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To whom it may concern

**CITY OF PORT PHILLIP SUBMISSION TO THE PARLIAMENT OF AUSTRALIA INQUIRY  
ON 'THE ROLE OF TRANSPORT CONNECTIVITY ON STIMULATING DEVELOPMENT  
AND ECONOMIC ACTIVITY'**

Please find attached the City of Port Phillip's submission to the Parliament of Australia inquiry on 'The role of transport connectivity on stimulating development and economic activity'.

This submission was endorsed by Council at its Ordinary Council Meeting on 9 February 2016.

If you have queries regarding any aspect of this submission, please contact Thomas Courtice, Senior Strategic Transport Planner, at [thomas.courtice@portphillip.vic.gov.au](mailto:thomas.courtice@portphillip.vic.gov.au) or (03) 9209 6153.

Yours faithfully

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**Parliament of Australia Inquiry on  
‘the role of transport connectivity  
on stimulating development and  
economic activity’  
Council Submission**

**February 2016**

## 1. Council Submission - Key Messages

The key messages contained within Council's submission to the Parliament of Australia Inquiry on 'the role of transport connectivity on stimulating development and economic activity' (the Inquiry) are summarised as follows:

- 1.1. Council supports the development of consistent guidelines to forecasting property value uplift and assessing value capture for use at both the Commonwealth and State levels of government. The Commonwealth could enable this through the required legislative and regulatory changes, ideally as part of a framework that includes a standardised and consistent methodology for use in cost benefit analyses. In doing so it could be used by Infrastructure Australia, Infrastructure Victoria and be promulgated widely to inform infrastructure investment decisions at all levels of Government.
- 1.2. Value capture has the potential to significantly improve the way urban renewal and densification is planned, holistic decision making and how necessary transformational infrastructure is funded. All opportunities to enable value capture should be explored by the Inquiry, and an appropriate suite of tools developed and legislated for use at Commonwealth, State and Local levels of Government (depending on the nature of infrastructure to be delivered).
- 1.3. The City of Port Phillip is growing rapidly, with the population expected to approximately double by 2051, with significant jobs growth. Council is undertaking a range of long term planning activities, including the development of an Integrated Transport Strategy to respond to the growing transport challenge. It needs to be acknowledged that many elements of the transport network are beyond Council's direct control, but that action is necessary to preserve the liveability of our city. So in order to respond to the growing transport problem, the Strategy will include the identification of funding streams, including the potential of value capture as a potential mechanism to fund new infrastructure that increases connectivity by sustainable travel choices.
- 1.4. The City of Port Phillip includes a large part of the Fishermans Bend Urban Renewal Area (FBURA), which is the key focus for growth in the municipality. The early delivery of the Collins Street Tram Extension project is vital in realising the envisioned boost to accessibility, land values and in the longer-term an improved urban renewal outcome. Council has prepared a report (attached to this submission) that demonstrates the benefits of delivering this extension, which could be financed through accessing the potential value capture opportunities that will be generated, in what is a fiscally constrained environment for Council.

## 2. Setting the Context for the City of Port Phillip

2.1. Today there is a limited range of safe and convenient travel choices available to our local community. Symptoms of this problem are:

- growing congestion on roads, tram and train services, particularly in peak hours;
- crashes and collisions involving people walking or riding a bike; and
- pressures on the limited parking spaces created by competition between residents, workers and visitors.

2.2. Partly in response to this problem, the City of Port Phillip's *Sustainable Transport Strategy* provides a unifying vision for transport within our city and is used to guide decision making.

2.3. Council's vision is: *'for a connected and liveable city where residents, visitors and workers can live & travel car free by improving the convenience, safety, accessibility and range of travel choices across our City.'*

2.4. This vision is supported by mode shift targets, which centre on a 50% reduction in the community's greenhouse gas emissions from transport. As car trips are the highest source of emissions, the targets focus on the distance travelled (not # of trips) with a change in travel choices, based on distance travelled:

- Reduce private vehicle travel from 78% to 53%
- Increase travel by walking and bike riding from 9% to 20%
- Increase travel by catching public transport from 13% to 28%

2.5. The respective shifts in transport mode have been derived based on the city's travel habits and the distance travelled. In summary the target shown includes:

- For short trips (less than 5km):
  - 15% increase in public transport trips
  - 35% increase in walking or bike riding trips
- For middle distance trips (5-15kms)
  - 35% increase in public transport trips
  - 15% increase in walking or bike riding trips
- For longer trips (those beyond 15kms)
  - 20% increase in public transport trips to adjoining municipalities
  - 10% increase in public transport trips to further places

### 3. City of Port Phillip's Growth Challenge - Fishermans Bend Urban Renewal Area

- 3.1. The City of Port Phillip includes approximately half of the Fishermans Bend Urban Renewal Area (FBURA). This area is predicted to be the home to 80,000 people and workplace for 60,000 by 2051. FBURA's impact will more than double the population of the City of Port Phillip in a small area of land (205 ha).
- 3.2. The current limited and congested road network surrounding FBURA means that current mode splits of the City of Port Phillip will not be appropriate or manageable into the long term. In recognition of its role as an extension to the central city, coupled with the intensity of development the target is for private vehicle mode share to be less than 20%, with walking, bike riding and public transport having to cater for the remainder of trips undertaken by both residents and employees.
- 3.3. In order to achieve this significant new infrastructure and policy changes will be required. Council's key priorities for Fishermans Bend include an integrated transport plan that consists of:
  - A commitment to the early delivery in 2018 of a 'turn up and go' 10 minute direct high frequency public transport link from the renewal area to the CBD, such as the Collins Street Tram extension.
  - Provision for future Metro rail stations (including safeguarding reservations).
  - Creation of a clearly funded infrastructure plan indicating how transport, community infrastructure (including schools, emergency and health provision) and open space will be funded and delivered.
  - Amended Development Contributions Plan (DCP) to include early payment of a proportion of DCP at permit stage and further payment at building permit to enable forward funding of infrastructure and to reduce speculation.

7.

**PORT PHILLIP'S CHALLENGES OF GROWTH IN NUMBERS:**

By 2021:

- 20,000 more residents in next 5 years (2014: 91,526 to 111,898)
- 10,000 more privately owned cars stored in Port Phillip (2014: 44,848 to 54,831 cars)
- 62,000 more trips by our residents (2014: 312,000 to 374,000 trips)

By 2046 (compared to 2014):

- 112,975 more residents
- 50,000 more workers
- 538,500 extra trips happening each day to/ from/ around CoPP

If we don't address our problems of car parking and travel, by investing to improve the range of travel choices available to our community (by shifting car trips to walking bike riding and PT, increasing safety of walking bike riding and PT and making car ownership a choice not a necessity) then it means:

In terms of travel:

- If we attempted to cater for this growth in residents and workers by car travel, we would need the equivalent of 6 Kings Ways (approx. 30 car traffic lanes)
- If we attempted to cater for this growth by tram travel this equates to the total number of trips currently done each day on the tram networks 24 services (3.5 million trips/ week).

In terms of demands on public road space:

- 55,358 EXTRA privately owned vehicles stored in our city = 100,206 resident cars in CoPP (that's 1.9 cars for every on-street car space we currently have)
- 21,500 EXTRA cars driven to and from our city by our city's workers and parked all day.

3.4. With the growth within FBURA the City of Port Phillip expects its population to more than double by 2051 and have 50,000 new jobs created. It will not be physically possible for the existing road network to accommodate the additional trips that will be generated through the existing mode share of 50% of trips by car.

3.5. In recognition of the challenges of growth to our City, on 8 December 2015, Council adopted the following recommendation to:

*“Endorse the commencement of an Integrated Transport Strategy for the City of Port Phillip, which considers the relationship between ‘movement and place’, including a municipal review of Council’s paid parking policy, to better understand and quantify the challenges of a growing city”.*

3.6. The Strategy is likely to include the identification of funding streams, including assessing the applicability of value-capture, in order to finance its program of implementation.

3.7. Without a broadening in the range of funding streams available to Council it will continue to be constrained in responding effectively to the transport challenge and its ability to preserve the liveability of the city by the cumulative impacts of:

- Rate capping on local governments
- Continued population growth in Port Phillip and Melbourne
- Congestion Levy (the Levy) being applied to Council’s off-street car parking spaces, generating \$1 million in lost revenue per year.

#### **4. Response to the Inquiry Terms of Reference**

Council responses to the various aspects of the Inquiry's Terms of Reference are detailed below:

##### **Legislative and Administrative Actions to utilise value capture**

- 4.1 Council supports the concept of value capture mechanisms being applied at the appropriate level of government to fund transport and other infrastructure. All opportunities for value capture should be explored at the Inquiry.
- 4.2 A consistent and transparent approach to infrastructure funding through value capture is required. As a key administrative action, standard methods of assessing value capture should be introduced to cost benefit analysis guidelines at the national level (e.g. Infrastructure Australia), to enable consistent methodology to be applied in all jurisdictions. This consistency is particularly important given the ongoing role that Infrastructure Australia will play in the assessment and funding of major infrastructure projects.

##### **Options for the application of value capture mechanisms**

- 4.3 The establishment of a standard methodology for the assessment of value capture through Infrastructure Australia guidelines is an important first step which will provide a framework for state and local governments to consider value capture opportunities.
- 4.4 As local government is not able to effect legislative change in its own right, leadership is required at state and national level to explore all options to capture the value of new infrastructure development, and develop a policy and legislative response to enable value capture to occur at the appropriate level of government.
- 4.5 Port Phillip City Council is responsible for integrated transport and land use planning for the municipality. Council is currently commencing the preparation of an Integrated Transport Strategy as a key input to long term planning for the expected doubling of population and the creation of 50,000 new jobs by 2051. The identification of sustainable and equitable funding streams for new infrastructure is a key requirement in responding to the challenges of growth, particularly in the FBURA.

