

ADDENDUM

Transport planning Report
On behalf of Christchurch City Council

In the matter of the Resource Management Act 1991

Application to establish a supermarket and associated fuel facility, ancillary offices,
car parking, access, signage and landscaping at

171 Main North Road, Northcote

Application number RMA/2018/2029

Context

1. I have read the outcome of the Independent Peer Review, (for the purposes of informing a decision under the RMA), by Mr Mr Falconer Falconer of QTP, and the subsequent Modelling Team responses and Section 6 'close out'.
2. My synopsis is that the matter remains somewhat complicated, and whilst I cannot fully understand the basis behind the conclusions, they do provide some direction for assessment. The overall review is helpful in understanding matters relating to Transportation Planning.

Findings of the QTP Review

3. The *major* aspects of the review included Mr Falconer's initial findings of:
 - i. Bias in favour of the development model, including under representation of Development traffic.
 - ii. 'Illogical' outcomes.
4. I have drawn similar conclusions about the nature of the findings, and have welcomed the explanations sought by Mr Falconer. It is also worth pointing out that questions regarding the same matters were asked during expert conferencing.
5. Regarding the first point (bias and under representation), the Applicant acknowledges that there is a difference worth "...*approximately 40 two way trips (one vehicle in every three minutes and one vehicle out every three minutes) and once distributed across multiple accesses serving the site and wider network is not considered to have any noticeable impact on network performance*". Mr Falconer acknowledges this as a 'minor inconsistency' and recommends that the model be 'interpreted with this in mind.' If considering this issue in isolation, I would agree with Mr Falconer.
6. However, in the Applicant's reply to point 9 in Appendix A of the QTP report, it would appear that the reduction in trips occurred after the CAST model outputs were supplied, which is a bias. If this were reduced in the CAST model, there would be opportunity for other non-development traffic to occupy some of the capacity freed up.

7. Regarding the second point ('illogical' outcomes), the Applicant has responded to a request for clarification citing three reasons as to why the Development traffic models show improvements in level of service. The Applicant suggests that:
 - i. Proposed traffic signals reduces the suggested 'U-turn' movements and circuitous travel via Northcote, Sawyers Arms and/or Vagues Road currently undertaken by FSIL Offices traffic.
 - ii. Some traffic would enter the site via Main North Road and exit onto Northcote Road, effectively bypassing part of the network.
 - iii. Proposed traffic signals improves uniformity of traffic optimisation in the corridor, and therefore reduces overall delays.
8. Mr Falconer acknowledges the reasons why performance may be improved, however, is unconvinced that they are sufficient to offset adverse effects of the increased traffic and the additional signalised intersection; a position I agree with. He considers that there will not necessarily be an improvement in network efficiency as reported by the Applicant.
9. I have already considered the (above) second reason (my evidence, para 246 (b)), and that it might have some impact, but not much. I am of the view that the other two reasons would not explain the outcomes, being the improved efficiencies of the FSIL Offices traffic and that additional traffic signals would improve corridor optimisation. Furthermore, I doubt the matter of fact that the addition of a signalised intersection would, in reality, reduce journey times.
10. In drawing his conclusions, (section 6), Mr Falconer states that there are uncertainty and limitations in the modelling, and that a practical approach is to "acknowledge some uncertainty and limitations in the model". Mr Falconer concludes that there is "strong evidence" that the model is in the right ball-park, and concludes that effects would be anticipated to be less than minor.
11. A key statement from Mr Falconer concerns the context within which he has drawn his conclusion (paragraph 4.7): "*The model does not necessarily provide an accurate prediction of what might occur in the future (nor does it need to), but rather provides an objective indication of relative effects based on very specific assumptions agreed for very specific scenarios*".

12. However, he later states (in reply to point 9) that *“The modelled network performance indicated with development is however likely to be reasonably representative of what might be expected based on the adopted assumptions”*.
13. The two above statements would appear slightly contradictory.
14. Mr Falconer also states that it is difficult to isolate the effects of the development from other model variables, which I agree with. This is important, as there may be available measures to provide more clarity, such as the sensitivity testing mentioned throughout my evidence.
15. Mr Falconer also finds a series of minor issues, and mentions on several occasions that the model needs to be interpreted ‘with this in mind.’
16. With respect to the improvement in performance with the addition of development traffic, Mr Falconer also states: *“Acknowledge and agree with reasons why performance may be improved, however not convinced that these are sufficient to offset adverse effects associated with increased development traffic and introduction of new signalised intersection”*. In my opinion this is a pivotal statement, inferring that the outcomes once deemed ‘illogical’ are still not accounted for.
17. Mr Falconer does take into account mitigating circumstances, which might offset some of the biases. One of the key points of ‘mitigation’ is a limitation of the paramics simulation tool, such as to over-simplify simulated operations, resulting in a degree of over estimation of delay (For example, not being able to simulate the variability in the traffic signals operations, designed to adjust to changes in flow and minimise delays, described in section 4.6). However, there is already a forecast improvement in operations (across most or all approaches), in spite of a 6% modelling increase in traffic and introduction of signals. If Mr Falconer’s consideration is followed through to conclusion, then the network would be predicted to operate yet more efficiently again than the current forecast, already considered overly optimistic (by Mr Falconer and the expert conferencing).
18. I am not able to share Mr Falconer’s recommended effects based conclusion, due to the cumulative impact of the matters specified above.
19. Furthermore, it is difficult to comprehend how a model, stated (at least twice) as being unlikely to reflect a future environment, could be relied upon for an effects based assessment.

