Transport for NSW

19 October 2022

TfNSW Reference: SYD22/00674/01

Ms Amanda Harvey
Executive Director
Metro East and South
Department of Planning and Environment
12 Darcey Street
Parramatta NSW 2150

RE: TfNSW's ADVISE TO DETERMINE GATEWAY CONDITIONS FOR TRAFFIC ASSESSMENT OF 'BANKSTOWN CENTRAL SHOPPING CENTRE ("Vicinity")

Dear Ms Amanda Harvey,

I refer to the above and am writing this letter in response to the Department of Planning and Environment (DPE)'s request to determine the Gateway Conditions for traffic assessment of Bankstown Central Shopping Centre ('Vicinity') planning proposal.

Please note that TfNSW had reviewed the planning proposal for the Bankstown Central Shopping Centre and provided comments on 8 September 2022 (Please see the attached TfNSW's response letter, Reference: SYD22/00674/01, Dated 8 September 2022). TfNSW's review of the proposal identified technical issues on the base model calibration/validation which require updating the base model and re-submit for TfNSW's approval and endorsement.

As such, TfNSW recommends to include the following conditions or similar for Gateway determination for Bankston Central Shopping Centre ('Vicinity') Planning Proposal:

- The applicant will complete, to the satisfaction of TfNSW all Traffic modelling and transport planning requirements specified by TfNSW as previously and as advised in TFMSWs letter (TfNSW Reference: SYD22/00674/01, Dated 8 September 2022) at Attachment A
- The planning proposal is to demonstrate the sites development capacity based on transport constraints applying to the subject land and within the wider Bankstown Town Centre Master Plan Area defined by Councils Bankstown Town Centre Master Plan.
- The planning proposal is to provide an evidence base in terms of methodology, assumptions, and calculations for the development potential reflected in proposed height and FSR standards and how these are related to traffic and transport constraints and future requirements.

Thank you for the opportunity to provide advice on the subject planning proposal. Should you have any questions or further enquiries in relation to this matter, Bayzid Khan would be pleased to take your call on 0402 05 7171 or email: development.sydney@transport.nsw.gov.au.

Sincerely,

Peter Mann
A/ Senior Manager Strategic Land Use
Land Use, Network & Place Planning

Attachment A – 20220908 - TfNSW response on Stantec Letter - Shopping Centre Final

Transport for NSW

8 September 2022

TfNSW Reference: SYD22/00674/01

Mr Stewart
General Manager
Canterbury-Bankstown Council
PO Box 8
Bankstown NSW 1885

Attention: Camille Lattouf

RE: PLANNING PROPOSAL FOR 'BANKSTOWN CENTRAL SHOPPING CENTRE ("Vicinity")' – BANKSTOWN LOCAL ENVIRONMENTAL PLAN (BLEP) 2015

Dear Mr Stewart,

I refer to the above and our previous correspondence of 18 May 2022 asking Council to address issues Transport for NSW (TfNSW) identified with traffic modelling for the 'Vicinity" planning proposal. We note that Council did not provide a formal response to our correspondence, but instead forwarded a letter, prepared by Stantec. TfNSW, therefore, has assumed that this letter represents Councils views with respect to the issues raised by TfNSW.

Transport for NSW has reviewed the response prepared by Stantec (Dated: 21 July 2022 and 1 August 2022) to our previous comments on the base AIMSUN model for 'Bankstown Central Shopping Centre' planning proposal. TfNSW's previous letter and the Stantec letter are provided in Appendix A for your reference.

TfNSW appreciates the clarifications provided by Stantec and has carefully reviewed all the responses provided. While many of the responses are acceptable and are resolved, TfNSW does not agree that the base AIMSUN model has been calibrated and validated sufficiently to be used to assess the impacts of the planning proposal on the surrounding road network.

Please note that some of the technical issues raised by TfNSW on the base model are categorised as of major or medium significance. TfNSW does not consider acceptable, the types of explanatory or "narrative" responses provided by Stantec to the issues that TfNSW has identified, and which require resolution. As such, TfNSW requests the Council address our previous comments and identified issues, revise the model as necessary/appropriate and re-submit the model files along with a revised response for our review and endorsement. To avoid confusion, TfNSW would appreciate if the revised response be provided by Council or with a Council's cover letter.

Thank you for the opportunity to provide advice on the subject planning proposal. Should you have any questions or further enquiries in relation to this matter, Bayzid Khan would be pleased to take your call on 0402 05 7171 or email: development.sydney@transport.nsw.gov.au.

Sincerely,

Peter Mann
A/ Senior Manager Strategic Land Use
Land Use, Network & Place Planning

Transport

18 May 2022

TfNSW Reference: SYD21/01120/01

Mathew Stewart
General Manager
City of Canterbury Bankstown
PO Box 8
Bankstown, NSW 1885

Attention: Mitchell Noble

RE: PLANNING PROPOSAL FOR 'BANKSTOWN CENTRAL SHOPPING CENTRE' – BANKSTOWN LOCAL ENVIRONMENTAL PLAN (BLEP) 2015

Dear Mathew Stewart,

Transport for NSW (TfNSW) appreciates the opportunity to provide comment on the above planning proposal.

We understand that the planning proposal seeks to amend the Bankstown Local Environmental Plan 2015 to establish site-specific height and floor space controls and amend the application of Bankstown Local Environmental Plan (BLEP) 2015 Clause 6.9 to northern parts of the site to allow residential uses to occur on the lower two levels of future redevelopment in those locations.

TfNSW has reviewed the submitted 'Traffic Impact Assessment' report (Prepared by GTA, dated 17 July 2020) and provides some key comments at **Attachment A (Comments on Transport Impact Assessment Report)** and in **Attachment B (Comments on Complete Street Models)** for consideration.

Please note that review of the Complete Street Models revealed that the models do not meet model calibration/validation criteria set out in the RMS Modelling Guidelines (2013). As such, the Complete Street Models are considered not suitable to be used as base model for future year option assessments.

TfNSW understands that the location and arrangement of the proposed bus interchange facilities are yet to be finalised, as such further review will be undertaken by TfNSW at later stage once final arrangement of the bus interchange facilities are completed. If required, TfNSW is willing to facilitate a meeting with the proponent and Council to discuss this matter in further detail.

Thank you for the opportunity to provide advice on the subject planning proposal. Should you have any questions or further enquiries in relation to this matter, Bayzid Khan would be pleased to take your call on 0402 05 7171 or email: development.sydney@transport.nsw.gov.au

Sincerely,

Peter Mann
A/ Senior Manager Strategic Land Use
Land Use, Network & Place Planning

Attachment A: Comments on Transport Impact Assessment Report (Dated 17 July 2020)

Section/Page ref	Comment/suggestion
Section 3.2 (Page 19)	The report assumes a high proportion of public transport usage for the proposed development. This should be compared with the current mode share data for the area. The current capacity of bus and rail services serving Bankstown area should also be analysed to understand if the current public transport have the capacity to accommodate the proposed future public transport usage as indicated in the report. This may require specific measures to improve such public transport usage proposed for the development as well as preparation of a Travel Demand Management Plan and Green Travel Plan.
Section 3.3 (Page 20)	The person-based trip estimation should include estimation of trips for AM peak. The trip generation estimation should include trips generated from all proposed development, including additional retail and childcare facilities.
Section 4 (Walking and Cycling)	The proposal and associated traffic assessment should include any future proposal of Bankstown Metro Station and proposed active transport linkages specially on the northern side of the proposed metro station.
Section 7.3 (Page 42)	The figure shows proposed access from Stacey Street. This access is very close to Stacey Street/Richard Street intersection and is a major safety concern. TfNSW does not agree with this access. An access is also shown on the North Terrace which is located on the proposed extension of Jacobs Street and appears to be very close to the proposed new intersection at North Terrace/Jacobs Street (Extension). It also appears from the figure that the west approach of Stacey Street/Wattle Street is not considered. Please clarify if this approach/access will be removed in future.
Section 7.4 (Page 43)	The trip generation estimation should be based on the trip rates included in *RMS Guide to Traffic Generating Developments* and *Technical Direction Guide to Traffic Generating Developments – Updated Traffic Surveys* and should include all proposed developments including retails.

Section/Page ref	Comment/suggestion
	The report should also include a figure showing adopted trip distribution percentages for the proposed development.
Figure 7.3 and Figure 7.4	Please include map key to show color coding for different LoS.

Attachment B: Comments on Complete Street Models

TfNSW Operational Traffic Modelling Team Review and Comments

Bankstown Complete Street Project – Base Model (AM and PM)

30/03/2022

The following sections comprise a summary of TfNSW operational traffic modelling team's review of *Bankstown Complete Street – Base Model* prepared by GTA consultants.

The specific documents and traffic model(s) provided for the review are outlined in Table 1.

Table 1: Reviewed material

Material	File name	File description	Received date
AIMSUN Traffic Models	2018 Base Weekday 7-9am.ang 2018 Base Weekday 4-6pm.ang	Base Model	March 2022
Path Files	Path Assignment 2018 Base Weekday 4-6pm.apa Path Assignment 2018 Base Weekday 7-9am.apa	Base Model Path Files	March 2022
Report	Bankstown Complete Street Project - Traffic Modelling Assessment Report - Microsimulation Model Calibration and validation Report (Base Model Report)	03/06/2018	March 2022

To provide clarity on the scale of issues identified, a categorisation approach to the review will be used based on the following three level criteria:

Major – issue needs addressing before using the model and will have an impact on model analysis and recommendations.

Medium – issues are localised and are likely to result in a small variation of the model analysis and recommendations but would not impact the decision process.

Minor – issues are minor or remote to the main area of investigation and would not be expected to impact on model analysis and should be considered for correction at subsequent updates.

This approach ensures that the review has captured the likely impact of issues identified and prioritises them to formulate corrective actions. In isolation, medium or minor issues would not have considerable impacts on the modelling results but combined they have the potential to impact the model's performance.

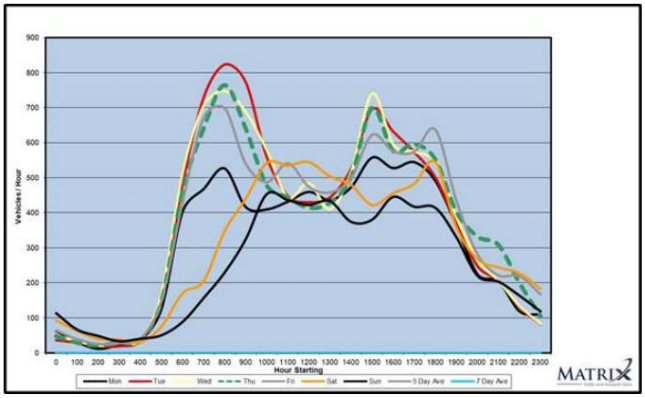
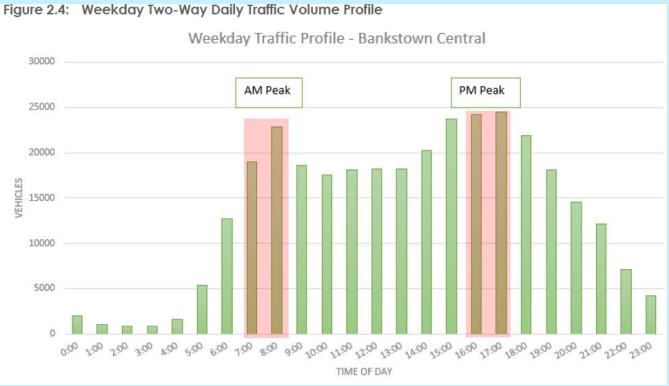
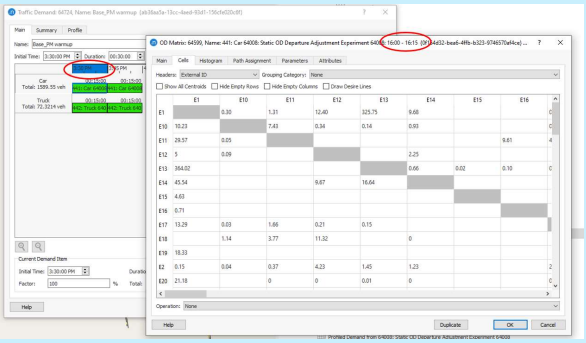
Table 2 - 4 provides a summary of review comments for Traffic Modelling Assessment report, Base Model Calibration and Validation report and Base models (AM and PM peaks)

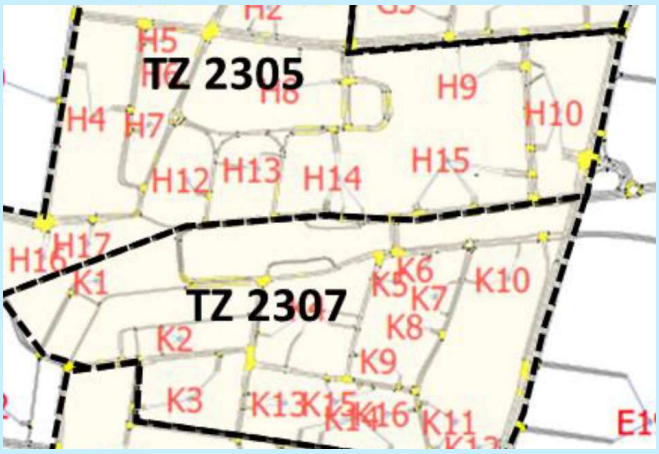
Table 2: Summary of review comments – Traffic Modelling Assessment Report