##### **Value Capture as a decision making tool in the reservation of transport corridors**

- 4.6 The selection and reservation of land for transport (and other) infrastructure is a key step in planning for urban renewal and growth in our cities. It is important that the selection of land for new infrastructure is undertaken as part of an integrated planning process, in order to maximise economic, social and environmental outcomes, including uplift in the value of land.
- 4.7 Generating investment confidence from the private sector is a key factor in the success of urban renewal programs, and the timely delivery of key infrastructure is often a barrier to the overall success of renewal. The reservation of land must be supported by a transparent and achievable funding and delivery mechanism in order to maximise confidence and complementary public and private sector investment.
- 4.8 The application of value capture as a standard method of assessing wider economic benefits would allow for a transparent and evidence based approach to precinct planning to enable the best overall economic and accessibility outcome, and provide confidence to the private sector over the timing of delivery.

### **Transport connectivity impacts to property value & tax revenue**

- 4.9 Council has completed significant work on land value and other economic impacts of improved transport infrastructure for FBURA. In particular, in 2014 Council commissioned a technical feasibility and economic analysis of the Fishermans Bend Collins Street Tram Extension (attached to this submission).
- 4.10 The report highlights the key importance of travel time and direct connections to the CBD as a major factor in the delivery of the FBURA vision. The Collins Street Tram extension will deliver significantly more economic value for Victoria than an alternative scenario with a less direct tram route.
- 4.11 Noting that preliminary cost estimates for the Collins Street Tram Extension project is in the order of \$300M, the AECOM report concluded:
- “land value capture” of \$1,106M would be realised with delivery of the Collins Street tram extension
  - potential additional revenue streams to State and Local Governments in the order of \$200M could be realised (Council rates, Stamp duty, Development contributions, Land tax) with early delivery of this project.
- 4.12 Over the 40 year development horizon, the Collins Street tram extension is estimated to potentially support:
- 82 percent higher land values
  - 34 percent increase in yield of stamp duty revenue
  - 229 per cent increase in yield of land tax receipts
  - 35 percent increase in yield of development contributions
  - 42 percent more yield of council rates revenue (albeit a very low total revenue).
- 4.13 The increased returns to State Government revenues is a result of the increased attractiveness of the area for higher-value development, sooner, in the scenario where the Collins Street tram extension is in place. The earlier development and wider accessibility is the key driver of these indicative results.
- 4.14 Although the results are indicative only, they nevertheless highlight the potential outcomes of delivering improved accessibility earlier to the core of Fishermans Bend so that urban renewal outcomes can occur sooner.
- 4.15 Further work is currently being undertaken by Council to support the delivery of transport and social infrastructure in Fishermans Bend. Council would welcome the opportunity to prepare a more detailed submission and present to the Inquiry in due course, having regard for the ongoing work and emerging findings from the Integrated Transport Strategy, FBURA and other long term planning activities.
- 4.16 The contact for further information relating to this submission is Brett Walters, Manager Transport and Sustainability, tel: (03) 9209 6364.

### **Attachment 1 - Fishermans Bend Collins Street Tram Extension Technical Feasibility and Economic Analysis**



# Fishermans Bend Collins Street Tram Extension

Technical Feasibility and Economic Analysis



AECOM

Fishermans Bend Collins Street Tram Extension

## Fishermans Bend Collins Street Tram Extension

Technical Feasibility and Economic Analysis

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## Quality Information

Document Fishermans Bend Collins Street Tram Extension

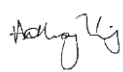
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## Executive Summary

In 2012 the Minister for Planning rezoned the Fishermans Bend precinct as Capital City Zone paving the way for urban renewal at a scale not seen before in Melbourne.

In order to unlock investment and prevent congestion Fishermans Bend Urban Renewal Area must have a world class public transport network to meet the needs of residents, employees and visitors.

The City of Port Phillip has worked collaboratively with the Department of Transport, Planning and Local Infrastructure, City of Melbourne, Metropolitan Planning Authority and Public Transport Victoria to develop a transport network for Fishermans Bend. This includes a new tram connection from Collins Street in the CBD to Fishermans Bend crossing the Yarra River and West Gate Freeway. This alignment is included in the Fishermans Bend Strategic Framework Plan and Plan Melbourne.

The bridges on the alignment are intended to provide walking, cycling and light rail connectivity between Docklands and Fishermans Bend as well as connections between Lorimer and Sandridge precincts within Fishermans Bend. They are 'green bridges' prioritising active and public transport modes, and have the potential to be attractive parts of the open space network.

Bridges that allow most boats to pass under, that are level with the ground at Point Park, cross Lorimer Street at grade, cross the West Gate Freeway and land before Ingles Street are feasible. It is not possible to provide a fixed bridge that enables tall masted boats to travel under the bridge, but a moveable bridge makes it feasible for tall masted boats to travel past the bridge.

An accessibility-based economic assessment of the possible effects on land use of the Collins Street tram line compared to a less direct alternative via Montague has also been completed. Headline financial and economic outcomes are summarised in Table 1 below. In terms of potential revenue streams to state and local governments, of the order of \$200 million of additional revenue may be yielded by the Collins Street Extension.

In addition to these potential financial outcomes, construction-related employment has been estimated using input-output assessment. The Collins Street Tram Extension (preferred option) is estimated to bring forward 640 employment positions in 2015-2023 and 1,170 positions in 2023-2031. With the alternative base case scheme, the 1,810 positions would be delayed until after 2047.

This study does not include any monetisation of journey time benefits which would accrue from the scheme or decongestion impacts. These additional benefits would increase the scheme's benefit cost ratio.

**Table 1 Economic Analysis Overview**

Financial measure	Base Case via Montague	Collins Street Extension	High level assumptions
Land Value	\$1,353M	\$2,459M	<ul style="list-style-type: none"> <li>- Based on values provided by Council.</li> <li>- Land values will remain at current levels until new transport infrastructure is live</li> </ul>
Council Rates	\$12M	\$19M	<ul style="list-style-type: none"> <li>- Rates are not cumulative and account only for new rates added each year</li> <li>- Current Rate in Dollar of 0.40708 adopted for entire period</li> </ul>
Stamp Duty	\$283M	\$383M	<ul style="list-style-type: none"> <li>- No stamp duty applied to pre-development land trades</li> <li>- No stamp duty applied to post development commercial property as assumed that all developers build and hold in portfolio</li> <li>- Residential stamp duty based on a 25:50:25 spread of median unit prices</li> <li>- Assumed that each unit is transacted only once during the development period</li> <li>- 50:50 split of primary residence to investment properties</li> </ul>
Development Contribution	\$185M	\$262M	<ul style="list-style-type: none"> <li>- Based on indicative DCP values provided in Section 3 of the Strategic Framework Plan</li> <li>- Assumed a split of 70:30 office to retail for commercial DC calculation</li> </ul>
Land Tax	\$8M	\$26M	<ul style="list-style-type: none"> <li>- Assumed an average commercial plot size of 2,000 m<sup>2</sup></li> <li>- Assumed an average residential plot size of 200 m<sup>2</sup></li> <li>- Calculated on current and future land value as provided by the Council</li> </ul>

**Note:** the numbers are indicative of relative outcomes only and do not constitute formal valuation advice.

## 1.0 Introduction

In 2012 the Minister for Planning rezoned the Fishermans Bend precinct as Capital City Zone paving the way for urban renewal at a scale not seen before in Melbourne.

In order to unlock investment and prevent congestion Fishermans Bend Urban Renewal Area must have a world class public transport network to meet the needs of residents, employees and visitors.

The City of Port Phillip has worked collaboratively with the Department of Transport, Planning and Local Infrastructure, City of Melbourne, Metropolitan Planning Authority and Public Transport Victoria to develop a transport network for Fishermans Bend. This includes a new tram connection from Collins Street in the CBD to Fishermans Bend crossing the Yarra River.

The Minister for Planning released the Strategic Framework Plan for Fishermans Bend at the end of July 2014. This includes details of a tram alignment along Plummer Street, Fennell Street and then across the West Gate Freeway and the Yarra River to Docklands and the CBD. Investigating the feasibility of this light rail route is a short-term action in Plan Melbourne, the Victorian Government's metropolitan planning strategy.

This report details the findings of a technical engineering review for the tram crossings of the Yarra River and West Gate Freeway to connect Collins Street in Docklands with Fishermans Bend west of the M1 West Gate Freeway. These bridges are intended to provide walking, cycling and light rail connectivity between Docklands and Fishermans Bend as well as connections between Lorimer and Sandridge precincts within Fishermans Bend. They are 'green bridges' prioritising active and public transport modes, and have the potential to be attractive parts of the open space network.

It also reports the findings of an accessibility-based economic assessment of the possible effects on land use of the Collins Street tram line compared to a less direct alternative via Montague.

## 2.0 Technical Engineering

### 2.1 Relevant design standards

The standards used in developing the bridge concepts shown in this report are:

- Australian Standard AS5100-2004 Bridge Design.
- American Association of State Highway and Transportation Officials (AASHTO) Movable Highway Bridge Design Specifications 2007 (Note – Australian Standard AS5100-2004 Bridge Design does not make provision for movable bridges. In such instances, it is typical to refer to international design standards)
- Victorian Rail Industry Operators Group Standards and Yarra Trams Track Design Manual, which set the maximum acceptable grades and vertical curves for tram infrastructure.

