety
ROM	Regional Operations Model
SouthWest Connect	Extension of Roe Highway west of Kwinana Freeway
STEM	Strategic Transport Evaluation Model
TOD	Transit Oriented Development
vpd	Vehicles per day
WAPC	Western Australian Planning Commission

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