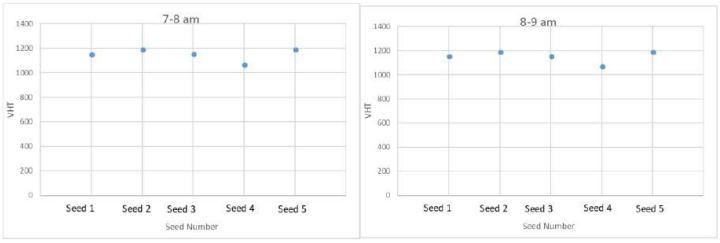
Item	Section	Comment	Priority
1	2.1.1 Base Model Development	Model version The traffic model cannot be opened with AIMSUN version 8.2.3 by the reviewer. The model review was undertaken in AIMSUN version 8.3.0	Note only
2	2.1.3 Calibation and Validation Summary	Calibration results did not fulfill defined criteria. Justification and more details should be provided such as location and number of vehicles. It could be be minor if those are not located in critical location or number traffic number only.	Medium
3	2.2.1 Future Year Demand	Given that new metro station will be completed in near future, was PTPM also be considered for mode share /shift as part of an integral input to this model?	Minor

Table 3: Summary of review comments – Base Model Calibration and Validation Report

Item	Section	Comment	Priority
1	2.1 Overview of the collected data	Table 2.1: Traffic Data Summary Data Type / Source / Survey Dates / Survey Times SCATS Detector Volume Data / Roads and Maritime / Thursday 22/02/2018, Saturday 24/02/2018 / 24 Hours SCATS Signal Data / Roads and Maritime / Thursday 22/02/2018, Saturday 24/02/2018 / 24 Hours Travel Time Surveys / Data Audit Systems / Thursday 22/02/2018, Thursday 22/02/2018, Saturday 24/02/2018 / 6:00 am to 8:00 am, 4:00 pm to 6:00 pm, 12:00 pm to 2:00 pm Automatic Tube Counts / Matrix / Tuesday 10/04/2018 - Tuesday 17/04/2018 / 24 Hours Mid-block Video Counts / Matrix / Saturday 7/04/2018, Thursday 12/04/2018, Thursday 12/04/2018 / 11:00 am to 2:00 pm, 6:00 am to 9:00 am, 3:00 pm to 6:00 pm Tube counts and SCATS Detector volume data were used. No classified intersection counts were used. Classified intersection counts are recommended to be used as the main source of traffic volumes calibration, rather than other data sources. 2.5.1 SCATS Detector Volume Data SCATS detector volume data was obtained for the signalised intersection within the study area. This data was obtained for 24-hour periods for the relevant survey dates. This data is used to cross-check and supplement the automatic tube counts data.	Major

2	2.2 Automatic Tube Count	The daily profile at Macauley Street shows that the PM peak at 3pm during the weekday does not align with the PM peak hour identified through all the sites (total) 4-5pm. This implies that the traffic movement has different trip pattern dependent on the origination / destination within the study area. Figure 2.2: Daily Traffic Profile at Macauley Street  Figure 2.4: Weekday Two-Way Daily Traffic Volume Profile  This is not captured in the traffic model e.g. warm up starts from 15:30, and the 15 minutes traffic matrices of 15:30-15:45 used the 16:00-16:15 demand matrices 	**Major**

3	**3.3.3 Network Assumptions**	Though it is acknowledged that the fixed time traffic signal is used for this microsimulation model, the commentary is required on the reason why actuated traffic signals are not adopted. Intersection Control All signalised intersections within the study area are controlled by SCATS (Sydney Coordinated Adaptive Traffic System) which allows for adaptive phase times and cycle times that respond to fluctuating traffic conditions and improving the efficiency of individual intersections. Average fixed time signal controls over the model period (cycle times, phase times and phase arrangements) have been adopted for each signalised intersection within the modelled network based on the SCATS IDM data provided by Roads and Maritime.	**Minor**
4	**3.4.1 Zone System**	There is some inconsistency in the zone system, e.g. highlighted below a centroid of Travel Zone 2302 (G) in the middle of centroids representing Travel zone 2305 (H).  This is also inconsistent with Figure 3.2 in the report which does not show this G3. 	**Medium**

5	**3.4.2 Traffic Demands**	It is to be clarified whether there are interpeak matrices from STM, and if so, whether they are valid to be used as prior matrix for the Saturday model? 3.4.2 Traffic Demands The process used to develop the demand matrices is provided in Figure 3.3. The prior matrices were extracted from the STM models. These prior matrices were provided for 7-9 am, 4-6 pm peak hours. The interpeak matrix was initially utilised as the prior matrix for the Saturday model.	**Minor**
6	**4.1 Process**	Volume based calibration on link counts do not meet the requirement in TfNSW Modelling Guideline (2013). Turn counts validation at intersections should be used. Similarly, for a microsimulation model, congestion validation using a visual check does not meet the requirement. Queue length validation at key intersections should be undertaken. In the next stage, model outputs were compared with empirical observations using statistical measures to quantify the goodness of fit. Generally, the process of improving the goodness of fit between model outputs and observed data was the same as used in the qualitative analysis stage. It also relied on an understanding of traffic conditions within the study area and major causes of congestion, as well as modelling judgment. The overall process was performed using the following steps: o Model stability validation o Volume based calibration – link count calibration o Travel time validation o Congestion validation – visual.	**Major**
7	**4.2 Calibration and Validation Criteria**	Calibration results of turning counts are missing. It needs further clarification why SCATS detector counts were aggregated to link volumes for calibration. Table 4.1: Calibration and Validation Criteria Type / Metric / Target Model Calibration Regression / R^2 value / >0.90 GEH for link flow comparisons / GEH < 5 / 85% Cordon Total / GEH < 4 / 100% Individual links in Cordon / GEH <5 / 85% Model Validation Travel times / Within 15% or one minute / 100%	**Major**
8	**4.3.2 Model Stability**	This is a poor representation of VHT values. Scatter plots are not used for such purposes. Figure 4.2: Scatter Plot for VHT – AM Peak 	**Minor**

<table>
<tr><td>9</td><td>4.4 Model Calibration Results</td><td>Throughout Section 4, no traffic counts calibrations results are presented using GEH, though it was identified as a criteria.</td><td>Major</td></tr>
<tr><td>10</td><td>4.5 Model Validation Results</td><td>Throughout Section 4, no travel time validation results of 8-9 am are presented.</td><td>Major</td></tr>
<tr><td>11</td><td>4.5 Model Validation Results</td><td>Travel time validation results have a difference of over 4 minutes for route 2 (PM peak)

Table 4.4: Travel Time Comparison – PM Peak (4-5 pm)
<table>
<tr><th rowspan="2">Route</th><th rowspan="2">Direction</th><th rowspan="2">Average Observed Travel Time (s)</th><th rowspan="2">Average Modelled Travel Time (s)</th><th colspan="2">Difference</th><th rowspan="2">Meets Criteria?</th></tr>
<tr><th>Relative (s)</th><th>%</th></tr>
<tr><td>1</td><td>NB</td><td>488</td><td>447</td><td>-41</td><td>-8%</td><td>Yes</td></tr>
<tr><td></td><td>SB</td><td>405</td><td>385</td><td>-20</td><td>-5%</td><td>Yes</td></tr>
<tr><td>2</td><td>NB</td><td>540</td><td>486</td><td>-54</td><td>-10%</td><td>Yes</td></tr>
<tr><td></td><td>SB</td><td>695</td><td>427</td><td>-268</td><td>-39%</td><td>No</td></tr>
<tr><td>3</td><td>NB</td><td>431</td><td>426</td><td>-4</td><td>-1%</td><td>Yes</td></tr>
<tr><td></td><td>SB</td><td>390</td><td>350</td><td>-39</td><td>-10%</td><td>Yes</td></tr>
<tr><td>4</td><td>NB</td><td>216</td><td>218</td><td>2</td><td>1%</td><td>Yes</td></tr>
<tr><td></td><td>SB</td><td>189</td><td>149</td><td>-40</td><td>-21%</td><td>Yes</td></tr>
<tr><td>5</td><td>NB</td><td>175</td><td>132</td><td>-43</td><td>-24%</td><td>Yes</td></tr>
<tr><td></td><td>SB</td><td>166</td><td>184</td><td>18</td><td>11%</td><td>Yes</td></tr>
<tr><td>6</td><td>EB</td><td>159</td><td>180</td><td>21</td><td>13%</td><td>Yes</td></tr>
<tr><td></td><td>WB</td><td>199</td><td>201</td><td>2</td><td>1%</td><td>Yes</td></tr>
</table></td><td>Major</td></tr>
<tr><td>12</td><td>4.5 Model Validation Results</td><td>Travel time validation needs be undertaken using section time average, especially for this study long travel time routes were assessed (over 5 minutes). The results are not presented in the report.

Table 11. 5 Microsimulation travel time target validation criteria
<table>
<tr><th>Topic</th><th>Criteria</th></tr>
<tr><td>Journey time average</td><td>Average modelled journey time to be within 15 per cent or one minute (whichever is greater) of average observed journey time for full length of route. Each route should be cumulatively graphed by section as shown above</td></tr>
<tr><td>Section time average</td><td>Average modelled journey time to be within 15 per cent of average observed journey time for individual sections</td></tr>
<tr><td>Journey time variability</td><td>Average and 95 per cent confidence intervals to be plotted for observed and modelled travel times for each journey time route. Comparison to be to modeller and RMS satisfaction.</td></tr>
</table>
The example for comparing the section travel time from the Guideline.

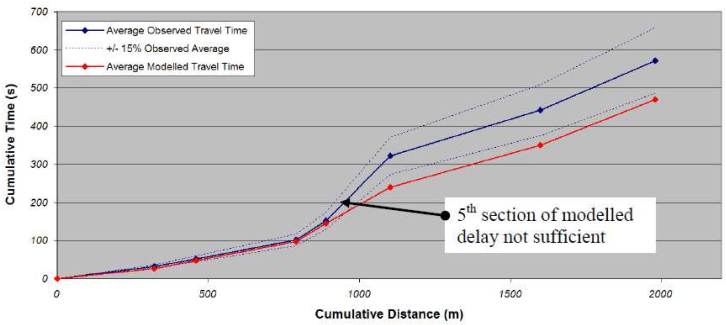
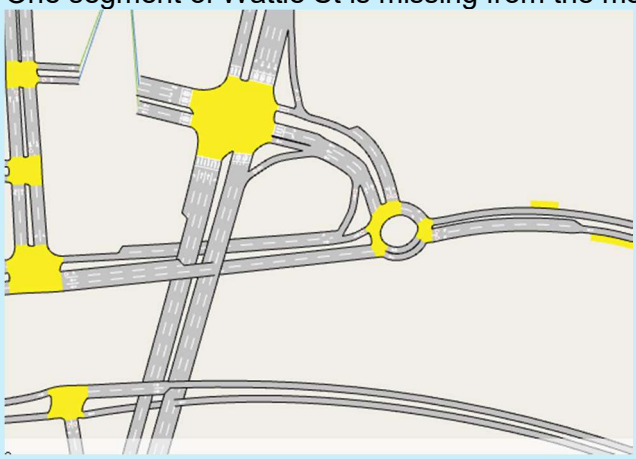
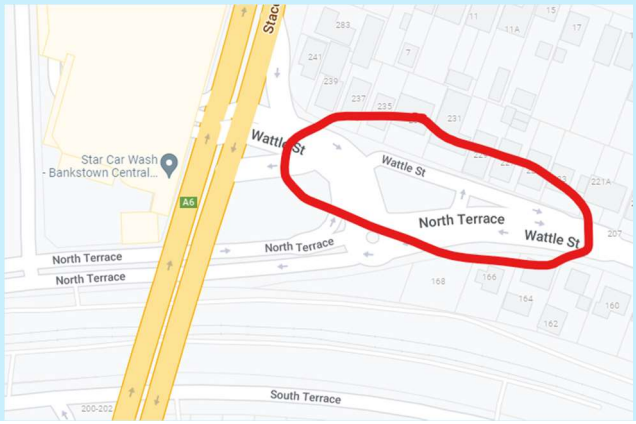
 