The bridge also makes provision for walking and cycling, with tram gradients consistent with these mode requirements. Note that the bridge widths can be readily adjusted to expand shared use or dedicated pedestrian and cycle paths to achieve urban design and landscape outcomes.

## 2.2 Design outcomes

Potential design solutions for the Yarra River crossing and the West Gate Freeway crossing are shown in plan and elevation view in Appendix A. The proposed bridge provides for two tram tracks, one in each direction, and pedestrian and cycle paths.

The following design outcomes were nominated by the City of Port Phillip for the bridge crossings of the Yarra River and West Gate Freeway.

**Table 2 Design criteria**

Design criteria	Design response	Commentary
Ability for larger boats and boats with retractable masts to pass under the bridge structure	Partly feasible. Bridge clearance set at 4.0 m above high waterline.	This is higher than the clearance of Spencer Street Bridge.
Investigate the possibility of enabling tall masted boats to travel under the bridge	Feasible with a moveable bridge section.	Cannot provide a fixed bridge of the desired height whilst meeting other design criteria because it exceeds tram grade requirements. Several moveable bridges with overhead wires have been successfully constructed internationally, for example in Amsterdam where tram services operate over moveable bridges.
Bridge to be level with ground at Point Park	Broadly feasible – some sections will be slightly raised by up to 1.5m	Detailed survey and urban design can resolve a fully integrated solution.
At grade tram crossing provision at Lorimer Street	Feasible.	It may be desirable to locally raise some sections of Lorimer Street to reduce travel speeds, help to integrate the light rail into the landscape, and reduce gradients.
Ability to provide sufficient clearance over the Westgate Freeway	Feasible.	A constructible single span solution with the appropriate clearance is feasible.
Ability to land bridge structure prior to Ingles Street.	Feasible.	Bridge lands in Fennell Street immediately north of Ingles Street intersection. <sup>1</sup>

The moveable bridge design has assumed a 'bascule' bridge. In this type of bridge the motorised moveable section is hinged and opens with the aid of a counterweight. In Amsterdam these operate successfully on streets with frequent tram services. A 'lifting' bridge could also be considered. In these bridges the moveable section is lifted vertically between two towers. Examples of this type of lifting bridge, with trams similar to Melbourne's, are in operation in France and Belgium. A bascule bridge has been assumed for this study primarily because of its lower visual impact. More detailed studies are required to resolve the architectural form of the bridge.

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<sup>1</sup> A detailed study could optimise the bridge landing. The current design assumes an underpass connection is provided at Boundary Street, as well as the crossing of the freeway. This sets the distance from the Ingles Street intersection that the bridge can reach ground level. Under these assumptions, the bridge landing can be moved approximately 50 metres from the intersection within tram design limits. If local street connections are changed, further design options are possible. Opportunities to have adjacent buildings have entrances onto the bridge, and open space opportunities in Fennell Street, could also be considered.



In Amsterdam, where similar bascule bridges operate, river craft are permitted to open the bridges in non-peak periods. The system works by creating clear time of day priorities whereby major people movements are prioritised during peak periods, however boat movements are facilitated at other times of the day.

## 2.3 Indicative cost

The bridge over the Yarra River has been conservatively estimated to cost approximately \$100 million, and the bridge over the West Gate Freeway has been conservatively estimated to cost approximately \$80 million. The total cost from Collins Street to Ingles Street is approximately \$190 million.

By comparison, the alternative route from the Port Melbourne light rail corridor to Ingles Street is estimated to cost approximately \$60 million. This highlights that the cost of the bridges is estimated at approximately \$130 million. The two routes differ by only 150m in length of light rail track; the Collins Street route is approximately 900m and the Ingles Street route approximately 750m.

Other cost estimates for Fishermans Bend light rail are \$300 million or more. These schemes extend further into the precinct to Prohasky Street or to Garden City, and make different assumptions about whether the rolling stock needed for the line is project specific or purchased as part of a larger network wide project. The difference highlights that the extension from Ingles Street to Prohasky Street or Garden City is expected to cost less per kilometre than the bridge sections.

All costs in this report are expressed as base construction cost estimates, with specific project delivery costs and a 30% risk contingency added to estimated costs to account for lack of project definition and unknown site conditions.

The approach taken is a common method used to establish relative costs with respect to indicative "concept" estimates. Each of these allowances made over the net trade costs will be interrogated for accuracy and relevance to the project as the project is developed. At this stage the percentage used and the resultant sums are a guide to the magnitude of cost for a project of a similar nature. When the project has matured to enable a clearer understanding of scope and materials, the procurement methodology, management and delivery and the associated risks, individual analysis of each category can be undertaken.

This cost includes broad allowances for light rail tracks and power, and a pedestrian and cycle path between Docklands and Ingles Street, site preliminaries, design, project management, contingency and risk, and an amount for landscaping and urban design restoration at Point Park. It excludes light rail vehicles, light rail, cycle and pedestrian infrastructure west of Ingles Street, services relocations, road occupations, river occupations, and land acquisition, and other items detailed in Appendix B. Further design work would assist to reduce this estimate.

The annual cost to operate a moveable bridge is expected to be in the order of \$200,000, based on similar bridges in the United States. The cost is primarily labour, and assumes that one person would be employed part time to manage the bridge opening twice a day on weekends, at defined times. Additional openings of the bridge to provide river access at non-peak times can be permitted. The cost also includes an inspection by a crew of four people, and associated light maintenance works, four times a year. The bridge costs could potentially be reduced by automation or by incorporating its management into existing river management roles.

Twice-daily weekend openings would provide enough time to safely transport the river traffic volumes detailed in the City of Melbourne's 2011 Docklands Vessel Traffic Study, which details the demand for boat movements that would require a bridge opening. The study says the trip rate from marinas is approximately 0.1 trips per berth per day. The Yarra's Edge marina has 149 berths, so 15 departures a day could be expected on average. Vessel counts indicate that on a summer Saturday in 2010 there were 9 movements of boats taller than 6m on the Yarra River, 6 movements on a Monday, and 9 movements on a Thursday, generally in the middle and later part of the day, especially Saturday afternoon. The speed limit for all boats on this part of the Yarra River is 5 knots, so a boat moving at cruising speed could safely clear the bridge span in under 10 seconds. Conservatively assuming that only two boats navigate through in a minute, a five minute opening period twice a day on weekends could accommodate 20 boat movements, more than the estimated daily demand.

Bascule bridges can be designed to open quickly, with each additional opening estimated to cost approximately \$500, mostly in labour costs. Bridge openings can be accommodated with trams operating at ten-minute headways, as they typically would during interpeak and weekend periods<sup>2</sup>. Examples from Amsterdam indicate

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<sup>2</sup> The interpeak is typically between 10 am and 4pm, and between 7:30 pm and 6:30 am

that a full opening and closing can be achieved within a three minute period. However, it would be difficult to open the bridge during the commuter peak period, when trams would be expected to operate every few minutes and walking and cycling demand would be highest, without causing unacceptable disruption to commuters.

## 2.4 Next steps

Next steps to develop the technical feasibility of the proposed bridges include:

- Complete a feature survey of the proposed alignment corridor
- Complete geotechnical studies to evaluate ground conditions around the proposed bridges
- Carry out preliminary design of alignment and bridge structures, reducing impacts (e.g. to the marina) and developing construction techniques
- Develop an urban design and landscape approach to integrate the bridges with Point Park, Lorimer Street and Fennell Street. It is recognised that this will be a key success factor for the proposed project.

## 3.0 Economic analysis

### 3.1 Approach

A journey time accessibility analysis was undertaken for the Collins Street tram extension and compared to a 'base case' shuttle tram option via Montague. The accessibility analysis estimated how the travel time from the CBD (specifically the corner of Collins and Spencer Streets) will differ between the two options. In the Collins Street option, trams operate directly from Collins Street to Fishermans Bend via the proposed bridges. In the Montague option, a shuttle tram service is provided connecting from Route 109 services. The shuttle operation has been assumed because the limited capacity of the section of tram line between Collins Street and Whiteman Street over Spencer Street Bridge means a direct route for Fishermans Bend tram services is not feasible. The analysis considers both tram travel time and the end-of-trip walk from proposed tram stops in Fishermans Bend. The area of land within different travel time bands (for example, within ten minutes 'stop-to-door') has been calculated.

The two scenarios assume the same average light rail travel speed of 24kph on new sections of network. This is substantially faster than current tram services, and reflects improved tram priority. The shuttle operation includes a slower 12 kph average speed on the existing busy line between Southern Cross and Montague and a three minute wait to change trams at Montague. The direct service provides an approximately nine minute trip to Prohasky Street; the alternative route takes approximately 20 minutes. It is assumed pedestrians walk at 4 km/h from tram stops to their destinations.

Areas of higher accessibility to the CBD are generally more attractive to commercial development, and the areas of land in each travel time band were evaluated accordingly, within the general directions set by the Fishermans Bend Strategic Framework Plan. For example, areas of Sandridge within ten minutes of the CBD were assumed to have more attractiveness for commercial development, but in Wirraway these areas would be more suitable for mixed-use development.

Different intensities of land use were assumed for each travel time band, by precinct, and factored to account for constraints like undevelopable land and site yields. The land use categories assumed are:

- Commercial (610 jobs per hectare)
- Mixed Use (333 dwellings per hectare/ 380 jobs per hectare)
- Medium density residential (167 dwellings per hectare)
- Lower density residential (83 dwellings per hectare)

All density assumptions have been sourced from the *Fishermans Bend Urban Renewal Area – Real Estate Market Assessment*<sup>3</sup>.

For each land type, land values and transaction rates were assumed to estimate rates revenue, stamp duty and land tax potential, and the two scenarios' outcomes were compared for their potential development outcomes over time.

