FISHERMANS BEND PLANNING PANEL
CITY OF MELBOURNE SUBMISSION
ADDENDA 1: LORIMER BUILT FORM TESTING & CAPACITY MODELLING
MAY 2018
Context

The Fishermans Bend Draft Framework sets a population of 12,000 residents and 6,000 workers by 2050, which forms part of the overall Fishermans Bend population target of 80,000 residents and 80,000 workers. These figures, set out in the Fishermans Bend Vision (2016) have formed the basis of infrastructure planning and the development of the draft Framework to date. CoM have contended that it is prudent to plan for the total capacity of a precinct rather than to a point in time. Previous modelling carried out by CoM has demonstrated that if the current FAR of 5.4:1 is applied across all sites in Lorimer and the approved permits proceed, this will deliver 15,392 residents and 7,545 workers. This FAR will not only lead to a dominant podium-tower typology across the precinct, but it will also deliver 22% above the current population target on which infrastructure has been planned for in Lorimer. This also does not account for any uplift in population that could be delivered through the FAU mechanism.

This report sets out additional modelling prepared by CoM to analyse what a reduced FAR may look like in order to deliver a quantum of population and jobs which better aligns to those proposed within the draft Framework and therefore the social and community infrastructure, open spaces and transport which has been identified to support the proposed resident and worker populations.

The revised FAR has been tested in respect to delivering a diversity of built form outcomes and typologies other than the typical podium tower typologies that the exhibited FAR and built form controls in Lorimer will generate.

Revised capacity modelling

The two approved residential development permits in Lorimer will deliver 2,654 residents, which need to be factored into the total population target and considered in developing a revised FAR.

In order to achieve a 12,000 population in Lorimer at 100% build out, the proposed FAR controls could be revised in a number of ways including:

Option 1:
- 2:1 FAR (including 0.6:1 FAR for non-residential land use) for the northern half of Lorimer to the north of the Turner Street green spine.
- 5.4:1 FAR (including 1.7:1 FAR for non-residential land use) for the southern half of Lorimer to the south of the Turner Street green spine.

CoM have acknowledged that Option 1 would result in unusual built form outcomes from the lack of transition between the northern and southern halves of Lorimer precinct and unduly restrain development capacity in the north of the precinct.

Option 2:
- 4:1 FAR (Including 1.25:1 FAR for non-residential land use) applied across the whole of Lorimer.

CoM take a pragmatic approach to Option 2, in that whilst an FAR of 4:1 provides equity across the precinct and provides a greater diversity of built form typologies (particularly important to the north of Lorimer given overshadowing constraints) the compromised context of the freeway and elevated structures in the southern half of the precinct provides the opportunity for greater density with little impact on amenity.

Option 3:
- 4:1 FAR (Including 1.25:1 FAR for non-residential land use) across the North side of the Turner Street Green Spine.
- 5:4:1 FAR (including 1.7:1 FAR for non-residential land use) for the southern half of Lorimer.

Option 3 has been proposed as a pragmatic compromise which protects the important amenity considerations of northern Lorimer but does not arbitrarily restrict development to the south of the precinct, particularly in light of the existing permits and less constraints around overshadowing.

Revised modelling has been undertaken that shows the theoretical capacity of Lorimer for Option 3 if all properties were to develop to these assigned Floor Area Ratios, excluding recent residential permits.
NEW BASELINE CAPACITY FOR LORIMER

Revised proposed FAR (Option 3)

Initial modelling has been undertaken that shows the theoretical capacity of Lorimer if all properties were to develop to the assigned Floor Area Ratio, excluding recent residential permits. This information helps provide a baseline capacity, to understand the impacts of the proposed built form controls on the ability to meet the baseline FAR on all sites. Each capacity figure comprises of dwellings from approved residential permits (known as ‘DAM dwellings’) and dwellings derived from the proposed Floor Area Ratios (known as ‘FAR dwellings’). The baseline scenario also applies the discretionary 1.25:1 FAR or 1.7:1 FAR for non-residential land uses to each property, depending on the site’s location.

