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17 December 2012

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Dear Clinton

Fishermans Bend Due Diligence Addendum

1.1 Purpose

This addendum note has been prepared to complement the *Fishermans Bend Transport Issues and Opportunities Study* final report issued by AECOM on 16 November 2012. Its purpose is to describe the potential scale and magnitude of the transport implications of a revised development scenario prepared by Places Victoria.

This addendum should be read in conjunction with *Fishermans Bend Transport Issues and Opportunities Study* final report and is subject to the same limitations and disclaimers.

1.2 Context

The change in development scenario is summarised in the table below.

Table 1 Summary of change in scenarios

	Previous (August 2012)			Revised (November 2012)			
Scenario	Number of Dwellings	Number of Residents	Commercial / Retail Floor Space	Number of Dwellings	Number of residents	Commercial / Retail Floor Space	Total jobs
Incremental	5,000	9,750	60,000	n.s.	n.s.	n.s.	n.s.
Low	20,000	39,000	120,000	15,000	35,250	200,000	17,286
Medium	40,000	78,000	200,000	30,000	70,500	500,000	35,729
High	60,000	117,000	300,000	60,000	141,000	850,000	58,099

n.s. = not stated. Source: Places Victoria

Changes from the previous scenario include:

- An increase in the number of residents assumed per dwelling from 1.95 to 2.35
- Further details of estimated employment has been prepared

1.3 Impacts on estimated demand

The following figures show the demand by corridor, based on the revised residential and floor area values.

Figure 1 Low scenario estimates

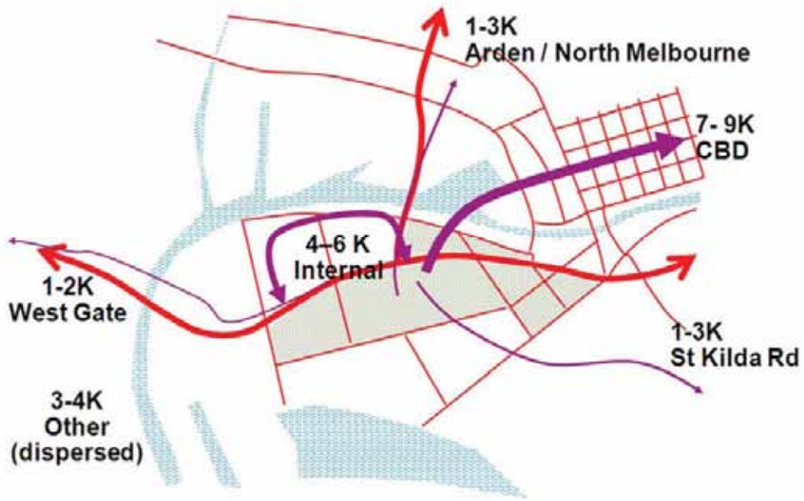


Figure 2 Medium scenario estimates

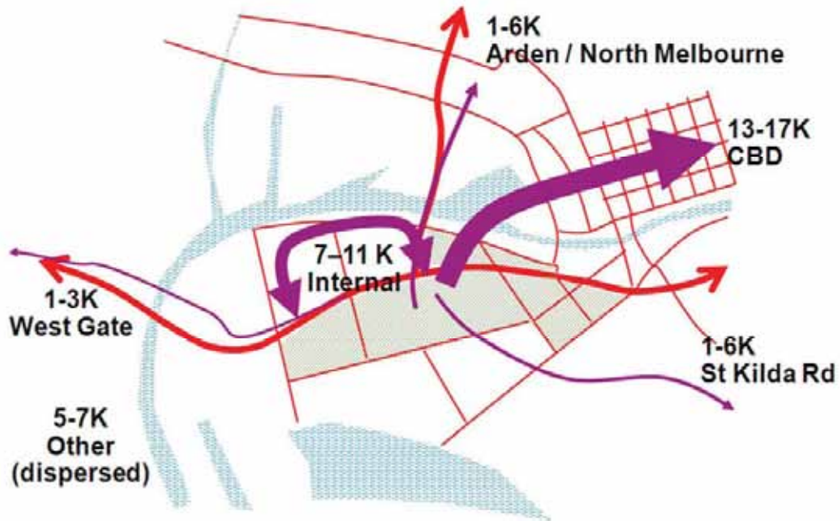
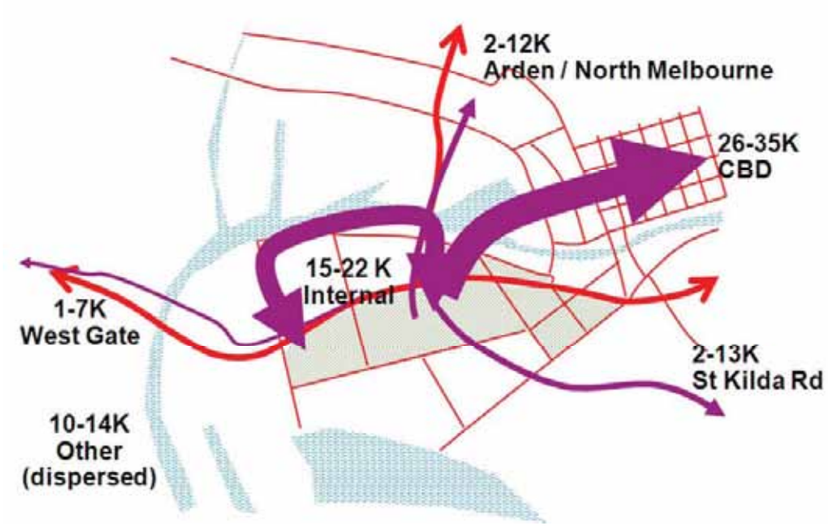


Figure 3 High scenario estimates



Scenario		Peak corridor demand (thousands of trips in peak hour)					
		Internal	St Kilda Road	Arden / North Melbourne	West Gate	CBD	Other
Low	Previous	4-6	1-4	1-3	1-2	7-10	3-4
	Revised	4-6	1-3	1-3	1-2	7-9	3-4
Medium	Previous	8-12	1-7	1-7	2-4	15-19	6-8
	Revised	7-11	1-6	1-6	1-3	13-17	5-7
High	Previous	12-18	2-11	2-10	1-5	22-29	9-12
	Revised	15-22	2-13	2-12	1-7	26-35	10-14

Findings and implications of these revised estimates are:

- There are no significant changes in the low scenario
- Marginal changes in the medium scenario increases the likelihood that higher capacity modes (e.g. light rail, bus rapid transit) will be needed on the CBD corridor
- The high scenario increases the likelihood that a heavy rail mode is needed on the CBD corridor. Also, the estimated range for the number of internal trips is now around the high end of the previous estimate. This increases the confidence that surface internal transport systems will complement a heavy rail access mode rather than become redundant.

1.4 Impacts of other aspects of the revised scenarios

1.4.1 Car parking rate

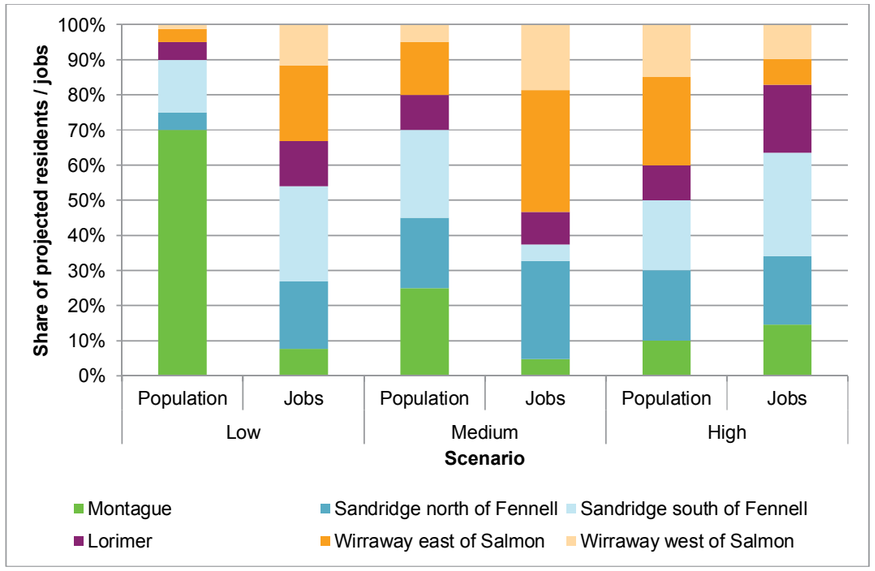
The land use scenario now assumes 0.8 car spaces per dwelling. It is noted that this is 60 percent higher than the 0.5 rate proposed by City of Port Phillip in the Montague Precinct. To mitigate the effects of car parking will require attention to design and transport strategies including:

- Resolution of building-specific issues of parking access points and conflicts with other modes. For example, it will not be appropriate to have car park accesses that cross separated tram lines and major pedestrian routes.
- Sharing daytime and night-time uses of parking spaces by residents and workers who commute.
- Detailed consideration of the role of on-street parking.

1.4.2 Localisation of population and jobs land and transport implications

The land use scenarios supplied by Places Victoria have markedly different distributions of population and jobs internally, as shown in Figure 4.

Figure 4 Population and Jobs Distribution in Fishermans Bend



It is noted that the Sandridge Precinct has accessibility advantages by being at the junction of access routes to the precinct. All scenarios place between 35 and 50 percent of population and jobs in Sandridge, with the exception of the 'low' scenario's residential distribution. Even though the Sandridge Precinct has an accessibility advantage the development scenarios do not show a higher concentration of population and jobs when compared with the other precincts.

1.5 Summary implications for the transport network

The revised land use scenarios are not considered to have implications for the transport network design. However, they increase the certainty that higher-capacity modes will be needed on the CBD corridor in particular.

The internal distribution of employment and jobs suggests that in the high scenario there will be complex internal transport patterns due to the fairly even distribution of residents and jobs across Fishermans Bend, suggesting that the whole internal transport network will need to develop in line with the emerging mixture of uses.

Yours faithfully

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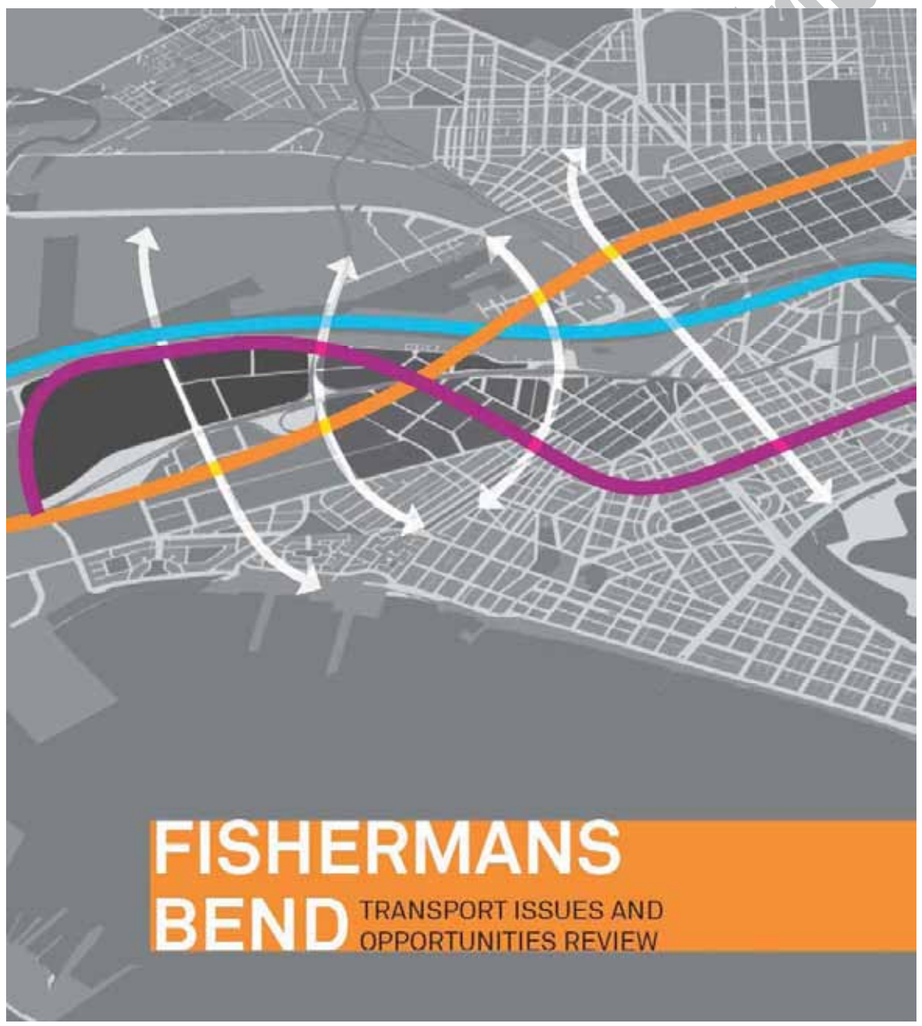
Places Victoria
16 November 2012

Fishermans Bend Transport Issues and Opportunities Study

Final Report



VOLUME 3

Fishermans Bend Transport Issues and Opportunities Study

Final Report

Prepared for

Places Victoria

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AECOM Fishermans Bend Transport Issues and Opportunities Study - Final Report

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Full List of Reference Documents

Executive Summary

In February 2012 the Minister for Planning announced that Fishermans Bend had been identified as a potential part of an expanded Central City. The Minister confirmed Fishermans Bend would be 'Australia's first inner city urban growth area' in June 2012.

As part of preliminary 'due diligence' investigations into the renewal of Fishermans Bend, Places Victoria (PV) is working with the Department of Transport (DOT) and key stakeholders to better understand the existing transport conditions, issues and opportunities related to the proposed Fishermans Bend Urban Renewal Precinct. This study is a key input to this process. Its primary output is a high level Integrated Transport Network Plan that will underpin future planning for the precinct. The network plan has been developed in partnership with stakeholders with whom broad consensus has been attained regarding the desired future for the precinct along with existing and emerging issues and opportunities.

For the purposes of this study, the Fishermans Bend Urban Renewal Area (FBURA) consists of four precincts:

- Montague Street (City of Port Phillip)
- Plummer Street / Wirraway Precinct (City of Port Phillip)
- Fennell Street / Sandridge Precinct (City of Port Phillip)
- Lorimer Street (City of Melbourne)

These precincts represent approximately 240 hectares of land on either side of the West Gate Freeway in Port Melbourne and South Melbourne. Most of the FBURA is within the City of Port Phillip. Ensuring that there are connections to the existing community and employment/leisure hubs will be an important aspect of the development of Fishermans Bend until it is sufficiently mature to cater for its own needs.

The majority of land-uses within the FBURA are industrial. Sites are owned by multiple private parties. The Montague Precinct includes smaller office industry and number of automotive premises (body shops, auction houses). Given these existing uses there is significant potential for land contamination. Currently, 9,000 people are employed in the area.

The existing transport conditions in the precinct are summarised as follows:

- The transport network, mode shares and existing trip attraction levels are generally commensurate with the existing and historical function of Fishermans Bend as primarily an industrial precinct
- The strategic and local area transport network is generally congested in neighbouring precincts during peak times with Fishermans Bend being transport constrained

There are a number of existing and emerging transport related issues which vary in scale and level of importance. The key strategic issue is that the transport network currently falls someway short in terms of providing the very good level of access by walking, cycling and public transport for both local and longer trips that are typically associated with central city type urban environments.

There is a strategic opportunity to enlarge the central city which is an economic asset of national significance by creating a new Fishermans Bend central city precinct that accommodates tens of thousands of people and jobs. If existing transport issues are not addressed satisfactorily then the potential to genuinely increase the size of the central city through the successful renewal of Fishermans Bend will be reduced.

To inform the study, four future development scenarios for Fishermans Bend were assumed by Places Victoria.

- Incremental Scenario – 5,000 dwellings and 60,000 m^2 of commercial/retail floor space
- Low Scenario – 20,000 dwellings and 120,000 m^2 of commercial/retail floor space
- Medium Scenario – 40,000 dwellings and 200,000 m^2 of commercial/retail floor space
- High Scenario – 60,000 dwellings and 300,000 m^2 of commercial/retail floor space

The overarching strategic direction for Fishermans Bend is for it to be… *"a connected and legible precinct where people's preference for getting around is by walking, cycling and public transport"*.

The strategic direction is supported by the following aims:

1) *"Design and deliver a connected, scalable and adaptable transport network that will lead high quality land use development*
2) *Influence the design of the precinct and provide a transport network that prioritises convenient, safe and accessible walking, cycling and public transport*
3) *Effectively manage freight and private vehicle movements through the area to support Melbourne's role as a significant transport and logistics hub, while protecting the amenity of Fishermans Bend"*

The strategic direction, aims and objectives have been developed to consider the core policy messages as set out within various Federal, State and Local Government planning documents. These include:

- Walking and cycling are priority modes for local trips
- Public transport is the priority mode for longer journeys
- Satisfactory provision for freight is required
- The transition of car travel as a niche mode with general traffic needs being a low priority
- Strategic traffic should be encouraged to use designated roads
- A restraint based approach should be taken to parking

During this phase of the study consensus was reached on walking, cycling and public transport mode share targets that:

- Should be set for the precinct; and
- Should be at least as ambitious as the mode share targets of the two Councils.

A series of indicative integrated network maps have been generated in response to the issues and opportunities that have been identified. They are a starting point based on the information available at the time they were produced. These networks will be refined as more extensive analysis and study work is completed. They will also be reviewed and refined further as the land use plan responds to the transport issues identified in this report.

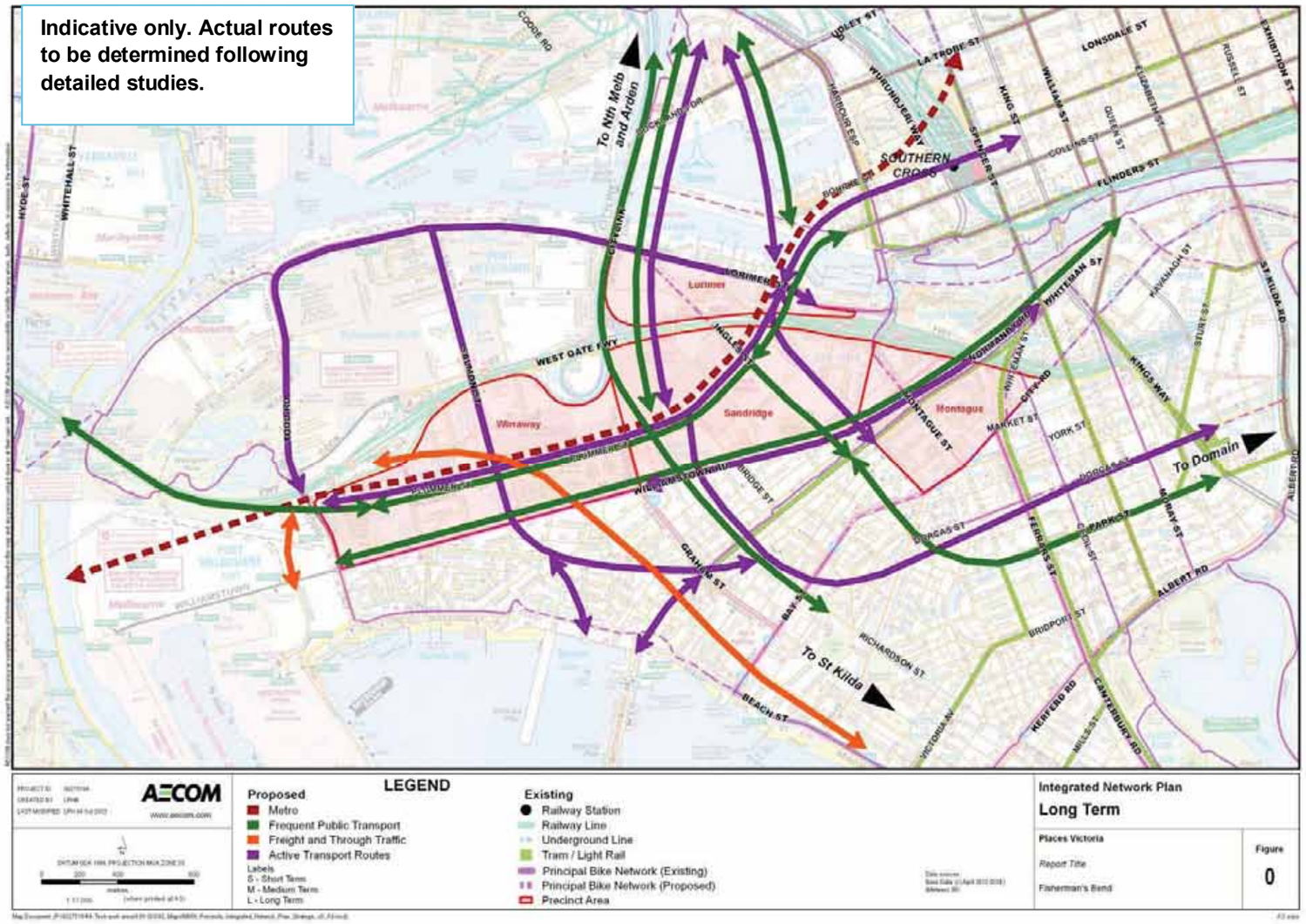
The table below provides a summary of the key features of the transport network under each of the four development scenarios required to respond to the anticipated scale of development. The network plan below is for the long term/full built out scenario which is an incremental network for the previous scenarios plus specific measures for this scenario.

