FISHERMANS BEND FREIGHT CORRIDOR ADVISORY SERVICES

Department of Economic Development, Jobs, Transport & Resources

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Document history and status

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Executive Summary

The Fishermans Bend Freight Corridor Advisory Services study was commenced in June 2016 to assist the Fishermans Bend Taskforce to identify a preferred long term corridor for provision of rail and road access to Webb Dock as trade volumes grow and the area more generally develops. There is a current freight route (via Lorimer St and Wurundjeri way), which provides adequate connection at current volumes. In the longer term, however, as volumes grow, additional or dedicated freight capacity may be needed. This study seeks to identify the likely transport moves that can be expected as trade grows and a preferred corridor for upgraded road and rail connections to protect in the case they are needed in the future. The central purpose of undertaking this study was to support the Fishermans Bend Taskforce to identify preferred long term road and rail corridors to Webb Dock Bend in master planning material which may be delivered in the future as the Fishermans Bend Renewal Area develops.

Jacobs was asked to assess three high level corridors for the provision of long term road and rail capacity which are shown to the right. Jacobs also tested whether any alternative corridors might exist.

The first stage of work completed by the study assessed the trade volumes that maybe handled at Webb Dock as volumes grow to identify the potential numbers of transport movements that could be generated. These movement numbers were then used to provide a basis for considering the need, capacity and likely timing for delivery of new, dedicated rail and road corridors. The report identifies clearly that for the short to medium term the existing Lorimer St road connection to Wurundjeri Way is expected to remain in place and be adequate to support expected volumes. However, in the longer term, as trade volumes through Webb Dock grow, additional capacity is likely to be needed. In the case Webb Dock reaches its existing design capacity, including 1.2 million international containers plus another 700,000 – 800,000 container equivalents in Bass Strait, coastal and automotive trade, around 8000 truck movements can be expected to and from Webb Dock per day. In future years, Webb Dock could be expanded further to handle far more trade than this. At these higher volumes, Lorimer St may no longer provide adequate capacity. The report also noted future planning now underway for development and renewal of Fishermans Bend that may add to the difficulty of accommodating additional truck movements through the area via Lorimer St only.

The second stage of the study was focused on assessing the alternative options for future road and rail connections that should be protected now to activate in the longer term if or when Lorimer St alone is considered to no longer be an adequate connection. Jacobs assessed the three corridors identified above and identified five strategic options for developing new road and rail capacity in the future. The five options included adding rail to the existing at grade road route on Lorimer St and then three options for delivery of road and rail connections on structure on Lorimer St, Turner St or along a new corridor next to the Bolte Bridge and M1 Freeway. The fifth strategic option involved delivery of new connections along two separate corridors.

Focusing further on these five strategic corridor options, during the third stage of work Jacobs prepared eight separate alignment concepts. The eight alignments included three options for rail and road along Lorimer St both on structure and at grade, and option for a full on structure solution along Turner St, three separate on structure alignments along the M1 corridor and, lastly, a dual corridor option which included rail on structure on Lorimer St and a road on structure option along the M1.

These alignment options were all designed, costed and assessed by Jacobs from delivery, operational and urban design impact perspectives. A Multi Criteria Assessment (MCA) workshop was also held with members of
the project's working group to assess and score each of these alignments against a range of criteria that had been agreed by the group. The outcome of the MCA process was to identify the options along the M1 corridor as broadly the preferred strategic option. The options along Lorimer St and Turner St were considered to have a greater impact generally on the urban realm and development potential of the area relative to the M1 options. Of the three M1 options, additional consideration by the group determined that 'Option 3C', shown to the left, was, on balance, the preferred long term corridor option. The other two M1 alignments identified were considered to either have an undue impact on Westgate Park or required network changes to Todd Rd that were considered on balance to be less desirable than the overall impacts associated with Option 3C. Option 3C passes through an area of the renewal precinct that is not expected to be developed fully for some years. As such, it was considered by the group that the impact of delivering a new freight corridor in the future could likely be best managed in this area compared to other areas where development is expected to occur sooner.

Following agreement of the preferred long term road and rail freight corridor, Jacobs progressed further urban design work to prepare a three dimensional view of Option 3C for inclusion, if needed, in any Fishermans Bend master planning material. This view, looking east along Cook St near the Salmon St overpass, is shown below.

Whilst Lorimer St is likely to continue to provide adequate connection capacity to Webb Dock for the movements that need this route for some time, as trade grows and development of Fishermans Bend progresses, at some stage in the longer term it is a real possibility that additional road and rail connections that are properly separated from urban areas will be needed. Whilst a range of factors may emerge in the longer term that identifies an alternative preferred route, for now it is vital that a route be identified and protected to ensure an effective road and rail corridor is available for development if and when it is needed.
88% of volumes occurred between 6 am and 8 pm. And the busiest hour was between 11 am and 12 pm (10% of total volumes)

56% of all trucks were container trucks

At Swanson Dock precinct:
- 4,728 inbound trucks and 4,816 outbound trucks were counted over 24 hours.
- 80-81% of movements occurred between 6 am and 8 pm. The busiest hour was between 9 am and 10 am for inbound movements (8%) and 11 am to 12 pm for outbound movements (8%)
- 84% of trucks were container trucks

The report also details traffic volumes to/from Webb Dock via route taken. The key findings were:

- Truck origins and destinations:
  - Trips to and from the west via the West Gate Freeway represented 45% of inbound and 47% of outbound trips at Webb Dock
  - Trips to/from CityLink represented 21% of inbound and 25% of outbound trips
  - Trips to/from Williamstown Road represented 11% of inbound and 10% of outbound trips
  - Trips to and from Lorimer Street via Todd Road represented 12% of inbound and 11% of outbound trips.
  - Trips to and from the east via the West Gate Freeway represented 11% of inbound and 4% of outbound trips; and
  - Trips from Webb Dock via Prohasky Street represented 3% of outbound trips. There were no inbound trips to Webb Dock via Prohasky Street.