The Fishermans Bend draft Framework projects the population of 12,000 residents by the year 2050 (see Figure 1). There are two current residential development permits in Lorimer which will already deliver 2,654 residents (see Figure 1.7 of CoM submission ‘Lorimer Built Form testing and capacity modelling’). These two residential developments need to be considered into the development of a Floor Area Ratio.

The proposed FARs of 4:1 and 5.4:1 result in 10,608 residents, and a population density of 473 and 636 residents per hectare respectively. When combined with the number of ‘DAM’ residents resulting from recent residential permits, this results in a total population of 13,262 people.

### Planning for Lorimer 2050

<table>
<thead>
<tr>
<th>Metric</th>
<th>2018</th>
<th>2025</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population projections</td>
<td>280</td>
<td>3440</td>
<td>12,000</td>
</tr>
<tr>
<td>Household number projections</td>
<td>0</td>
<td>1900</td>
<td>5882</td>
</tr>
<tr>
<td>Job projections</td>
<td>1820</td>
<td>2290</td>
<td>6000</td>
</tr>
<tr>
<td>Open space (hectares)</td>
<td>0ha</td>
<td>4.36ha</td>
<td>5.04ha</td>
</tr>
<tr>
<td>Total precinct size (hectares)</td>
<td>45ha</td>
<td>5ha</td>
<td>50.4ha</td>
</tr>
</tbody>
</table>

Figure 1. Capacity statistics for Lorimer outlined in the Fishermans Bend draft Framework (page 72).

Figure 2. Capacity outputs for Lorimer if all properties were to develop to a 5.4:1 FAR on the southern half of Lorimer and a 4:1 FAR on the northern half of Lorimer (excluding current approved residential permits).

*workers are expressed as a minimum on the basis that non-residential FAR can be increased within the maximum FAR, if the residential FAR is similarly decreased.
Model parameters

The following parameters have been used for the revised modelling:

- For sites that are situated to the north of the Lorimer green spine, a revised FAR of 4:1, including an FAR of 1.25:1 for non-residential land uses.
- For sites that are situated to the south of the Lorimer green spine, the FAR of 5.4:1 remained. This included an FAR of 1.7:1 for non-residential land uses.
- For each site, the FAR has been applied to the property boundary, with the exception of Lorimer Place, where the FAR was applied to specific land parcels (see Figure 7). The proposed built form controls in Chapter 6 of Hodyl & Co's expert evidence.
- The overshadowing controls for new public open space in accordance with Thomson Berrill's expert evidence statement.
- There is one proposed open space that is not modelled in accordance with the Thompson’s report. Figure (ix) of Thompson’s report shows a proposed open space on 161-189 Turner Street that comprises of approximately 50% of the land area. The City of Melbourne’s modelling (shown in Figure 3) shows the southern portion of this area with built form. As this segment of Turner Street will serve a ‘retail spine’ to the precinct, the presence of smaller scale built form will help to activate the street whilst still increasing the dimensions of the open space from the exhibited version.

The City of Melbourne has adopted the same criteria to identify ‘unencumbered open space’ as stated by Thomson (Table B1, page 20). It is assumed that the different quantum of unencumbered open space between both sets of modelling is due to the City of Melbourne’s reduction in neighbourhood open space (see Figure 3) and the modelling of the widths of new streets and lanes as identified in the Fishermans Bend draft Framework, whilst also complying with the overshadowing requirements for each space.
Model parameters

Figure 5 shows the street wall height controls, as articulated on page 48 of Hodyl and Co’s expert evidence.

There is one proposed open space that is not modelled in accordance with Thompson’s expert evidence. Figure ‘(ix)’ of Thompson’s report shows a proposed open space on 161-189 Turner Street that comprises of approximately 50% of the land area. The City of Melbourne’s modelling (shown in Figure 3) shows the southern portion of this area with built form. As this segment of Turner Street will serve a ‘retail spine’ to the precinct, the presence of smaller scale built form will help to activate the street whilst still increasing the dimensions of the open space from the exhibited version.