Integrated Network Plan	Key Features
Short-term	- A catalyst light rail project in Plummer Street and linking with the Port Melbourne Light Rail. In the short term, Ingles/Plummer St is a suitable corridor for Light Rail Transit, for the following reasons: • The demand estimates indicate that it would provide suitable capacity • Previous investigations have shown that the link is generally feasible subject to resolving operations in the Central City • The route bisects the precinct and Light Rail Transit is a demonstrated catalyst mode • The link can be incrementally built upon to deliver future medium and long-term network links that in turn are suitable for Light Rail Transit - Delivery of a precinct-wide active transport network extending into and integrated with adjacent areas and networks. - Upgrading of established bus services e.g. on Williamstown Road.

Integrated Network Plan	Key Features
	- Maintenance of appropriate arrangements for through traffic movements between the West Gate Freeway and the south-east
Medium-term	- Expansion of the light rail service to Victoria Harbour and Domain Metro Station, resulting in high network integration and flexibility. In the medium term, Light Rail Transit is recommended for connections to Victoria Harbour and Domain for the following reasons because: • Demand estimates indicate it would provide suitable capacity • Previous investigations have shown that the link to Victoria Harbour is generally feasible, and this study has confirmed potentially feasible connections exist between South Melbourne and Fishermans Bend • The mode would further catalyse development in the Lorimer precinct and potentially other neighbouring precincts outside the study area • Use of Light Rail Transit would increase the flexibility of the overall tram network plan by creating new route options from St Kilda Road and new terminus site options. - A frequent bus service to link Arden and St Kilda via Fishermans Bend. - A frequent bus service over the West Gate Bridge
Long-term	- New river and harbour crossings in the Docklands precinct to better connect Fishermans Bend with the broader City West redevelopment area (Docklands, E-Gate and Arden-Macauley). - A metro line connecting Newport and Southern Cross via Fishermans Bend, with potential onwards extension as part of a metropolitan-scale scheme. In the long term, a Metro is identified for the following reasons: • Demand estimates indicate that it would be required, with other modes unable to move the volume identified • Its deliverability is uncertain given the high cost, but as a grade-separated solution it is less constrained by existing corridors • It would further catalyse development, along the corridor already catalysed by Light Rail Transit in the short term, creating the opportunity for a hub of development of the scale needed under the 'high' long term scenario - The metro would contribute further to the flexibility of the overall transport network by creating new network nodes (stations) that act as gateways to the inner city transit network, potentially addressing capacity issues allowing more trips to be made, balancing demand levels at a

Integrated Network Plan	Key Features
	metropolitan scale by stimulating development in the west, and is broadly consistent with separately prepared rail network plans. It is unlikely it would replace the surface Light Rail Transit lines, which would become a link primarily for shorter intra-precinct trips substituting for walking and cycling.

Indicative Long Term Integrated Network Plan



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1.0 Introduction

1.1 Background

Places Victoria (PV) is vested with facilitating and coordinating integrated, sustainable and innovative urban renewal outcomes. PV's primary focus is on precinct renewal and strategic infill sites. Its projects include Fishermans Bend, Richmond Train Station, and Wodonga; along with the continuation of precinct-wide projects at Melbourne Docklands and Dandenong. As reflected in its name, PV's role is to create great places for people to live, work and visit.

In February 2012 the Minister for Planning announced that Fishermans Bend had been identified as a potential part of an expanded Central City. The Minister confirmed Fishermans Bend would be 'Australia's first inner city urban growth area' in June 2012.

As part of preliminary 'due diligence' investigations into the renewal of Fishermans Bend, PV is working with the Department of Transport (DOT) and key stakeholders to better understand the existing transport conditions, issues and opportunities related to the proposed Fishermans Bend Urban Renewal Precinct. This study is a key input to this process.

1.2 Objective of the Study

The objective of the study is to prepare a high level Integrated Transport Network Plan that can underpin future planning for the precinct, based on a robust understanding of issues and opportunities for transport in Fishermans Bend.

1.3 Context

The Central City is the economic hub of Victoria, contributing over 30 percent of the $306 billion Gross State Product in 2010-2011 (Source: Australian Bureau of Statistics - ABS) and accounting for 43 percent of all Victorian economic growth (Source: Department of Planning and Community Development - DPCD) over the past decade. It had an annual economic output of approximately $93 billion for the 2011 financial year.

The restructuring of the Victorian economy has seen resurgence in employment and a large increase in demand for housing in the Central City, particularly in the last decade. Continuing economic change and a growing demand for knowledge services will contribute towards ongoing Central City jobs and population growth. By 2046 it is conservatively estimated that around 1.1 to 1.6 million jobs will be located in the Central City area, increasing its share to around 30 percent of all metropolitan jobs and 40 percent of all newly created jobs (Source: DPCD).

The residential population of the Central City has more than doubled in recent years and is forecast to nearly double again by 2046 (Source: DPCD). This has been driven by central jobs growth alongside broader, modern lifestyle aspirations for easy access to a wide range of services and activities. A rising local population increases the availability of the local labour for business, increasing its attractiveness as a business location and adding to the high levels of diversity and activity that make the Central City a successful as place.

The Central City has grown through a combination of intensification and geographical expansion. This outcome has been achieved via Government intervention within a process to provide a land use and transport offer which has been geared to meeting the requirements of the market.

The ability to geographically expand the Central City is one of Melbourne's key strategic advantages, enabling growth and intensification to occur while maintaining competitive rents and land values for commercial premises and affordable housing opportunities. Melbourne has a pipeline of renewal areas, one of which is Fishermans Bend. These have the potential to take on a Central City type function as areas to live, work, study and undertake other activities.

Figure 1 below shows the Fishermans Bend Precinct in the context of the Central City. Given the precinct's location and its close proximity to South Melbourne and Bay Street precincts, the development of Fishermans Bend will present ongoing challenges for the road network.

Existing truck traffic through the Port Melbourne/South Melbourne area has been of major concern to the local Councils and residents of the Bayside for several decades at least. In particular there have been longstanding concerns about trucks on Beach Road/Beaconsfield Parade and through residential streets of Port Melbourne/South Melbourne. Trucks became an issue once West Gate Bridge was close to being opened in the late 1970's. The removal of tolls on the West Gate Bridge in the early 1980's exacerbated the level of truck traffic on Beach Road.

More recently, a road link was constructed between Plummer Street and Todd Road, so that trucks could avoid using Williamstown Road in the vicinity of Todd Road. Planning for Webb Dock has been undertaken on the basis that traffic to/from Webb Dock is directed to intersections with Todd Road opposite the West Gate Freeway ramps so this traffic does not have to travel near residential areas to access the freeway.

Figure 1 Fishermans Bend Precinct in context

1.4 Fishermans Bend Urban Renewal Precinct

For the purposes of this study, the FBURA consists of four precincts:

- Montague Street (City of Port Phillip - CoPP)
- Plummer Street / Wirraway Precinct (City of Port Phillip - CoPP)
- Fennell Street / Sandridge Precinct (City of Port Phillip - CoPP)
- Lorimer Street (City of Melbourne - CoM)

These precincts (See Figure 2 below) represent approximately 240 hectares of land on either side of the West Gate Freeway in Port Melbourne and South Melbourne. Most of the FBURA is within the CoPP. Ensuring that there are connections to the existing community and employment/leisure hubs will be an important aspect of the development of Fishermans Bend until it is sufficiently mature to cater for its own needs.

Figure 2: Fishermans Bend Urban Renewal Area

As shown in Figure 2 the majority of land-uses within the FBURA are industrial. The Montague Precinct includes smaller office industry and number of automotive premises (body shops, auction houses). Given these existing uses there is significant potential for land contamination. Currently, 9,000 people are employed in the area.

To inform this study, four future development scenarios for Fishermans Bend were identified by Places Victoria.

- Incremental Scenario – 5,000 dwellings and 60,000 m^2 of commercial/retail floor space
- Low Scenario – 20,000 dwellings and 120,000 m^2 of commercial/retail floor space
- Medium Scenario – 40,000 dwellings and 200,000 m^2 of commercial/retail floor space
- High Scenario – 60,000 dwellings and 300,000 m^2 of commercial/retail floor space

On current projections, the above low, medium and high development scenarios will make Fishermans Bend one of the dominant residential precincts in the Central City. The Commercial/Retail GFA (m^2) proposed for Fishermans Bend is an order of magnitude less than that of the rest of Central City, which will have significant implications for the level of transport provision needed. This is explored further in Part 2 of this report.

1.5 Purpose and Structure of this Report

The report is structured as follows:

- Section 2.0 – Provides a summary of the strategic direction, aims and objectives identified for transport in the course of the study;
- Section 3.0 - Provides an overview of existing transport conditions at Fishermans Bend covering walking, cycling, public transport, freight, ports, marine, traffic, parking and land use. This section also identifies gaps in data about transport at Fishermans Bend and prioritises recommendations for further work;
- Section 4.0 – Presents the findings of the issues and opportunities identification stage of the study;
- Section 5.0 – presents the Short, Medium and Long Term Preliminary Integrated Transport Network Plan for the precinct for further consideration as the planning for Fishermans Bend progresses;
- Section 6.0 presents a suite of findings and recommendations arising from the study;
- Appendix A – Lists the existing conditions workshop attendees; and
- Appendix B – Full list of reference documents.

2.0 Strategic Direction, Aims and Objectives

2.1 Strategic Direction

Fishermans Bend is a connected and legible precinct where people's preference for getting around is by walking, cycling and using public transport.

2.2 Aims and Objectives

1) Design and deliver a connected, scalable and adaptable transport network that will lead high quality land use development
   - a) Transport infrastructure and services should be proactively provided to integrate with, and support, changing land use and associated transport demand (refer to land use planning).
   - b) Provide strategic transport linkages which complement existing networks and connect to metropolitan and regional destinations via existing and planned gateways.
   - c) Influence land use planning outcomes to recognise that there is limited capacity on the existing road and public transport networks for additional peak direction trips. Consider land uses that capitalise on the opportunity to utilise capacity on the network in the counter peak direction or during off peak periods.
   - d) Build on the close proximity of Fishermans Bend to water by providing high quality access corridors that form part of an active transport network to Port Phillip Bay and the Yarra River.
   - e) Integrate land uses so that any major entertainment, recreation, retail, education and employment uses are located close to high quality public transport corridors (refer to land use planning).
   - f) Influence land use planning so that the most significant public, civic and urban land uses are located at the most accessible locations on the high quality public transport network.
2) Influence the design of the precinct and provide a transport network that prioritises convenient, safe and accessible walking, cycling and public transport
   - a) Develop a hierarchy of streets for the precinct which includes priority public transport corridors and pedestrian-focused streets. Design and allocate road space to recognise the different functions across this hierarchy (also supports Aim 3).
   - b) Provide high quality walking, cycling and public transport linkages to adjoining areas, e.g. the Hoddle Grid, Southbank, Docklands, Arden Street, St Kilda, St Kilda Road, the existing Fishermans Bend employment precinct, Port Melbourne, South Melbourne, Bay Street and the West.
   - c) Minimise on-street and off-street parking provision, including specifying maximum parking rates, in order to encourage use of walking, cycling and public transport(also supports Aim 3).
   - d) Minimise the impact on the external transport network surrounding Fishermans Bend by maximising the use of walking, cycling and public transport to access the precinct.
   - e) Influence land use planning, building, and public space design by adopting the principles that avoid the need for longer distance trips and achieves an activated, permeable and people-friendly built environment.
   - f) Deliver a fine grain, legible and connected pedestrian and bicycle network that integrates with the built environment and applies best practise examples from successful precincts in Melbourne and around the world.
3) Effectively manage freight and private vehicle movements through the area to support Melbourne's role as a significant transport and logistics hub, while protecting the amenity of Fishermans Bend.
   - a) Minimise the impact on the external transport network surrounding Fishermans Bend by maximising the use of walking, cycling and public transport to access the precinct (also supports Aim 2).
   - b) Develop a hierarchy of streets for the precinct which includes arterial freight routes connecting to key destinations. The design and allocation of road space should recognise different functions across this hierarchy (also supports Aim 2).

   - c) Integrate land use planning and building design to minimise local service, delivery and waste freight within developments and associated transport movements (refer to land use planning).

3.0 Existing Conditions

3.1 Introduction

A technical review of documentation relating to transport at Fishermans Bend has been completed with the objective of establishing existing conditions and any critical gaps in information. In total 32 documents have been reviewed, including studies, policy documents, maps, concept designs, advocacy statements, guidelines and legislation. The reference documents are cited in Appendix B.

3.2 Review Methodology

As a key deliverable of the study is a high level integrated network plan, the review evaluated the previous studies in relation to the following themes, for each mode relevant to Fishermans Bend and the interaction of transport and land use:

- Walking
- Cycling
- Public Transport
- Freight, Ports and Marine
- Traffic and Parking

A series of mind maps were compiled to provide visual summaries of the key messages that have emerged from the document review process. Five mind maps were produced to cover the themes mentioned above plus land use.

A draft of these mind maps were presented to stakeholders at a workshop held on 22nd August 2012. A list of stakeholders invited to and present at the existing conditions workshop is provided in Appendix A. Stakeholders were invited to discuss the content of each mind map and make various modifications, deletions and additions where appropriate. Stakeholder inputs have been considered as the final versions of the mind maps have been developed.

3.3 Technical Review

3.3.1 Summary of Key Findings

Key findings from the technical review:

- The Minister for Planning has extended Capital City Zone to include Fishermans Bend.
- The M1 and the Yarra River are significant barriers between Fishermans Bend and other Central City precincts.
- The existing land use in the Fishermans Bend Precinct is characterised by large block sizes. This hinders permeability and is thus a barrier to a fine grained walking and cycling network.
- The existing industrial area north of the West Gate Freeway, west of CityLink (bounded by Todd Rd and Lorimer St) will continue to generate freight and through traffic. Access to this area is limited.
- Local Government policies for the inner and Central City area are comprehensive and mature. Central City Local Government Authorities have ambitious non-car travel targets
    - By 2030, 80 percent of all trips to CoM will be by non car modes - in 2009 it was 64 percent
    - By 2030, 95 percent of all trips within CoM will be by non car modes - in 2009 it was 84 percent
    - By 2030 it is anticipated that walk trip numbers will increase by 64 percent
    - CoM's Bike Plan has the following targets for 2016:
        - 50 percent increase in bicycle trips
        - 5 percent change in trips of length 2-7 kilometres from car to bicycle

    - CoPP has mode shift targets for cycling based on a 50 percent reduction in emissions by 2020
- The majority of the Fishermans Bend bicycle network is on-road and the network is relatively coarse (particularly to the west)
- Buses are the primary means of public transport access for the majority of the precinct. Current public transport is characterised by low frequency, part-time services with route variations that are confusing. The recent bus Route 606 upgrade provides a good example of a well-patronised connection into Fishermans Bend.
- A Fishermans Bend Light Rail study investigated six options for engineering development. The operational strategies use William Street or Collins Street to provide CBD access. The alternatives of Swanston Street and Spencer Street were not feasible due to existing and future capacity constraints. The Collins Street option was identified as having significant benefits.
- The Department of Transport (DOT) as a long term proposition has considered the potential of a heavy rail connection between Central Melbourne and Newport via Fishermans Bend.
- Anecdotally, the West Gate Freeway (WGF) and City Link suffer from high levels of congestion.
- Approximately 25 percent of the AM peak traffic on WGF exits at Todd Road. Of the AM Peak Westbound traffic (west of the City Link Ramp) on the WGF:
    - Around 3,000 vehicles exit at Prohasky St.
    - Around 2,800 vehicles enter the WGF westbound carriageway from Prohasky St/Todd Rd ramp.
    - Around 5,600 vehicles travel westbound on the WGF between Todd Road and Williamstown Rd (PM peak traffic levels are around 10,000 vehicles per hour).
    - Daily Total Volumes westbound on the WGF between Todd Road and Williamstown Rd are around 95,000 vehicles per day including 12,000 trucks per day.
- Major arterials including Todd Road, Lorimer Street and Williamstown Road carry around 6,000-8,000 vehicles per day; some arterials such as Montague Street and Normanby Road have higher volumes up to 28,000 vehicles per day.
- The Webb Dock rapid appraisal concluded that port related traffic is about 2 to 3 percent of total traffic, and hence is not a major cause of congestion during off peak traffic periods. However, during highly congested periods, traffic from Webb Dock is likely to significantly contribute to the level of congestion on the broader road network. The Webb Dock rapid appraisal established that during peaks or specific events, port related traffic could be as high as 14 to 16 percent. It should be noted that there is only one single ramp to service all traffic that wants to travel west. This ramp has limited capacity (The maximum capacity of the westbound ramp is around 1600-1800 vehicles per hour).
- Plummer Street is currently a preferred freight/traffic route and runs through the centre of the precinct.

3.3.2 Features of the existing transport network

The main features of the transport network serving Fishermans Bend are summarised below.

	Internal features	External features
Walking	- Limited footpaths. - Large blocks reducing walkability. - Land uses not conducive to walking.	- Highly walkable precincts, particularly to east (South Melbourne) - Walkable activity centres nearby such as Bay St - Trails and paths developing along river frontage and bayside
Cycling	- Indirect routes to the north and west. - Some network gaps exist. For example there is no link from Yarra's Edge to Docklands. - The majority of the Fishermans Bend cycle network has basic line marking treatments and no on-road separation. - The cycle network is relatively coarse (particularly to the west). - Significant heavy good vehicle movements in the area serving as barriers for cycling (safety).	- Westgate Punt is a network node - Bay Trail and Yarra River trail offer strategic connections
Public Transport	- Tram routes 109, 96 and 112 run close to the eastern extent of the precinct. - Bus routes 232, 235, 237, 238 and 606 that run around and through the precinct. - Bus service levels are relatively low and some routes are indirect and confusing. - Existing bus and tram stops that are not well served by the footpath network.	- Werribee line located about 3km west of site. Southern Cross is nearest major rail node. - Dense grid of frequent tram services east and north-east of the precinct.
Traffic and Parking	- Existing streets are wide. - Traffic levels are in the range of 6,000 – 8,000 movements per day per direction. This is at the higher end for the local road network. - The West Gate Freeway and Montague Street are much more intensively used than any other major road in the precinct. - There is a through movement between the West Gate Freeway and the south-eastern suburbs, predominately along Graham Street. - At-grade and on-street parking is abundant.	- The West Gate Freeway and Western Link (Bolte Bridge) are key parts of the metropolitan transport network. - Kingsway provides a connection to the south-eastern suburbs via the West Gate Freeway.
Freight	- Existing land uses generate freight movements and surrounding land uses have important freight requirements - Plummer Street is a designated freight route	- Webb Dock located west of the precinct - The West Gate Freeway is a Principal Freight Route and divides the renewal area.

3.3.3 Policy Review

Table 1 summarises the review of existing policies relevant to Fishermans Bend Urban Renewal Area.