20. My understanding of an 'effect' on the transport network usually derives from a specific design issue: a network pinch point or over exposure to a specific crash risk. In this case, for example, the ability of the proposed signalised right turn access to accommodate the total length of a queue, such as at the proposed signalised access, a matter raised by the Safety Audit team. Or, the efficiency effects on the network associated with managing this issue.
21. I would interpret Mr Falconer's findings to suggest that the modelling is not suitable for accurately portraying these more detailed design matters, and neither are they required to be.
22. Even if we take the model as being 'in the right ball park', there would surely be uncertainty on specific matters, from whence specific effects may arise. The Road Safety Audit team have stated that: *"accurate modelling of the traffic generated by the site will be critical to the success of this project."*
23. In my opinion:
- i. The remaining inconsistencies identified by Mr Falconer do not convince me that the model can accurately be used to assess effects.
 - ii. This uncertainty means that critical impacts on the network – for example the queueing back to QEII cannot be quantified with certainty.
 - iii. Mr Falconer's assessment that the effects will be less than minor is not well supported.

Comments on the Applicant's Conclusions

24. There are further remarks to be made about the nature and wording of the Applicant's conclusions drawn from the modelling. The Applicant states that the modelling shows that the Development traffic can be 'absorbed into the receiving transport environment with the proposed mitigations in place.' A key discussion point in the JWS and in my evidence is that the outcome of the assessment of effects is entirely reliant upon baseline traffic re-routing (as discussed in my evidence, section 7.2.5). Whether or not this is agreed to be a realistic outcome, it certainly does not represent a future environment where development traffic is being 'absorbed'.

25. Mr Smith has also provided a commentary (evidence of Mr Smith, paras 152 – 157) on the modelling undertaken, subsequent to the expert conferencing, and with reference to the peer review outcomes. I agree with Mr Smith that this modelling should ideally have formed part of the Conferencing process, but it simply was not possible owing to extreme time constraints and demands of the process.
26. The subsequent modelling that I undertook represents the outcomes of the Expert conferencing; the CAST modelling used during Conferencing, for example, did not include the network changes later identified as being pertinent to the future baseline model. The CAST modelling used ‘going in’ to the process, and during, included some assumptions that were subsequently changed and quite late in the process (including establishing critical future baseline parameters during session 3 of 4).
27. I have not sought to replace or challenge the efficiency based modelling (which I show in my evidence as Figure 9, p33), based on any subsequent analysis, but continue to accept it at face value. The CAST modelling, however, continues to be the best model for estimating the effects of route change. To be clear, it is these effects, and not the more detailed intersection performance estimates that I have sought to provide clarity on.
28. It should also be noted that the Applicant has used a different model again (the Canterbury Transport Model (CTM)), developed in a different suite¹, to report on network outcomes. Furthermore the revised ITA addendum includes figures slightly different from the Expert conferencing, showing that the models used have also been re-run. However, I will trust that the difference is due to standard process (as noted by the Applicant) and nothing more, and will assume that the changes have no bearing on the expert conferencing outcomes.
29. The changes I subsequently made to CAST (and used to inform my assessment prior to receipt of the QTP review), were limited to the QEII / Northcote / Main North Road intersection operating parameters to those agreed upon during conferencing. I also made other changes, not relied upon for assessment, but considering the effects of recent specific policy outcomes with regards the Christchurch Northern Corridor (CNC), a matter of cover off in section 6.2.1 of my evidence.

¹ Cube voyager, not generally considered suitable for this purpose.

30. The changes did not deviate from the validated baseline, (the process of checking CAST as fit for purposes was undertaken by myself and agreed upon by all, and features in my evidence), neither has it deviated from the Peer Review scope nor from the appropriate use and interpretation of the tools.
31. The inadequacies of the CAST model outputs provided is set out briefly in the peer review Appendix A (matter 10), however Council have always supplied the versions of the CAST model that have been requested by the Applicant, and in a timely manner.
32. The outcome has however, highlighted certain potential effects, including the potential for rat running through Winters Road. This was also an issue raised by Mr Clarke during expert conferencing. My advice is that this is a very plausible and pertinent risk and in my opinion should be addressed through this process.

Conclusion

33. Setting aside my comments on the Applicant's conclusions above, and the changes I made to CAST, I retain concerns with the modelling undertaken by the Applicant and reviewed by Mr Falconer. These especially relate to matters 14 and 16. For clarity, I am in agreement with the majority of Mr Falconer's responses set out through Appendix A of the report, except in the statement in response to point 9, which finds the modelled network performance *'likely to be reasonably representative'* which I would interpret to contradict other statements made elsewhere (for example, QTP paragraph 4.7).
34. Based on the information available, that the network operations would improve with development and increase in traffic, one would be compelled to recommend that effects will be less than minor. However, there appears to be unanswered questions as to how the modelling has reached these conclusions. In my experience, this is an unusual situation, and possibly in part due to the complicated nature of the receiving environment.
35. There are safety implications; however I am satisfied that these can be addressed through Safety Auditing. Furthermore, if consented, I highlight my comments at paragraph 247 of my evidence that: *"The CNC will be transformative to such an extent that when subsequent processes of design and implementation are undertaken, they will be done so on the basis of observation*

(post CNC opening), and hence the forecasts provided will not be relied upon during those subsequent stages”.

36. Nonetheless, I am unable to agree that the proposed increase in traffic and traffic control points on the Arterial road network could produce a less than minor effect, and further in my opinion there appears to be reported circumstances that limits confidence in the model’s ability to forecast specific effects.
37. Whilst I do not disagree with the majority of Mr Falconer’s specific findings, I am unable to agree with a less than minor outcome and would recommend effects would more likely be at least minor.