As the proposed street and laneway network from the draft Framework has not been revised since the introduction of Thompson’s expert evidence, there are a number of caveats to Figure 5 that should be noted. For clarity, Figure 5 doesn’t spatially map the new control for street wall heights intersecting at a corner, however this control is reflected in the modelling outcome (Figure 7). For the purposes of the 3D model outcome (Figure 7), there are four properties that now have different public open space allocation. Consequently, the proposed street/laneway network for these properties has changed to respond to these new open spaces. All plans in this report reflect the City of Melbourne’s revised urban structure for these sites, which has been used to model the proposed revised FARs outlined in Option 3 (see page 3).

One of the design principles for Lorimer is a strong and direct relationship between the proposed street network, open space network and built form. It is recommended that the proposed urban structure for Lorimer be revised and finalised prior to the finalisation of new built form controls. Further clarification is also required for the status of the proposed tram corridor, and whether it is included as a ‘street’ of 22 metre of greater.

Table 11 Street wall heights (all building heights)

<table>
<thead>
<tr>
<th>Street width</th>
<th>Maximum street wall height for buildings up to 38 metres</th>
<th>Maximum street wall height for buildings greater than 38 metres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than or equal to 12m</td>
<td>15.4 m (preferred) 23 m (mandatory)</td>
<td>15.4 m (preferred) 23 m (mandatory)</td>
</tr>
<tr>
<td>Greater than 12m and less than 22m</td>
<td>30m</td>
<td>23m</td>
</tr>
<tr>
<td>22m or greater</td>
<td>30m</td>
<td>23m</td>
</tr>
<tr>
<td>Lorimer</td>
<td>N/A - all core area</td>
<td>-</td>
</tr>
</tbody>
</table>

Site is affected by the revised open space network (according to Thompson expert evidence). The site’s urban structure and street/laneway network will need to be revised from the draft Framework before specific street wall heights can be accurately mapped.

- Streets/lanes with a width of 12m or less - preferred street wall height is 15.4m (4 storeys) and maximum street wall height is 23m (6 storeys)
- Streets/lanes with a width greater than 12m and less than 22m - street wall height must not exceed 23m (6 storeys)
- Streets/lanes with a width of 22m or greater and overall building height up to 38 metres - street wall height must not exceed 30m (8 storeys)
- Streets/lanes with a width of 22m or greater and overall building height greater than 38 metres - street wall height must not exceed 23m (6 storeys)

Figure 5. Map of the proposed street wall heights according to Hodyl & Co’s expert evidence and Thompson’s proposed open space network.

Figure 6. Proposed street wall height controls as outlined in Hodyl & Co expert evidence, page 48.
Modelling outcome

The revised modelling for Lorimer confirms that a FAR of 4:1 to the north of the green spine facilitates a greater diversity of building typologies on a site, whilst also complying with the proposed built form controls outlined in Chapter 6 Hodyl & Co expert evidence. This reduced FAR also enables the precinct’s capacity to more closely align with the projected 12,000 population that is outlined in the draft Framework (with the assumption that all sites will develop, excluding approved residential permits).

It is important to note that the design requirements of car parking in Lorimer will limit the presence of certain building typologies, such as perimeter block and open block typologies. Lorimer’s soil and flooding conditions require for most car parking to be built above ground in a podium (sleeved with active land uses). If car parking is provided in one building (i.e. consolidated) for large sites with multiple buildings, then the objectives of built form diversity can be achieved.

Despite the revised building parameters, the site at 323-327 Ingles Street is still unable to achieve a FAR of 5.4:1. This anomaly was also raised on page 23 of City of Melbourne’s ‘Lorimer Built Form Testing & Capacity Modelling’.