Table 1 Existing Policies

Theme	Policy	Document Reference
Walking	- Walking is a priority mode. - Inner/Central Melbourne has high levels of walking.	- CoPP Walk Plan - CoPP Precinct Plans - Montague Street Precinct Structure Plan - CoPP Sustainable Transport Strategy - Access Docklands - A Strategy for the Docklands Transport Network - Our Cities, Our Future – A National Urban Policy - Transport Integration Act 2010 - Public Transport Guidelines for Land Use and Development - State Planning Policy Framework - Inner Melbourne Action Plan
Cycling	- Cycling is a priority mode. - Plans must respond to the needs of cyclists when planning streets and urban development.	- CoM MSS - CoPP Bike Plan - CoPP MSS - CoM Transport Strategy - Planning for Future Growth 2012 - CoPP Precinct Plans - Montague Street Precinct Structure Plan - CoPP Sustainable Transport Strategy - Access Docklands - A Strategy for the Docklands Transport Network
Public Transport	- Public transport is defined as a priority mode. - Supports the active encouragement of public transport use.	- CoM Transport Strategy - Planning for Future Growth 2012 - CoPP Sustainable Transport Strategy
Freight, Ports and Marine	- External freight movements are likely to continue and will therefore need to be accommodated - Webb Dock rail link included in some policies, but no commitment to deliver	- Fishermans Bend Planning and Economic Development Strategy, Chaarter Keck Cramer Hansen Partnership, November 2010 - Dynon Port Precinct Planning Final Report V9, DOT
Traffic and Parking	- The role of cars should be reduced to more of a niche role and the need to accommodate traffic should not generally be a key driver when planning for access and mobility. - Strategic road connectivity should be provided by directing traffic to the appropriate roads (primarily designated Preferred Traffic Routes). - Traffic engineering treatments should be introduced so that through traffic does not use local roads. - Consideration should be given to all modes and their relative level of importance in the context of policies	- CoM MSS - CoPP MSS - CoM Transport Strategy - Planning for Future Growth 2012 - CoPP Precinct Plans - Montague Street Precinct Structure Plan - CoPP Sustainable Transport Strategy - Access Docklands - A Strategy for the Docklands Transport Network - Our Cities, Our Future – A National Urban Policy - Transport Integration Act 2010 - Public Transport Guidelines for Land Use and Development

Theme	Policy	Document Reference
	when planning street environments. - More holistic, asset management based approaches are required when looking at Melbourne's road corridors to meet existing and future transport needs - Mixed traffic has the lowest level of priority within the Central City policy context - Parking restraint is generally advocated in the policy context	- State Planning Policy Framework - Inner Melbourne Action Plan - Parking Plan Towards 2010 - VicRoads SmartRoads

For the remainder of this chapter, an assessment of the existing conditions is provided for each individually theme, as described in Section 2.2 above.

3.3.4 Walking

Existing walking facilities are characteristic of a largely industrial precinct with:

- Poor internal connectivity levels in places
- Non-existent footpaths in places
- Large block sizes that hinder permeability
- No existing Pedestrian Priority Network (PPN) routes in the Fishermans Bend Precinct (See Figure 3 below).
- Wide roads are barriers to crossing movements
- Traffic speeds
- Destinations are limited
- The Montague Precinct was also excluded from the CoPP pedestrian counts because the PPN through this area was delineated based on future conditions. It was considered that counts through this area would not provide any insight into the alignment of the PPN.
- No SmartRoads pedestrian priority areas in Fishermans Bend

There is currently minimal pedestrian activity in the Fishermans Bend Precinct however, in similar recently renewed Central City areas such as neighbouring Southbank and Docklands precincts, 49% and 34% of residents walk to work respectively. Some analysis pointed to its geographical proximity to the major employment hub of the CBD and the easy access to these destinations, including numerous bridge crossings of the river in the case of Southbank.

Pedestrians account for 6 percent of trips to the CoM and 80 percent of all trips within the municipality. Current walking patterns in the Fishermans Bend Precinct is localised and generally limited to weekdays as workers walk to cafes along Lorimer Rd and around the Montague precinct.

Figure 3 Existing Priority Pedestrian Network

Reference Documents (See Appendix B for Full List)

1) Stakeholder workshop
2) Parking Plan Towards 2010 – CoPP
3) Network Operating Plans, VicRoads
4) Declared network 2012, VicRoads
5) Rapid Appraisal and Review of Webb Dock Traffic Impacts, VicRoads
6) Fishermans Bend Light Rail Study, PTV/AECOM
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13) Docklands Transport Strategy - Access Docklands, CoM/PV
14) Our Cities, Our Future – A National Urban Policy, Federal Gov
15) Transport Integration Act 2010, DOT
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17) State Planning Policy Framework, DPCD
18) Inner Melbourne Action Plan (IMAP),
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29) Dynon Port Precinct Road Network Assessment, DOT/VicRoads
30) Planning overlays 2012, DPCD
31) Project Control Group - Constitution and Terms of Reference, DPCD
32) East West Needs Assessment , DOT

3.3.5 Cycling

Existing cycling facilities are characteristic of a largely industrial precinct with:

- Indirect routes to the north and west
- Some network gaps exist (e.g. Yarra's Edge to Docklands)
- The majority of the Fishermans Bend cycle network is on-road
- The cycle network is relatively coarse (particularly to the west)
- Significant heavy goods vehicle movements in the area serving as barriers for cycling (safety)
- Traffic speeds

Fishermans Bend was not included in the CoPP cycle survey, so there is no existing data on bicycle ridership for the precinct.

Feedback from stakeholders suggests that commuters cyclists destined for the CBD use Westgate Punt and Lorimer St ; recreational cycling occurs (through informal bike links) between Westgate Punt and the beach. The upgrade of the Westgate Punt services has increased cycling in the area. Since October 2011, when the upgraded operations commenced, to October 2012, 17000 tickets have been sold (DOT). 94 percent of patrons have been cyclists (Bicycle Network Victoria website).

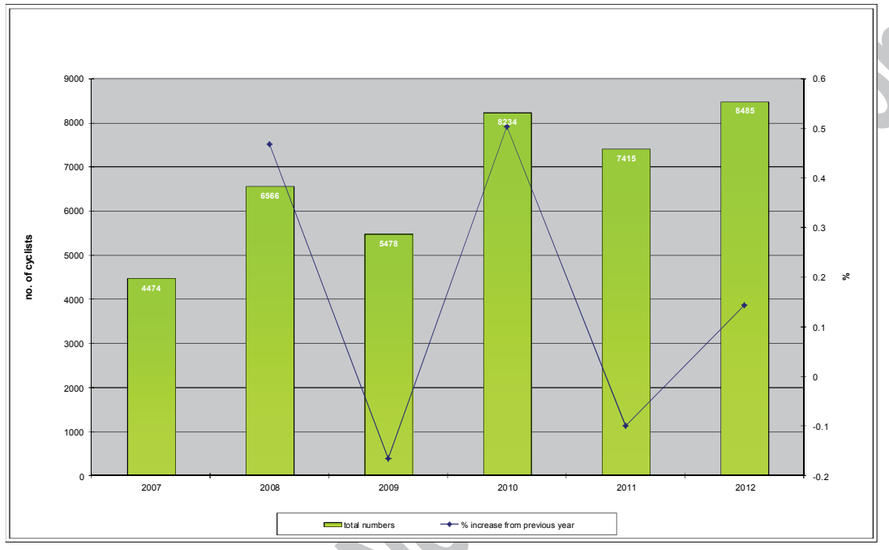
Similarly, the CoPP Super Tuesday Counts (See Figure 5) shows an increase in the number of cyclists from 2011 to 2012 and a gradual increase between 2007 and 2012. It should be noted that this is a 2-hr count on one day of the year, covering primarily commuter cycling levels as an indicator for bike ridership more broadly across the municipality.

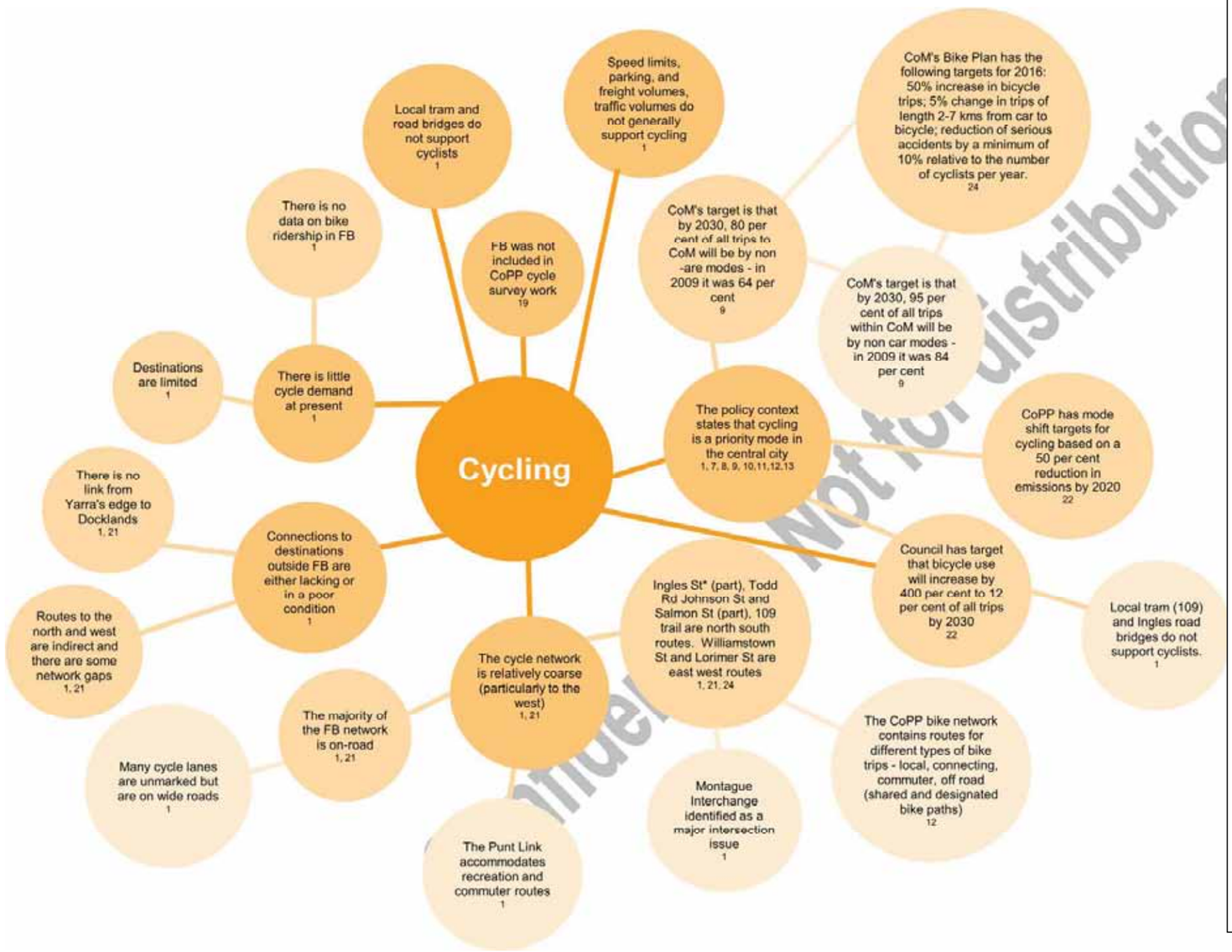
Even though we do not have cycling data specific for the FBURA, both the Westgate Punt Upgrade and the Super Tuesday Counts show an increase in cycling flows in recent years. Bike riding must be planned for as part of the development of the precinct.

Figure 4 shows the surrounding bicycle network.

Figure 4 Existing Bicycle Network

Figure 5 CoPP Super Tuesday Counts





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32) East West Needs Assessment , DOT

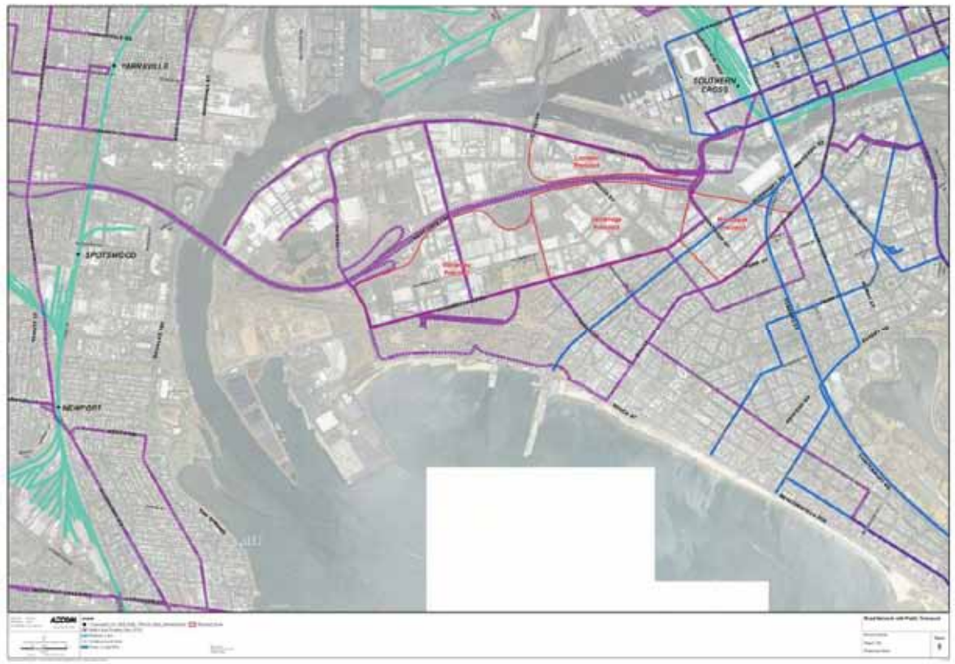
3.3.6 Public Transport

Figure 6 shows the existing public transport network serving Fishermans Bend Precinct. The precinct is served by:

- Tram routes 109, 96 and 112 that run close to the eastern extent of the precinct
- Bus routes 232, 235, 237, 238 and 606 that run around and through the precinct
- The nearest rail services are the Werribee Train Line, about 3km (as the crow flies) from the Western extent of the precinct, and the City Loop at Southern Cross, about 1km north-east of the precinct
- Existing public transport connections can be a long way from FBURA, for example more than 1km of walking to access the tram network.

Public transport access, mode share and linkages with other Central City, South Melbourne and Bay Street Precincts are relatively poor but commensurate with existing land uses and historical function. Buses are the primary means of public transport access for the majority of the precinct. Current public transport is characterised by low frequency, part-time services with route variations that are confusing.

Figure 6 Existing Public Transport Network



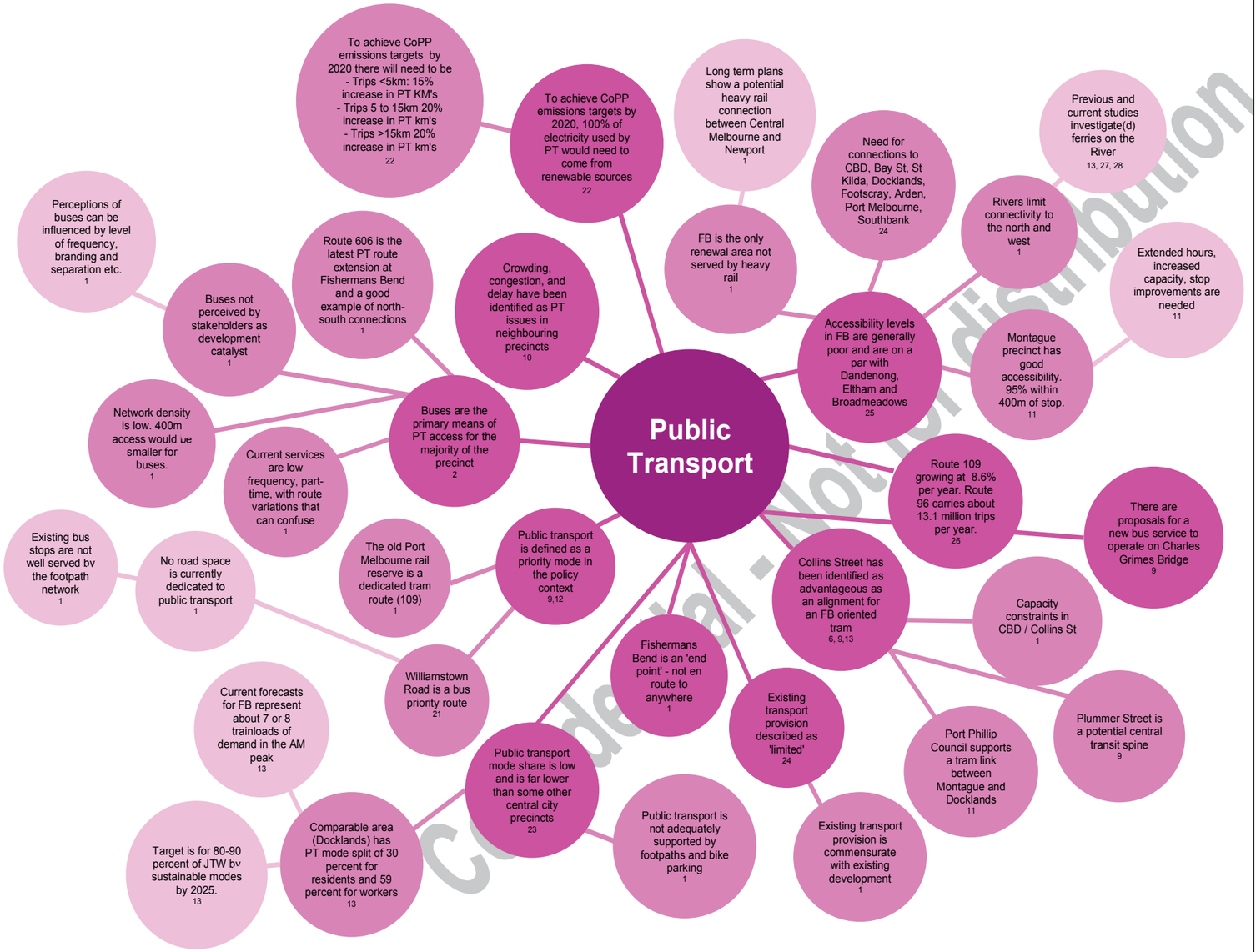
Other characteristics of the existing public transport network include:

- Existing bus and tram stops that are not well served by the footpath network.
- Designation of Williamstown Road as a bus priority route.
- Public transport strategic network accessibility levels in the Fishermans Bend precinct are generally poor and are on a par with Dandenong, Eltham and Broadmeadows (based on an RMIT metropolitan-scale analysis of accessibility).
- The recent Route 606 extension provides a good example of north-south connections into Fishermans Bend.

Route 109 grew patronage by 19.5 percent between 2002 and 2003 (5 percent of this growth was attributed to the Box Hill Extension). In 6 years between 2002 and 2008 it achieved an average annual growth of 8.6 percent. Population growth in Port Melbourne does account for the recent success of the 109, but the major reasons seem to be upgraded stop infrastructure and high capacity low floor trams. Similarly, Melbourne's most popular tram route, the Route 96 carries about 13.1 million trips per year.

A survey carried out by the CoPP of its residents revealed that a significant number (47 percent) of tram users "disagreed" that they were able to travel comfortably on trams. When they looked more closely at this issue a clear consensus emerged that more capacity (larger trams) were somewhat or very important during peak periods. Overall, 9 of 10 respondents voiced this view.Amongst residents from St Kilda or St Kilda Rd and amongst fulltime workers the view was even stronger.

For the neighbouring Docklands precinct, the public rransport mode share for commuters is 59 percent and 30 percent for residential travel. The Docklands and Southbank Precincts have a range of public transport options with good connectivity to Central Business District (CBD) employment and while crowded and congested during peak periods they are frequent services on a dense network, which is currently not the case for the FBURA.