Travel time, land use and financial assumptions are shown in Appendix B.

### 3.2 Landowner consultation

Landowners were consulted to inform estimates of change in development outcome between the direct and indirect tram route scenarios. The key points from the consultations included:

- Their overriding objective is to have certainty on tram delivery and its timing as a matter of urgency
- The landowners' preference was for the direct tram option
- The tram is likely to be a catalyst for development with the delivery of schemes being brought forward in line with certainty over the preferred option

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<sup>3</sup> *Fishermans Bend Urban Renewal Area – Real Estate Market Assessment, MacroPlanDimasi 2013*

- The direct tram option will have a positive impact on values. Landowners stated it would be difficult to quantify, suggesting it could be from 10% to 100%+ depending on sequencing
- Tram capacity is likely to impact the density of development
- Lack of public transport is likely to have a detrimental impact on the experience of people living and working in the precincts (particularly with the challenges around the amount of car parking and existing congestion on surrounding arterial roads and the tram network)

The landowners would not be drawn on whether either option would impact the mix of development that would be delivered. Note that the analysis is indicative only and is not intended to be relied on for any funding strategy. Its purpose is to provide a high level indication of the difference in potential urban outcomes of the alternative routes through an economic lens.

### 3.3 Results

The results below present the estimated results of the two scenarios. Over the 40 year development horizon, the Collins Street tram extension is estimated to potentially support:

- 82 percent higher land values
- 34 percent increase in yield of stamp duty revenue
- 229 per cent increase in yield of land tax receipts
- 35 percent increase in yield of development contributions
- 42 percent more yield of council rates revenue (albeit a very low total revenue).

The increased returns to State Government revenues is a result of the increased attractiveness of the area for higher-value development, sooner, in the scenario where the Collins Street tram extension is in place. The earlier development and wider accessibility is the key driver of these indicative results.

Although the results are indicative only, they nevertheless highlight the potential outcomes of delivering improved accessibility earlier to the core of Fishermans Bend so that urban renewal outcomes can occur sooner.

**Table 3 Economic Analysis Overview**

Financial measure	Base Case via Montague	Collins Street Extension	High level assumptions
Land Value	\$1,353M	\$2,459M	- Based on values provided by Council. - Land values will remain at current levels until new transport infrastructure is live
Stamp Duty	\$283M	\$383M	- No stamp duty applied to pre-development land trades - No stamp duty applied to post development commercial property as assumed that all developers build and hold in portfolio - Residential stamp duty based on a 25:50:25 spread of median unit prices - Assumed that each unit is transacted only once during the development period - 50:50 split of primary residence to investment properties
Land Tax	\$8M	\$26M	- Assumed an average commercial plot size of 2,000m <sup>2</sup> - Assumed an average residential plot size of 200 m <sup>2</sup> - Calculated on current and future land value as provided by the Council - Assumes Land Tax is payable on 50% of the low/medium density residential and 100% of the mixed use/commercial
Development Contribution	\$185M	\$262M	- Based on indicative DCP values provided in Section 3 of the Strategic Framework Plan - Assumed a split of 70:30 office to retail for commercial DC calculation
<b>Subtotal: State Government revenues</b>	<b>\$475M</b>	<b>\$668M</b>	- Sum of stamp duties, land tax and developer contributions
Council Rates	\$12M	\$19M	- Rates are not cumulative and account only for new rates added each year - Current Rate in Dollar of 0.40708 adopted for entire period

**Numbers are indicative only and do not constitute formal valuation advice.**

### 3.4 Construction impact

This analysis provides a high level estimate of the employment impact of construction activity under both scenarios. The economic analysis has been undertaken using Input-Output (I-O) tables, provided by the Australian Bureau of Statistics (ABS). Input-output multipliers are summary measures used for predicting the total impact on all industries in an economy as a result of changes in demand for output of any one industry. An increase in demand for one product or service will result in subsequent rounds of production impacts in supplier and related industries, as demand for inputs increase to meet the higher demand. A change in demand experienced in one industry will therefore result in a change to the overall output, employment and income across the economy as a whole. Multipliers are used to represent these changes. For example, the ABS estimated that the flow-on employment multiplier for the construction industry in Victoria is 10.98. This means every \$1m spent in construction output in the economy will give rise to an additional 10.98 jobs in the economy from the indirect effects of the initial construction activity.

These figures indicate that the amount of construction in each period can be expected to support the construction-related employment shown. These numbers relate only to the construction activity. Most of the jobs would likely be in Victoria, but no assumption about location has been made.

The preferred option is estimated to bring forward 640 employment positions in 2015-2023 and 1170 positions in 2023-2031, instead of that employment being delayed until after 2047. With job creation a key issue in the Victorian economy at the time this report has been prepared, the ability to rapidly bring forward jobs by catalysing the redevelopment of Fishermans Bend is an economically strategic opportunity to stimulate the Victorian economy.

**Table 4 Construction related employment, direct**

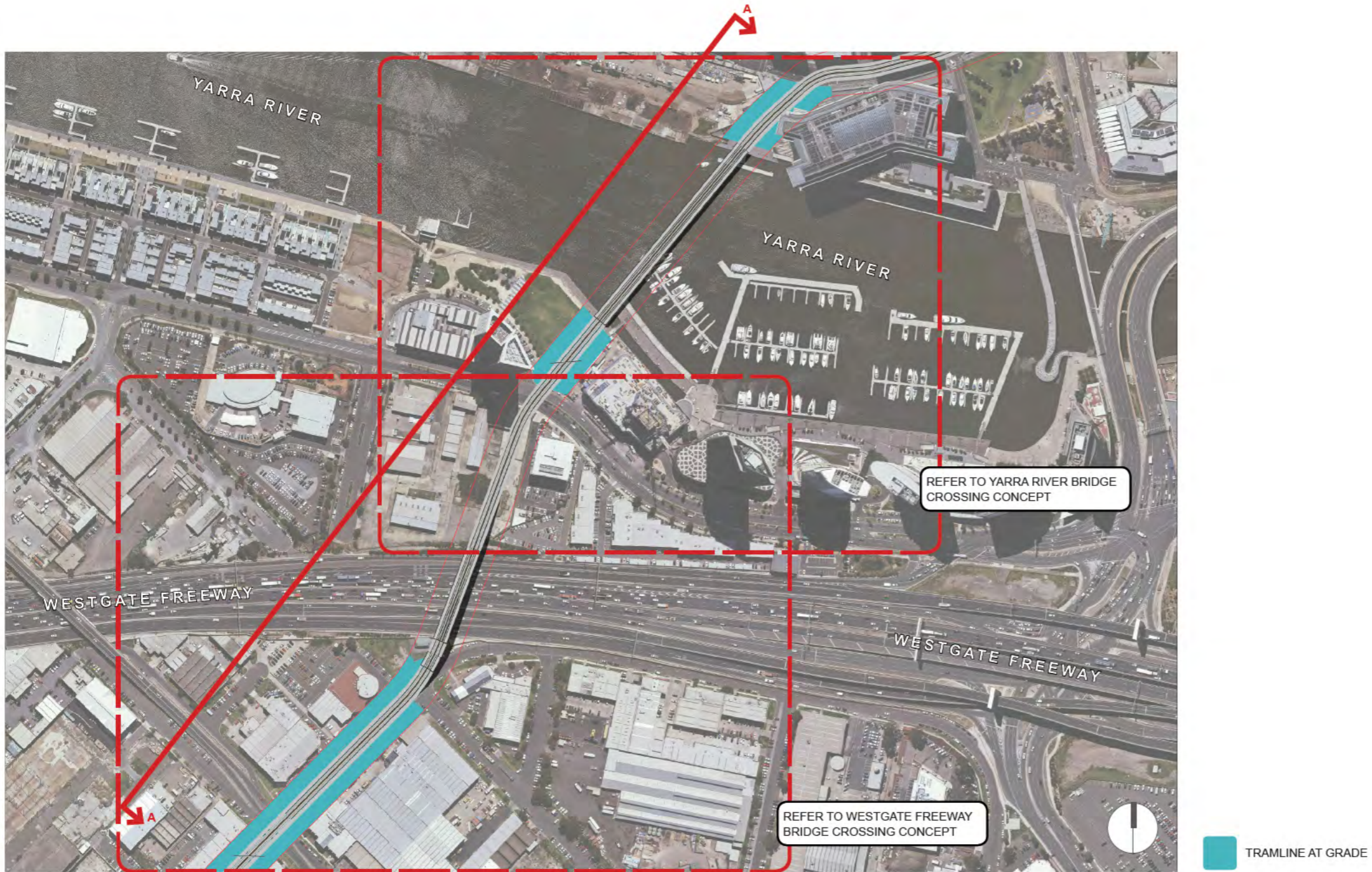
Scenario	2015-2023	2023-2031	2031-2039	2039-2047	2047-2055
Base Case via Montague	250	250	350	450	450
Collins Street Extension	350	430	380	450	300
Difference in period	100	180	30	0	-150

**Table 5 Construction related employment, indirect**

Scenario	2015-2023	2023-2031	2031-2039	2039-2047	2047-2055
Base Case via Montague	1,460	1,460	2,010	2,570	2,570
Collins Street Extension	2,000	2,450	2,180	2,550	1,730
Difference in period	540	990	170	-20	-840