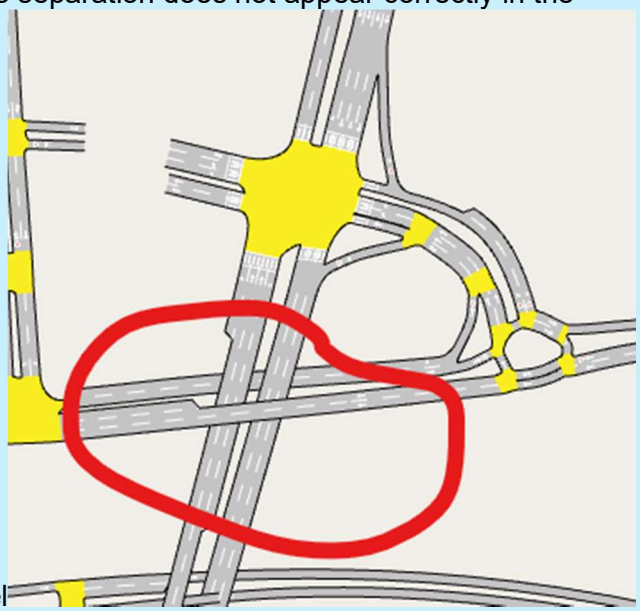
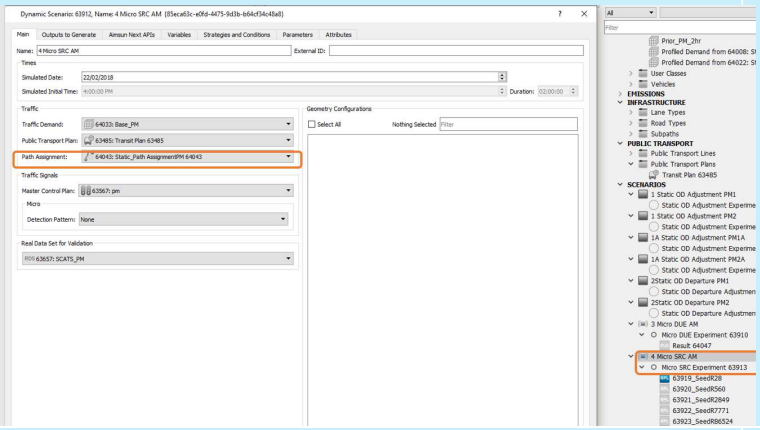
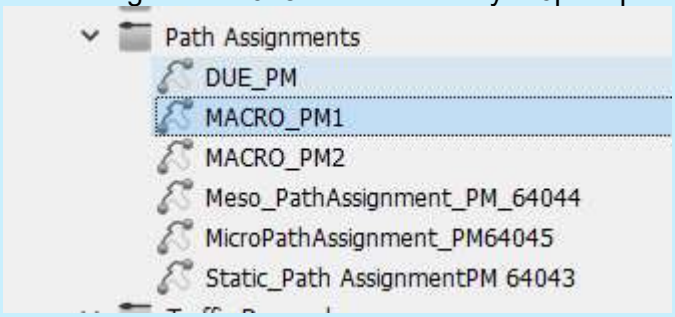
Figure 11.5 Travel time comparison</td><td>Major</td></tr>
</table>

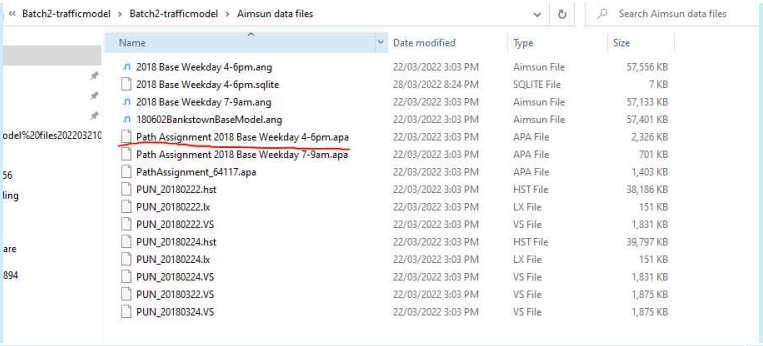
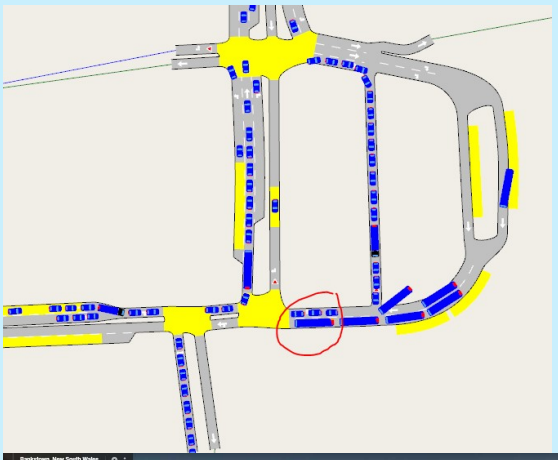
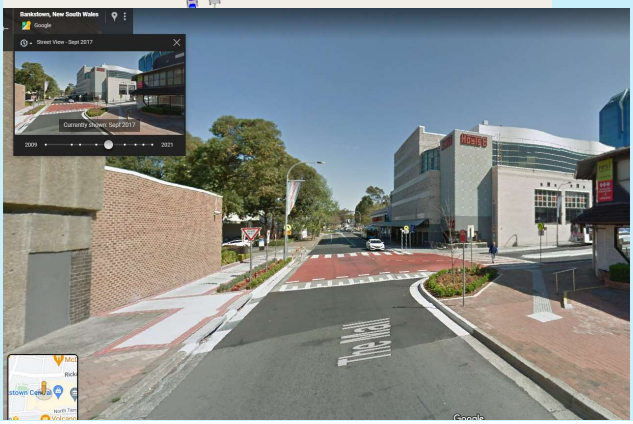
13	**4.6 Visual Inspections**	Visual inspection of congestion using Average Speed is not acceptable for validation of a microsimulation model. As a minimum, queue length validation at key intersections should be undertaken for a CBD model of such scope. **Table 11.7 Microsimulation queue length target validation criteria** **Topic** — **Suggested criteria** Queue length — Modelled and observed queue lengths to be compared at key locations within the study area (95th percentile to be used if possible). Comparison to be to both the modeller and RMS satisfaction. Figure 4.8: Average Speed Comparison – Weekday 	**Medium**
14	**General**	Through the base model report, it does not show any evidence of the actual traffic condition (e.g. peak hour site observations or videos from traffic survey). There is deemed unacceptable the only indicator of actual traffic condition is based on Google Traffic, used to compared to the Simulated average speed. It is noted by the reviewer that the Site Observation was undertaken between 12-2pm on a Tuesday 2.6 Site Observations Site visit was conducted on Tuesday, 7 February between 12 pm and 2 pm. Council members were present and walked the GTA team across some of the key streets within the Bankstown CBD. The purpose of this site visit was to understand the key congestion areas in the Bankstown CBD, road geometry, general traffic movements and driver behaviour. However, since the time of the site visit did not coincide with the peak hour congestion and queues, no peak hour behaviour was observed.	**Medium**

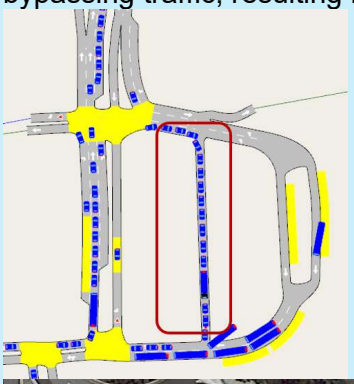
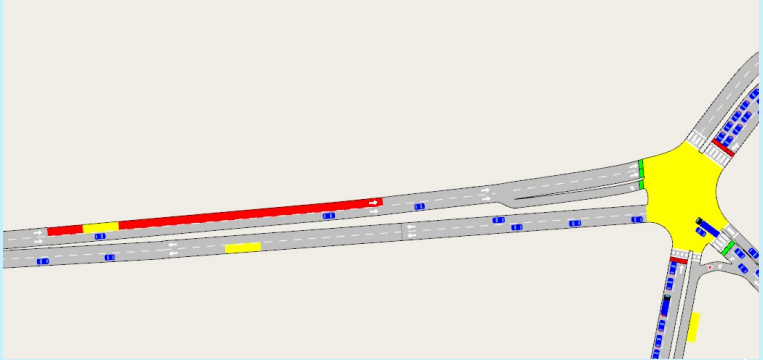
15	**Genernal**	The calibration and validation of this base model also do not cover other criteria required in RMS Modelling Guideline (2013). Basic and minimum requirements have not been met. Below is a summary of the basic requirement: **Table 11.1 Microsimulation link and turn target calibration/validation criteria (network wide)** **NETWORK-WIDE** **Topic** / **Criteria** Link or turn: Results to be tabulated in appendices and summarised in main report; Tolerance limits for network-wide area: *GEH < 5 Minimum 85 per cent of observations to be within tolerance limits*; *Turn or link flows with GEH > 10 require explanation in reporting*; Plots of observed vs modelled hourly flows required for all observations; *Plots to include lines showing GEH = 5 tolerance limits*; *R^2 value to be included with plots and to be > 0.9*; *Slope equation to be included with plots (intercept to be set to zero)* Screenline or cordon: Tolerance limits for network-wide area: *Each directional screenline or cordon total to have GEH < 3*; *Individual links in screenlines / cordons to have GEH < 5 for 85 per cent of observations* **Table 11. 5 Microsimulation travel time target validation criteria** **Topic** / **Criteria** Journey time average: Average modelled journey time to be within 15 per cent or one minute (whichever is greater) of average observed journey time for full length of route. Each route should be cumulatively graphed by section as shown above Section time average: Average modelled journey time to be within 15 per cent of average observed journey time for individual sections Journey time variability: Average and 95 per cent confidence intervals to be plotted for observed and modelled travel times for each journey time route. Comparison to be to modeller and RMS satisfaction. **Table 11.7 Microsimulation queue length target validation criteria** **Topic** / **Suggested criteria** Queue length: Modelled and observed queue lengths to be compared at key locations within the study area (95th percentile to be used if possible). Comparison to be to both the modeller and RMS satisfaction. **In summary, based on the lack of calibration and validation results (turn counts, section travel time, queue length) and lack of traffic data (e.g. classified intersection counts, peak hour site inspection) for the calibration and even inputs to the base model, the submitted base model (AM&PM) does not indicate the quality of being suitable for assessing any future options.**	**Major**

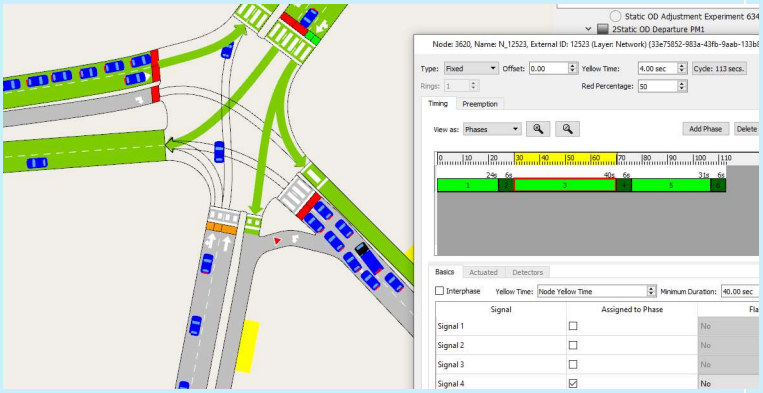
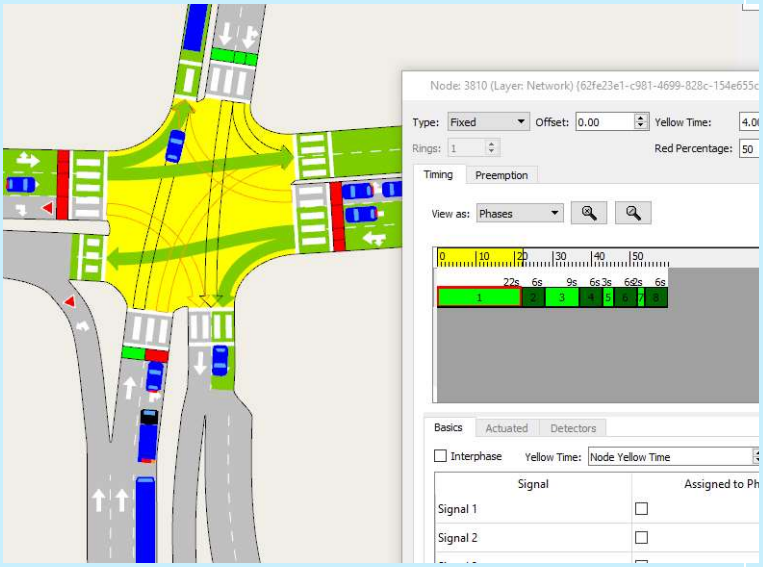
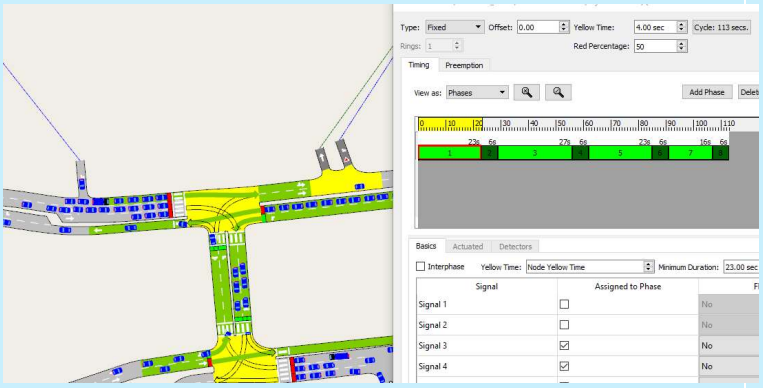
Table 4: Summary of review comments – Aimsun Base Model