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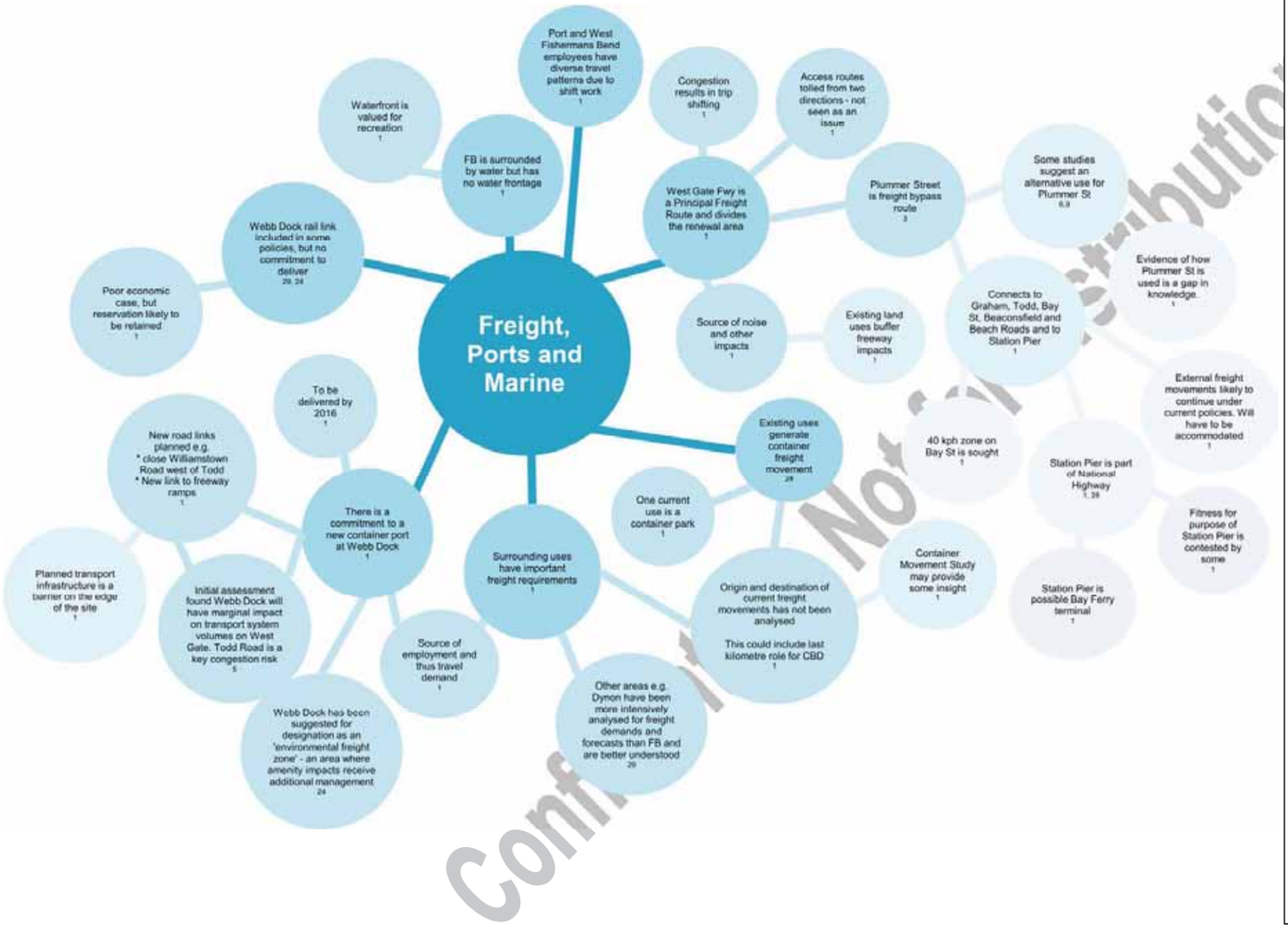
3.3.7 Freight, Ports and Marine

There is a Government commitment to provide a new container port at Webb Dock. The associated new infrastructure will have both positive and negative impacts on the development area at Fishermans Bend. An initial assessment of Webb Dock based on the existing Fishermans Bend industry and land-uses (without FBURA) was undertaken. The initial assessment by VicRoads found that Webb Dock will have a marginal impact on transport system volumes on West Gate but Todd Road is a key congestion risk.

The document review identified the following key existing conditions;

- The West Gate Freeway is a Principal Freight Route and divides the renewal area.
- Existing land uses generate freight movements and surrounding land uses have important freight requirements.
- Fishermans Bend is surrounded by water but has no water frontage. There is an historic water course through the precinct but the exact location is unknown and has not been mapped.

The existing freight task (port and other freight) is not well understood due to a lack of data. This includes origin, destination and route data for current freight movements and how Plummer Street is being used. External freight movements are likely to continue and thus the urgent need for freight and local access vehicles to be understood as the planning progresses.



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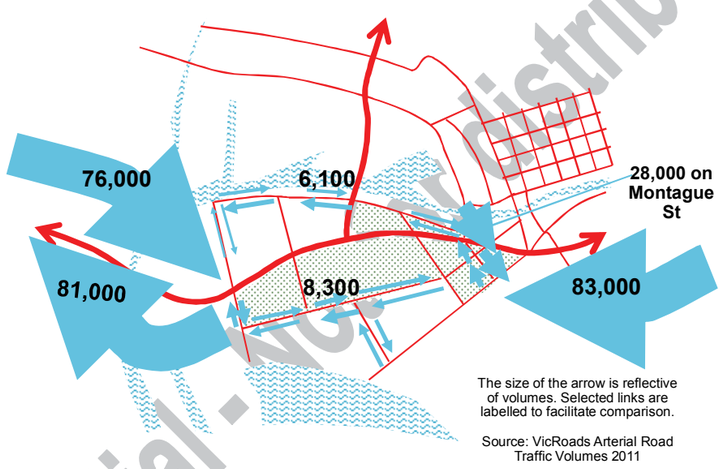
3.3.8 Traffic and Parking

Fishermans Bend is a peninsula and is transport constrained. It is surrounded on three sides by water and the local strategic transport network (including the West Gate Freeway) is generally already heavily used. Plummer Street is currently a preferred traffic/freight route because it is located north of residential areas, which are located on the southern side of Williamstown Road. Capacity issues also currently exist for the Montague Street, Normanby Road, City Road, Kings Way, Lorimer Street and Todd Road.

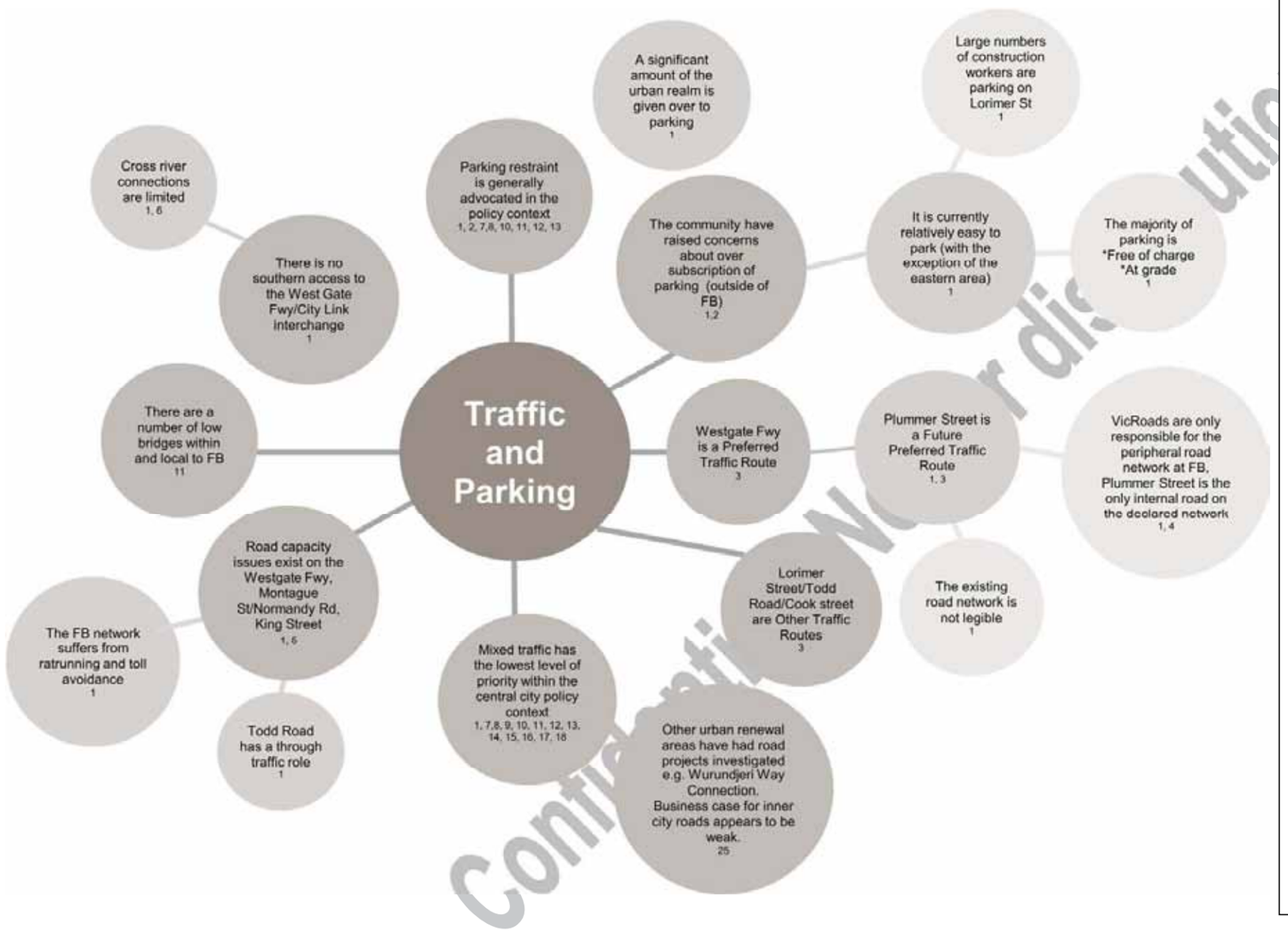
VicRoads SCATS data indicates that there are higher volumes of traffic on the West Gate Freeway (and its associated ramps /access roads), and Montague Street. Most of the local road network has comparatively lower volumes.

Figure 7 Existing Fishermans Bend Volumes (Indicative Only)



Traffic and parking existing conditions are also characterised by the following:

- There is a through movement between the West Gate Freeway and the south-eastern suburbs, predominately along Graham Street.
- Anecdotally other parts of the road network are used by through traffic, including freight, travelling from/to the South East (SE) and Westgate Freeway via Beaconsfield Parade and through Fishermans Bend. It is not "rat-running" because the existing network supports this through movement as it is the most direct route for those travelling to/from the SE.
- There is no southern access to the West Gate Freeway/City Link interchange.
- Cross river connections are limited.
- Todd Road has a through traffic role.
- There are a number of low narrow bridges within and local to Fishermans Bend.
- A significant amount of the urban realm is given over to parking.
- The majority of parking is free of charge and at-grade.
- VicRoads are only responsible for the peripheral road network (Williamstown Road, Todd Road, West Gate Freeway, Sections of Graham and Prohasky Streets) at Fishermans Bend, Plummer Street is the only internal road on the declared network.
- It is currently relatively easy to park (with the exception of the Montague Precinct).
- There is a lack of data on traffic and traffic patterns.



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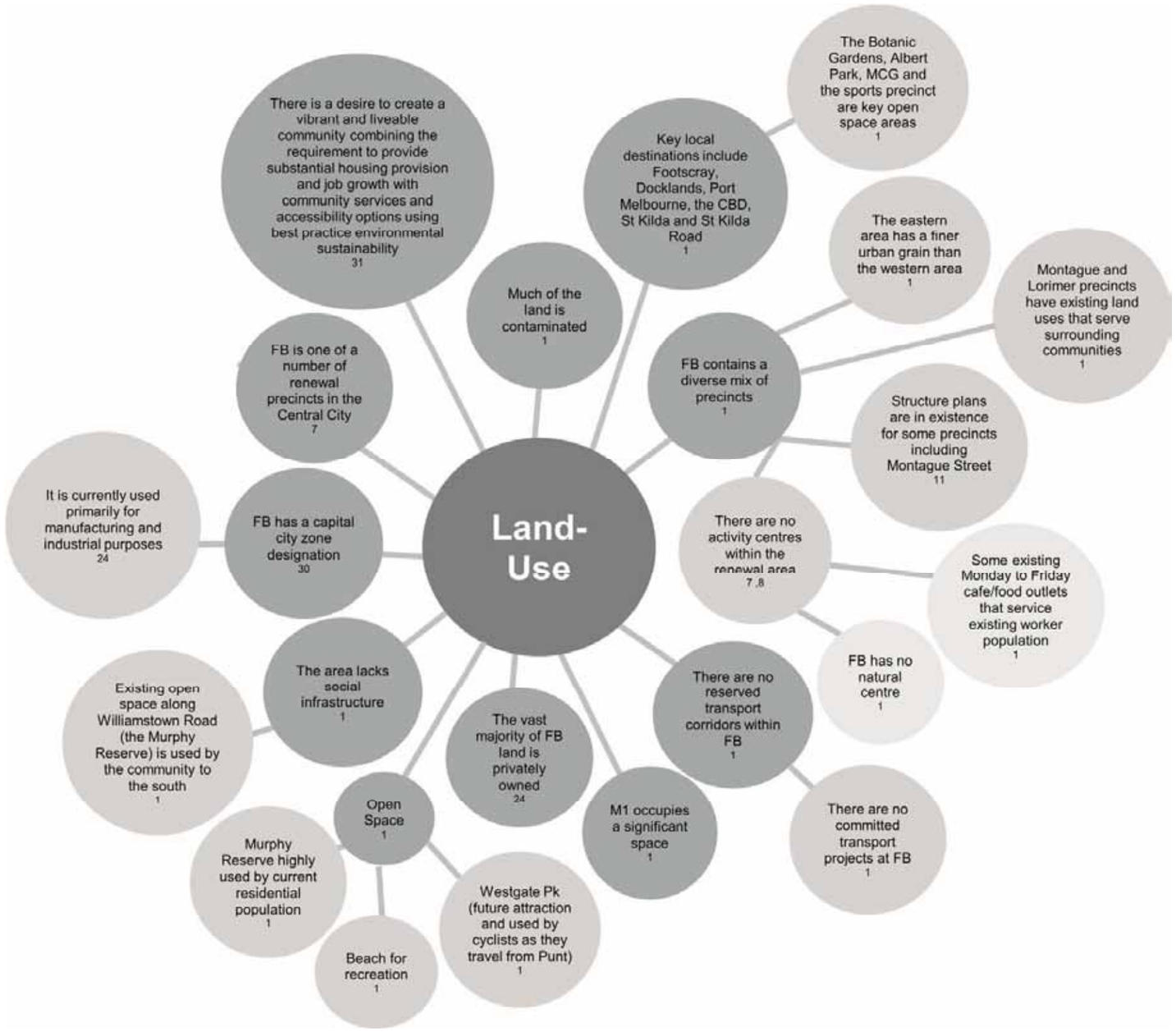
3.3.9 Land Use

Although land use falls outside our scope of works and is being addressed by another working group within Government, we recognise that land use and transport is intrinsically linked. We have therefore captured all stakeholder comments at the workshop which is related to land use existing conditions in the mind map on the next page.



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3.4 Recommendations for Gap Filling Studies

3.4.1 Data Gaps

The following high priority data gaps have been identified:

- Current freight movements (for both port and other freight) including Origin-Destinations, routes, types of vehicles, peak weekday and weekend periods (freight surveys are available for 2007 and 2009).
- Existing traffic conditions particularly the levels of through traffic, volume to capacity analysis, levels of congestion during the peak period for major arterials, key intersections and gateways to the Fishermans Bend Precinct.
- Existing levels of cycling within and through the precinct including origin-destinations, routes, purpose and peak period volumes.
- Modelling to better understand the future transport task, particularly the interface of Fishermans Bend with the other Central City Precincts (Docklands, Southbank, Dynon and Webb Dock etc).

3.4.2 Recommended Gap Filling Studies

Table 2 shows a recommended prioritised list of gap filling studies that needs to be addressed as planning work for the Fishermans Bend Precinct progresses:

Table 2 Recommended Gap Filling Studies

Theme	Gap	Priority	Comment/ Recommendations
Walking and Cycling	Demand data for existing walking and cycling accessing the precinct	Low	Include walking and cycling in future survey work
	Origins-destinations, time of day and trip purpose	Low	Given the significant change in land use this is not a priority. However if intercept surveys are commissioned then walking and cycling should be included.
	Determine existing walking and cycling rates	Low	Include walking and cycling in future survey work
Public Transport	Boarding and alighting within the precinct of Buses and Trams	Low	Analysis needs to be undertaken to understand existing use patterns. Data can be sourced from PTV.
Freight, Ports and Marine	Freight movement patterns (ODs, time of day, weekends etc)	High	Cordon Intercept or Number Plate Recognition Surveys along gateways to/from the precinct.
	Types of vehicles being used (LGVs, HGVs etc)	High	Cordon count/video surveys along key freight routes (Plummer Street, Williamstown Road and Todd Road – also Graham and Montague Rds).
Traffic and Parking	Traffic data is sparse	High	Traffic counts (tubes or videos) along major arterials (gateways) including Montague Street and Normanby Road.
	Traffic counts at key intersections/interchanges - Todd Road, Montague Street and Graham Street	High	Queue length and turning counts at key intersections
	Parking counts (on and off-street)	Low	Parking requirements will change for future land uses

Theme	Gap	Priority	Comment/ Recommendations
	Parking Occupancy levels	Low	Parking requirements will change for future land uses
Other	Multi-modal modelling of Fishermans Bend particularly interfaces with other precincts (E-Gate, Webb Dock etc)	Low*	Important requirement going forward to provide an evidence-base for testing the impact of land-use changes on the transport network. *It is prudent to commence this early given the lead time to get models validated to meet VicRoads and DOT requirements. Also, modelling requirements should inform the data collection/survey specification.*
	Accessibility modelling and analysis	Low*	Important requirement going forward to provide an evidence-base to assist with justifying transport improvements.
	Interfacing with other technical studies	Low*	Utilities to inform where flooding is worse in certain areas than others, so transport routes can consider this as the planning progresses.

* for the due diligence phase BUT high for subsequent phases of planning and approvals

4.0 Issues and Opportunities

4.1 Introduction

Following the mapping of existing conditions, a structured process of capturing issues and opportunities was undertaken. This stage of the study allowed for a range of possible solutions and approaches to be canvassed. The output is a series of mind maps that captures the sometimes complex interplay of issues and opportunities affecting each component of the integrated transport system needed in Fishermans Bend.

4.2 Methodology

The approach to capturing issues and opportunities made use of the foundation established by mind-mapping the existing conditions.

A set of mind-maps that reflected the key thematic issues and opportunities already raised during the course of the study were prepared. In facilitated discussions additional issues and opportunities, and the links between them, were identified and recorded (See Mind Maps show in Figures 8 – 13 below).

4.3 Summary of Key Issues and Opportunities

The table below summarised the key issues and opportunities that emerged.

Table 3 Key Issues and opportunities

Issues	Opportunities
Walking	
- Fishermans Bend is not currently a pleasant place to walk - Fishermans Bend has wide roads and lacks a sense of enclosure e.g. shelter, seating - The footpath network is currently patchy - Fishermans Bend lacks activated frontages - Bridges are narrow and generally unappealing to pedestrians - The freeway and river provide barriers to walking to other precincts - Freight movement is not conducive to creating a pedestrian orientated domain - The Normanby Road/Clarendon Street intersection is not attractive to pedestrians - Large land parcels are not at the pedestrian scale	- Provision of a good quality pedestrian network to support use of public transport - Potential Fishermans Bend gateway at Normanby Road/ Clarendon Street intersection with links to the CBD and along the river - Encourage recreational uses and open space - Scale of development for amenity and permeability - Reallocation and/or redesign of road space - Low speed and traffic volumes
Cycling	
- Cyclists do not like using roads with large freight volumes - There is a conflict between cyclists and pedestrians along the waterfront - River paths are not continuous - There are various network gaps such as the Yarra's Edge to Docklands - The Normanby Road/Clarendon Street intersection is not attractive to cyclists	- Fishermans Bend is flat - The precinct is small enough that it can be cycled quickly - Potential Fishermans Bend gateway at Normanby Road/ Clarendon Street intersection with links to the CBD, along the river and to a lesser extent towards the South. - Segregation and priority - There is a need for a connected network that may include new routes - Exemplar cycling facilities adopting best practice guidelines (create/identify nodal points such as bike parking at PT points/intersections) - Early delivery is affordable and feasible

Issues	Opportunities
Traffic and Parking	
- A freight route/preferred traffic route (Plummer Street) runs through the heart of the precinct - The road layout is not legible - Many of the surrounding roads are congested, where will Fishermans Bend traffic go? - Ingles Street could be a bottleneck as it is the only 'internal road' connecting the Lorimer Street precinct with the rest of Fishermans Bend. - Development model often requires parking	- Manage and minimise demand using a wide range of policy tools (e.g. TDM, Planning Scheme and/or exemplar new thinking) - Must provide some level of vehicular access including service and emergency vehicles
Freight	
- There are major data gaps for freight - New development means growth of the local and strategic freight task – how can this be best accommodated? - Webb Dock creates interface and noise, light impact issues - There is no direct access off the Bolte Bridge	- Manage development program to reduce freight generation - Define and manage freight network - Last mile / demand reduction strategies e.g. new approaches to waste collection - In anticipation of the final relocation of trade from Webb Dock, plans will be in place for the extension of the FBURA into the dock areas, perhaps retaining space for a major cruise shipping facility. These strategic opportunities are focussed from 2050.
Public Transport	
- No road space currently allocated to public transport - Buses have low frequencies , do not operate on a full time basis and are confusing - The area lacks public transport density - Fishermans Bend is a peninsula, there is no demand to the south, access to the west is difficult - Buses are not perceived as a catalyst for development - Bus services are perceived poorly - The port and river complicate access options at Fishermans Bend - Some of these networks are already at capacity	- Public transport has the potential to shape development outcomes at Fishermans Bend - A potential Metro Line provides an opportunity to provide a transport hub at Fishermans Bend - New PT could reduce demand on the Westgate Bridge - Tie into the existing network - Link to key precincts including the Hoddle Grid, Southbank, Docklands, Port Melbourne, Arden Street, St Kilda Road and St Kilda. - Link to the South and provide better access (northern edge of existing Port Melbourne/Garden City and Beacon Cove and South Melbourne) - Levels of service that it is required early to give confidence to developers and assist in meeting traffic and parking aims - Service simplification - Address existing problems with Fishermans Bend projects - Agreement was on the need to build scalable public transport infrastructure which would act as a catalyst for development and which would give developers certainty to progress with developments - Quality of trip to and from public transport stops - Provide interchanges to facilitate transport choice
Land Use	
- The vast majority of Fishermans Bend land is predominately private ownership - Fishermans Bend has no natural centre	- There is an opportunity to provide a mix of land uses - Land use planning can provide effective buffers between uses including Webb Dock and traffic noise

Issues	Opportunities
	mitigation from the West Gate Freeway. - The eastern area of the precinct has a finer urban grain than the western area - Create permeable areas - Land use mix for reduced peak hour demand and local activity

4.3.1 The role of mode share targets

During the Strategic Direction, Aims and Objectives phase of the study, mode share targets were considered. There was further discussion on mode share targets during the Issues and Opportunities phase. The consensus in the workshop was that:

- Mode share targets should be set for the precinct; and
- Should be at least as ambitious as the mode share targets of the two Councils.