## Appendix A

# Bridge Profile - Drawings



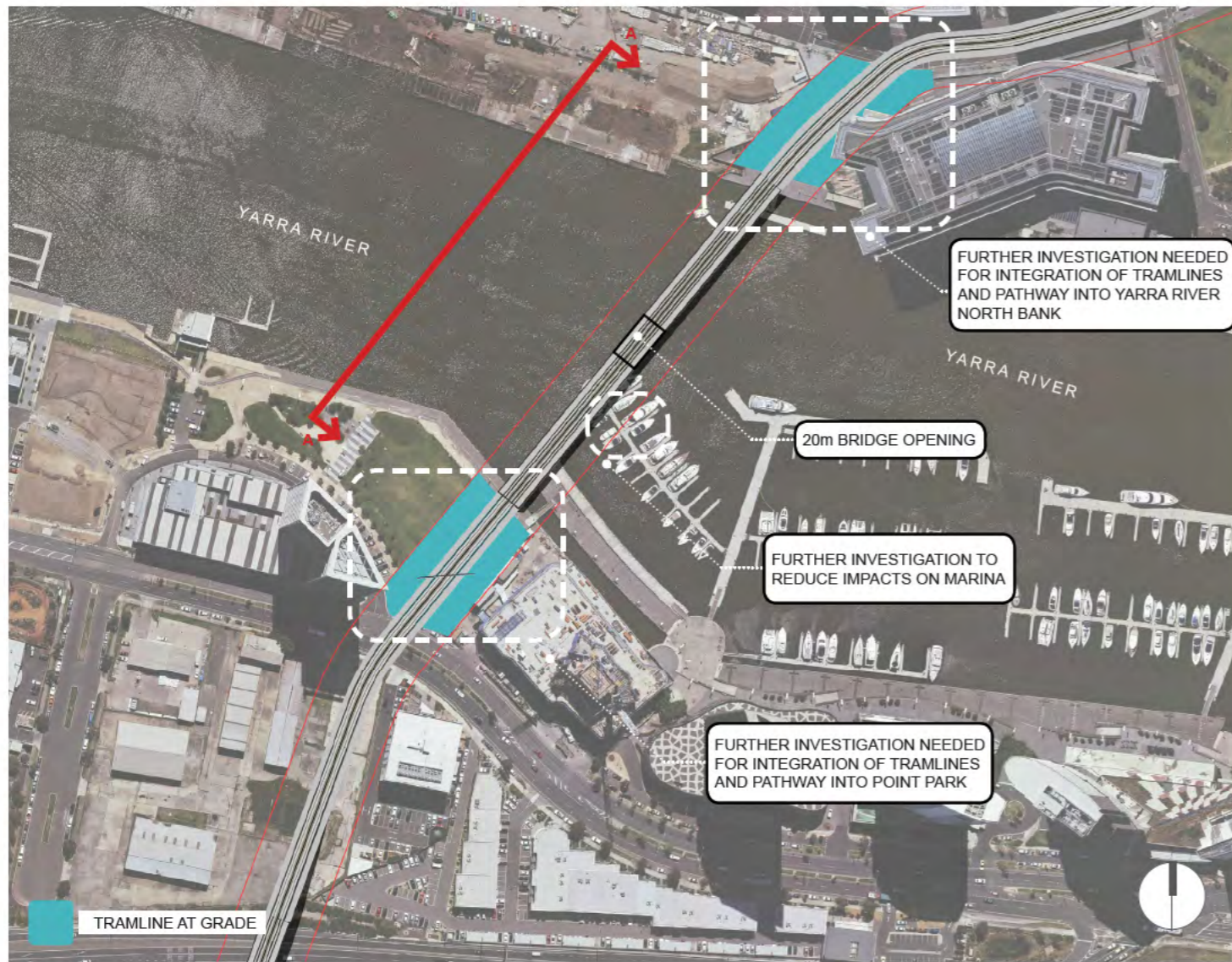
OVERVIEW PLAN - Not to scale



OVERALL ELEVATION A-A







KEY PLAN - Not to scale

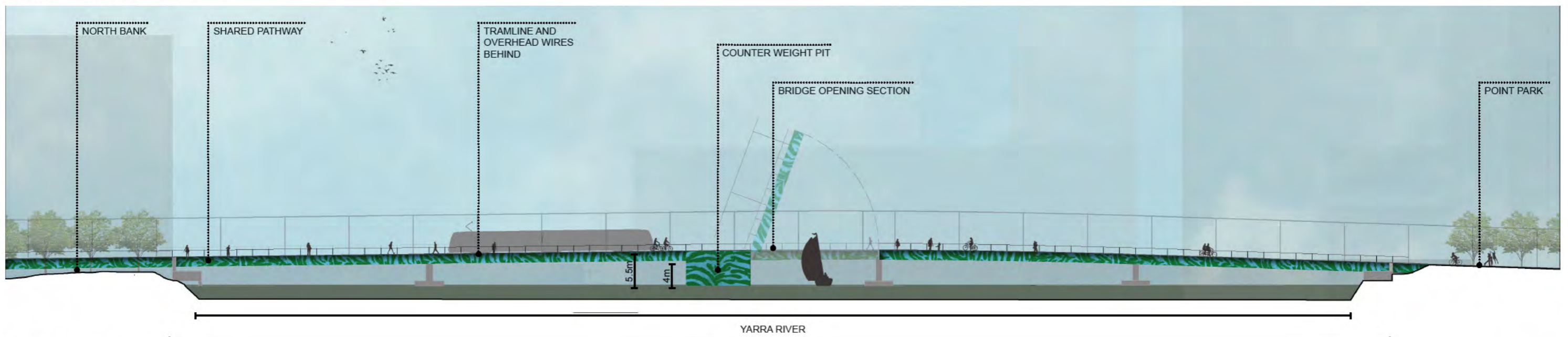


1. BASCULE BRIDGE AMSTERDAM

2. OVERHEAD WIRES FUNCTIONING ON BRIDGE OPENING



3. DOUBLE BASCULE BRIDGE HORTUSBRUG, AMSTERDAM



ELEVATION A-A

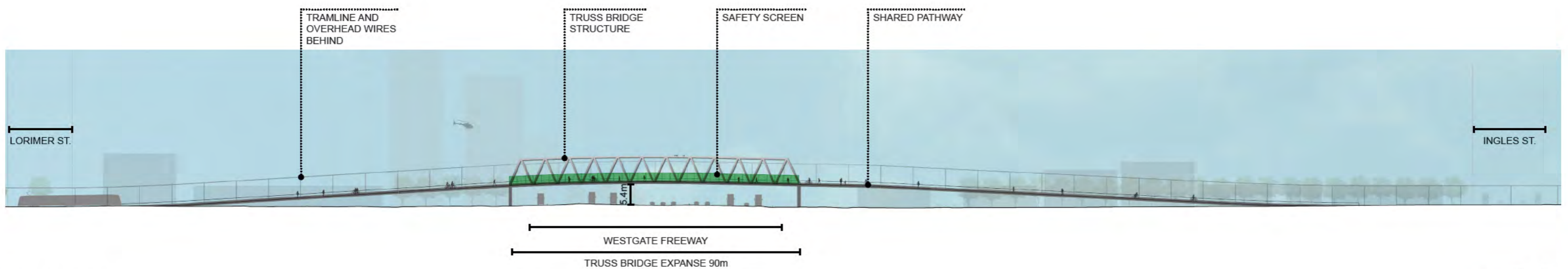




KEY PLAN - Not to scale



1. TRAMLINE TRUSS BRIDGE, THE HAGUE 2. 3. TRUSS BRIDGES, NOTTINGHAM TRAMLINE



ELEVATION A-A

## Appendix B

# Economic assumptions

## Appendix B Economic assumptions

### Journey time analysis

A journey time accessibility analysis was undertaken for the Collins Street tram extension and compared to an alternative via Montague precinct. The accessibility analysis estimated how the travel time from the CBD (specifically the corner of Collins and Spencer Streets) will differ between the two options.

The analysis considers both tram travel time and the end-of-trip walk (assuming 4km/hr walk speed) from proposed tram stops in Fishermans Bend. The land within the Fishermans Bend Urban Renewal Area (FBURA) has been assigned in to different travel time bands, which are:

- 0-10 minutes from the CBD
- 10-15 minutes from the CBD
- 15-20 minutes from the CBD; and
- More than 20 minutes

### Routes

The analysis considered two routes:

- Collins Street tram extension, from Victoria Harbour on a bridge over the Yarra River to Lorimer Street, then a bridge over the West Gate Freeway to Fennell Street just north of Ingles Street, then via Fennell and Plummer Streets as shown in the Strategic Framework Plan. The journey time to Prohasky Street is approximately nine minutes.
- Montague alternative, following the 109 route until diverting up Ingles Street and following the alignment of the Collins Street tram extension. Due to capacity constraints on the existing network<sup>4</sup> it has been assumed that the Montague to Ingles St portion of the line will be a separate shuttle service, able to run at the same speed as the preferred route (24/km hr). As the route is operated by two separate trams, a three minute transfer penalty has been applied to move between the two sections. The journey time to Prohasky Street is approximately 20 minutes.

Figure 1 illustrates the two routes, including stops and tram speeds.

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<sup>4</sup> The capacity constraint is the impact additional Fishermans Bend trams would have on the intensively used section of tram line between Whiteman Street and Collins Street. This section of tram line is already planned to accommodate additional tram services in the future and a frequent Fishermans Bend tram service would disrupt and delay other services.

