

**WEST GATE TUNNEL PROJECT ENVIRONMENT EFFECTS STATEMENT**  
**INQUIRY AND ADVISORY COMMITTEE**

**CITY OF MELBOURNE**

**TECHNICAL NOTE NUMBER:** #10

**DATE:** 15 September 2017

**LOCATION:** **Port, CityLink and City Connections**

**EES/MAP BOOK REFERENCE:** Technical Report A

**SUBJECT:** **Further response to PN60**

**NOTE:**

1. This Technical Note contains additional material in response to Project Note 60 to that which is contained in the City of Melbourne's Technical Note #2 (Document 122).
2. Project Note 60 was submitted on Day 11, Monday 28 August. This did not allow for sufficient time for detailed assessment of its contents by the traffic experts engaged by the City of Melbourne.
3. This Technical Note has been prepared with the assistance of Mr Marco Lucioni and his Project Team.

**RESPONSE:** Further detailed analysis is attached.

**CORRESPONDENCE:** N/A

**ATTACHMENTS:** The further response to PN60 is attached.

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**AM Peak video footage**

**MacKenzie Road off ramp / connection to Footscray Road (eastbound)**

Further analysis of the AM peak video footage provided has been undertaken.

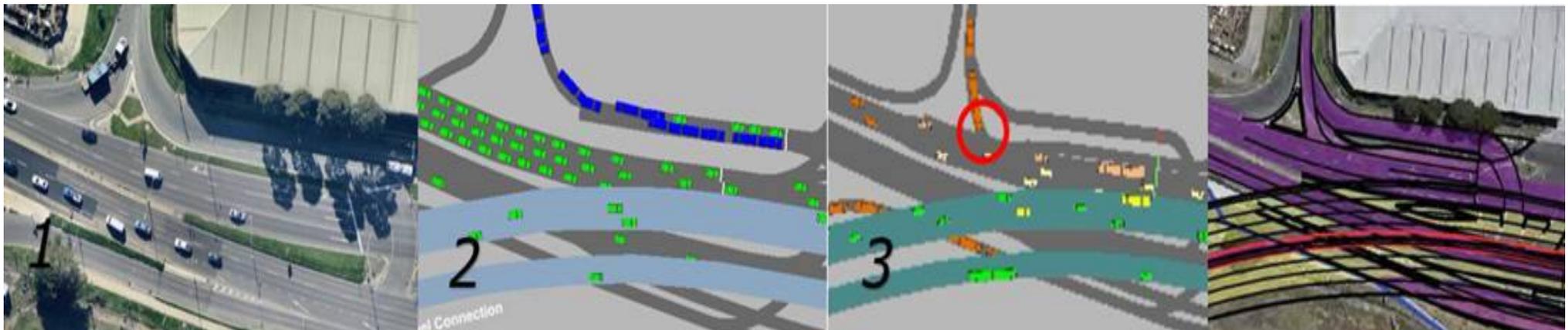
As shown in the images below, it has been observed that there is a material difference in the configuration of the Footscray Rd connection (Eastbound) in the Project Design and Option 5 microsimulation models that were provided as part of PN 40 (image 2) and PN 60 (image 3).

The difference makes a substantial difference to the operational performance of the connection (i.e. results in less capacity, longer delay and queues).

Existing conditions are shown in image 1, while image 4 is an extract of the EES mapbook.

The Project Design as depicted in PN40 (Image 2) assumes this movement operates with a separate phase as part of the Linfox signalised intersection, offering superior capacity to that adopted under Option 5 for PN 60 (Image 3), where this movement does not benefit from traffic signals but is required to give way and pick gaps in traffic to enter Footscray Road (identified in the red circle in image 3 below).

There is no explanation for this difference given in PN60, and this difference would play a significant influence on the congestion that is depicted in Figure 1 of PN60.



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### Traffic Results in Option 5

The WDA has only provided daily volume plots for '2031 Option 5' total volume and '2031 Option 5 vs 2031 no project' difference plots to review the alternate modelled options.

No AM or PM plots, or '2031 option 5' vs '2031 project' difference plots have been provided.

This makes it difficult to drill down into the strategic modelling results in any real detail to ascertain traffic redistributions and expected traffic volumes in the peak periods (which relate to the AM and PM peak VISSIM modelling videos).

There is not enough information to review the alternate options properly.

In order to undertake an adequate review, further information, (including the following) would be required:

- AM & PM peak volume plots for Option 5 (and the other Options) considered in the VLC Zenith model.
- Difference plots for AM, PM and daily periods for Option 5 (and perhaps the alternate models) against the '2031 No Project' and '2031 Project' cases.

A comparison of the '2031 Option 5' vs '2031 No Project' (page 17/18 of Project Note 60) against '2031 Project' vs '2031 No Project' (figure D15, technical report part 2), reveals the following:

- Relative change on CityLink / Bolte Bridge stays the same (-22k vpd), which indicates any redistribution of traffic is happening locally on WGT/Footscray Rd/Wurundjeri Way etc.. It is reasonable to expect a wider redistribution of traffic when removing the Dynon Road link, and this is expected to include some redistribution of trips back to the West Gate Freeway and Bolte Bridge Links (after all some of these vehicle trips were originally distributed on the West Gate Fwy and Bolte Bridge).
- Footscray Rd west of Citylink volumes *go down* under Option 5 (-3k to -4.5k vpd). This result appears counterintuitive and further analysis is required to validate the result.
- Wurundjeri Way south of Dudley *goes down* under Option 5 (+9k vpd to +7k vpd). This result appears counterintuitive and further analysis is required to validate the result.
- Wurundjeri Way north of Flinders *goes down* under Option 5 (+6.5k to +4.5k). This result appears counterintuitive and further analysis is required to validate the result.
- Footscray Rd north of Dudley goes up under Option 5 (-1.6k to +4.5k)\*.
- Dudley Rd east of Wurundjeri Way goes up (-1.5k vpd to +6k vpd)\*.

\*Almost all of the +9.5k vpd on Dynon Rd appears to be redirected on to Footscray Rd and Wurundjeri Rd extensions link.

Having regard to the above, further information would be required to properly analyse and understand whether the WDA has considered constraining capacity at additional locations in the '2031 Option 5' model to better calibrate induced traffic and/or traffic distributions (as has occurred in the '2031 project') model.

### Queuing Issues

There appears to be a queuing issue in the '2031 Option 5' AM model (refer below) which appears to potentially be a result of insufficient green time provided to this off ramp right turn movement (City Link Southbound Off Ramp).

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It appears that redundant green time has been given to the main road, resulting in queues on the off ramp. However, insufficient detail is provided to establish that this is the case.

To undertake a proper analysis, further information in regard to signal timing changes that have been implemented at this location would be required.

Project Note 60 indicates that signal phasing could be amended to provide additional green time to this movement, however it would impact LOS on the main Footscray Road movement. However Project Note 60 indicates that this hasn't been tested.

A small change in green time should be investigated in this model. Not providing for a change in green time appears to result in vehicles queuing back up CityLink, and all the way back to the model extents, and breaking flow down to zero (potentially resulting in unreleased vehicles).

However, a relatively small change in green time would be expected to mitigate this issue, and while it would marginally impact on the main Footscray Road movement it is unlikely to be a critical impact to the future operation of Footscray Road.

Not testing the impacts/benefits of a small change in signal phasing is not considered to be satisfactory or a robust assessment of Option 5.

Further, no information has been provided as to whether a 3<sup>rd</sup> right turn lane (or other mitigation options) has been considered. This is expected to ~~would~~ improve capacity and reduce queue lengths at this location.