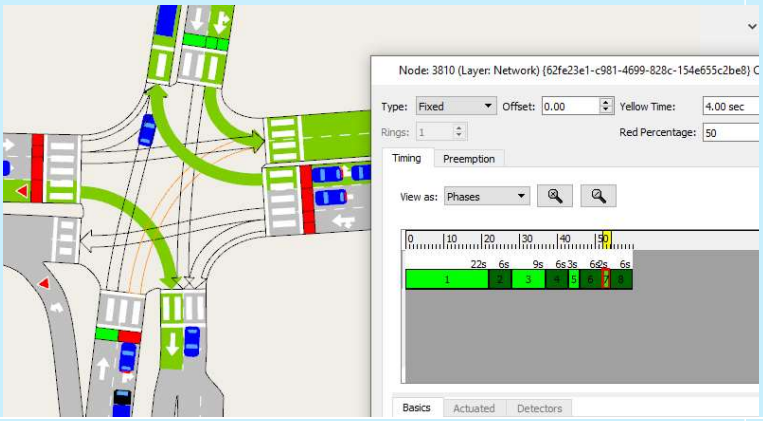
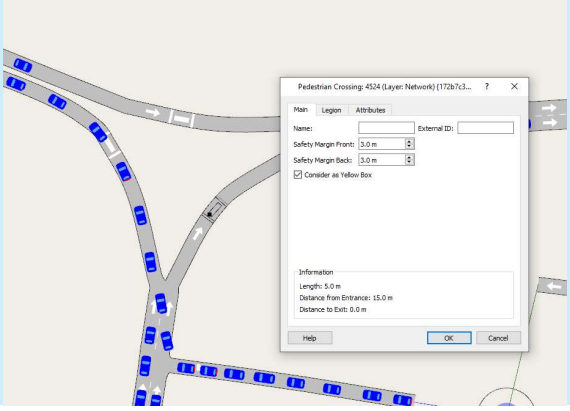
1	**Speed limit – Stacey St**	The northbound speed limit on Stacey St is 70kmph (-33.9195797024294, 151.0400266117751). In the model, it is 60kmph. 	**Minor**
2	**Wattle St – Missing component**	One segment of Wattle St is missing from the model.  	**Major**

3	**Grade separation**	Grade separation does not appear correctly in the model 	**Minor**
4	**Path for Micro SRC**	The Micro SRC (AM and PM) mistakenly use Static Path as inputs, instead of the Micro DUE path. 	**Major**
5	**Path available for Model Review**	None of the Path Assignments in the model links to the supplied APA file Path Assignment 2018 Base Weekday 4-6pm.apa 	**Major**

			
6	**Reproducing Base Model results**	As a result of above issues, the reviewer is unable to reproduce the base model results for the checking purpose. Hence, all the following comments were made based on the 'new' simulation for the purpose of spot checking vehicle simulation in the model.	**Medium**
7	**The Mall**	The simulation (PM) shows severe congestion at the Mall, especially for the westbound movements. It does not appear that with the width of the Mall it can accommodate two lanes of movement.  	**Major**

			
8	**The Mall**	The southbound lane should be used for those accessing car parks. There are no traffic zones linking to the surrounding car parks and this link is used by bypassing traffic, resulting in unrealistic congestion.  	**Major**
9	**Marion Street**	It needs clarification the reason on closing the kerbside lane (for a short section) using traffic management (PM peak) 	**Medium**

10	**Pedestrian crossing at traffic signal**	Although the pedestrian crossing was coded, there was no traffic signal phasing reflecting the delay (e.g. late start) caused by pedestrian crossing at almost all the traffic signals that were spot checked, including those close to CBD. This substantially under simulates the delays at the intersections for vehicles.   	**Major**

11	**Traffic signal minimum green time**	Unrealistic and short green time was used at some intersections. 	**Major**
M12	**Rat running due to Stacey Street congestion**	Traffic adopt rat running e.g. Sir Joseph Banks Street due to congestion along Stacey Street. There is no evidence showing whether this is actual condition due to the lack of site inspection. 	
M13	**Midblock Pedestrian crossing**	It is unknown and needs clarification on the reason of coding midblock pedestrian crossings where there are no pedestrian inputs or impact on the vehicles. 	**Medium**

Stantec Australia Pty Ltd
Level 25, 55 Collins Street
Melbourne VIC 3000
AUSTRALIA
ABN 17 007 820 322

21 July 2022

Project/File:

Patrick Lebon
City of Canterbury Bankstown
PO Box 8
Bankstown NSW 2200

Dear Patrick,

Reference: PLANNING PROPOSAL FOR 'BANKSTOWN CENTRAL SHOPPING CENTRE' – BANKSTOWN LOCAL ENVIRONMENTAL PLAN (BLEP) 2015 – RESPONSE TO TFNSW LETTER DATED 18 MAY 2022

Further to recent discussions, Stantec has now had the opportunity to undertake a detailed review of the Transport for New South Wales (TfNSW) letter dated 18 May 2022 pursuant the Bankstown Central Planning Proposal. This letter is hereafter referred to as 'the TfNSW letter'.

The TfNSW letter outlines a number of comments relating to both the Transport Impact Assessment (TIA) report dated 17 July 2020 submitted by Stantec for the Planning Proposal as well as the AIMSUN traffic modelling that was completed by Stantec to support Complete Streets. It concludes that the *"(TfNSW) review of the Complete Street Models revealed that the models do not meet model calibration / validation criteria set out in the RMS Modelling Guidelines (2013). As such, the Complete Street Models are considered not suitable to be used as base model for future year option assessments."*

In our view, the modelling completed for Complete Streets, and thus by extension the Bankstown Central Planning Proposal, is appropriate and, most importantly, fit for purpose for the following reasons:

1. The AIMSUN traffic modelling completed for Complete Streets meets RMS calibration / validation criteria (contrary to the opinion stated in the TfNSW letter), particularly considering its intended purpose was to support a transport infrastructure framework for the Bankstown CBD and not justify specific infrastructure projects or major development applications.
2. The AISMUN traffic modelling completed for Complete Streets (and by extension the Bankstown Central Planning Proposal) is not expected or likely to be the final traffic modelling completed in the Bankstown CBD over the coming years. Rather, it is expected that additional traffic modelling will be completed to either support major development applications, significant road network changes in the CBD and/or other major projects (e.g., the New Bankstown Hospital).
3. The AIMSUN traffic modelling included in the Stantec TIA dated 17 July 2020 for the Bankstown Central Planning Proposal was included principally to illustrate that the full development of the site was not expected to have a significant impact on the operation of the surrounding road network. In our view, the completion of such traffic modelling goes beyond what is typically submitted in support of a Planning Proposal, noting that such modelling it is more commonly required for major development applications. This is particularly considered the case for the

Bankstown Central Planning Proposal given it seeks approval for a relatively minor change to the existing controls applicable to the site, including an increase in the approved overall FSR from 3.5:1 to 3.92:1.

In this regard, whilst the comments provided by TfNSW are noted (and indeed some are not disagreed) and will undoubtedly assist any future traffic modelling in the CBD, we do not consider it necessary or materially beneficial to undertake additional or revised traffic modelling at this time to support Complete Streets or the Bankstown Central Planning Proposal.

In our experience, this modelling would most often be provided to support either the next major development application in the Bankstown CBD (such as the Bankstown Central Town Centre site (bound by The Appian Way, The Mall, North Terrace and the Jacobs Street extension) or the New Bankstown Hospital) and/or to confirm the design of a significant road network reconfiguration in the Bankstown CBD (such as the closure of The Appian Way during daytime hours / creation of a shared zone along this street at night).

The approach to undertaking the modelling at that time is considered logical and appropriate as the details of bus network changes in the CBD would be known by that time (following the completion of the TfNSW review currently being completed) and further information would be available regarding the timing and nature of road network changes, development yields and car parking provisions in the CBD (amongst other factors). It is considered reasonable that as the Bankstown CBD continues to evolve due to these and other projects, further modelling and transport analysis is undertaken at that time and in an iterative way to consider the ongoing changes that occur.

For the above reasons, we do not consider it necessary to delay the assessment of the planning proposals for Bankstown Central or the Bankstown City Centre.

For completeness, further discussion regarding the background of the traffic modelling completed for Complete Streets and the purpose of Complete Streets itself, coupled a response to each of the TfNSW comments, is outlined in the following attachments:

- ***Attachment 1 – Relevant Background***
- ***Attachment 2 – Stantec Letter of Response to TfNSW on the Bankstown Central Shopping Centre Planning Proposal (SYD21/01120/01) dated 18 February 2022***
- ***Attachment 3 – Response to TfNSW Comments (Attachment B Comments Only)***

I hope the above and attached information is clear. Naturally, should you wish to discuss this matter further and/or organise a time with TfNSW to discuss it in person, please do not hesitate to contact me.

Reference: **TfNSW Comments on Bankstown Complete Street Project – Base Model**

Sincerely,

STANTEC AUSTRALIA PTY LTD

Tim De Young
Group Leader - Transportation Engineering
Phone: +411 863 774
tim.deyoung@stantec.com

Reference: **TfNSW Comments on Bankstown Complete Street Project – Base Model**

ATTACHMENT 1:

RELEVANT BACKGROUND

Complete Streets

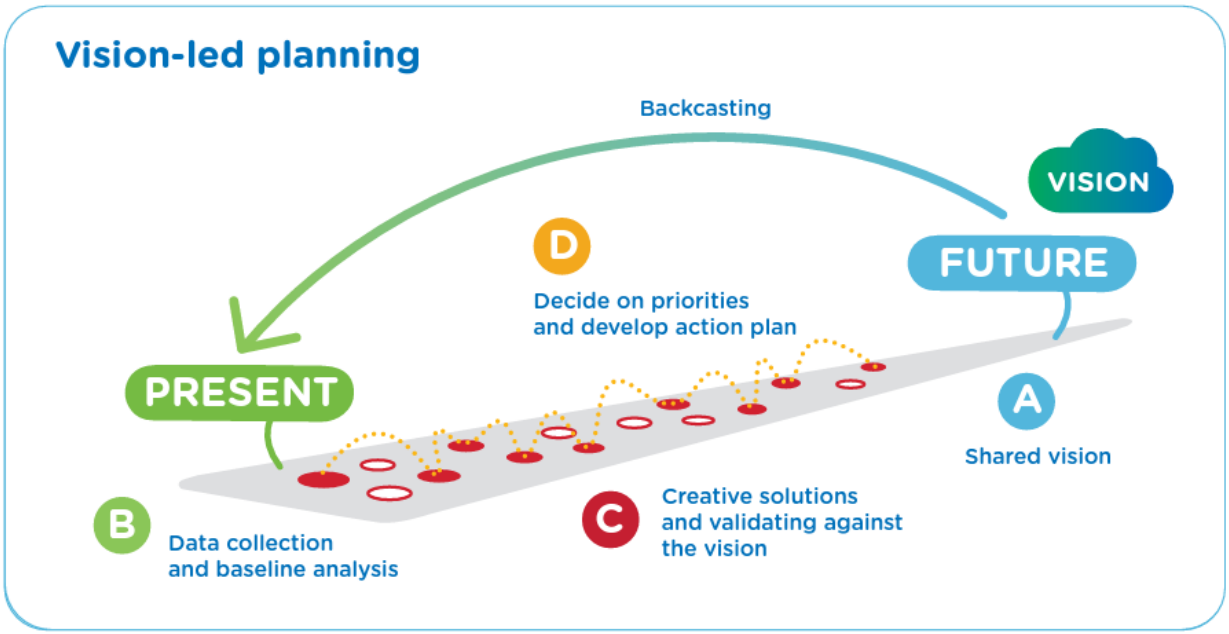
In 2017, Stantec (then GTA) was engaged by Canterbury-Bankstown Council, via Roberts Day, to provide transport planning and traffic engineering advice associated with the preparation of the Complete Streets project for the Bankstown CBD.

As outlined on Council's website for the project, *"'Complete Streets' is an approach that combines smart transport planning with good design to create an attractive destination*", which:

- *"Designs for all ages, backgrounds and abilities*
- *Designs for all modes (walking, cycling, public transport and vehicles)*
- *Designs for all functions including transport, shopping and outdoor dining*
- *Prioritises people first"*

The development of Complete Streets followed a 'vision and validate' approach (as opposed to the more traditional 'predict and provide' approach), whereby the vision for the Bankstown CBD streetscape was set first and then validated by appropriate analysis. This approach is recognised in the TfNSW's Future Transport Strategy 2056, as shown in Figure 1. For Bankstown, this approach also had regard to a range of other factors relevant to the study area including the proposed Metro project, potential bus network reconfiguration, active travel enhancements, maximum car parking rates, and so on.

Figure 1: Vision-led Planning (Future Transport Strategy 2056).



For Complete Streets, the validating analysis including AIMSUN traffic modelling completed by Stantec (then GTA), with the associated modelling report forming an appendix to Complete Streets. This report was formally exhibited with the Complete Streets documentation, noting that TfNSW responded to Council as part of this exhibition process and outlined no objection or concerns with respect to the modelling in its letter dated 1 July 2019. In October 2019, Council ultimately endorsed Complete Streets.