Figure 1 Route scenarios

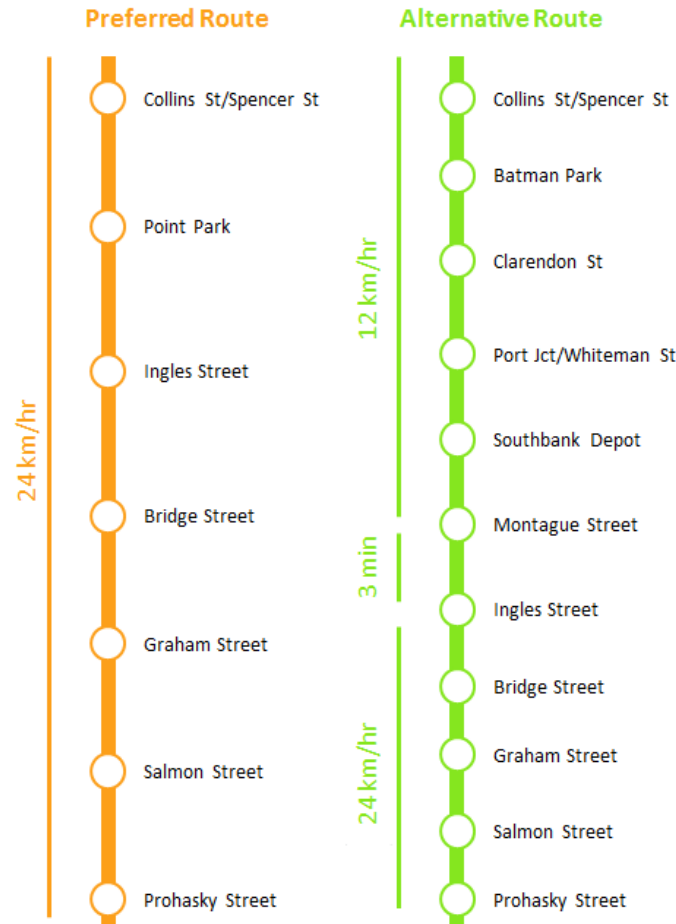
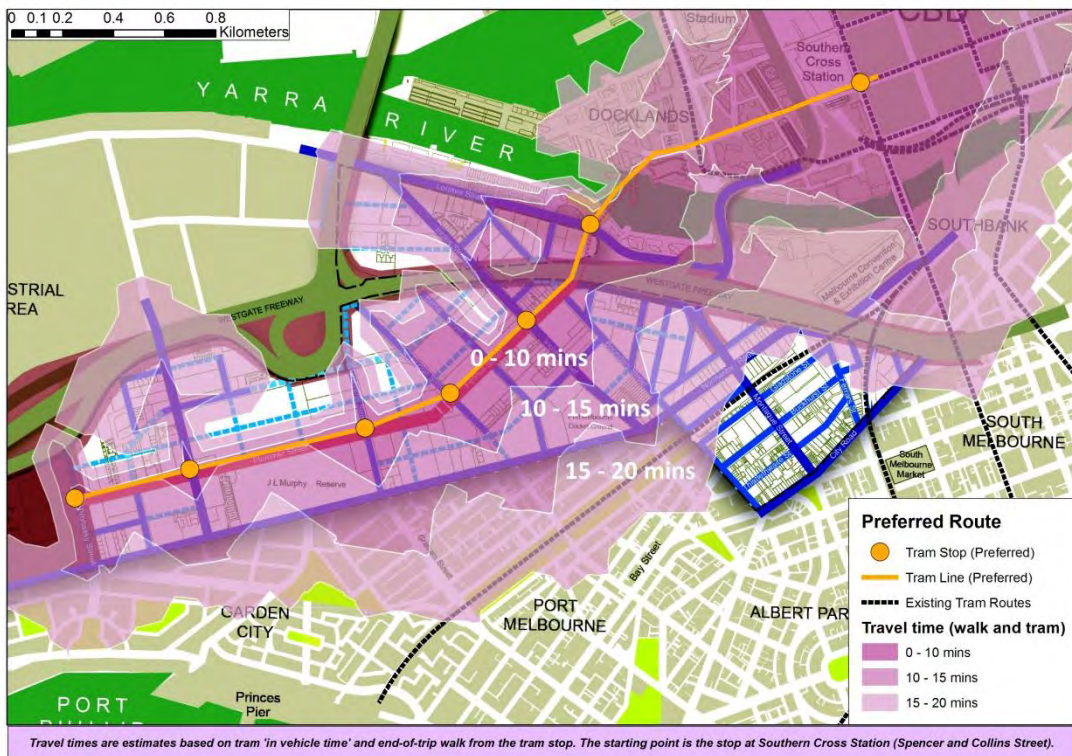


Figure 2 and Figure 3 illustrate the journey time analysis for the Preferred and Alternative analysis respectively. The maps each have three accessibility bands, 0-10 minutes, 10-15 minutes and 15-20 minutes. All areas within FBURA which lie outside the coloured bands have a travel time of more than 20 minutes from the CBD.

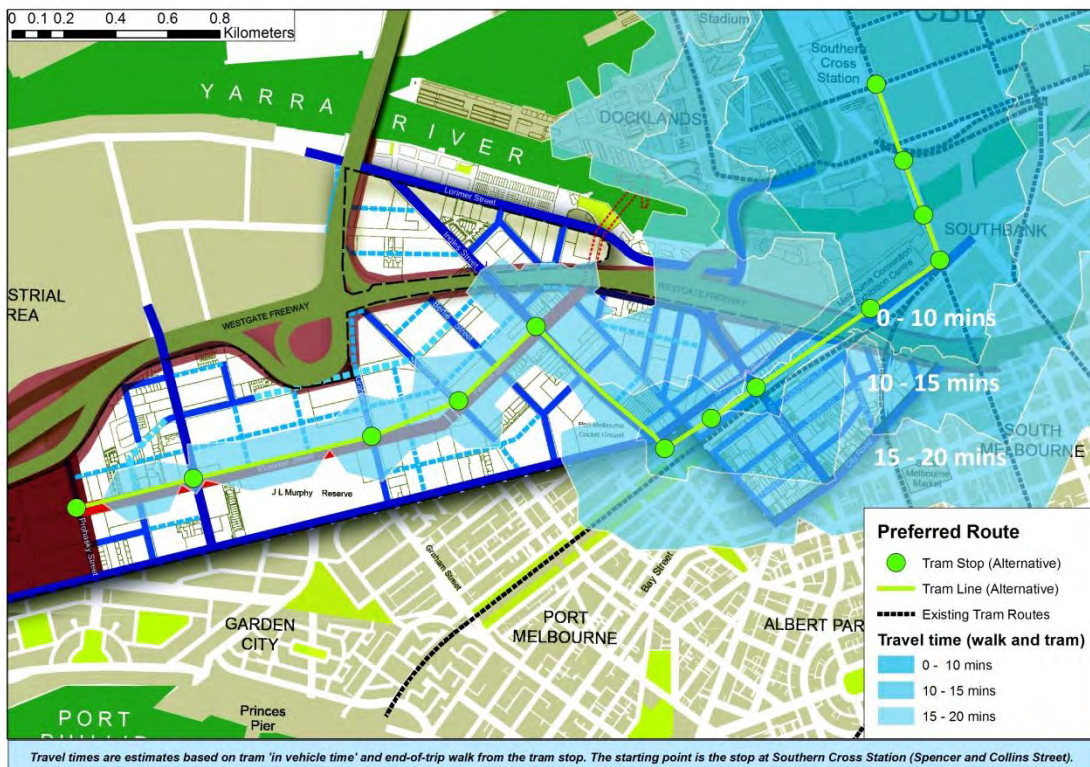
There are areas close to the proposed tram lines that show low accessibility, particularly between stops (that is, they are coloured white but are close to the proposed tram line). This is because the walking network in the precinct is not fully developed, which reduces the area that is measured as accessible. The indicative network in the Strategic Framework Plan was not built into the model.

Figure 2 Journey time accessibility analysis, Preferred Route



Source: AECOM

Figure 3 Journey time accessibility analysis, Alternative route



Source: AECOM

## Economic Analysis

The economic analysis compares the different options across a number of key quantitative economic drivers as follows:

- Land value
- Stamp Duty
- Rates
- Development Contributions
- Land Tax

The results of this analysis are included in Table 6 along with high level assumptions used to derive the each economic driver. The results are presented as an index, which are reflective of the present value for each driver.

**Table 6 Economic Analysis Overview**

Value (\$)	Base Case (Alternative)	Preferred	High level assumptions
Land Value	\$1353 M	\$2459 M	<ul style="list-style-type: none"> <li>• Based on values provided by Council. Assumed that Land Values will stay at current rates until new transport infrastructure is introduced</li> </ul>
Council Rates	\$12 M	\$19 M	<ul style="list-style-type: none"> <li>• Rates are not cumulative and only account for new rates each year</li> <li>• Increase in additional rates values as a result of new development</li> </ul>
Stamp Duty	\$283 M	\$383 M	<ul style="list-style-type: none"> <li>• No stamp duty applied to pre-development land trades</li> <li>• No stamp duty applied to post development commercial property as it is assumed that all developers build and hold in portfolio</li> <li>• Residential stamp duty based on a 25:50:25 spread on average unit prices</li> <li>• Assumed that each unit is transactional only once during the development period</li> <li>• 50:50 split of primary residence to investment properties</li> </ul>
Development Contribution	\$185 M	\$262 M	<ul style="list-style-type: none"> <li>• Based on indicative DCP values provided in Section 3 of the Strategic Framework</li> <li>• Assumed a split of 70:30 Office to Retail for the Commercial calculation</li> </ul>
Land Tax	\$8 M	\$26 M	<ul style="list-style-type: none"> <li>• Assumed an average commercial plot size of 2,000 m<sup>2</sup></li> <li>• Assumed an average residential plot size of 200 m<sup>2</sup></li> <li>• Calculated on current and future Land Value as provided by the Council</li> <li>• Assumes Land Tax is payable on 50% of the low/medium density residential and 100% of the mixed use/commercial</li> </ul>

Numbers are indicative only and do not constitute formal valuation advice.