Figure 7. Revised built form outcome for Lorimer
Impact of car parking on built form

Case Study 1: 826-846 Lorimer Street, Port Melbourne

The first case study for 826-846 Lorimer Street provides an example of a possible built form outcome under a revised FAR of 4:1 (Option 3). Figure 6.1 demonstrates that a reduced FAR to 4:1 enables a greater diversity of building typologies to be delivered on a site, whilst also complying with the proposed controls in Hodyl & Co’s expert evidence (Chapter 6) and the proposed street network of the Fishermans Bend draft Framework.

The car parking provision for this development (see Figure 8.1) has been concentrated in ‘Building 1’ and ‘Building 2’. The car parking is located in the centre of both podiums and sleeved with non-residential land uses (10 metre depth) on all interfaces with new streets or laneways. This response also allows for the minimum widths required to accommodate enough car parking space for both residential and non residential uses. The consolidation of the car parking allows for ‘Building 3’ to accommodate a building typology with communal private open space.

Figure 6.1 shows a perimeter block building as one example of a typology that can be delivered within the 4:1 FAR and a ‘consolidated’ car parking approach.

**Table:**

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>SITE AREA (m²)</th>
<th>FLOOR AREA RATIO</th>
<th>RES GFA SITE AREA (m²)</th>
<th>NON-RES GFA SITE AREA (m²)</th>
<th>DWELLINGS</th>
<th>TOTAL CAR SPACES REQUIRED</th>
<th>CAR PARKING GFA (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>826-846 Lorimer Street</td>
<td>14,306 m²</td>
<td>4.1 (1.25:1 for non-res land use)</td>
<td>39,344</td>
<td>17,833</td>
<td>332</td>
<td>345</td>
<td>10,350</td>
</tr>
</tbody>
</table>

Figure 8.2: Car parking capacity requirements for sites in Case Study 1
Impact of car parking on built form

Case Study 2: Lorimer Place

In the first stage of modelling titled "Lorimer Built Form Testing & Capacity Modelling, March 2018", the City of Melbourne has applied the proposed 5.4:1 FAR to each property boundary across the precinct. In the case of strata titled properties, such as Lorimer Place, the FAR was also applied to the property boundary, assuming that any proposed public open space would need to be delivered through the FAR rather than through land acquisition. For properties where more than half of their area was assigned to new streets, laneways and open space, this meant that they were classified as ‘unable to deliver the FAR’, as seen in Figure 4.8-4.10 of City of Melbourne’s initial submission (March, 2018).

For case study 2, the proposed FAR for each site has been applied. In the case of Lorimer Place, the proposed FAR (4:1) has been applied to the four larger land parcels that are adjacent to Lorimer Street. It is assumed that the rest of Lorimer Place will be purchased and converted to public open space and a future tram corridor. Sites 880-884 Lorimer Street have been modelled together as they fall under the same ownership.

The sites that have been tested are:
1. 876 Lorimer Street, Port Melbourne
2. 880-884 Lorimer Street, Port Melbourne (Submitter no. 130 & 162).
3. 8 Rogers Street, Port Melbourne

Case Study 2 explores two different built form outcomes depending on the distribution of car parking across the site. The soil and flooding conditions in Lorimer requires most car parking to be situated above ground. The outcome seen in Figure 9.2 consolidates the car parking space where possible to allow for ground level private open space to occur.

Figure 9.2 and 9.3 demonstrate how consolidating car parking can impact the built form outcome on sites with multiple subdivided lots. In Figure 9.2, all four stores in the podium for Building 2a will accommodate all car parking space required for the site. The levels containing car parking will be sleeved with ‘active’ land uses for a depth of 10 metres. This ‘consolidated’ approach leaves an opportunity for Building 2b to include ground-level private open space.