In this regard, it is noted that the traffic modelling which informed Complete Streets was purposefully high-level in its nature and certainly not ever proposed to define exact transport projects or intersection configurations. Moreover, it was not ever proposed to avoid the need for further analysis for major development projects or road network change projects in the future when further information regarding the scale of development, mixture of land uses, staging of road network changes and/or car parking provisions would be known. Indeed, Complete Streets acknowledges the following with respect to its recommend concepts designs:

"The concepts illustrate the long-term opportunities for enhancement of the CBD and provide a guide for the detailed design of each street. These concepts are based on high level base information and are indicative only in their resolution. Detailed site survey and analysis will be applicable to each to take the concepts to the next level of design."

This is also reflected in the traffic modelling report which accompanies Complete Streets which notes that the purpose of the model is to *"understand the current key issues and to provide a platform to test various future Complete Streets strategies".*

In summary, we reiterate the following:

1. The traffic modelling completed for Complete Streets was prepared to guide the development of a framework with strategies for the future transport network in the Bankstown CBD and is considered fit for this purpose. It is worthwhile to note that Complete Streets was also supported by TfNSW at the time of its exhibition.

2. The traffic modelling completed for Complete Streets was not intended to be relied upon to justify or define final transport or land use projects in the Bankstown CBD. It was expected at the time, and continues to be expected now, that additional traffic modelling would be completed to either support major development applications and/or significant road network changes in the CBD.

Bankstown Central Planning Proposal

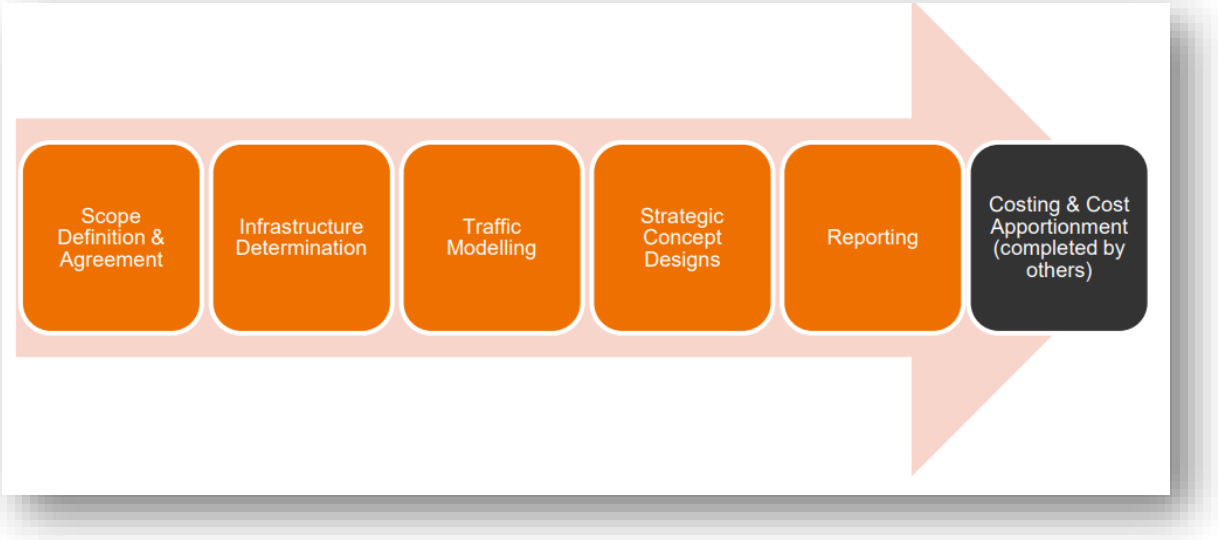
In 2020, Stantec was engaged by Vicinity Centres (VCX) to assist with a Planning Proposal and various Development Applications which considered future development opportunities at Bankstown Central Shopping Centre.

As the Planning Proposal (and DAs) were developed following the endorsement of Complete Streets by Council in October 2019, they were guided by the strategies and transport masterplan set out in Complete Streets. The Bankstown Central Planning Proposal maintained consistency with Complete Streets, other than that it proposed an on-street bus interchange on the Jacobs Street extension (rather than delivery of an off-street bus interchange on VCX land).

As part of the stakeholder engagement process, Council invited TfNSW to review and provide comment on the Planning Proposal. In its response letter dated 24 December 2021, TfNSW suggested that a *"comprehensive Transport Study be undertaken to assess the cumulative impacts of the planning proposal on existing and planned public transport infrastructure and regional road network"*. The letter outlined TfNSW's view that this is warranted *"given the significant scale of development proposed in the*

masterplan for the Bankstown Central Shopping Centre site associated with the LEP amendment, as well as the evolving character of the Bankstown City Centre".

In response, Stantec prepared a letter dated 18 February 2022 (attached as Attachment 2 to this letter) which outlined our view that the requested comprehensive Transport Study was not necessary or reasonable for completion as part of a Planning Proposal and that, if required, it ought to be pursued separately by TfNSW and/or Council. The February 2022 letter also outlined a recommended methodology for that study, with a key figure reproduced below:



This figure further highlights our expectation and recommendation that additional modelling is likely to be required for the Bankstown CBD to progress the Complete Streets concept designs into more refined designs which can be costed (and then funded). In light of the fact that TfNSW has also recently engaged Stantec to investigate and determine bus options for the CBD, in collaboration with Council and VCX, it is considered logical that this traffic modelling be completed at the conclusion of that project.

Stantec Australia Pty Ltd
Level 25, 55 Collins Street
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ATTACHMENT 2:

STANTEC LETTER OF RESPONSE TO TFNSW ON THE BANKSTOWN CENTRAL SHOPPING CENTRE PLANNING PROPOSAL DATED 18 FEBRUARY 2022

Stantec Australia Pty Ltd.
Level 25, 55 Collins Street
Melbourne VIC 3000

18 February 2022

Project/File: N186960

Mr. Nik Wheeler
Urbis
Angel Place
Level 8, 123 Pitt Street
Sydney NSW 2000

Dear Nik,

Reference: Planning Proposal Bankstown Central Shopping Centre (SYD21/01120/01)

A Planning Proposal was submitted on behalf of Vicinity Centres (VCX) to Canterbury-Bankstown Council (Council) to initiate an amendment to the Bankstown Local Environmental Plan (BLEP 2015) with respect to the Bankstown Central Shopping Centre site located at 1 North Terrace, Bankstown (the site).

It is understood that Council invited Transport for New South Wales (TfNSW) to review the Planning Proposal. Upon their review, TfNSW suggested that a *"comprehensive Transport Study be undertaken to assess the cumulative impacts of the planning proposal on existing and planned public transport infrastructure and regional road network".* The letter clarifies TfNSW's view that this is warranted *"given the significant scale of development proposed in the masterplan for the Bankstown Central Shopping Centre site associated with the LEP amendment, as well as the evolving character of the Bankstown City Centre*".

This letter has been prepared to respond to the TfNSW letter to provide additional information to Council regarding the transport impact assessment report previously prepared by GTA (now Stantec) which was submitted with the Planning Proposal. The overarching conclusion of this letter is that whilst we consider that the comprehensive transport study requested by TfNSW has merit in guiding the delivery of transport infrastructure in the Bankstown CBD, it is not considered necessary or reasonable for completion as part of a Planning Proposal submission. This conclusion is held for the following reasons:

1. The transport assessment submitted with the Planning Proposal contains a robust assessment of the transport impacts of the anticipated future land use. In our view, the level of assessment provided in that report is consistent with typical requirements for a Planning Proposal. If there are any clarifications of assessment assumptions or a need for further assessment of development implications, we consider that it is reasonable that this occurs post-Gateway or for subsequent development applications when there is greater certainty regarding the land use and prevailing transport conditions.

2. The request from TfNSW appears to have limited regard to the extensive body of work that was completed by Council, including detailed traffic modelling, that informed Complete Streets for the Bankstown CBD. The Complete Streets documents sets out the future Year 2036 transport infrastructure proposed for the Bankstown CBD, which appears to be the principal outcome sought to be determined by the TfNSW requested study. It is further noted that the Planning Proposal has been prepared having regard to Complete Streets, including its recommended network of active travel linkages, and the accompanying transport report outlines the extent of any transport differences. Most notably, this includes the provision of bus bays on the future extension of Jacobs Street, rather than an off-street bus interchange on adjacent land.

3. The requested TfNSW study seeks to identify infrastructure works and determine a funding / cost apportionment mechanism for those works. This is not a body of work that can reasonably or effectively be led by a private sector property owner. Rather, it needs to be led by Council, in collaboration with key stakeholders (including, but not limited to, Vicinity Centres and TfNSW). This approach will be particularly important for the Bankstown CBD given projects like the extension of Jacobs Street (as proposed in Complete Streets) will not be "required" by the development of the Bankstown Central site, but will naturally be dependent on it occurring, and will have far broader benefits to the movement of people between the train station and Western Sydney University campus as it is proposed to allow the creation of shared zones along The Appian Way and Fetherstone Street. In this regard, it is recommended that the transport study sought by TfNSW is completed separate to the Planning Proposal process.

For completeness, a summary of how the transport assessment submitted with the Planning Proposal responds to and/or addresses the comments outlined in the TfNSW letter is contained in **Appendix 1** of this letter. Moreover, at Council's request, our recommendation as to how the broader transport study could best be completed separate to the Planning Proposal process is outlined in **Appendix 2**. This latter recommendation is provided for Council's consideration, and further discussion / agreement with Vicinity Centres.

Naturally, should you have any questions or comments regarding the above or attached, please do not hesitate to contact me.

Sincerely,

Tim De Young BEng (Civ) Hons / BCom / MBA
Senior Principal | Group Leader - Transportation Engineering

Mobile: 0411 863 774
tim.deyoung@stantec.com

Attachments: Appendix 1, Appendix 2

Appendix 1 - Detailed Commentary on TfNSW Letter

The TfNSW letter outlines a recommended methodology for the transport study.

The key elements of this methodology, including the extent to which they have been already assessed in the transport report that accompanied the Planning Proposal, is outlined as follows:

Existing conditions assessment

"Define the existing conditions of the transport system serving the master plan site, addressing the levels of performance for all transport modes, including walking, cycling and freight."

An existing conditions assessment of transport modes is contained in the Colston Budd Rogers & Kafes (CBRK) Transport Impact Assessment Report (dated March 2019). This report provided a preliminary assessment which was followed by a more detailed Transport Impact Assessment Report (dated July 2020) prepared by Stantec (then GTA); hereafter referred to as the July 2020 TIA. This includes an assessment of the pedestrian network, cycling network, public transport network and car parking.

In addition, it is noted that the existing transport network was comprehensively assessed in Complete Streets, including within the technical appendices. These appendices included a Transport Issues and Opportunities (Appendix A) and Traffic Modelling Report (Appendix C).

In combination, these documents are considered to provide an extremely thorough overview of existing transport conditions in the Bankstown CBD.

Connections

Assess the impacts and opportunities arising from the master plan proposal on travel demands and operation of the rail and bus networks and future Metro.

The July 2020 TIA contains extensive discussion on the impacts and opportunities with respect to the bus network, including (most notably) the construction of the Jacobs Street extension to provide an on-street bus interchange.