Existing targets are summarised below.

Table 4 Summary of mode share targets of Cities of Melbourne and Port Phillip

Transport task	Council	Mode	Target	Timeframe
Internal to City of Melbourne	CoM	Non-car	95%	2030
To/from City of Melbourne	CoM	Non-car	80%	2030
Residents' travel	CoPP	Private vehicle	53%	2020
Residents' travel	CoPP	Public transport	28%	2020
Residents' travel	CoPP	Walking and cycling	20%	2020
Share of trips of length 2-7 km	CoM	Bicycle	5% increase from car	2016

4.3.2 Mode specific mind maps

The following pages show the six mind maps prepared during this stage of the study.

On these mind maps:

- Green bordered rectangles represent opportunities
- Red bordered circles represent issues

Figure 8 Walking Issues and Opportunities Mind Map

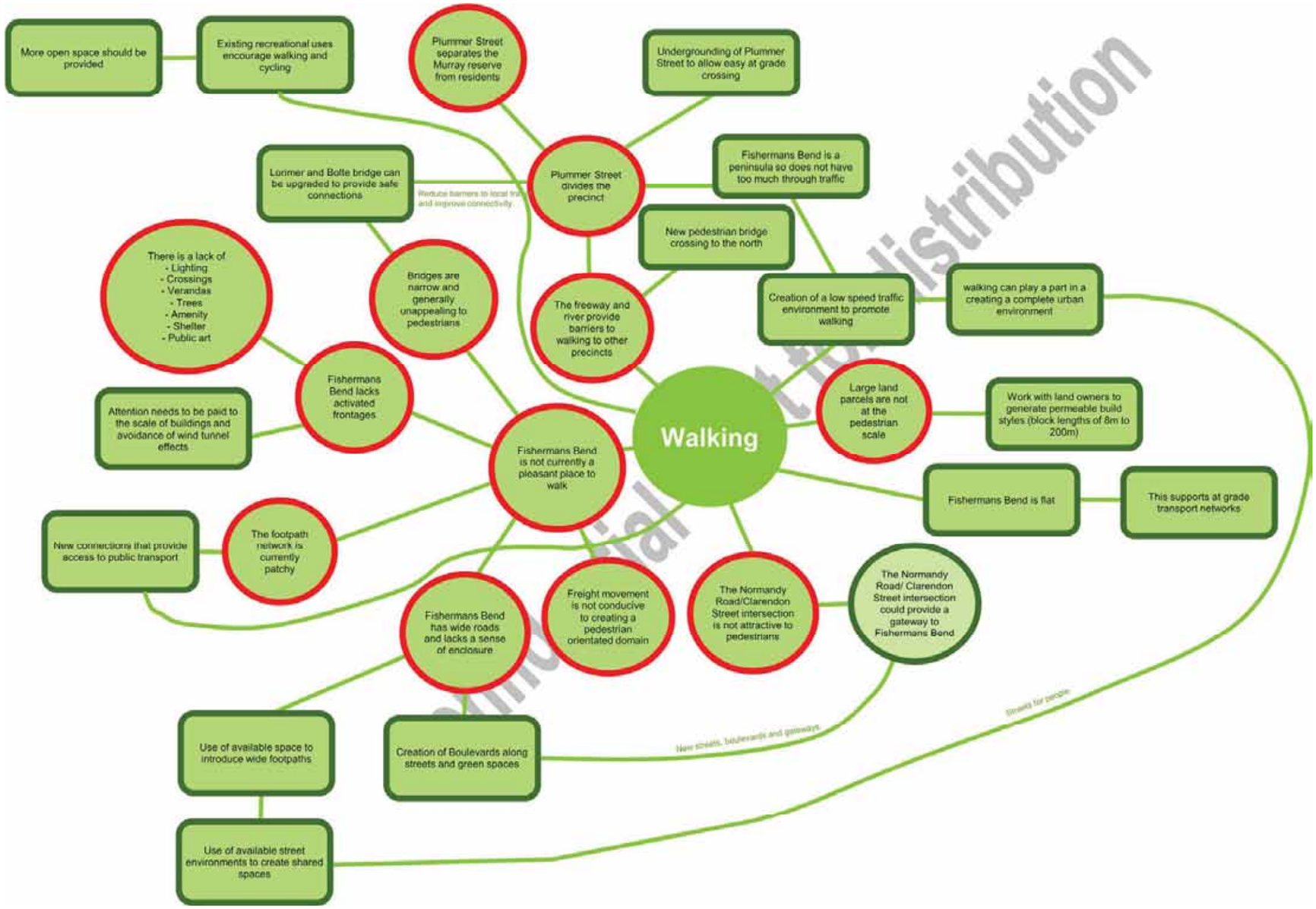

Figure 9 Cycling Issues and Opportunities mind map

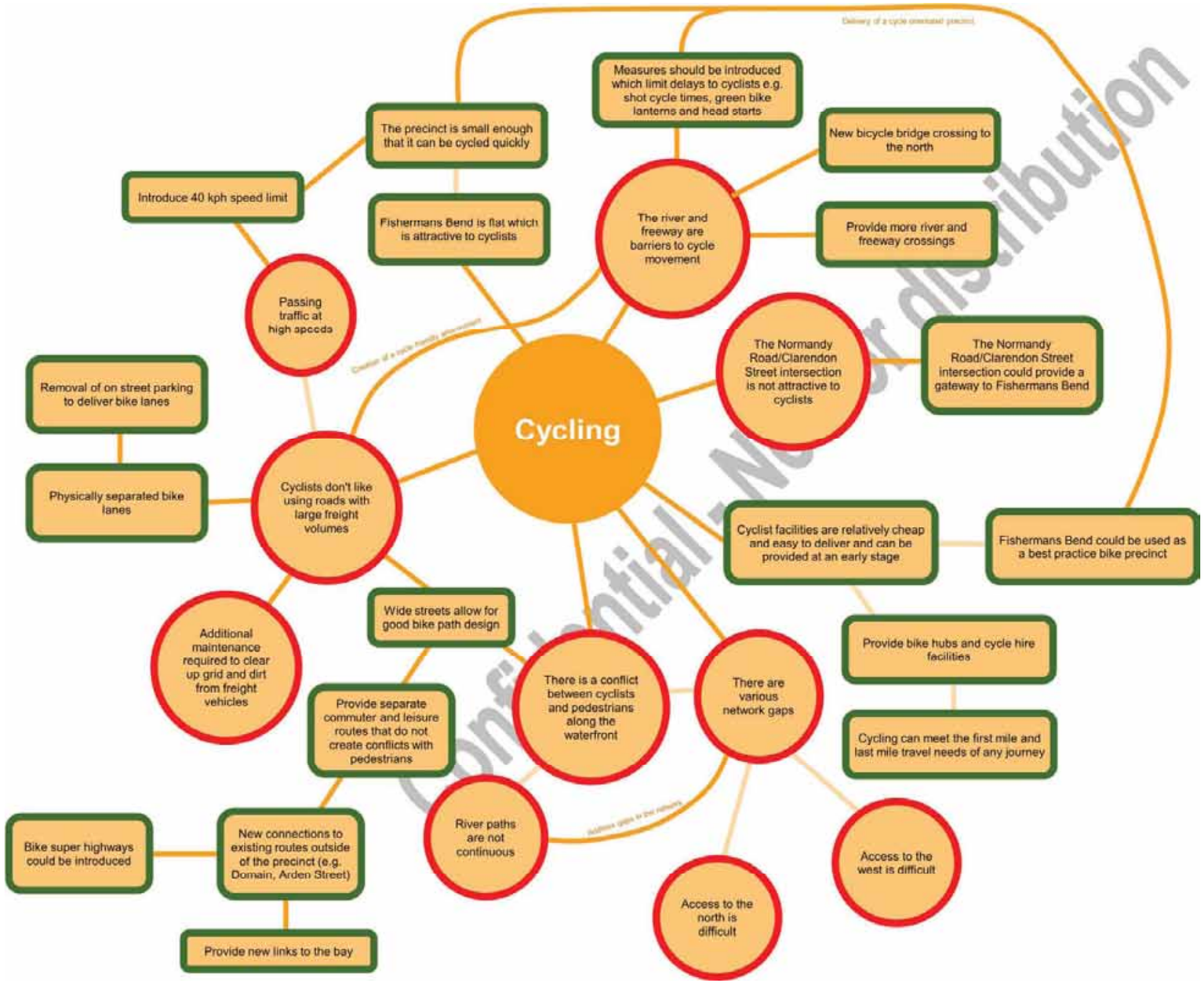

Figure 10 Public transport Issues and Opportunities mind map

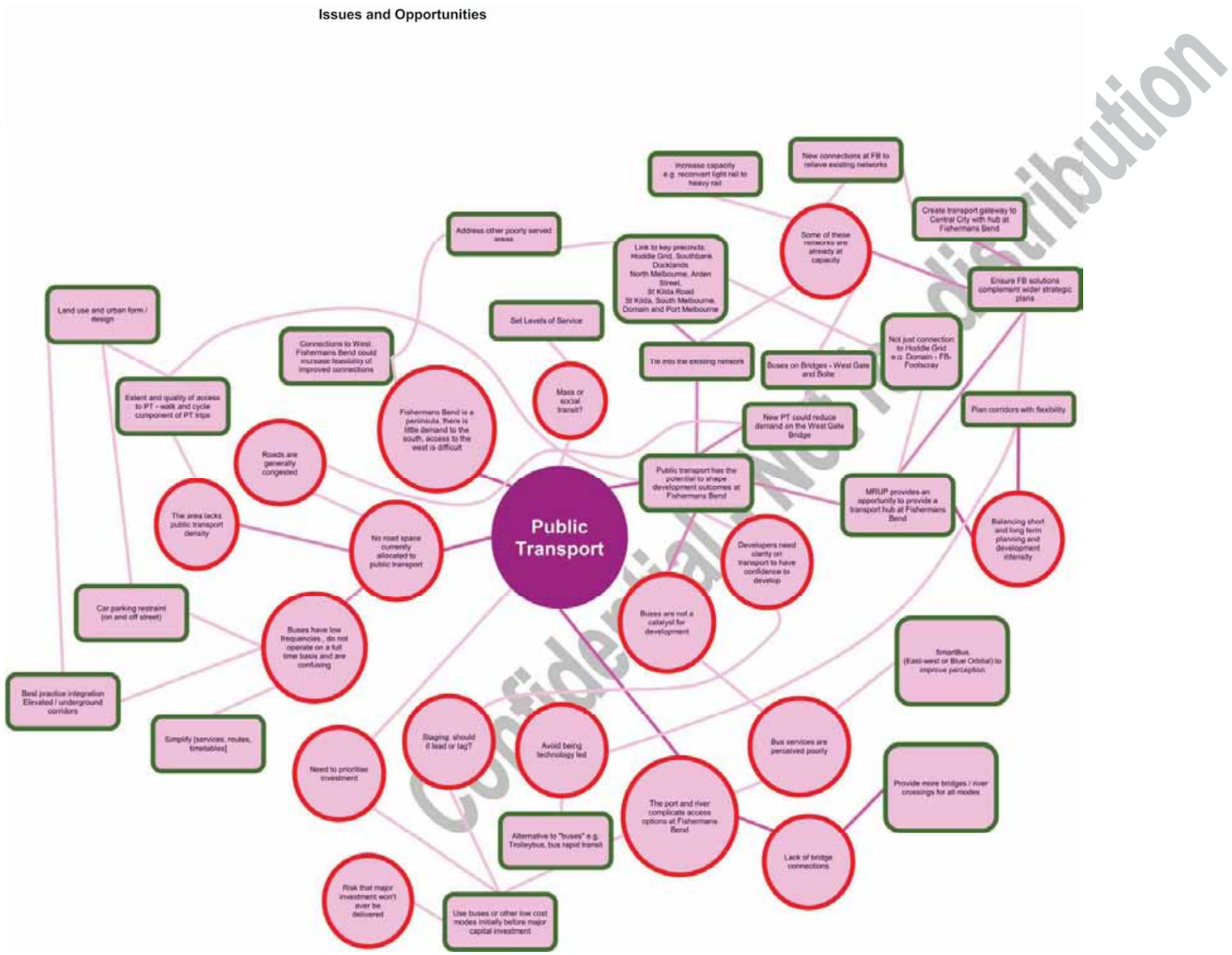

Figure 11 Freight Issues and Opportunities mind map

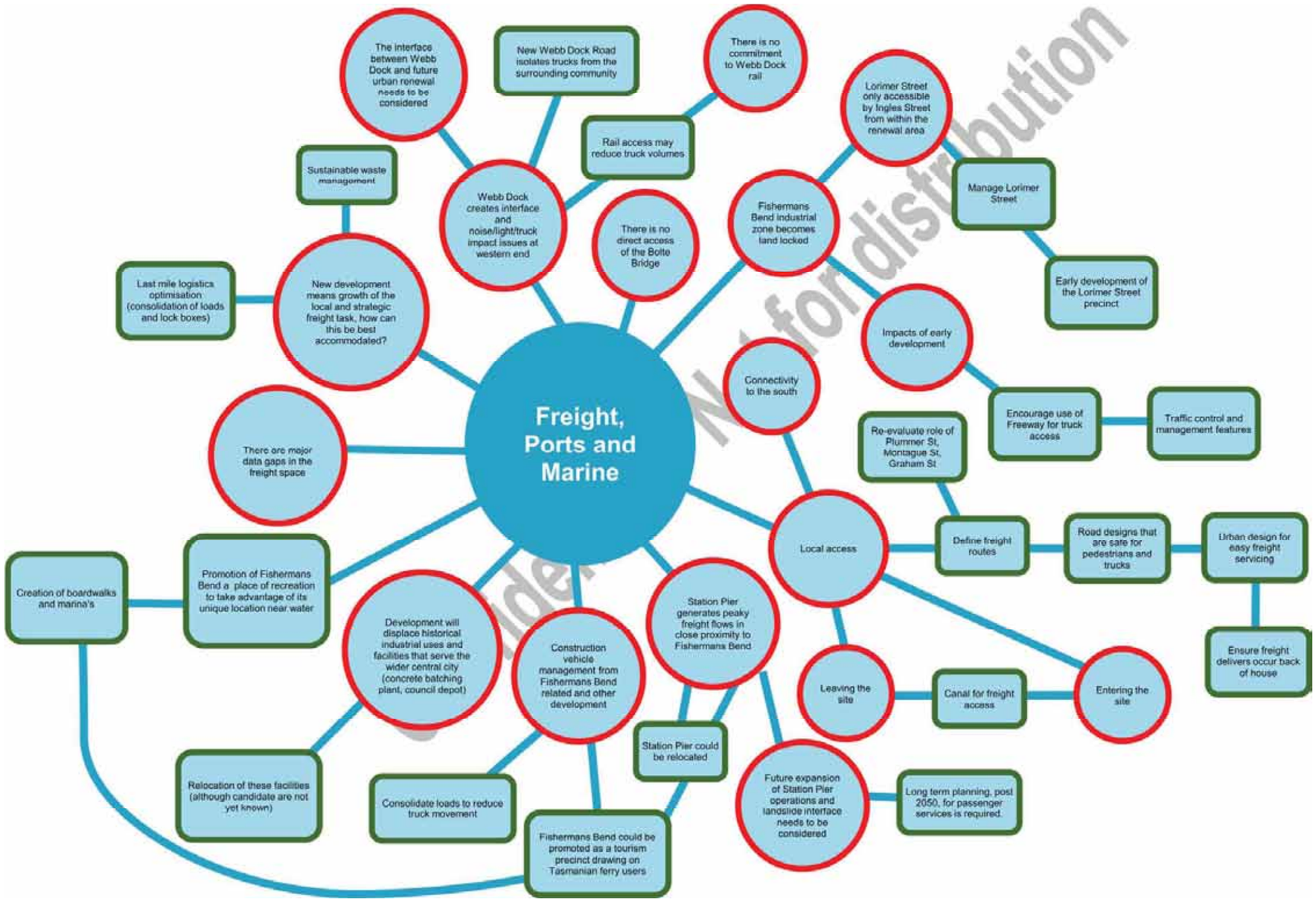

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Figure 12 Traffic and Parking Issues and Opportunities mind map