## Economic impact of construction

This analysis provides a high level estimate of the economic impact of construction activity under both scenarios. The economic analysis has been undertaken using Input-Output (I-O) tables, provided by the Australian Bureau of Statistics (ABS).

Input-output multipliers are summary measures used for predicting the total impact on all industries in an economy as a result of changes in demand for output of any one industry. The ABS-estimated initial effects multiplier for the construction industry in Victoria is 2.32. This means for every \$1m spent on construction output

in the economy, the output would give rise to 2.32 jobs in the construction industry (the initial employment effect). The 'initial effects' are the outputs of construction, such as new housing and/or commercial buildings.

Similarly, the flow-on employment multiplier for the construction industry in Victoria is 10.98. This means every \$1m spent in construction output in the economy, will give rise to an additional 10.98 jobs in the economy from the indirect effects of the initial construction activity. This additional employment is a result of flow-on effects in the economy, such as businesses involved in manufacturing the materials needed for construction (e.g. concrete, steel frames) seeing an increase in demand. The businesses supplying and servicing the concrete and steel frame businesses (e.g. quarrying, steel production) will also see an increase in demand for their products and services. As activity has increased throughout the construction industry supply chain, the result is a further increase in job creation.

The I-O tables date from 2009-10. The estimated construction value in 2014 dollars (the 'input') has been discounted to apply the I-O ratios. It should also be noted that the relationship between construction and employment may change over time.

Table 4 and Table 5 display the estimated employment gain resulting from the Fishermans Bend development scenarios for direct and flow-on jobs respectively. The jobs are not cumulative, but represent the employment created in the time period by construction-related activity. The tables show that the different phasing of light rail construction is also associated with different phasing of construction-related employment. There is also a modest net increase in employment associated with the higher intensity of development in the Collins Street scenario over the assessment period.

With job creation a key issue in the Victorian economy at the time this report has been prepared, the ability to rapidly bring forward jobs by catalysing the redevelopment of Fishermans Bend is an economically strategic opportunity to stimulate the Victorian economy.

**Table 7 Construction jobs, direct**

Scenario	2015-2023	2023-2031	2031-2039	2039-2047	2047-2055
Base Case via Montague	250	250	350	450	450
Collins Street Extension	350	430	380	450	300
Difference in period	100	180	30	0	-150

**Table 8 Construction jobs, indirect**

Scenario	2015-2023	2023-2031	2031-2039	2039-2047	2047-2055
Base Case via Montague	1,460	1,460	2,010	2,570	2,570
Collins Street Extension	2,000	2,450	2,180	2,550	1,730
Difference in period	540	990	170	-20	-840



## Assumptions and Methodology

This section details the methodology behind the economic analysis.

### Parameters

Table 9 shows the economic parameters used in the analysis

**Table 9 Economic Parameters**

Parameter	Value	Comment
Discount rate (real)	7.00%	Department of Treasury and Finance Investment Lifecycle and High Value/High Risk guidelines, 2013 <sup>5</sup>
First Year	2015	
Appraisal Period	40 year development horizon	Fishermans Bend Strategic Framework

### Inputs

#### Land Category and Associated Densities

In conjunction with the Fishermans Bend Strategic Framework Overview, the travel times were used to inform the potential development type and density at individual precinct level. Our assumed land categories and associated densities are as follows;

- Commercial / 0-10 minutes/610 jobs per hectare
- Mixed Use / 10-15 minutes / 333 dwellings per hectare/ 380 jobs per hectare
- Medium density residential / 15-20 minutes/ 167 dwellings per hectare
- Lower density residential / 20+ minutes 83 dwellings per hectare

All density assumptions have been sourced from the *Fishermans Bend Urban Renewal Area – Real Estate Market Assessment*<sup>6</sup>.

The table below highlights how we apportioned these across the precincts and travel times.

**Table 10 Land Use, by travel time category/Precinct**

Precinct	Travel Time			
	0 - 10 minutes	10 -15 mins	15- 20 mins	> 20 minutes
Lorimer	Commercial	Mixed Use	Medium Residential	Low Residential
Sandridge	Commercial	Mixed Use	Medium Residential	Low Residential
Montague	Commercial	Mixed Use	Medium Residential	Low Residential
Wirraway	Mixed Use	Medium Residential	Low Residential	Low Residential

Source: AECOM assumption

These land categories and associated densities were applied to the corresponding land in each precinct on the assumption that those areas with shorter travel times to the CBD would be capable of supporting higher density Commercial or Mixed Use schemes.

#### Land Area

The gross land area for each precinct was calculated on a category basis.

<sup>5</sup> *Economic Evaluation for Business Cases – Technical Guidelines, Department of Treasury and Finance 2013*

<sup>6</sup> *Fishermans Bend Urban Renewal Area – Real Estate Market Assessment, MacroPlanDimasi 2013*

The developable footprint was assumed to be 65% of the gross area<sup>7</sup> to account for city infrastructure such as roads, drainage and park areas, urban realm and circulation.

The measurements were cross-referenced to the densities to provide indicative dwelling and job numbers.

**Table 11** Developable Land (m<sup>2</sup>), by precinct and time band

Precinct	0 - 10 minutes	10 -15 mins	15- 20 mins	> 20	Total
<b>Preferred</b>					
Lorimer	51,892	63,342	53,382	15,705	184,321
Sandridge	195,526	204,970	76,127	19,248	495,871
Montague	0	2,449	126,301	132,581	261,331
Wirraway	42,754	203,557	182,021	109,830	538,162
<b>Total</b>	<b>290,172</b>	<b>474,318</b>	<b>437,831</b>	<b>277,364</b>	<b>1,479,686</b>
<b>Alternative</b>					
Lorimer	0	0	13,854	170,467	184,321
Sandridge	0	24,460	280,513	190,898	495,871
Montague	27,093	138,880	95,358	0	261,331
Wirraway	0	0	107,360	430,802	538,162
<b>Total</b>	<b>27,093</b>	<b>163,340</b>	<b>497,085</b>	<b>792,167</b>	<b>1,479,686</b>

*Land Value*

City of Port Phillip provided the indicative future land values shown in Table 12 for analysis, using existing locations as a base. The current land value estimates are based on the *Fishermans Bend Urban Renewal Area – Real Estate Market Assessment*.

The future land values are based on the assumption that:

- Commercial land values will be similar to Docklands, \$5,000/m<sup>2</sup>
- Mixed Use Land will be similar to Southbank, with a 70/30 split between a residential value of \$15,000 and an office value of \$7,500 per m<sup>2</sup>.

**Table 12** Land Value, by Land Use/Precinct

Precinct	Current Land Value per m <sup>2</sup>	Future Land Value per m <sup>2</sup>			
		Commercial	Mixed Use	Medium Resi	Low Resi
Lorimer	\$1,018	\$4,500	\$10,000	\$4,500	\$2,750
Sandridge	\$990	\$4,500	\$10,000	\$4,500	\$2,750
Montague	\$3,575	\$4,500	\$10,000	\$4,500	\$2,750
Wirraway	\$935	\$-	\$10,000	\$4,500	\$2,750

**Source:** MacroPlanDimasi (uplifted by 10% to reflect current value), Port Phillip estimates (future)

<sup>7</sup> The MacroPlanDimasi report considered gross and net development areas by benchmarking Fishermans Bend to other urban renewal areas; specific percentages were not detailed in the report. The assumption of 65% by City of Port Phillip is broadly consistent with urban planning outcomes in similar areas.

*Phasing*

Owing to the development horizon of 40 years, we have assumed five 8-year development cycles with the proportion of development brought forward during each phase outlined in the table below.

**Table 13** Percentage uptake of land

Scenario	2015-2020	2020-2025	2025-2030	2030-2035	2035-2040
Preferred	19%	23%	20%	23%	16%
Alternative	15%	15%	20%	25%	25%

Source: AECOM assumption

It is assumed that all of Fishermans Bend will be redeveloped over a 40 year period.

The higher levels uptake of land in the early development cycles is attributable to the bridge coming online earlier in the preferred scenario. This is assumed to occur at 2021 in the preferred scenario and 2030 in the alternative.

**Outputs**

The economic analysis focused on the following outputs and was calculated in line with the phasing assumptions set out above:

- Land value
- Stamp Duty
- Rates
- Development Contributions
- Land Tax

*Land Value*

Land Value was calculated using the following formulae for each precinct:

$$\text{Land Value} \times \text{Developable Land per Category}$$

*Number of Dwellings*

Number of Dwellings was calculated using the following formulae for each precinct:

$$\text{Gross Land per Category} \times \text{Developable Land per Category}$$

*Number of Jobs*

Jobs were calculated using the following formulae for each precinct:

$$\text{Developable Land per Category} \times \text{Job Numbers per Category}$$

*Residential Rates*

The Residential Rates payable were calculated using the following formulae for each precinct:

$$\text{Unit Value} \times 5\% \times \text{Dwellings}$$

For calculating the Unit Value we adopted actual Median Unit sales data from neighbouring precincts. We assumed that half of the Dwellings transacted at the median value, a quarter at 25% less than the median value and a quarter at a value 25% above the median as per the table below.