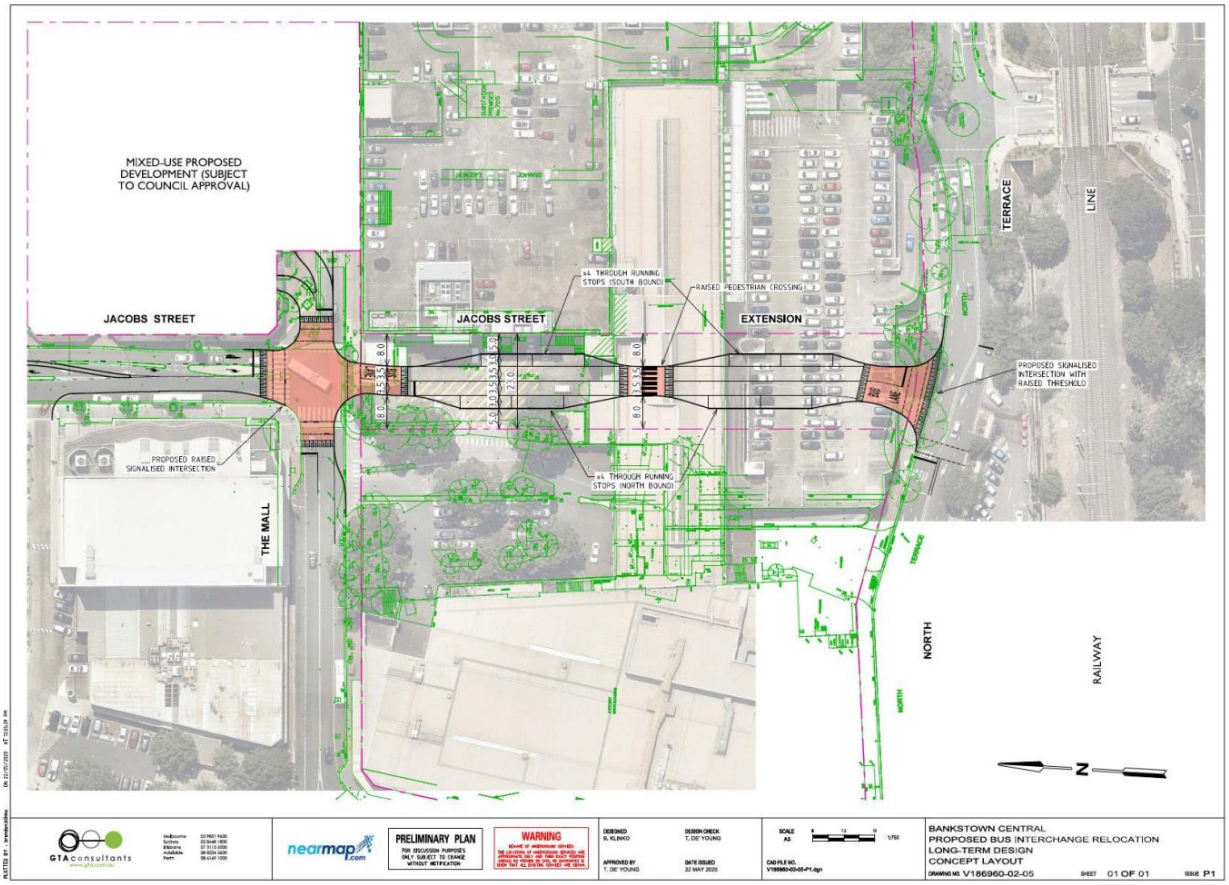
Specifically, the TIA includes a concept layout plan for the on-street bus interchange with the provision of 8 on-street bus bays. This concept layout is reproduced below in Figure 1 for reference. It is noted that the provision of 8 bus stops is consistent with the arrangements recently approved by Council and TfNSW for the relocation of the existing bus interchange off the Bankstown Central site. The relocation will see two bus stops provided on Bankstown Central land (together with 10 layover bays), two bus stops located on Jacobs Street north of The Mall, and four bus stops located on The Mall west of Jacobs Street. This arrangement is anticipated up to the delivery of the long-term solution.

The TIA also includes discussion regarding bus layover and how this ought to be located outside of the CBD in the fullness of time. (The TIA includes discussion how the bus infrastructure can be staged to achieve this outcome.) As such, the concept layout does not show layover bays as they are not expected to be accommodated in the Bankstown CBD in the long term.

The TIA does not include an assessment of the implications on the rail network as it is considered beyond the reasonable expectations of a report submitted for a Planning Proposal. However, it is assumed that the planning for the rail network has considered the likely uplift from the future development of the site.

Reference: **Planning Proposal Bankstown Central Shopping Centre (SYD21/01120/01)**

Figure 1: Proposed Jacobs Street Extension and Bus Interchange – Concept Design



Source: July 2020 TIA

Define a clear, permeable, and accessible precinct network of walking and cycling connections to help achieve a sustainable transport system to accommodate the master plan proposal.

The masterplan for the Bankstown Central site has been informed by Complete Street which outlines the proposed active travel network for the area.

The benefits to walking and cycling as a result of the infrastructure proposed within the masterplan has been documented within the TIA. This includes improvements to connectivity in both the east-west and north-south directions. In addition, it is understood that VCX submitted a Letter of Offer to Council with the Planning Proposal which will see it construct cycleways along Rickard Road and The Appian Way to the site frontages.

Investigate opportunities for a permanent bus interchange in consultation with TfNSW and Council.

As outlined above, the July 2020 TIA contains a discussion and concept layout plan showing the proposed location of the bus interchange on the Jacobs Street extension. It is understood that this arrangement is currently being assessed by TfNSW and can be progressed concurrently with, and thus not hold up, consideration of the Bankstown Central Planning Proposal.

Traffic generation rates

Traffic generation rates should be identified through empirical evidence (i.e., surveys of similar land uses with comparable characteristics) with consideration of cumulative impacts of other known traffic generating developments within the area of influence".

The July 2020 TIA contains a trip and traffic generation estimate which have principally been informed by data provided in the RMS Technical Direction (TDT 2013/04a). The TIA does not include an assessment of the generation of other development in the area as it is considered beyond the reasonable requirements for a Planning Proposal submission. Appendix 2 of this report outlines how the broader land use changes in the Bankstown CBD can be assessed.

Transport Modelling

The following three stage modelling approach should be considered:

1. ***Strategic transport modelling using existing model resources (i.e., STM and STFM) to identify travel demands, patterns and mode splits. Critically review the strategic modelling outputs to ensure that they adequately reflect future travel behaviours, including travel patterns and travel demands.***
2. ***Appropriate modelling software that considers route choice based on travel time delay and dynamic/coordinated traffic signal operations (i.e. microsimulation, hybrid model, or mesoscopic model).***
3. ***Intersection modelling (incorporating network-based signal operations) - based on the flows from the above modelling exercise.***

The above modelling approach should include a base year model, future years base case (without development), and a separate model with full development and background traffic growth. Consultation should be undertaken with TfNSW and Council to agree on the year the future base should be modelled.

The applicant's traffic consultant should collaborate with TfNSW and Council to identify and agree on the geographical boundary/extent of the model study area which will be based on the output from the strategic models (Item #1 above), key travel links to measure impacts of development traffic on travel time and intersections to be modelled.

The July 2020 TIA includes an assessment of the operation of the surrounding road network with consideration of the Planning Proposal. This assessment was completed using the AIMSUN traffic model prepared by Stantec (then GTA) that tested the appropriateness / impacts of the transport network changes proposed in Complete Streets for Year 2036 conditions.

Specifically, the TIA includes results for two scenarios: "future base with complete streets" (which is the 2036 land use yield as assumed within Complete Streets plus the transport network changes) and a "post development with complete streets" (which adds the development yield associated with the Planning Proposal). Using the terminology used by TfNSW, the two scenarios considered within the TIAR equates to a 'future years without development' and 'future years with development' scenarios.

If additional traffic modelling is required for the CBD (including considerations for additional development and/or the staged delivery of transport infrastructure), we contend that this work would be best completed separate from the Bankstown Central Planning Proposal and form part of a broader review of transport infrastructure and stage for the Bankstown CBD. A recommended methodology for this broader review is in Appendix 2.

Identified Road and Transport Infrastructure

Based on the above modelling outputs, identify transport and road infrastructure requirements to support the proposed increase in floor space and changes to land use. Staging based on trigger points linked to GFA/masterplan stages should be identified.

The applicant's traffic consultant will be required to work in collaboration with Council and TfNSW to develop a precinct network of walking and cycling connections linked to the master plan site to help achieve a sustainable transport system.

The identification of transport and road infrastructure requirements to support Bankstown CBD has already been documented in Complete Streets which we understand has previously been reviewed and supported by TfNSW.

For the Planning Proposal, the masterplan and July 2020 TIA have been prepared on the basis that the future transport network outlined in Complete Streets represents the desired transport network. This includes the extension of Jacobs Street, which is discussed in depth in the TIA.

If the configuration of this network requires further testing including consideration of how its best staged / delivered over time, we would contend its best completed by Council, and effectively as an addendum to Complete Streets (rather than as a requirement of the Planning Proposal), using the methodology presented in Appendix 2.

Funding of transport and road network infrastructure

High level strategic/concept engineering plans overlayed on an aerial to scale should be developed to determine feasibility including any third-party land components.

Strategic cost estimates of any identified walking, cycling, and road infrastructure required in support of the planning proposal should be prepared. These costs should align with the NSW Global Rates. In consultation with Council, DPIE and TfNSW, identify a planning/funding mechanism to deliver the identified transport infrastructure".

The completion of this scope item is not reasonable nor appropriate to be led by a private sector party given they would ultimately also be contributing to the works through identified mechanism.

Appendix 2 - Recommended Methodology for TfNSW Requested Transport Study

It is recommended that the approach for the transport study is tailored to best achieve the objectives sought by TfNSW whilst maintaining a high level of collaboration between the stakeholders (particularly Council and VCX).

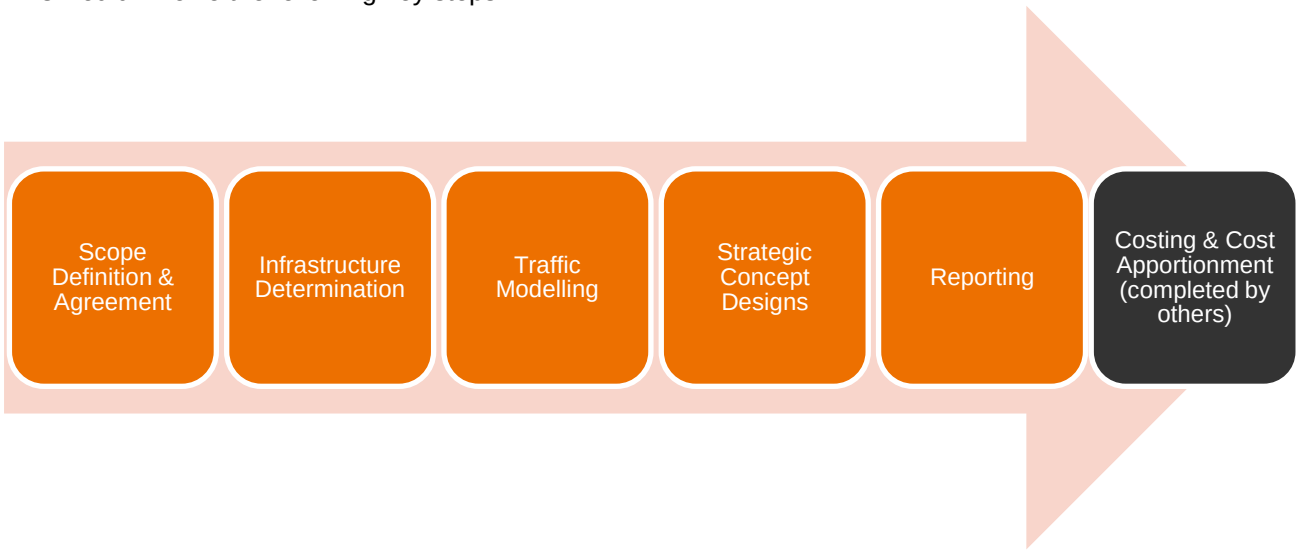
In the absence of this collaboration or without an approach that deals with likely conflicts and differences of opinion at an early stage, we expect that the transport study may have limited benefit, as key inputs, assumptions, and/or modelling outputs may become debated amongst the stakeholders.

In this instance, it is evident that the desired objective sought by TfNSW is the identification, scoping and costing of the transport infrastructure required in the Bankstown CBD over the next 10-20 years, having regard to both the network changes proposed by Complete Streets and the envisaged land use intensification on the Bankstown Central site (and broader CBD).

For the Bankstown CBD, it is evident that the majority of this work has already occurred, as the future Year 2036 transport network has already been identified through Complete Streets. This network was also tested using AIMSUN traffic modelling which informed the intersection and streetscape proposals outlined in Complete Streets.

In this context, we consider the best approach for the transport study is not to seek to determine through traffic modelling what transport infrastructure is required for the Bankstown Central Planning Proposal but rather seek to determine the impact of the developments within the CBD (including the Bankstown Central Planning Proposal) on the transport infrastructure that is proposed and can realistically be delivered per the aspirations of Complete Streets. ***In essence, we recommend a "vision and validation" approach, not a "predict and provide" approach, to this study.***

This would involve the following key steps:



1. **Scope Definition & Agreement** – This would be a twofold process whereby Council and VCX first agree on the proposed methodology that they deem most appropriate and achievable, and then secondly with TfNSW to seek their consent to that proposed methodology.

2. **Infrastructure Determination** – This would involve the identification of the Complete Street transport infrastructure including road network that can realistically be delivered for key timeframes (e.g., Years 2026, 2031 and ultimate 2036) given the constraints of land ownership and development staging of the Bankstown Central site. This would need to occur openly and collaboratively between Council and VCX, rather than being dictated by traffic modelling. Amongst other items, this would need to confirm the timing of the construction of the Jacobs Street extension and thus the implications for the timing of the creation of a shared zones on The Appian Way and Fetherstone Street.

3. **Traffic Modelling** – Following the collaborative determination of the transport / road network that will be delivered at each key timeframe and with input from VCX and Council on land use change for each timeframe, undertake traffic modelling using the three-stage approach recommended by TfNSW. This would include an assessment of the anticipated trip generation of the indicative land use to also allow consideration of other (non-vehicle) travel demands and implications. This would include scenario testing with and without the Bankstown Central Planning Proposal including consideration of whether infrastructure works above and beyond those contemplated in Complete Streets are required. For the without development scenario, it would also test and confirm intersection treatments as were proposed in Complete Streets.

4. **Strategic Concept Designs** – Based on the modelling outputs, strategic concept designs of the required transport infrastructure would be prepared. These designs would be prepared on aerial photograph bases. It is assumed that the landscape architecture plans prepared for and contained in Complete Streets would be provided to Stantec in a CAD format.