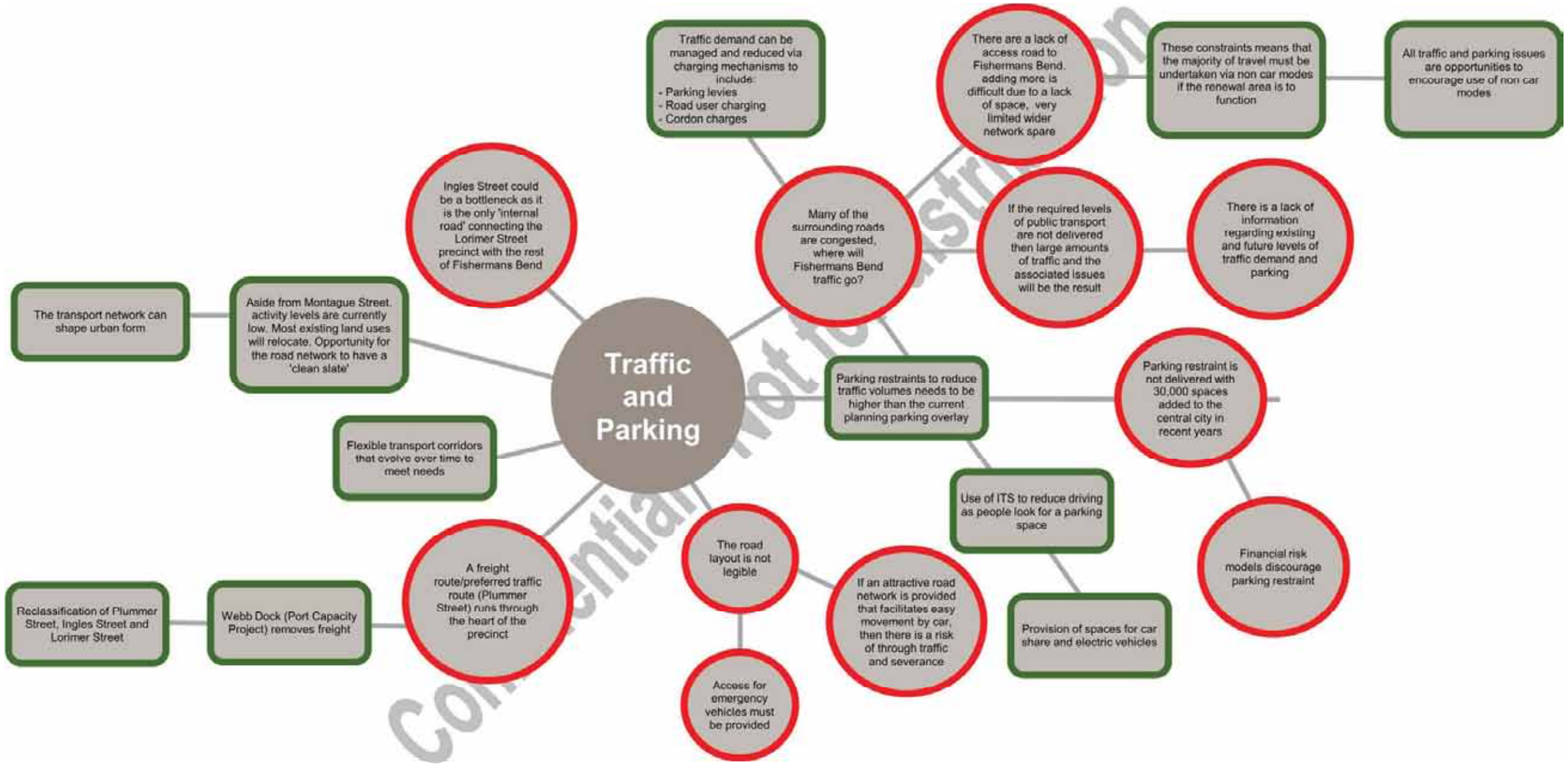
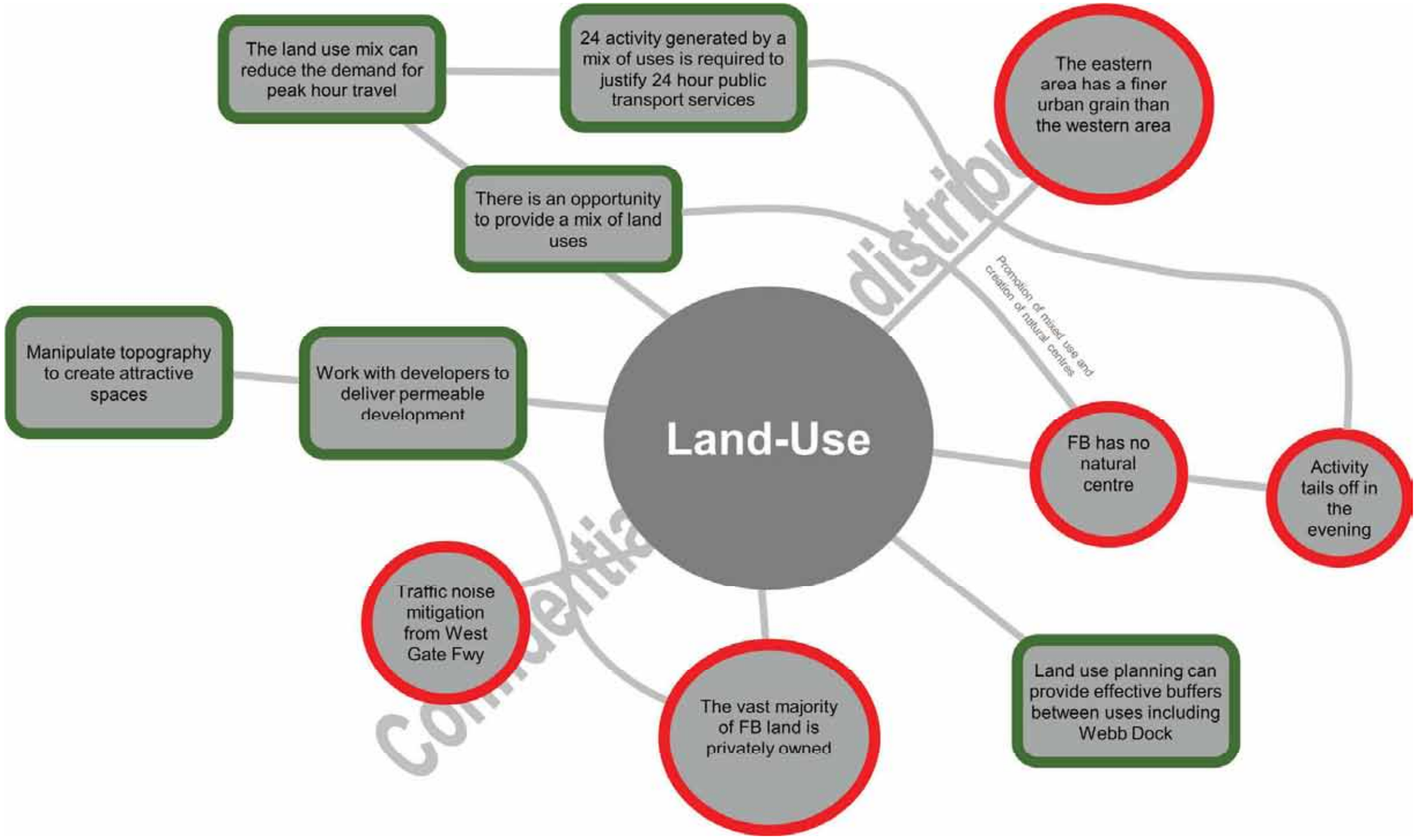


Figure 13 Land use Issues and Opportunities mind map



4.4 Discussion of strategic issues and opportunities

4.4.1 Managing land use transition

The land use transition that will occur at Fishermans Bend presents a number of challenges.

These centre on incremental intensification of travel demand within the precinct as development occurs alongside a general uplift in transport demand and the associated pressures that will occur throughout inner Melbourne as a result of population growth and further economic restructuring. Fishermans Bend will be in a state of transition for at least a 20 year period and there will be a need for a diverse range of land uses to coexist satisfactorily over this time. All urban areas are in a state of constant renewal, with the cranes that currently dominate some areas of the Hoddle Grid providing a visual indicator of this. However, the challenges associated with urban renewal transition from historical manufacturing uses to modern Central City uses are more pronounced. These challenges are summarised as follows:

- Delivering a consistently safe and attractive Central City type public realm for pedestrians in an area where industrial uses still exist.
- Proactively managing the externalities associated with freight movement in potentially sensitive Central City type street environments whilst ensuing that remaining industrial uses can continue to operate satisfactory.
- Consistent and proactive management of increased road travel demand as development occurs so that the impacts of renewal at Fishermans Bend on neighbouring precincts are acceptable.

4.4.2 Stimulating development with transport

Transport is widely seen as an effective means for stimulating urban development and renewal. Buses are not perceived by stakeholders as a development catalyst. Generally the transport needs to be infrastructure –based i.e. a built mode such as a railway or tramway, although there is some evidence that dedicated busways can have some effect (Source: Understanding Ridership Drivers for bus rapid transit systems in Australia, Currie and Delbosc).

Urban renewal areas that have placed transport infrastructure in a prominent role in the urban model include:

- London Docklands: this precinct used light rail to initially catalyse development with a modest scheme with relatively poor integration into the broader urban transport system. This network was subsequently extended to key interchanges. Metro rail was then introduced to provide capacity and network connectivity. A regional rail connection for further capacity and network connectivity purposes is now under construction.
- Odaiba: the Tokyo equivalent of London Docklands. This area of reclaimed waterfront is served by a driverless light metro. Subsequently, underground mass transit railways have been provided.
- IJburg: this area on reclaimed land south-east of Amsterdam is served by a centrally located tram line as it has strictly limited road capacity in and out of the precinct.

The emphasis on infrastructure is associated with:

- Demonstrated commitment by decision makers that the area warrants investment
- Certainty on the preferred locations for development
- The transport capacity needed for high-intensity land uses

The selection of the specific route for catalyst infrastructure is essentially a policy statement about what connections are important. Accordingly, they are usually to a major attractor or destination such as the City Centre, a major financial precinct, a major transport interchange or a tertiary education precinct.

In the case of Fishermans Bend, the network planning process favoured connections to the Hoddle Grid via Southern Cross, then eastwards and northwards to Melbourne Metro nodes in commercial and renewal districts, before connecting westwards. There is also a need for connections to the existing communities and employment opportunities with the CoPP.

The following strategic questions have been raised in relation to Fishermans Bend:

- What is the sequencing and relative priority of Fishermans Bend compared to other Central City Urban Renewal precincts?
- Will Fishermans Bend form part of an expanded Central City (with associated high-productivity employment hub) or will it become a residential bayside neighbourhood – or both?
- Will Fishermans Bend be a destination, or a corridor connecting the City to the bay – or both?
- Will development within the precinct face the port or turn away?

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5.0 Integrated Network Plans

5.1 Introduction

Three scenarios were explored to gain a better understanding of possible urban renewal trajectories. This chapter outlines the process undertaken to develop Integrated Network Plans for Fishermans Bend. In summary:

- Strategic demand estimates were prepared to provide context for the network planning task.
- In a workshop, stakeholders schematically planned an initial integrated network based on connectivity requirements. These were then re-prioritised with the demand estimates and the capacities of the various modes in mind
- The schematic networks were then re-analysed to reflect the geography of Fishermans Bend, and developed into short, medium and long-term networks with modal recommendations for the transit network.

To simplify the planning process, the timeframes were linked directly to Places Victoria's low, medium and high scenarios of land use development, assuming a steady process of intensification over time. This is consistent with the redevelopment timeframes applied to other precincts such as Docklands. In the event that there is market appetite to deliver the 'high' scenario outcomes in the short-term, it would be necessary to also deliver the associated transport in the short-term.

A key objective of the network plans was that they should be cumulative. The long term network builds on the medium term network. This in turn builds on the short term network. Avoiding redundancy of network links has been a goal in defining each level of network development.

5.2 Context for Network Planning

5.2.1 Approach to investigating possible future demand levels

An appreciation of possible volumes of future demand is needed to provide some context for network planning. Specifically it assists in selecting transit modes, as they vary in capacity.

Fishermans Bend is characterised by having limited transport access from external areas, constrained by the geography of the site which in turn has restricted the transport network provided in the area. The site is generally served by four main 'corridors':

- The West Gate Bridge
- The Bolte Bridge
- Connections from the CBD and Eastern Suburbs
- Connections from the South East and St Kilda Road

In addition to these corridors, there is also the potential for internal movements.

Instead of undertaking a formal four-step modelling exercise, the origin-destination patterns of nearby and similar areas were investigated and the demands aggregated into the above five general 'corridors'. The areas were the Melbourne (Inner) and Port Phillip statistical areas for Journey to Work analysis, and the Docklands area as studied in the Docklands Transport Study.

Two main sources of data were used:

- ABS Journey to Work analysis
- Docklands Transport Model

These sources were used to identify origin-destination patterns at the statistical area for journeys to work scale. Each origin or destination was assigned either to:

- one of the four main access corridors
- an internal trip
- 'other'

to reflect the route that would need to be taken if that trip was travelling from or to Fishermans Bend. This effectively applied nearby areas' travel patterns to Fishermans Bend, exploring the implications of different large-scale travel behaviour on access to the area.

Diagrams summarising the travel patterns observed in 2006 are shown below.

- Figure 14 shows the corridors that would be used if Fishermans Bend was primarily a destination zone, with a journey to work pattern and land use mix the same as 'Melbourne – Inner' in the 2006 Journey to Work analysis.
- Figure 15 shows the corridors that would be used if Fishermans Bend was primarily a mixed residential area with a journey to work pattern and land use mix the same as Port Phillip in the 2006 Journey to Work analysis.
- Figure 16 shows the corridors that would be used if Fishermans Bend was primarily an urban renewal area with a journey to work pattern and land use mix that is the same as Docklands in the 2011 Docklands Transport Model.

Figure 14 Journey to Work to Inner Melbourne as applied to Fishermans Bend

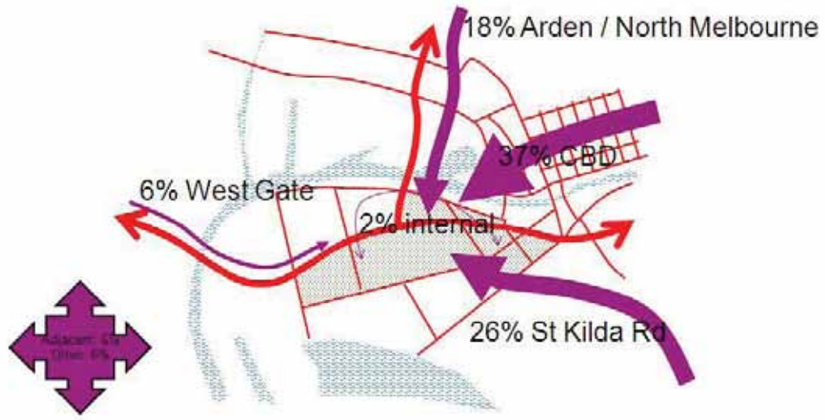


Figure 15 Journey to Work from Port Phillip as applied to Fishermans Bend

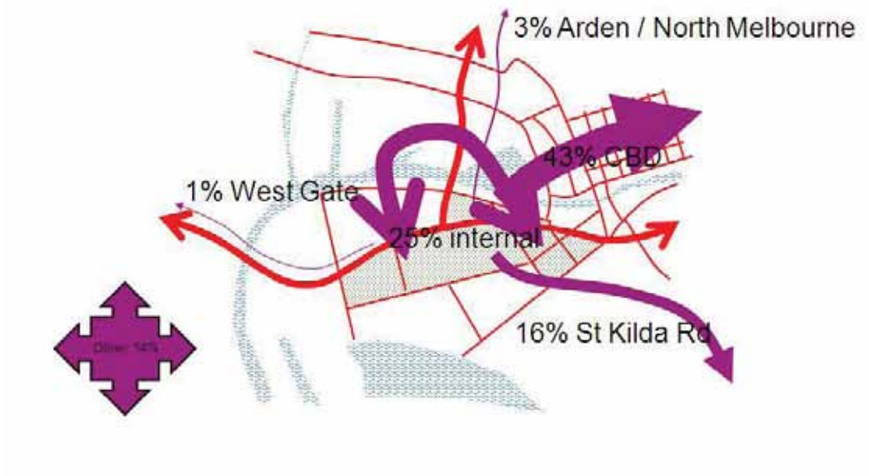
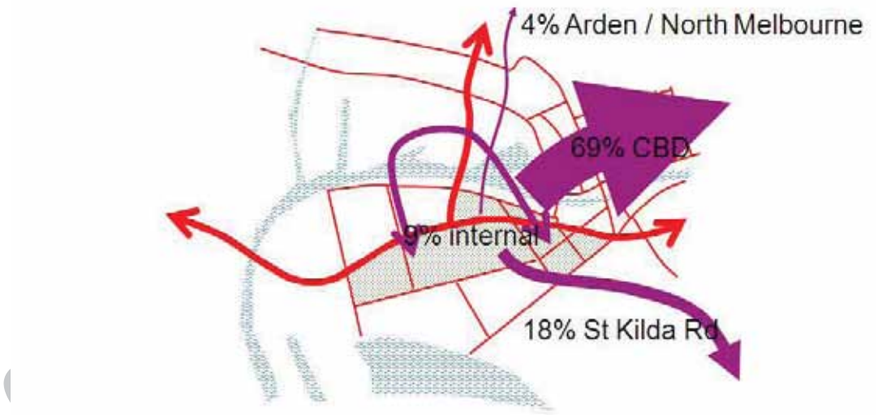


Figure 16 Journey to Work from Docklands as applied to Fishermans Bend



The maximum and minimum percentages by corridor for the nearby and similar areas were taken as upper and lower bounds of estimates of the proportion of people who would travel on that corridor to access work.

Table 5 Splits of travel by corridor observed in the nearby similar areas

Corridors	LOWEST	AVERAGE	HIGHEST
Internal	18%	23%	27%
West Gate (Hobsons Bay, Wyndham, Geelong)	1%	5%	8%
Hoddle Grid / CBD / N + E Melbourne	33%	37%	43%
St Kilda Road / SE Melbourne	2%	7%	16%
Arden / North Melbourne /N+W Melbourne	3%	8%	15%
Other	13%	15%	18%

An estimate of journeys to work was derived using the relevant trip generation rate from the Docklands Transport Model. This rate was used as it was the most recently derived rate for an urban renewal area on the edge of the Central City.

This estimate was then allocated to the various corridors in line with the percentages shown in Table 5.

The approach provides an indication only of the magnitude of volumes that may be expected under each development scenario. More detailed modelling will need to be undertaken to develop more robust estimates in due course.

5.2.1.1 Outputs

The four sketches for the four land-use scenarios are shown below. Note that on these sketches, the width of the arrow reflects the estimated mean volume. These are peak one-hour estimates for journeys to work and are **indicative only**.

The forecast number of trips is summarised below.

Table 6 Summary of estimated number of journeys to work in the peak hour

Scenario	Number of journeys to work (to nearest '000)
Incremental	6,000
Low	22,000
Medium	45,000
High	67,000

Figure 17 Incremental scenario estimates

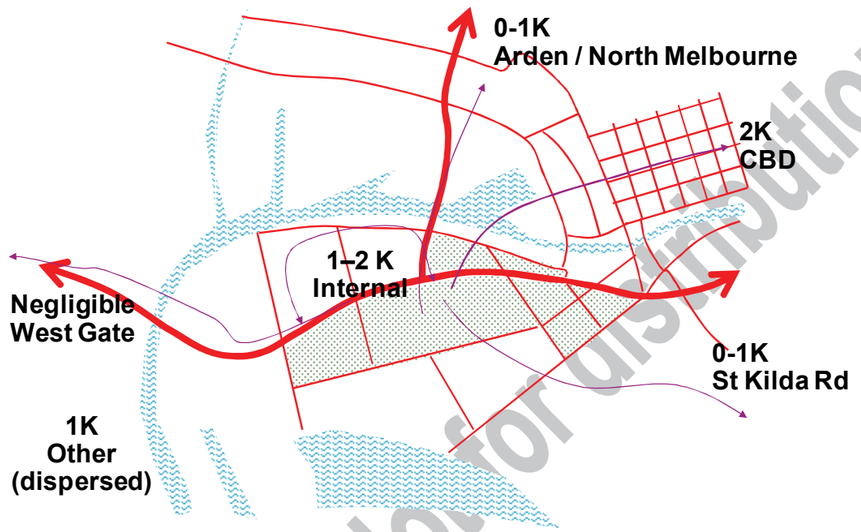


Figure 18 Low scenario estimates

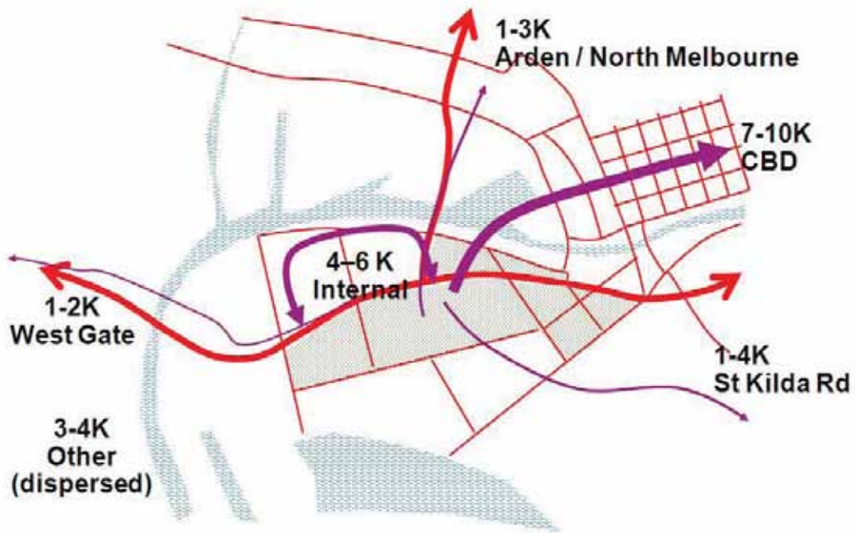


Figure 19 Medium scenario estimates

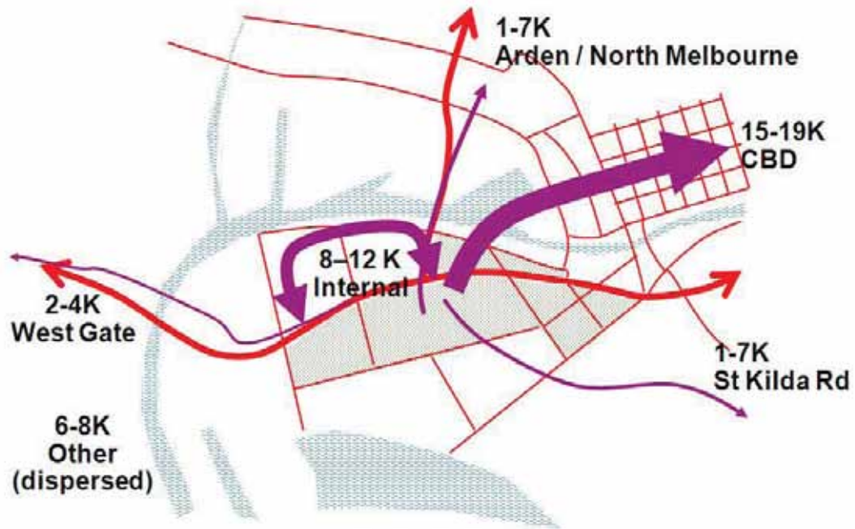
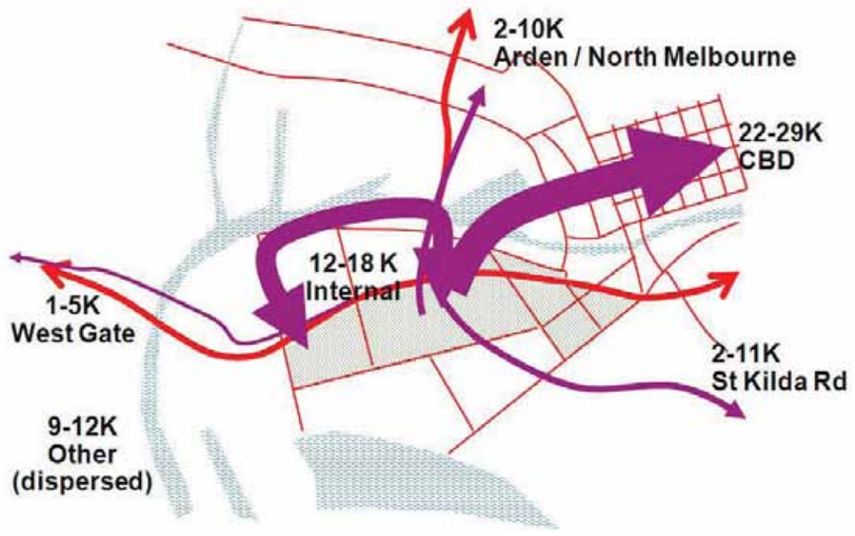


Figure 20 High scenario estimates

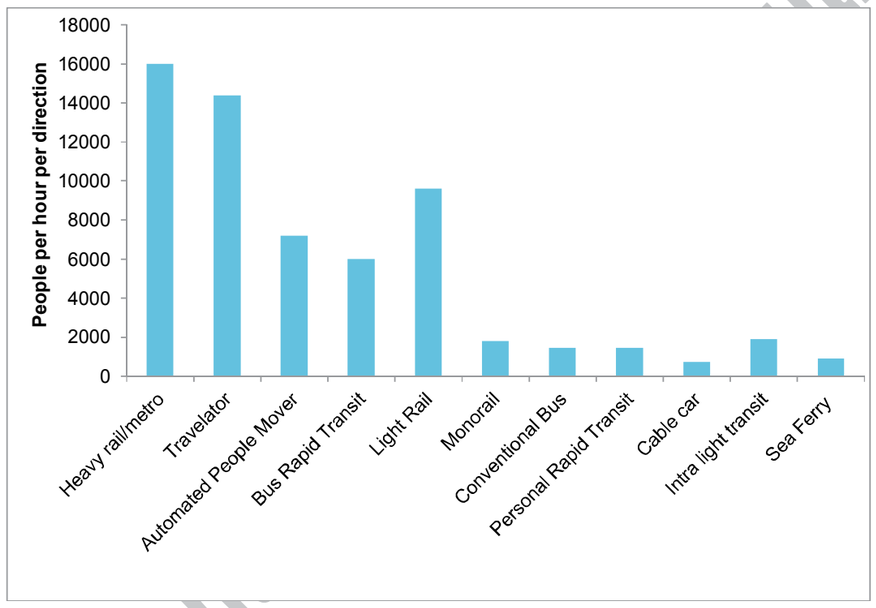


5.2.2 Transit mode capacities

Figure 21 shows the typical person-moving capacities of various transit modes. Note that there is usually a range of capacities that can actually be achieved depending on the vehicle type, technology and traffic priority.