Figure 9.2: Built form outcome when car parking is consolidated on sites with multiple buildings

Figure 9.1: Four larger sites in Lorimer Place to be tested for Case Study 2

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Addenda 1 - Fishermans Bend Planning Panel Built Form & Capacity Modelling (City of Melbourne 2018)
Impact of car parking on built form

Figure 9.3 shows the required car parking for each property distributed across all podiums across a site. There are a number of key differences in built form outcome between Figure 9.2 and 9.3, including:

- The absence of perimeter block/open block building typologies removes the opportunity for ground-level private open space.
- The first two levels each development (podium) comprise of car parking, sleeved with non-residential land use.
- The upper levels of developments have been configured to maximise sunlight and daylight into as many dwellings as possible. Therefore, upper level floorplates are no more than 25 metres in depth, to align with the Better Apartment Design Standards.

In conclusion, both Case Study 1 and Case Study 2 demonstrate that a lower FAR of 4:1 and a ‘consolidated’ car parking approach both increase the opportunity for more diverse built form, such as perimeter block and open block typologies. However, the built form outcome will also be influenced by:

- The location of proposed streets and laneways,
- Car parking provision rates and design requirements for car parking space
- Other proposed built form controls (e.g. street wall heights, setbacks above the street wall and overshadowing controls)
- Additional design standards, such as the Better Apartment Design Standards and minimum tower floorplates.

### SPECIFIC SITE TESTING - CASE STUDY 2

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>SITE AREA (m²)</th>
<th>FLOOR AREA RATIO</th>
<th>RES GFA SITE AREA (m²)</th>
<th>NON-RES GFA SITE AREA (m²)</th>
<th>Dwellings</th>
<th>TOTAL CAR SPACES REQUIRED</th>
<th>CAR PARKING GFA (m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 876 Lorimer Street</td>
<td>1,503 m²</td>
<td>4:1 (1.25:1 for non-res land use)</td>
<td>4,134</td>
<td>1,879</td>
<td>34</td>
<td>36</td>
<td>1,086</td>
</tr>
<tr>
<td>2. 880-884 Lorimer Street (Submitter no. 130)</td>
<td>4,550 m²</td>
<td>4:1 (1.25:1 for non-res land use)</td>
<td>12,513</td>
<td>5,687</td>
<td>105</td>
<td>109</td>
<td>3,288</td>
</tr>
<tr>
<td>3. 8 Rogers Street</td>
<td>3,994 m²</td>
<td>4:1 (1.25:1 for non-res land use)</td>
<td>10,985</td>
<td>4,933</td>
<td>92</td>
<td>96</td>
<td>2,886</td>
</tr>
</tbody>
</table>

Figure 9.4: Car parking capacity requirements for sites in Case Study 2

![Figure 9.3](image-url) Built form outcome when sites when car parking is equally distributed across all buildings within a site

![Figure 9.4](image-url) Car parking capacity requirements for sites in Case Study 2

| 74 sqm | Average dwelling size |
| 0.5 | Residential car parking rate |
| 1 per 100m² of GFA | Non-residential car parking rate |
| 30m² | per car space |
Specific Site Testing - Case Study 3

Capacity of 225 Boundary Street & 312 Ingles Street Port Melbourne (Concrete Batching Plant)

Under the proposed controls outlined on page 3 of this report, both properties of 312 Ingles Street and 225 Boundary Street have the following capacity outputs.

<table>
<thead>
<tr>
<th>PROPERTY</th>
<th>SITE AREA (m²)</th>
<th>FLOOR AREA RATIO</th>
<th>RES GFA SITE AREA (m²)</th>
<th>NON-RES GFA SITE AREA (m²)</th>
<th>DWELLINGS</th>
<th>RESIDENTS</th>
<th>WORKERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>312 Ingles Street &amp; 225 Boundary Street (Port Melbourne)</td>
<td>1,503 m²</td>
<td>5.4:1 (1.7:1 for non-res land use)</td>
<td>53,835</td>
<td>24,735</td>
<td>454</td>
<td>820</td>
<td>419</td>
</tr>
</tbody>
</table>

Figure 10.1: Capacity statistics for 225 Boundary Street & 312 Ingles Street Port Melbourne

It should be noted that number of workers recorded in Figure 10.1 doesn’t reflect the number of existing workers located on site. It simply reflects the 1.7:1 FAR for non-residential land use.