**Table 14 Property Values**

Travel time	Example Suburb	Unit Value		
		Lower Bound	Median	Upper Bound
0 - 10 minutes	Docklands	\$453,000	\$604,000	\$755,000
10 -15 mins	Southbank	\$416,250	\$555,000	\$693,750
15- 20 mins	Montague / St Kilda	\$372,750	\$497,000	\$621,250
> 20	Elwood	\$400,500	\$534,000	\$667,500

Source: Property Observer website<sup>8</sup>

<sup>8</sup> www.propertyobserver.com.au/

**Commercial Rates**

The Commercial Rates payable were calculated using the following formulae for each precinct:

$$\text{Commercial Floor Area } m^2 \times \text{Commercial Rental Value } m^2 \times \text{Rate in the Dollar}$$

Commercial rental rates were sourced from Savills Quarter times report based on example suburbs, which are detailed in Table 15.

**Table 15 Commercial rates per m<sup>2</sup>**

Travel time	Example Suburb	Office \$/ m <sup>2</sup>	Retail \$/ m <sup>2</sup>
0 - 10 minutes	Docklands	\$400	\$350
10 -15 mins	Southbank	\$320	\$280
15- 20 mins	Montague / St Kilda	\$256	\$224
> 20	Elwood	\$205	\$179

Source: Savills<sup>9</sup>, AECOM assumption

\* The quantum of Commercial Accommodation was based on the number of Jobs multiplied by an assumed floor area of 11m<sup>2</sup> per Job.

\*\* Based on 30:70 of Retail:Office

**Residential Stamp Duty**

The Stamp Duty per dwelling was calculated using the following formulae for each precinct:

$$\text{Residential Unit Value} \times \text{Stamp Duty by threshold}$$

**Table 16 Stamp Duty**

Travel time	Example Suburb	Unit Value					
		Principal Place of Residence			Investment Property		
		Lower Bound	Median	Upper Bound	Lower Bound	Median	Upper Bound
0 - 10 minutes	Docklands	\$19,150	\$31,310	\$40,370	\$22,250	\$31,310	\$40,370
10 -15 mins	Southbank	\$17,182	\$28,370	\$36,695	\$20,045	\$28,370	\$36,695
15- 20 mins	Montague / St Kilda	\$15,007	\$21,790	\$32,345	\$17,435	\$24,890	\$32,345
> 20	Elwood	\$16,395	\$24,010	\$35,120	\$19,100	\$27,110	\$35,120

Source: State Revenue Office Victoria

It was assumed that 50% of units would be principal place of residence and 50% investment properties.

**Commercial Stamp Duty**

<sup>9</sup> Quarter Times Melbourne Office, Savills Research Victoria, Q3/2014

It has been assumed that all commercial development is held in the developer's portfolio upon completion and therefore no Stamp Duty is applicable to Commercial property.

*Residential Development Contributions*

The Development Contribution per Dwelling was calculated using the following formula for each precinct:

$$\text{Number of Dwellings} \times \$16,000 \text{ per dwelling}$$

*Commercial Development Contributions*

The Development Contributions for Commercial was calculated using the following formula for each precinct:

$$\text{Commercial Floor Area} \times \$17,100^* \text{ per } 100\text{m}^2 \text{ of Commercial}$$

\* Based on 30:70 of Retail:Office which has Developer Contributions of \$18,000 and \$15,000 per 100m<sup>2</sup> respectively

*Land Tax*

The Land Tax per land parcel was calculated using the following formulae for each precinct:

The following average parcel sizes were used in the analysis.

- Average Parcel size for low and medium residential is estimated to be 200 m<sup>2</sup>
- Average Parcel size for mixed use and commercial is assumed to be 2,000 m<sup>2</sup>

Land Tax is assumed to be payable on 50% of the low and medium residential land parcels (to reflect investor ownership) and on 100% of the mixed use and commercial land parcels.

$$\text{(Land Area / Average Parcel Size)} \times \text{Land Tax}$$

**Table 17 Land Tax thresholds**

Total taxable value of landholdings	Land tax payable
< \$250,000	Nil
\$250,000 to < \$600,000	\$275 plus 0.2% of amount > \$250,000
\$600,000 to < \$1,000,000	\$975 plus 0.5% of amount > \$600,000
\$1,000,000 to < \$1,800,000	\$2,975 plus 0.8% of amount > \$1,000,000
\$1,800,000 to < \$3,000,000	\$9,375 plus 1.3% of amount > \$1,800,000
\$3,000,000 and over	\$24,975 plus 2.25% of amount > \$3,000,000

Source: State Revenue Office Victoria

Land Tax is calculated on the value of the land under ownership excluding the value of any buildings or other improvements. Accordingly the calculation is intrinsically linked to the underlying land values, which are low to begin with and increase significantly once the new infrastructure comes online.

Note it is the freeholder of the land parcel who will be liable for any land tax payment, as opposed to the long leasehold owners of the units, albeit it may be charged back through body corporate / service charge fees.

*Economic impact analysis - Construction jobs*

This analysis was undertaken using Input-Output multipliers, sourced from the ABS. Input-Output analysis helps us to understand the indirect flow of impacts on economic activity through the economy.

An increase in demand for one product or service will result in subsequent rounds of production impacts in supplier and related industries, as demand for inputs increase to meet the higher demand. A change in demand experienced in one industry will therefore result in a change to the overall output, employment and income across the economy as a whole. Multipliers are used to represent these changes, with the following multipliers being commonly used for measuring economic contribution:

For the purpose of this analysis, we have derived the impact on construction jobs as a result of economic activity around Fishermans Bend, requiring the use of employment multipliers which measure the overall increase in employment as a result of an increase in demand.

Employment multipliers are calculated from input-output tables of the economy, which quantify the inter-linkages between different industries across the economy in terms of the purchases that each industry makes from others to produce its final products. The impacts measured by the multipliers can be categorised into production-based and consumption effects.

An estimate of total construction cost by land use type (see Table 18) was used to perform the input-output calculation as a starting point for the economic modelling.

$$\begin{array}{c} \text{Gross Area} \\ \text{(sqm) / Year} \end{array} \times \begin{array}{c} \text{Construction} \\ \text{Costs by Land} \\ \text{Use (\$/m}^2\text{)} \end{array} \times \begin{array}{c} \text{Employment} \\ \text{Multiplier (jobs/\$)} \end{array}$$

**Table 18 Construction cost by land use type**

Precinct	Travel Time	Land Use	\\$/m <sup>2</sup>
Montague	0 - 10 minutes	Commercial	\$3,060
	10 -15 mins	Mixed Use	\$3,048
	15- 20 mins	Medium Residential	\$2,715
	> 20	Low Residential	\$2,475
Wirraway	0 - 10 minutes	Mixed Use	\$2,720
	10 -15 mins	Medium Residential	\$2,715
	15- 20 mins	Low Residential	\$2,475
	> 20	Low Residential	\$2,040
Sandridge	0 - 10 minutes	Commercial	\$3,060
	10 -15 mins	Mixed Use	\$2,905
	15- 20 mins	Medium Residential	\$2,715
	> 20	Low Residential	\$2,475
Lorimer	0 - 10 minutes	Commercial	\$2,855
	10 -15 mins	Mixed Use	\$2,905
	15- 20 mins	Medium Residential	\$2,715
	> 20	Low Residential	\$2,475

Source: AECOM

**Table 19 Construction jobs, direct**

Scenario	2015-2023	2023-2031	2031-2039	2039-2047	2047-2055
Base Case via Montague	250	250	350	450	450
Collins Street Extension	350	430	380	450	300

**Table 20 Construction jobs, indirect**

Scenario	2015-2023	2023-2031	2031-2039	2039-2047	2047-2055
Base Case via Montague	1,460	1,460	2,010	2,570	2,570
Collins Street Extension	2,000	2,450	2,180	2,550	1,730

**Cost estimate exclusions**

Development costs associated with precinct development or delivery of supporting community assets are not included in the construction costs, nor is property development or reconfiguration on adjoining sites.

The following are specifically excluded from the indicative estimate and allowance for risk:

- Rolling stock
- Yarra Trams free issue materials or operational equipment;
- Staging costs;
- Works outside of area boundaries as nominated;
- Works associated with development on adjacent land parcels;
- Artwork or special features and or working with heritage listed assets;
- Allowance for adverse groundwater conditions (note allowance has been made to working in poor founding soils);
- Land or associated acquisition costs;
- Demolition of buildings or structures on acquired land;
- Working with or removal of contamination / hazardous materials;
- Allowance for demolition of residual structures, existing in-ground services, foundations or the like;
- Allowance for handling/treating cultural artefacts encountered, including resultant disruption and/or delays to construction works;
- Allowance for premium or overtime rates associated with extensive out of hours working or acceleration;
- Allowances for utility infrastructure upgrades or relocations (water, gas, sewer, electricity etc.);
- Costs associated with the delivery of a detailed business case;
- Resident compensation and/or consultation;
- Escalation;
- Cost of capital; and
- GST.



## Appendix C

# Landowner Feedback

## Appendix C Landowner Feedback

Table 21 Landowner Feedback Matrix

Aspect	Landowner 1	Landowner 2	Landowner 3
Density	Unlikely to affect landowner's target development density	Density of development to be directly linked to tram capacity Cited 'Garden City' as an example in the 1980s	Density of their development plans is directly linked to the tram
Development mix	No comment on Development Mix	A direct tram route would encourage 'boulevard' type development Increased active frontage along route and surrounding stations	No comment on Development Mix
Phasing	Unlikely to affect landowner's phasing May impact planning	Commitment to a tram solution is likely to bring forward the phasing of development	Commitment to a tram solution is likely to bring forward the phasing of development
Value	Direct tram will enhance value No comment on quantification	Direct tram will enhance value Impact could be 10-20% up to 100%+ depending on sequencing	A tram solution will inherently create value Could not quantify value enhancement
End User Experience	Expect end users to view the regeneration more favourably with a direct tram route	Direct tram will create positive outcome for end users	Expect end users to view the regeneration more favourably with a direct tram route