These modal capacities help to contextualise the demand volumes shown above. Given that the site has constraints on access by road, a high modal share to sustainable modes is both desirable and needed. Accordingly, the bulk of the volumes shown in Figures 17 to 20 would need to be moved using public transport, walking and cycling.

Figure 21 Typical capacities for various transit modes



The assumptions underpinning this chart are:

- Heavy rail/Metro – 90 sec headway, carriage capacity 645
- Travelator – 2 sec headway, 2 people per section
- Automated People Mover – 20 sec headway, 40 people per vehicle
- Bus Rapid Transit – 30 sec headway, 50 people per bus
- Light Rail – 120 sec headway, 80 people per train
- Monorail- 120 sec headway, 60 people per train
- Conventional bus – 60 sec headway, 120 people per bus
- Personal Rapid Transit - 10 sec headway, 4 people per pod
- Intra Light Transit – 30 sec headway, 16 people per pod
- All numbers based on a single service operating along a single transit corridor

The flexibility of capacity provision is an important component in responding to the uncertainty in future demand at this stage of planning for Fishermans Bend. For example, Figure 18 has particularly high uncertainty on the demand between Fishermans Bend and St Kilda Road with a range of 1,000 to 7,000 persons per hour. This suggests that supplying bus services, but also planning for a light rail service, would be an appropriately flexible approach to capacity delivery; but in the medium term it appears unlikely that the capacity of a metro would be needed on this link. The important outcome is supplying a cost-effective amount of frequency of service given the actual demand.

5.3 Network Planning

A Network Planning workshop was held as the final stakeholder engagement session in the study program.

In this workshop, stakeholders undertook a collaborative network planning and prioritisation exercise. The exercise was designed to encourage lateral and unconstrained thinking about:

- What places should be connected (i.e. link and network design)
- What order they should be connected in (i.e. priorities)

To facilitate this outcome, a schematic diagram of Fishermans Bend was prepared. The advantages of a schematic diagram in this exercise are that it removes the tendency to focus on specific streets or corridors, and allows spatial relationships to be distorted so that journey time assumptions cannot be applied. Instead, it focuses attention on the need for connectivity. The features on the diagram highlighted:

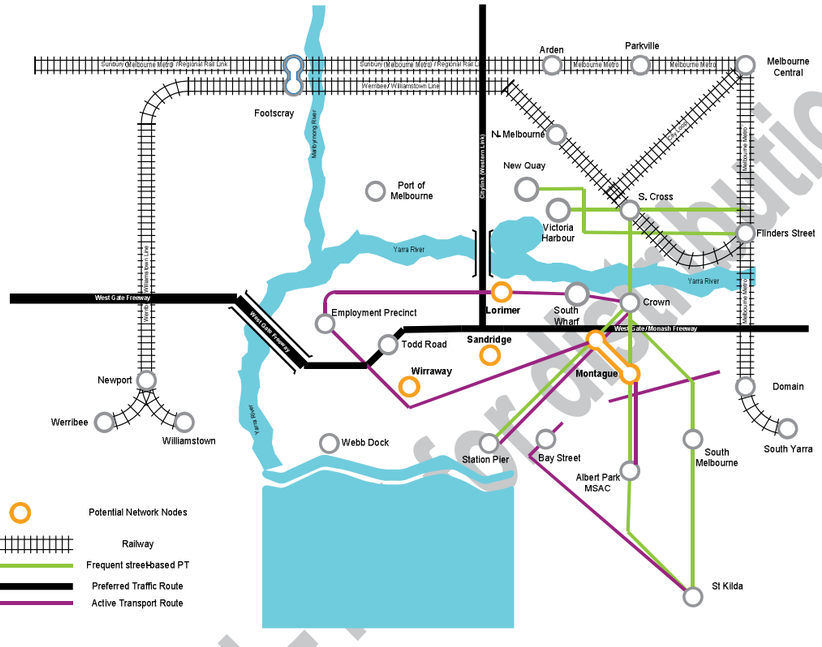
- Major natural features that constrain transport provision (rivers, Port Phillip Bay)
- Existing and planned high-value transport infrastructure (bridges, CityLink, high frequency public transport lines, railways, active transport networks)

Note that the public transport network was not defined modally, but rather as 'frequent public transport'.

- Nodes identified during previous workshops (employment precincts, interchanges, and the four Fishermans Bend precincts). A mixture of current and future nodes, and internal and external nodes were used. For example, Domain Metro Station is a future, external node of potential importance for access to Fishermans Bend.

The base diagram is shown below.

Figure 22 Base schematic used for network planning

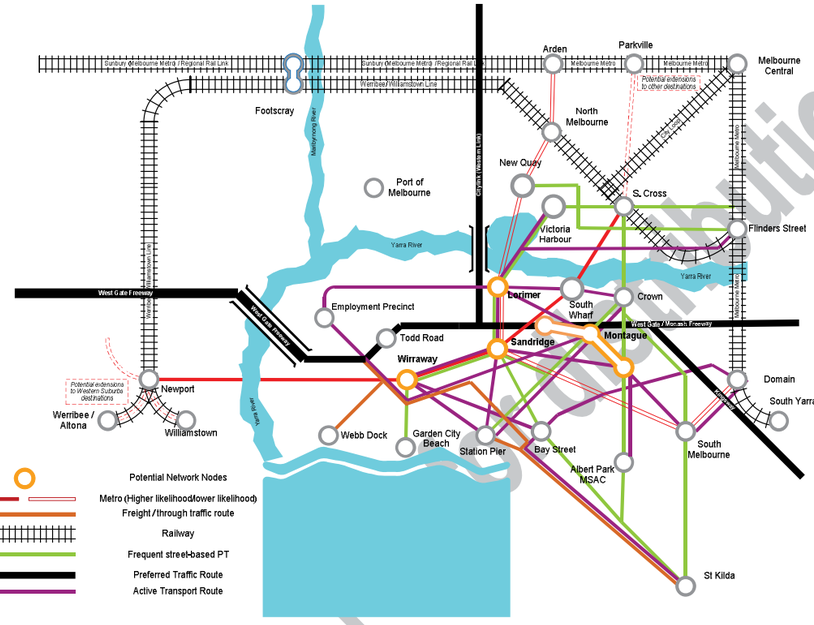


The workshop methodology followed these steps:

1) Three tables were formed with four or five stakeholders and one facilitator
2) The groups were reminded of the strategic direction, aims and objectives for the precinct, including the policy goals of minimising private vehicle use, maximising internal walking and cycling and maximising the use of transit for longer trips.
3) Each group prepared a diagram showing the additional network links that, in their view, are needed to appropriately connect Fishermans Bend internally and to surrounding areas. Groups were also encouraged to add additional nodes if required.
4) The order in which these links was identified was noted on the diagrams.
5) The identified networks were discussed in a plenary session.
6) The demand information outlined in the previous chapter was presented, along with typical capacities for various transit modes.
7) The networks were revised and re-prioritised in light of the demand and capacity information. Each group focuses on one timeframe of 'short', 'medium' or 'long'.

Following the workshop, the networks were consolidated into the diagram shown below.

Figure 23 Consolidated network diagram



Next, the networks were 'translated' to the physical geography of Fishermans Bend. As part of this process:

- the networks were simplified by exploiting the existing network topology of Fishermans Bend (that is, junctions and existing links were used to minimise the number of new connections needed)
- Comments and additional network planning input was sought and received from DOT
- GIS maps were prepared for the three timeframes – short, medium and long. These networks are generally cumulative in approach, so that the medium term network comprises additional links built on the short term network, and so on.

As part of further planning for FBURA, detailed options assessments will need to be undertaken to support the transit modes recommended on network links in the proposed integrated network plans.

5.4 High Level Integrated Network Plans

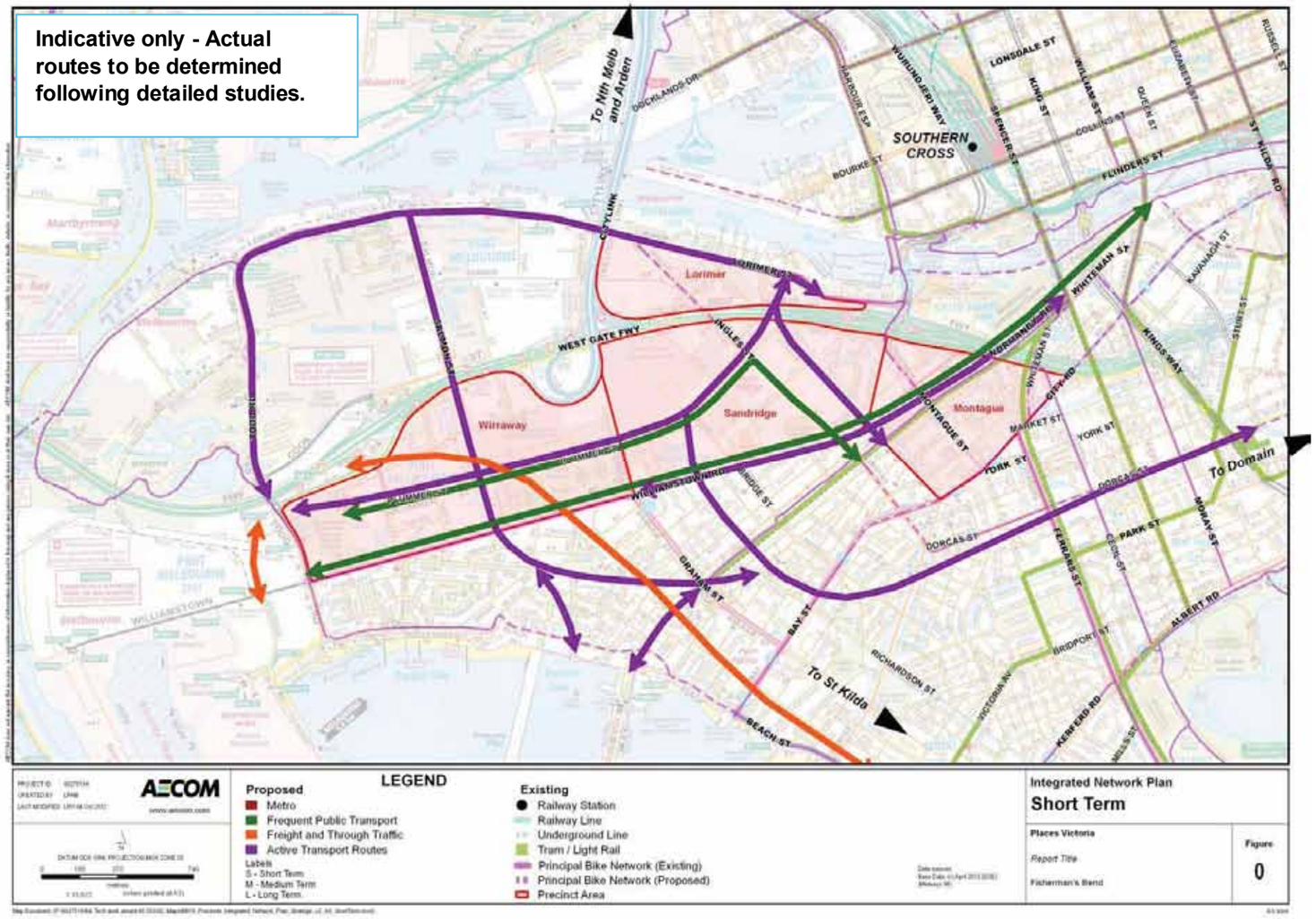
The following three maps show the indicative networks developed during the study. These are 'indicative' in the sense that they have been developed based on the process described in this report and in response to the land use scenarios for Fishermans Bend. More extensive analysis and study will continue to refine these networks, and they will also be reviewed and refined as the land use plan responds to the transport challenges identified in this report.

5.4.1 Short-term

The short-term indicative network plan is shown below. Its key features are:

- A catalyst light rail project in Plummer Street and linking with the Port Melbourne Light Rail. In the short term, Ingles/Plummer St is a suitable corridor for Light Rail Transit, for the following reasons:
  - The demand estimates indicate that it would provide suitable capacity
  - Previous investigations have shown that the link is generally feasible subject to resolving operations in the Central City
  - The route bisects the precinct and Light Rail Transit is a demonstrated catalyst mode
  - The link can be incrementally built upon to deliver future medium and long-term network links that in turn are suitable for Light Rail Transit
- Delivery of a precinct-wide active transport network extending into and integrated with adjacent areas and networks.
- Upgrading of established bus services e.g. on Williamstown Road.
- Maintenance of appropriate arrangements for through traffic movements between the West Gate Freeway and the south-east.

Figure 24 Short term indicative network plan



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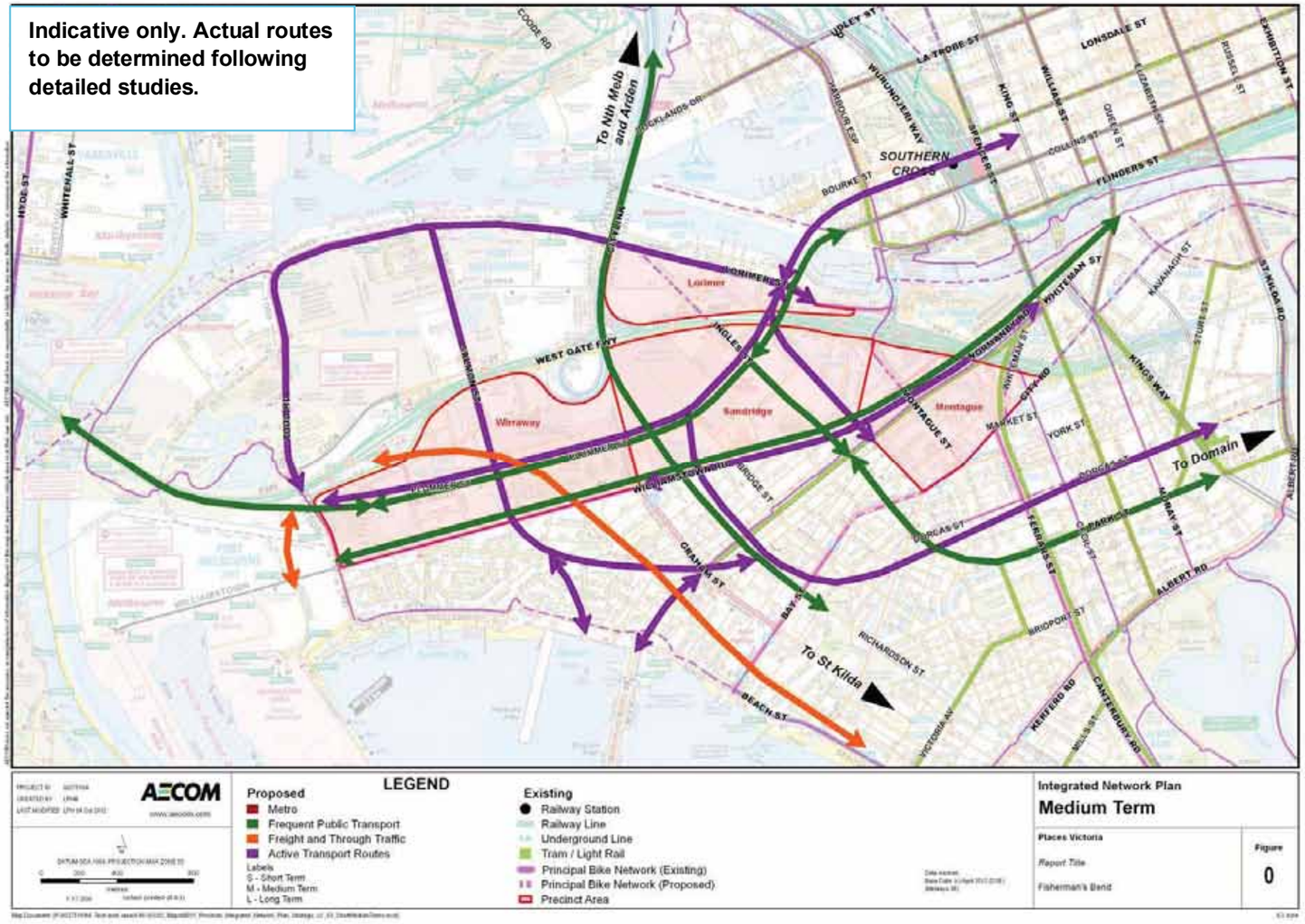
5.4.2 Medium-term

The medium-term indicative network plan is shown below. Its key features are:

- Expansion of the light rail service to Victoria Harbour and Domain Metro Station, resulting in high network integration and flexibility. In the medium term, Light Rail Transit is recommended for connections to Victoria Harbour and Domain for the following reasons because:
  - Demand estimates indicate it would provide suitable capacity
  - Previous investigations have shown that the link to Victoria Harbour is generally feasible, and this study has confirmed potentially feasible connections exist between South Melbourne and Fishermans Bend
  - The mode would further catalyse development in the Lorimer precinct and potentially other neighbouring precincts outside the study area
  - Use of Light Rail Transit would increase the flexibility of the overall tram network plan by creating new route options from St Kilda Road and new terminus site options.
- A frequent bus service to link Arden and St Kilda via Fishermans Bend.
- A frequent bus service over the West Gate Bridge.