5. **Reporting** – The findings and recommendations from the above would be summarised in a standalone report. This would include the strategic concept designs to allow the costing and funding mechanisms to be determined as a separate stage of work by others. It is emphasised that the costing and funding mechanisms would not be completed or determined by Stantec, as we consider they ought to be completed by a consultant who is independent of the project.

In our view, whilst the study will undoubtedly be beneficial to all parties as it will provide greater certainty on the required transport infrastructure in the CBD (and presumably its equitable funding), we would contend that it is inappropriate to be led by the private sector or be directly linked to the Planning Proposal for the following reasons:

- The study seeks to identify CBD wide transport infrastructure works and then apportion costs for that transport infrastructure onto landowners, including VCX. This process would typically be led by Council (nor the private sector).

- The study needs to be directly linked to Complete Streets which has already identified the desired ultimate (Year 2036) transport / road network plan for the CBD. Importantly, it is noted that Complete Streets was also informed by AIMSUN traffic modelling.

- The study would be particularly challenging if led by a private sector party with the objective of identifying its own required mitigation. This latter approach would align more with the “predict and

provide" approach which is likely to lead to conflict over key transport infrastructure. (The most likely example is the new bus interchange, either on the Bankstown Central site as proposed in Complete Streets, or the extension of Jacobs Street as proposed in the Bankstown Central Planning Proposal. Putting aside its location (for now), this bus interchange will clearly serve a far broader benefit to the CBD than solely accommodating the increased travel demands of the Planning Proposal e.g., its provision will also allow for The Appian Way and Fetherstone Street to become pedestrian-focused shared zones, which have little need or nexus to the Bankstown Central Planning Proposal.)

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ATTACHMENT 3:

RESPONSE TO TFNSW COMMENTS (ATTACHMENT B ONLY)

Table 3, Base Model Calibration and Validation Report

Item 1) *Tube counts and SCATS Detector volume data were used. No classified intersection counts were used. Classified intersection counts are recommended to be used as the main source of traffic volumes calibration, rather than other data sources.*

The RMS Traffic Modelling Guidelines (2013) specifies that for calibration of microsimulation modelling that "*traffic volumes can be in the form of link flows or turning movement flows"*. In this instance, link volumes and SCATS detector volumes were utilised for calibration.

This approach was adopted for a range of reasons and is considered acceptable given either option is permitted by the RMS Guidelines. As such, we retain the view that the model is fit for its purpose (i.e., guide the Complete Streets strategy (not define exact road projects or support development applications)).

Notwithstanding this, as outlined earlier in this letter, it is acknowledged that further traffic modelling will likely be required in the future to support major development applications and/or significant road network changes in the CBD. At the time of such traffic modelling, classified intersection counts could be attained to check the calibration of the model and/or inform any associated revisions to the model.

Item 2) *The daily profile at Macauley Street shows that the PM peak at 3pm during the weekday does not align with the PM peak hour identified through all the sites (total) 4-5pm.This implies that the traffic movement has different trip pattern dependent on the origination / destination within the study area.*

This is not captured in the traffic model e.g., warm up starts from 15:30, and the 15 minutes traffic matrices of 15:30-15:45 used the 16:00-16:15 demand matrices

Given the purpose of the model, the adopted PM peak time period aligns with the broader network peak time. It is acknowledged that there may be some site-specific variations to peak periods, but overall the adopted 4-5pm peak period is considered appropriate.

Item 3) *Though it is acknowledged that the fixed time traffic signal is used for this microsimulation model, the commentary is required on the reason why actuated traffic signals are not adopted.*

Given the purpose of the model, the adopted fixed time approach is considered appropriate. Any further model refinements and applications for future modelling (refer to Attachment 1) can adopt actuated signal timings.

For the reasons outlined above, we consider that this additional traffic modelling should be completed to either support major development applications and/or significant road network changes. We do not consider it appropriate to undertake this modelling for a Planning Proposal for the reasons outlined earlier in this letter.

Item 4) *There is some inconsistency in the zone system, e.g., highlighted below a centroid of Travel Zone 2302 (G) in the middle of centroids representing Travel zone 2305 (H). This is also inconsistent with Figure 3.2 in the report which does not show this G3.*

This is not expected to have a material impact on the model results. However, it is acknowledged and agreed that this should be updated for future modelling (refer to Attachment 1).

For the reasons outlined above, we consider that this additional traffic modelling should be completed to either support major development applications and/or significant road network changes. We do not consider it appropriate to undertake this modelling for a Planning Proposal for the reasons outlined earlier in this letter.

Item 5) *It is to be clarified whether there are interpeak matrices from STM, and if so, whether they are valid to be used as prior matrix for the Saturday model?*

It is confirmed that the interpeak STFM matrices have been used as prior matrices for the development of the Saturday model. Given limited information on travel movements, it is considered the most appropriate approach noting that the prior matrix has been re-estimated using available traffic data.

Item 6) *Volume based calibration on link counts do not meet the requirement in TfNSW Modelling Guideline (2013). Turn counts validation at intersections should be used. Similarly, for a microsimulation model, congestion validation using a visual check does not meet the requirement. Queue length validation at key intersections should be undertaken.*

Refer response to Item 1.

Item 7) *Calibration results of turning counts are missing. It needs further clarification why SCATS detector counts were aggregated to link volumes for calibration.*

Refer response to Item 1.

Item 8) *This is a poor representation of VHT values. Scatter plots are not used for such purposes.*

The provided graphs are not scatter plots. The graphs illustrate variability of VHT values at different seed numbers. The intention is to demonstrate model stability as required by the RMS Traffic Modelling Guidelines (2013).

Item 9) *Throughout Section 4, no traffic counts calibration results are presented using GEH, though it was identified as a criterion.*

Calibration results are provided in the appendix to the traffic modelling report exhibited with Complete Streets.

Item 10) *Throughout Section 4, no travel time validation results of 8-9 am are presented.*

As above.

Item 11) *Travel time validation results have a difference of over 4 minutes for route 2 (PM peak)*

The calibration criteria are met for all other routes and directions and therefore the model validation is still met despite the issues on this one route.

As outlined in Table 10.4 of the RMS Traffic Modelling Guidelines (see excerpt below), validation can be met by achieving an average journey time within 15% or one minute of the observed journey time for 95% of observed travel time routes.

Table 10.4 Highway assignment modelling travel time target calibration/validation criteria

Topic	Criteria
Journey time average	Average modelled journey time to be within 15 per cent or one minute (whichever is greater) of average observed journey time for full length of route for 95 per cent of observed travel time routes. Travel times on each route should be cumulatively graphed by sector

TfL guide [5] and NZ EEM [8]

Collating the travel time validation comparison information presented in Table 4.3 to Table 4.7 of the Calibration and Validation Report shows that for the total of 60 travel time comparison points (different routes at different peak hours), two were considered to not meet the above requirements. This equates to 97% of results achieving the criteria which meets the minimum 95% target stipulated in the Guidelines.

Item 12) *Travel time validation needs be undertaken using section time average, especially for this study long travel time routes were assessed (over 5 minutes). The results are not presented in the report.*

Please refer to Appendix E of the Calibration and Validation Report for detailed travel time validation results.

Item 13) *Visual inspection of congestion using Average Speed is not acceptable for validation of a microsimulation model. As a minimum, queue length validation at key intersections should be undertaken for a CBD model of such scope.*

As described by the RMS Traffic Modelling Guidelines (2013), there are no statistical calibration criteria for queue calibration due to subjectivity in collecting and recording queue lengths. As such, the guidelines recommend that the model outputs (congestion patterns) are presented to appropriate authorities for the purpose of validation. This approach taken by Stantec does not impact the viability of the model and Council officers were comfortable with the level and pattern of queueing in the base model.

Item 14) *Through the base model report, it does not show any evidence of the actual traffic condition (e.g. peak hour site observations or videos from traffic survey). There is deemed unacceptable the only indicator of actual traffic condition is based on Google Traffic, used to compared to the Simulated average speed.*

It is noted by the reviewer that the Site Observation was undertaken between 12-2pm on a Tuesday

Survey records can be provided if required.

Item 15) *The calibration and validation of this base model also do not cover other criteria required in RMS Modelling Guideline (2013). Basic and minimum requirements have not been met.*

Refer response to Item 1.

Item 16) *In summary, based on the lack of calibration and validation results (turn counts, section travel time, queue length) and lack of traffic data (e.g., classified intersection counts, peak hour site inspection) for the calibration and even inputs to the base model, the submitted base model (AM&PM) does not indicate the quality of being suitable for assessing any future options.*

Noting the responses above and the discussion presented earlier in this letter, we disagree that the model is not fit for purpose. We also respectfully note this view was not outlined by TfNSW when it first reviewed

Complete Streets and responded in July 2019 prior to the endorsement of Complete Streets by Council later that year.

In our view, the review undertaken by TfNSW has not fully considered the model purpose or the information provided in the appendices of the Calibration and Validation report, or the fact that future traffic modelling is to be completed in the future to either support major development applications and/or significant road network changes.

Table 4, AIMSUN Base Model

The following items are considered relatively minor and considered to have no material impact on the Complete Street model's fitness for purpose or the recommendations of Complete Streets in accordance with the intended model purpose identified in the body of this letter.

Item 1) *The northbound speed limit on Stacey St is 70kmph (-33.9195797024294,151.0400266117751). In the model, it is 60kmph.*

Noted. This can be updated in any future modelling (refer to Attachment 1).

Item 2) *One segment of Wattle St is missing from the model.*

Noted, although this is unlikely to have a material impact on the model outputs. This can be updated in any future modelling (refer to Attachment 1).

Item 3) *Grade separation does not appear correctly in the model*

It is included but visually has not been correctly represented.

Item 4) *The Micro SRC (AM and PM) mistakenly use Static Path as inputs, instead of the Micro DUE path.*

Noted. This can be updated This can be updated in any future modelling (refer to Attachment 1).

Item 5) *None of the Path Assignments in the model links to the supplied APA file Path Assignment 2018 Base Weekday 4-6pm.apa*

Noted. This can be updated in any future modelling (refer to Attachment 1).

Item 6) *As a result of above issues, the reviewer is unable to reproduce the base model results for the checking purpose. Hence, all the following comments were made based on the 'new' simulation for the purpose of spot checking vehicle simulation in the model.*

Noted. Refer discussion above.

Item 7) *The simulation (PM) shows severe congestion at the Mall, especially for the westbound movements. It does not appear that with the width of the Mall it can accommodate two lanes of movement.*

Noted. The model aimed to replicate the observed congestion within the area.

Item 8) *The southbound lane should be used for those accessing car parks. There are no traffic zones linking to the surrounding car parks and this link is used by bypassing traffic, resulting in unrealistic congestion.*

Noted. This is unlikely to have a material impact on the model outputs. This can be updated in any future modelling (refer to Attachment 1).

Item 9) *It needs clarification the reason on closing the kerbside lane (for a short section) using traffic management (PM peak)*

Noted. This can be provided but is unlikely to have a material impact on the model outputs.

Item 10) *Although the pedestrian crossing was coded, there was no traffic signal phasing reflecting the delay (e.g., late start) caused by pedestrian crossing at almost all the traffic signals that were spot checked, including those close to CBD. This substantially under simulates the delays at the intersections for vehicles.*

Noted. This can be included in any future applications of the model.

Item 11) *Unrealistic and short green time was used at some intersections.*

Noted. This can be included in any future applications of the model.

Item 12) *Traffic adopt rat running e.g., Sir Joseph Banks Street due to congestion along Stacey Street. There is no evidence showing whether this is actual condition due to the lack of site inspection.*

This has been confirmed with Council in the base model presentation.

Item 13) *It is unknown and needs clarification on the reason of coding midblock pedestrian crossings where there are no pedestrian inputs or impact on the vehicles.*

Noted.

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1 August 2022

Project/File: 300303460

Mr Chris Pratt
Vicinity Centres
Queen Victoria Building, Level 4, 455 George Street
Sydney New South Wales 2000

300303460Dear Chris,

Reference: PLANNING PROPOSAL FOR 'BANKSTOWN CENTRAL SHOPPING CENTRE' – BANKSTOWN LOCAL ENVIRONMENTAL PLAN (BLEP) 2015 – RESPONSE TO TFNSW LETTER DATED 18 MAY 2022

Stantec has now had the opportunity to undertake a review of the Transport for New South Wales (TfNSW) letter dated 18 May 2022 pursuant the Bankstown Central Planning Proposal. This letter is hereafter referred to as 'the TfNSW letter'.

The TfNSW letter outlines a number of comments relating to both the Transport Impact Assessment (TIA) report dated 17 July 2020 submitted by Stantec for the Planning Proposal as well as the AIMSUN traffic modelling that was completed by Stantec to support Complete Streets (and was then used for the Bankstown Central Planning Proposal TIA).