- Truck types:
  - 55-56% of trucks were container trucks
  - 18-19% of trucks were pantechs or tautliners
  - 9-10% were car carriers
  - 15-18% were other types of trucks including; tankers, prime movers, low loaders, flatbeds and rigid.

- Port and non-port trucks:
  - At the West Gate Freeway eastbound off ramp, 23% of trucks were bound for Webb Dock, the remainder not related to Webb Dock
  - At the West Gate Freeway eastbound on ramp, 22% of trucks were from Webb Dock, the remainder not related to Webb Dock
  - At the West Gate Freeway westbound off ramp, 39% of trucks were bound for Webb Dock, the remainder not related to Webb Dock
  - At the West Gate Freeway westbound on ramp, 43% of trucks were from Webb Dock, the remainder not related to Webb Dock

- In 24 hours 584 trucks travelled from Webb Dock to the Swanson-Dyonne precinct, and 562 trucks travelled in the opposite direction.
  - 76-79% of the trucks were to/from the Swanson Dock precinct and 21-24% were to/from the Dyonne rail precinct.
  - The majority (59%) of trips to/from the Swanson-Dyonne Precinct to/from Webb Dock had an intermediate stop and/or took more than 30 minutes.

- The average TEUs carried per truck was between 1.22-1.26

Key findings from previous studies:

- A rail connection to Webb Dock would be economically viable at a throughput of 600,000 TEU per year (equivalent to 30% mode share of Webb Dock handling a total of 2 million TEU per year).

- There is little difference in terms of total truck trips to the port precinct whether Swanson handles 8 million TEU alone, or 4 million and Webb Dock handles 4 million. The only changes are to which part of the port the container handling is concentrated to or spread across. Trades need to be accommodated somewhere in the port and shifting these around makes no change to total truck volumes generated.

- Webb Dock rail link with at 30% mode share would reduce truck trips to/from Webb Dock by between 2,400 and 3,700 trucks per day in 2035.

- An opening bridge style rail link would not significantly delay water craft, however, a requirement to open will reduce the maximum rail path capacity of any connection.
### Landside transport expected to use road and rail freight corridor through Fishermans Bend

<table>
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<tr>
<th>Scenario Road rail mode share</th>
<th>Unit</th>
<th>Low scenario 100% road</th>
<th>Medium scenario 20% rail</th>
<th>High scenario 40% rail</th>
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<tr>
<td>Trucks per day, 365 days</td>
<td>Trucks</td>
<td>1,250</td>
<td>1,246</td>
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<td>Trucks per day, operating days only</td>
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<td>Average trucks per hour, operating days only</td>
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<td>Percentage increase of peak hour over average</td>
<td>%</td>
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<td>Trucks per peak hour</td>
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<td>Trucks per minute average over 24 hours, operating days only</td>
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<tr>
<td>Trucks per minute, peak hours</td>
<td>Trucks</td>
<td>1.9</td>
<td>1.5</td>
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Source: Study team with review from DEDJTR and project reference group

These assumptions have been developed based on data from the Port of Melbourne Traffic Surveys reports (GHD 2013) which undertook detailed truck surveys and various locations which enabled matching of truck observations at different locations to compile estimates of the proportion of trucks using different routes to and from the port.

The main influencing factors in determination of truck routes are:

- Location of origins and destinations
- The road network that is open to the truck concerned, considering:
  - Vehicle type (semitrailer, b-double, super b-double HPFV or a-double HPFV)
  - Vehicle mass (GCM < 42.5 t; < 68.5 t, < 77.5 t, < 85.5 t or < 109 t)
- Congestion on alternative routes that may be open to the vehicle concerned.

### 4.3 Accommodating anticipated numbers of trains to Webb Dock

#### 4.3.1 Issues

One of the fundamental design parameters for the rail freight corridor to Webb Dock is whether there needs to be two tracks for most or all of the distance, or whether a bidirectional single track would have adequate capacity. A number of options and suggestions for consideration have been identified, including:

- Two tracks for the entire connection from Swanson Dyonon precinct to Webb Dock
- A single bidirectional track for the 500 – 600 m crossing of the lower Yarra River, with two tracks for the balance (to reduce costs for the bridge or tunnel crossing) with the assumption that this short section would have little impact on total capacity
- A twin track design, but with initial construction of only one track until demand necessitates greater capacity
- Potential for a rail route to be planned and constructed, but which would be used by port container and other trucks initially.

This raised the issue of accommodating both trucks and trains when the corridor was transformed for rail operation. It had been proposed that the design could be to accommodate trucks and trains, but with initial construction of two lanes. Other lanes could be added when rail was introduced. The issue then arose of whether a single train track would be adequate, implying a three lane design, or whether rail would need two