Figure 25 Medium term indicative network plan

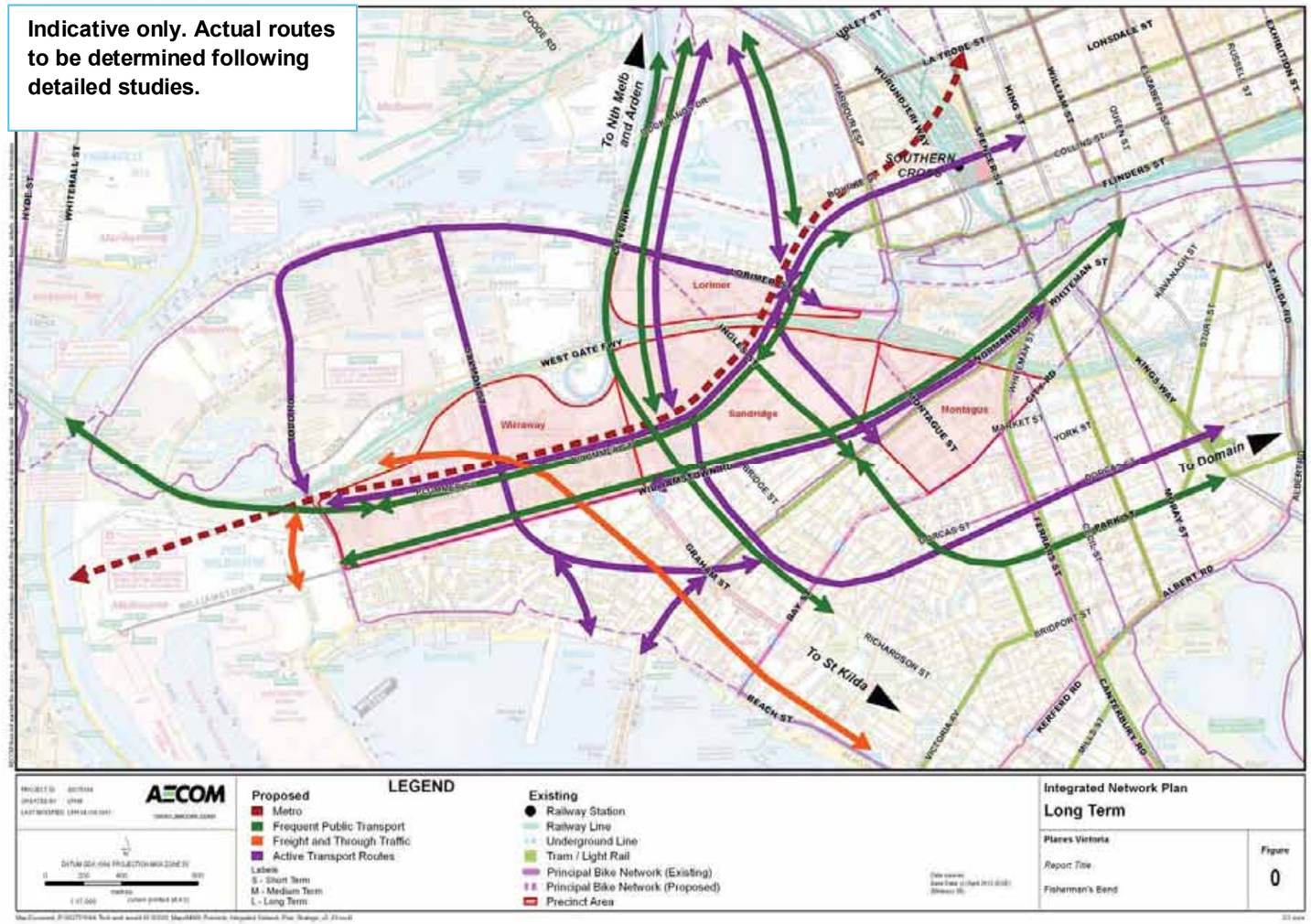


5.4.3 Long-term

The long-term indicative network plan is shown below. Its key features are:

- New river and harbour crossings in the Docklands precinct to better connect Fishermans Bend with the broader City West redevelopment area (Docklands, E-Gate and Arden-Macaulay).
- A metro line connecting Newport and Southern Cross via Fishermans Bend, with potential onwards extension as part of a metropolitan-scale scheme. In the long term, a Metro is identified for the following reasons:
  - Demand estimates indicate that it would be required, with other modes unable to move the volume identified.
  - Its deliverability is uncertain given the high cost, but as a grade-separated solution it is less constrained by existing corridors.
  - It would further catalyse development, along the corridor already catalysed by Light Rail Transit in the short term, creating the opportunity for a hub of development of the scale needed under the 'high' long term scenario.
  - The metro would contribute further to the flexibility of the overall transport network by creating new network nodes (stations) that act as gateways to the inner city transit network, potentially addressing capacity issues allowing more trips to be made, balancing demand levels at a metropolitan scale by stimulating development in the west, and is broadly consistent with separately prepared rail network plans. It is unlikely it would replace the surface Light Rail Transit lines, which would become a link primarily for shorter intra-precinct trips substituting for walking and cycling.

Figure 26 Long term indicative network plan



6.0 Recommendations

6.1 Findings and Recommendations

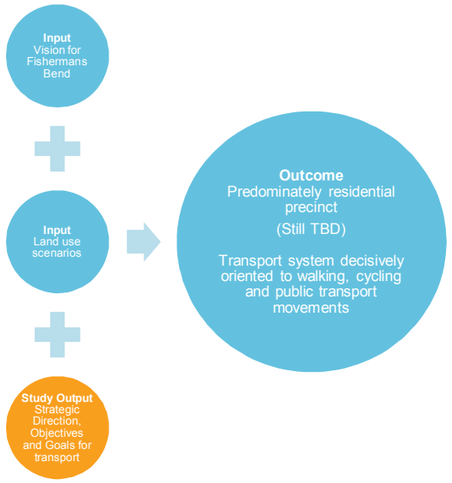
Finding	Recommendation
Land Use	
Scale and sequencing of development not yet known	1. Further develop land use development scenarios, both within Fishermans Bend and across other urban renewal areas (e.g. Docklands, E-Gate, Arden-Macaulay) to inform staging and prioritisation of transport infrastructure.
The land use mix in the scenarios provided results in peaked commuting transport patterns.	2. Consider increasing the commercial / employment element of the land use mix to potentially reduce the peak capacity requirement. This would balance the flows increasing the utilisation of public transport capacity by creating multi-directional movement. Note that this would likely also result in an overall increase in travel to and from the precinct.
Block sizes are large with significant barriers to fine grain networks whilst for sustainability, capacity and urban policy reasons, the number of internalised trips and the share of them by walking and cycling should be maximised	3. Throughout the redevelopment areas, a fine grained network of links for pedestrians and cyclist should be developed through appropriate planning controls.
Transport	
Parking constraint will be necessary at Fishermans Bend on both policy and capacity grounds, as high levels of access by car are not desirable or feasible on the transport networks leading to the area.	4. As per CoPP/CoM parking policies limit supply of parking in the precinct. 5. Prioritise implementation of a Travel Demand Management Strategy that articulates the transition from industrial/private vehicle-oriented development to a mixed-use transit and active oriented development. The TDM Strategy could include: - Bike Share schemes - Car Share schemes - Policy and Planning Tools - Pricing incentives - Travel Plans - Urban Form and Design - Speed limit reduction (preferable 40kmh) - Innovative management of both construction-related movements and access for construction workers - Monitoring
There are no heavy rail 'gateway' stations within Fishermans Bend. With the exception of the Montague Precinct, the majority of Fishermans Bend is serviced by (low frequency) bus public transport and poor active transport links. The transition process from current land use will result in unique transport challenges. For sustainability, capacity and urban policy reasons, active and public transport mode share will need to be maximised for trips within /to/from Fishermans Bend.	6. Adopt mode share targets of no less than those adopted by CoPP and CoM shown in Table 4. 7. Develop a road user hierarchy 8. The above mode share targets cannot be achieved without good quality active and public transport – implement within an integrated transport network with a grid active transport and high frequency public

Finding	Recommendation
There is a need to integrate activity centres/nodal points with Public Transport Interchanges. The key public transport network nodes to support access to Fishermans Bend and other urban renewal areas will likely be: - Southern Cross - Domain Interchange/Metro Station - Arden / North Melbourne	transport links. See section 5.4 for proposed Short, Medium, Long Term Integrated Transport Network maps 9. A detailed options assessment needs to be undertaken to support the transit modes recommended by the proposed Integrated Network Plans. We recommend applying the following criteria: - **Capacity**: Is the mode a suitable choice given the estimated demand? - **Deliverability**: Is the mode likely to be feasible on that link, based on previous studies? - **Catalyst**: Is the mode likely to stimulate development, and is the link strategically located for that purpose? - **Flexibility**: Is the use of the mode on the network link consistent with the likely long term development of the network? That is, will it form part of the wider network and not need to be replaced by an alternative or higher capacity mode that requires a different network configuration? 10. To progress the planning for the proposed integrated transport network, each link will require further development. Undertake the following studies as the planning progresses: a) Feasibility study for active transport connections to all adjoining areas, including Docklands via Charles Grimes Bridge and Southbank/CBD via Normanby Road/Clarendon Street. b) Feasibility study for the Ingles and Plummer Light Rail Line with connection to Port Melbourne light rail line. c) Feasibility study for light rail/active transport the Ingles and Plummer alignment with connection to Southern Cross/Hoddle Grid. d) Route selection study for the public transport connections to Domain. e) Feasibility study into Bus Rapid Transit link via the Bolte Bridge between Arden/North Melbourne, Fishermans Bend and St Kilda. 11. Confirm that indicative transport demand analysis and Local and State Government officers consensus that the priority order in which strategic connections could be provided to Fishermans Bend: a) To Southern Cross/Hoddle Grid b) Internal to precinct (walking and cycling) c) To St Kilda Road/Domain Metro Station d) To Arden/North Melbourne e) To West Gate Freeway

Finding	Recommendation
Existing through movements (including freight traffic) will need to be accommodated, at least in the short to medium term.	12. Undertake Origin-destination traffic survey to determine levels of through traffic (including freight). 13. Investigate corridor options to cater for through traffic moving between the West Gate Freeway and Beach Road, including traffic using Graham Street and Williamstown Road. 14. Investigate corridor options to cater for freight traffic using the precinct, including Plummer Street
The take-up of public transport will be influenced by the accessibility to/from it within the precinct.	15. Ensure there is a fine grained pedestrian network and end of trip facilities for cycle trips around transit stops.
A light rail line is considered a 'catalyst' project for development.	16. Undertake Urban Design for Plummer Street shared PT/active transport spine. A light rail line route via Ingles and Plummer Streets is a good choice for a short-term catalyst transport project at Fishermans Bend. Additionally, it will facilitate the access of construction workers during the development phase of the precinct. This segment would form part of a wider network link that could be linked to: - The Port Melbourne light rail line in the short term; - Victoria Harbour / Collins St in the medium term; - Domain Metro Station in the short to medium term - E-Gate and Arden in the longer term
A Metro line will be needed in the long term/high development scenario and could be brought forward if it meets metropolitan strategic requirements such as a second river crossing to the West (Newport and beyond).	17. Identify alignment easement and possible station locations. Plan to modern / emerging technological standards.
The Sandridge precinct could be developed as a network node with high connectivity and accessibility, at the intersection of the Arden-Domain network link and the Wirraway-CBD network link.	18. Preference this location for the most intensive and/or strategically significant land uses.
Anticipated travel behaviour and patterns are likely to change as the urban renewal proposition becomes more developed.	19. Maintain the flexibility of the integrated transport network by planning for an ultimate network grid and adding new links where evidence warrants.

6.2 Alternative Futures

This report is based on three key elements that have been either inputs to or major elements of the study. Application of these elements results in the particular transport network strategy outlined in this document.

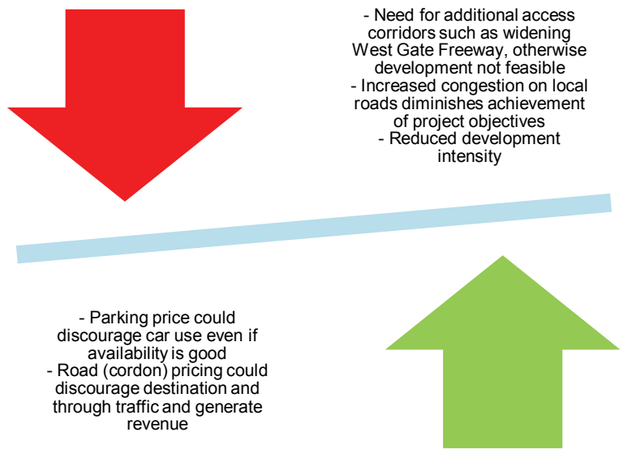


As this is a due diligence study, it is very likely that the future will be different to that envisaged in this study, but there are a number of key drivers that could underpin 'alternative futures' that will be qualitatively different and require significantly different transport initiatives.

6.2.1 Alternative parking policies

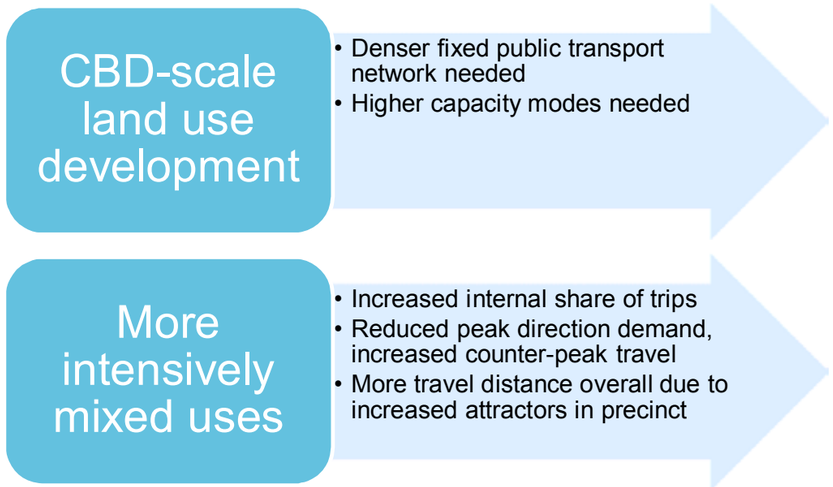
The Strategic Direction for transport established during the project advocated a progressive policy position of car use restraint by minimising parking supply in Fishermans Bend.

Should this policy not be adopted, there are a number of potential consequences that would need to be mitigated, or policy alternatives that would need to be considered.



6.2.2 Implications of alternative land use outcomes

The land use scenarios assumed outlines a predominately residential precinct with a small amount of localised commercial and retail uses. There are a number of alternative ways land use may develop, and the implications of these for transport are summarised below.



6.2.3 Implications of alternative urban form

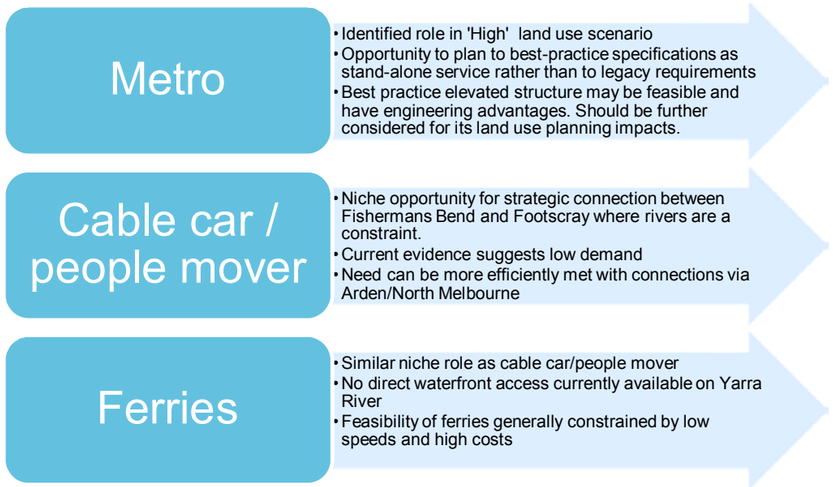
During the workshops, it was generally assumed that the urban form of Fishermans Bend would remain largely as it currently is in terms of existing drainage lines and roads. As an alternative, it was suggested that an urban form with internal waterways may be appropriate for the site's context.

Comparable urban centres such as Amsterdam, Rotterdam, Copenhagen and Bangkok that have a large number of internal waterways are still characterised by strong terrestrial transportation links, particularly for foot, bicycle and tram. The recent IJberg development in Amsterdam, which is located on a reclaimed peninsula, is served by a central tram line.

The opportunity for canals can be further considered but the key terrestrial transport links identified in this Study would still be required.

6.2.4 Implications of alternative technologies

During this study, the roles of existing 'alternative' technologies and possible future technological developments have been considered, in the light of specific case-studies globally. In summary, the development of Fishermans Bend should aim to deliver best-practice implementation of existing technologies, including examination of the Metro line as a stand-alone best-practice technological scheme.



Appendix A

Workshop Attendees

Appendix A Workshop Attendees

Cameron Brenton – Places Victoria

Geoff Ward – Places Victoria

Clinton Fisher – Places Victoria

Sasha Yarwood – Department of Transport

Andrew Korr – Public Transport Victoria

Lisa Kogios – VicRoads

Damon Rao – City of Melbourne

Richard Smithers - City of Melbourne

Adrian Salmon – Department of Planning and Community Development

Neville Wood – Department of Transport

Mathew Stafford – Department of Planning and Community Development

Christopher Ong – Port of Melbourne Corporation

John Bartels – City of Port Phillip

Andrew Newman – Department of Transport (Freight Logistics and Marine)

Harry Monkou – VicRoads

Paul Noisette – VicRoads

Kim Irons – Office of Victorian Government Architect

Peter White – VicRoads

Stephen Leitch – Department of Planning and Community Development

Vanya Kumar – VicRoads

Sameem Moslih – VicRoads

Emma Nicholson – Department of Transport

Kerry McConnell – VicRoads

Christopher Welsh – Public Transport Victoria

John Williams – City of Port Phillip

Gavin Tan – City of Port Phillip

Andrew Wall – VicRoads

Malcolm Snow – Places Victoria

Charles Pashula – VicRoads

Stefan Mitrik – City of Port Phillip

Denis Leviny – AECOM

Ellery Salida – AECOM

Simon Exon – AECOM

Ian Hopkins – AECOM

Zac Cvitkovic - AECOM

Appendix B

Appendix B Full List of Reference Documents

Appendix B Full List of Reference Documents

- 2012 Transport Strategy (CoM)
- ABS National Accounts, National Income, Expenditure and Product (ABS)
- Bay Ferry Study, 2009 (AECOM)
- Bike Plan (CoM)
- Bike Plan 2011, 2020 (CoPP)
- Bike Scope Report, 2010 (CoPP)
- Charting Transport, 2010 (Chris Loader Blog)
- Community Travel Mode Shift Scenarios to Achieve Toward Zero Transport Strategy Targets (CoPP)
- Declared network, 2012 (VicRoads)
- Dockland Transport Strategy - Access Docklands (CoM/PV)
- Dynon Port Precinct Planning – Road Network Assessment (DOT/VicRoads)
- East West Needs Study (DOT)
- Fishermans Bend Land Use and Economic Development Strategy, 2010 (CoPP)
- Fishermans Bend Light Rail Study (PTV/AECOM)
- Inner Melbourne Action Plan (IMAP)
- Jan Schurer Accessibility Modelling Report (CoM)
- Mode Share Target Development to inform Sustainable Transport Strategy (CoPP)
- Montague Precinct Structure Plan – Background Paper (CoPP)
- Montague Precinct Structure Plan (CoPP)
- Municipal Strategic Statement (CoPP)
- Municipal Strategic Statement, August 2012 (CoM)
- Network Operating Plan (VicRoads)
- Our Cities, Our Future – A National Urban Policy (Federal Government)
- Parking Plan Towards, 2010 (CoPP)
- Planning overlays, 2012 (DPCD)
- Planning Policy Framework (DPCD)
- Port and East West Corridor Framework, November 2011 (DOT)
- Port and Inner West Study (DOT/VicRoads)
- Precinct Plans (CoPP)
- Project Control Group - Constitution and Terms of Reference (DPCD)
- Public Transport Advocacy Statement (CoPP)
- Public Transport Guidelines for Land Use and Development (PTV)
- Rapid Appraisal and Review of Webb Dock Traffic Impacts (VicRoads)
- Rapid Appraisal Webb Dock – SC comments on Final Report P23 21122011 (DOT)
- Road User Safety Strategy, 2002 – 2007 (CoPP)
- SNAMUTS Melbourne, 2010 Report (CoM)
- Sustainable Transport Precinct Plans (Port Melbourne) – Under development (CoPP)

- Sustainable Transport Strategy (CoPP)
- The Walking and Bike Riding Study Report, 2010 (CoPP)
- Transport Integration Act 2010 (DOT)
- Travel Smart Map (CoM)
- Understanding Ridership Drivers for bus rapid transit systems in Australia, (Currie and Delbosc)
- Victorian Freight Logistics Plan (DOT)
- Walk Plan 2011 – 2020 (CoPP)
- Walking and Riding Study Final Report 2010 (CoPP)
- Wurundjeri Way Connection Study (VicRoads)
- Yarra River Shuttle Service Review 2009 (AECOM)

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