This letter has been prepared to respond only to Attachment A of the TfNSW letter which contains comments on the Stantec TIA Report for the Planning Proposal. It is noted that a separate letter dated 21 July 2022 was prepared by Stantec for Canterbury Bankstown Council to respond to the comments raised by TfNSW regarding the AIMSUN traffic modelling used to support Complete Streets. The key conclusions reached in the 21 July 2022 letter are reproduced as follows:

> *"In our view, the modelling completed for Complete Streets, and thus by extension the Bankstown Central Planning Proposal, is appropriate and, most importantly, fit for purpose for the following reasons:*
>
> 1. *The AIMSUN traffic modelling completed for Complete Streets meets RMS calibration / validation criteria (contrary to the opinion stated in the TfNSW letter), particularly considering its intended purpose was to support a transport infrastructure framework for the Bankstown CBD and not justify specific infrastructure projects or major development applications.*
> 2. *The AISMUN traffic modelling completed for Complete Streets (and by extension the Bankstown Central Planning Proposal) is not expected or likely to be the final traffic modelling completed in the Bankstown CBD over the coming years. Rather, it is expected that additional traffic modelling will be completed to either support major development applications, significant road network changes in the CBD and/or other major projects (e.g., the New Bankstown Hospital).*
> 3. *The AIMSUN traffic modelling included in the Stantec TIA dated 17 July 2020 for the Bankstown Central Planning Proposal was included principally to illustrate that the full development of the site was not expected to have a significant impact on the operation of the surrounding road network. In our view, the completion of such traffic modelling goes beyond what is typically submitted in support of a Planning Proposal, noting that such modelling it is more commonly required for major development applications. This is particularly considered the case for the Bankstown Central Planning Proposal given it seeks approval for a relatively minor change to the existing controls applicable to the site, including an increase in the approved overall FSR from 3.5:1 to 3.92:1.*

Reference: TfNSW Comments on Bankstown Complete Street Project – Base Model

In this regard, whilst the comments provided by TfNSW are noted (and indeed some are not disagreed) and will undoubtedly assist any future traffic modelling in the CBD, we do not consider it necessary or materially beneficial to undertake additional or revised traffic modelling at this time to support Complete Streets or the Bankstown Central Planning Proposal."

In this context and having regard to the additional information provided below, we consider that the TIA Report dated 17 July 2020 provides a suitable level of documentation and analysis to support the Bankstown Central Planning Proposal.

Notwithstanding this, it is acknowledged that further documentation and analysis (including traffic modelling) will likely be required for the major development applications lodged for development on the site in the future. The approach to undertaking such modelling at the time the development application is sought is considered logical and appropriate as the details of bus network changes in the CBD would be known by that time (following the completion of the TfNSW review currently being completed) and further information would be available regarding the timing and nature of road network changes, development yields and car parking provisions in the CBD (amongst other factors).

For completeness, each comment from Appendix B of the TFNSW letter is produced below, together with a response from Stantec.

Item 1) Section 3.2 (Page 19) – The report assumes a high proportion of public transport usage for the proposed development. This should be compared with the current mode share data for the area.

ABS 2016 mode split data for Bankstown as both an origin and destination for work-based trips is summarised in Figure 1.

This data considers the Bankstown North (SA2) which includes Bankstown Central on its southern boundary and shows a preference for vehicles to travel to work from Bankstown and to get to work in Bankstown. This data shows a preference for the use of car (as driver) for travel to work in Bankstown (77%) as well as from Bankstown to work in other locations (65%).

Additionally, the mode share for all trips originating from households within Bankstown in 2019/2020, as reported by the Household Travel Survey, is shown in Figure 2. This shows that 50% of trips are taken by private vehicle, 23% by vehicle as a passenger, 9% by train, 5% by bus and 12% walked only.

The above datasets confirm a heavy reliance on the use of car for travel to/from Bankstown at present and therefore there is no disagreement that the mode share targets set out in the Bankstown Central Planning Proposal TIA will require a significant shift to more sustainable transport modes. However, we consider this significant mode share is appropriate, noting:

1. It is proposed to occur over a very long development duration i.e., 20 to 30 years.

2. It is consistent with State Government and Council objectives for the Bankstown CBD, which seek to reduce car reliance and increase the use of walking, cycling and public transport as the preferred modes of travel to/from the CBD.

3. It aligns with the significant investment that has already occurred and will continue to occur in Bankstown to improve active travel and public transport accessibility. These projects include, but are not limited to, the new Bankstown Metro station and Sydney Metro conversion of the Bankstown Railway line.

Reference: **TfNSW Comments on Bankstown Complete Street Project – Base Model**

Figure 1: Journey to Work Mode Share (ABS Census Data, 2016)

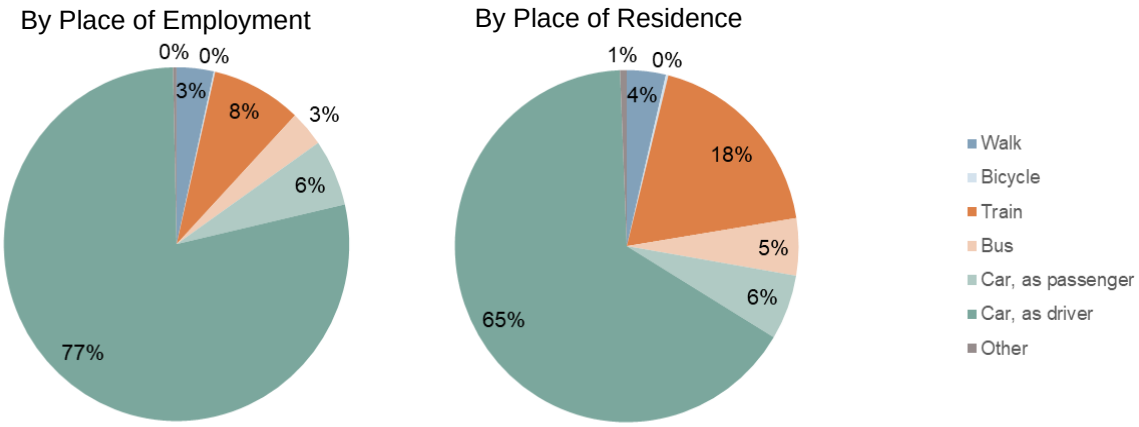
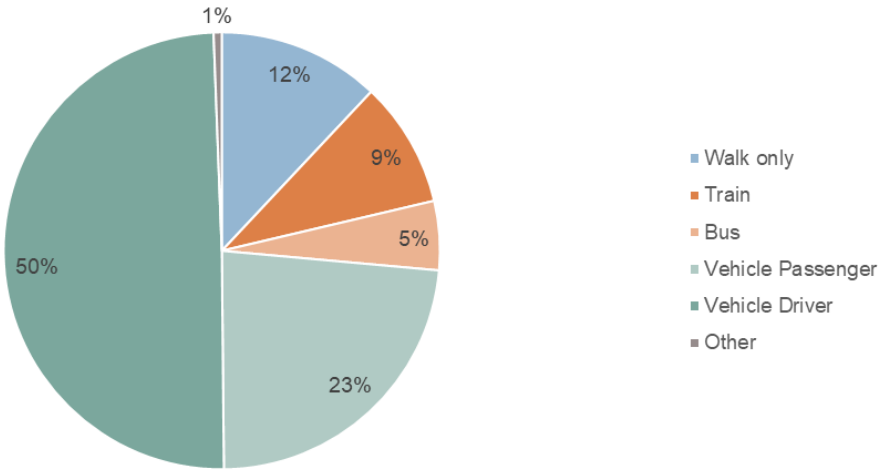


Figure 2: Household Mode Share (Household Travel Survey, 2019/2020)



The current capacity of bus and rail services serving Bankstown area should also be analysed to understand if the current public transport have the capacity to accommodate the proposed future public transport usage as indicated in the report. This may require specific measures to improve such public transport usage proposed for the development as well as preparation of a Travel Demand Management Plan and Green Travel Plan.

An assessment of the capacity of the existing and/or future / upgraded public transport network to accommodate the increased patronage from the development of the Bankstown Central site is not considered necessary or reasonable for the following reasons:

1. The Planning Proposal seeks a relatively small change in the existing controls applicable to the site, including an increase in the approved overall FSR on the site from 3.5:1 to 3.92:1. As such, the Planning Proposal does not include a significant intensification of the site over what is permitted under the current controls.

2. The ability for the transport infrastructure currently being planned and constructed in the CBD would have already considered the likely uplift in patronage proposed for site including, but by no means limited to, the Bankstown Central site (particularly given the Planning Proposal only seeks a relatively small change in the approved FSR).

3. The Bankstown Central site represents only one of a number of strategic developments sites in the Bankstown CBD. Other major developments include, but are not limited to, the New Bankstown Hospital proposed by Health Infrastructure NSW. In our view, an assessment of the capacity of public transport system should not be the responsibility of a private development, but rather should be led by the State Government having regard to the full development of the CBD.

4. The Planning Proposal does not seek approval for development. In due course, further analysis and reporting will be provided for each development application lodged on the site. At this time, assessments of public transport can be completed as required. In addition, Green Travel Plans can be provided to further encourage active travel and public transport use.

It is further noted that the 17 July 2020 TIA report adopts a travel demand management approach for the planning of the site including the adoption of progressive car parking rates to actively reduce traffic generation and encourage other modes of transport. This approach is consistent with the Council's newly proposed adoption of maximum car parking rates in the CBD.

Item 2) Section 3.3 (page 20) – The person-based trip estimation should include estimation of trips for AM peak. The trip generation estimation should include trips generated from all proposed development, including additional retail and childcare facilities.

The PM peak was assessed as it is the period in which the trip generation of the site will be highest. In other peaks, such as the AM peak hour peak or weekend midday peaks, the trip generation is likely to be approx. 80% of the PM peak.

As outlined in Section 3.3, trip generation has not included other uses such as retail as they are considered ancillary land uses to the existing and future development of the site. For example, the additional retail is expected to principally draw visitation from people already living or working on the site or in the CBD precinct.

If such additional trip generation were assumed, it would be appropriate to adopt a far larger proportion of trip containment within the development. This would offset the increase in trips and is therefore not considered necessary.

Item 3) The proposal and associated traffic assessment should include any future proposal of Bankstown Metro Station and proposed active transport linkages specially on the northern side of the proposed metro station.

The consideration of the future Bankstown Metro Station and proposed active transport linkages have been outlined with Complete Streets. The Bankstown Central Planning Proposal has been prepared with regard to Complete Streets and includes (for example) new east-west and north-south active travel connections through the site. In this regard, we consider that the Planning Proposal has already had appropriate regard to the proposed changes in the CBD.

Item 4) The figure shows proposed access from Stacey Street. This access is very close to Stacey Street/Richard Street intersection and is a major safety concern. TfNSW does not agree with this access.

An access is also shown on the North Terrace which is located on the proposed extension of Jacobs Street and appears to be very close to the proposed new intersection at North Terrace/Jacobs Street (Extension).

Reference: TfNSW Comments on Bankstown Complete Street Project – Base Model

It also appears from the figure that the west approach of Stacey Street/Wattle Street is not considered. Please clarify if this approach/access will be removed in future.

It is acknowledged that the referred figure shows a vehicle access from Stacey Street at a location that is too close to the Rickard Road intersection. It is accepted that this vehicle access is unlikely to be feasible and therefore we acknowledge and accept TfNSW's objection to its provision.

The vehicle access shown along North Terrace near the proposed extension of Jacobs Street is an existing car park access point which is currently not proposed to change from its present arrangement. Notwithstanding this, it is accepted that this vehicle access may need to be reviewed, altered and/or closed as part of the Jacobs Street extension project. Further information regarding such changes will be provided at the time that planning approval for the extension of Jacobs Street is sought. This level of detail is simply not able to be provided for the Planning Proposal.

Finally, it is noted that no change is currently proposed or envisaged at the Stacey Street / Wattle Street vehicle access. If such change is ever proposed as part of a development application on the site, it will be supported by appropriate traffic modelling.

Item 5) The trip generation estimation should be based on the trip rates included in RMS Guide to Traffic Generating Developments and Technical Direction Guide to Traffic Generating Developments – Updated Traffic Surveys and should include all proposed developments including retail. The report should also include a figure showing adopted trip distribution percentages for the proposed development.

Traffic generation rates have been sources from *RMS Guide to Traffic Generation Developments – Updated Traffic Surveys* and other empirical data that Stantec has collected for similar developments.

The adopted traffic generation rates are considered appropriate particularly given that a travel demand management approach is proposed which will include limitations to car parking provision to reduce car traffic and encourage other transport modes.

If further information on traffic generation and distribution is required by TFNSW, we recommend that it is provided for each development application when detail regarding the location of the development and the provision of car parking is known. This information is not available now as the detailed planning of each development site is yet to be completed.

Item 6) Please include map key to show colour coding for different LoS.

The figures were included in the TIA report to simply show that there was no material change expected in the Level of Service at key intersections. For reference, Figure 7.3 (Future Base with Complete Streets) and Figure 7.4 (Post Development with Complete Streets) are reproduced below with a legend.

Reference: **TfNSW Comments on Bankstown Complete Street Project – Base Model**

Figure 7.3 (Future Base with Complete Streets)

Figure 7.4 (Post Development with Complete Streets)

Reference: **TfNSW Comments on Bankstown Complete Street Project – Base Model**

I hope the above and attached information is clear. Naturally, should you wish to discuss this matter further and/or organise a time with TfNSW to discuss it in person, please do not hesitate to contact me.

Sincerely,

STANTEC AUSTRALIA PTY LTD

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