

BEFORE THE INDEPENDENT COMMISSIONER

IN THE MATTER of the Resource Management Act 1991
("the Act")

AND

IN THE MATTER of an Application to establish a
supermarket and associated fuel
facility, ancillary offices, car parking,
access, signage and landscaping at 171
Main North Road, Northcote
(RMA/2018/2029)

EVIDENCE OF IAN DAVID CLARK ON BEHALF OF THE NZ TRANSPORT AGENCY

26 November 2019

1 Qualifications

- 1.1 My name is Ian David Clark.
- 1.2 I am a Director of Flow Transportation Specialists Limited, which was established in February 2005. Prior to October 2005 I was the Manager of the Transportation Planning Section at the Auckland office of Opus International Consultants Ltd. I was employed by Opus for eight years.
- 1.3 I hold a Bachelor of Arts in Geography from the University of Wales and a Master of Science in Transportation from the University of London. I am a member of the Chartered Institute of Logistics and Transport, the Chartered Institution of Highways and Transportation and the Australian Institute of Traffic Planning and Management. I am also a member of Engineering New Zealand (formerly the Institute of Professional Engineers of New Zealand), and I was formerly a board member of the Trips Database Bureau and Chairman of the New Zealand (Transport) Modelling User Group.
- 1.4 My work experience includes over 30 years in transport planning, working in both New Zealand and the United Kingdom.
- 1.5 My experience in New Zealand includes responsibility for the transportation planning of numerous major transport schemes, including the State Highway 20 (SH20) Manukau Harbour Crossing, the SH18 Upper Harbour Motorway, the SH1 Esmonde Interchange, the SH1 to Highbrook Drive interchange, the City Rail Link, and the Northern and Southern Corridor Improvements projects, all in Auckland. I was also responsible for the transport planning of the SH1 Russley Road/Memorial Avenue project in Christchurch.
- 1.6 I have also been responsible for reviewing a wide range of transport projects and developments, both for transport agencies and developers, including:
 - 1.6.1 I reviewed the predicted effects of the Victoria Park Tunnel and the SH20 Waterview Connection projects, for the former Auckland City Council.
 - 1.6.2 I reviewed various applications relating to Eden Park, for Auckland City Council and Auckland Council.
 - 1.6.3 I reviewed the effects of a proposed Waterfront Hotel in Dunedin, for Dunedin City Council.

- 1.6.4 In Christchurch, I presented several briefs of evidence to the Independent Panel for the Christchurch Replacement District Plan, both on the transport chapter and on a variety of site specific proposals, in 2015. Prior to that I provided evidence to several plan change hearings, including those relating to the Styx Centre, and at Marshlands and to the Environment Court hearings relating to development at Belfast, in 2006 and 2011, noting that these are within the area of influence of the Christchurch Northern Corridor (CNC) project.
- 1.6.5 I have had some involvement in a few matters relating to the CNC project, most recently being involved in the assessment of a proposal for a High Occupancy Vehicle lane, southbound along the route, early in 2019.
- 1.7 I have read the Code of Conduct for Expert Witnesses as contained in the Environment Court Practice Note 2014, and I agree to comply with it as if this hearing was before the Environment Court. My qualifications as an expert are set out above. I confirm that the issues addressed in this brief of evidence are within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

2 Scope of Evidence

- 2.1 In this evidence I cover the following:
- 2.1.1 My role in the proposal;
 - 2.1.2 The location of the proposal;
 - 2.1.3 The relevance and impact of the Christchurch Northern Corridor (CNC);
 - 2.1.4 The assessment of the proposal;
 - 2.1.5 A consideration of the effects of the proposal;
 - 2.1.6 Conditions to avoid or minimise adverse effects associated with the proposal.

3 Background and Role

- 3.1 In August 2019 I was commissioned by the NZ Transport Agency to review the Integrated Transport Assessment (ITA) submitted in support of the proposed Pak and Save supermarket at Papanui.

- 3.2 I attended the four joint witness conferences on traffic modelling in September and October 2019, and the one on transport planning in October 2019, and I note that the resulting joint witness statements are included as Appendix L to the Officers Report.
- 3.3 In preparing this evidence I have reviewed the following documents:
- 3.3.1 The ITA prepared by Abley, dated 20 May 2019;
- 3.3.2 The Officers Report, focusing on the Transport Planning Report provided at Appendix C, which was prepared by Mr Mark Gregory (including the Addendum) and the peer review prepared by Quality Transport Planning;
- 3.3.3 The transport evidence of Mr Paul Durdin and Mr Dave, Smith, for the Applicant.

4 The Location of the Site

- 4.1 The location of the site of the proposed development, and the existing transport environment is summarised in the ITA, and in the Officers Report, and in the evidence of Mr Smith. I will not repeat the information already provided to the Commissioners on this issue.

5 The Christchurch Northern Corridor Project

- 5.1 The site is located adjacent to one of the key intersections within the Christchurch Road Network, namely the intersection of Main North Road/Northcote Road/Queen Elizabeth II Drive (which I have generally abbreviated to Main North Road/QEII Drive within this evidence).
- 5.2 The importance of the intersection for general traffic travelling in a north-south direction will decrease following the completion of the Christchurch Northern Corridor (CNC) project, which is currently under construction. However, the intersection will still be important for east-west traffic travelling along Northcote Road/QEII Drive, and for public transport travelling north-south¹.
- 5.3 The proposal is reliant on the CNC reducing vehicle movements at the intersection, and indeed the section of Main North Road between Northcote Road and Cranford Street, but this will still be an area where it is important to maintain a satisfactory level of service on the road network.

¹ References to north-south and east-west in this paragraph are also relevant to the opposite directions.

- 5.4 The Main North Road/QEII Drive intersection currently operates with an undesirable level of congestion. As a result, it currently operates with filtered right turns², in order to keep delays down.
- 5.5 The evidence of Mr Smith notes that the CNC will lead to a reduction in flows on Main North Road, past the site, of about 17% during the evening peak³.
- 5.6 The forecast flows passing through the intersection of Main North Road/QEII Drive are predicted to be almost identical in 2018 (pre CNC) as in 2021 (post CNC, but without the proposed Pak and Save). Traffic patterns are predicted to change, leading to a forecast reduction in delays⁴, but it is more likely that the reduction in flows will be used to allow the NZ Transport Agency (or the Christchurch Transport Operations Centre (CTOC)) to redress the balance between efficiency and safety at the intersection, and to give greater priority to safety. This can be achieved by replacing the filtered right turn phases with dedicated right turn phases⁵. Such a change is consistent with the Government Policy Statement (GPS), which emphasises safety as one of the two main strategic transport priorities⁶. The change in signal phasing, which was agreed as a valid assumption during the traffic modelling joint witness caucusing⁷, means that the intersection is predicted to be operating at capacity in the future scenario without the proposed development, in the evening peak.
- 5.7 A further recommendation from the joint witness caucusing was that the lane allocation on southern approach to the intersection from Main North Road should be changed. The ITA had assumed that the change would only take place for the scenario with the development, leading to a forecast improvement in the intersection. However, the traffic experts recommended that this change should also be assumed in the scenario without the development⁸.
- 5.8 The existing and forecast flows on the southern approach to the intersection are shown in Figures 1 and 2 below.

² Filtered right turns are where right turns receive a green light at a signalised intersection, but these vehicles have to give way to oncoming traffic

³ Evidence of Mr Smith, paragraph 74

⁴ ITA, Table 8.3

⁵ Dedicated right turn phases are where right turns are given a green light at a signalised intersection, without these vehicles having to give way to conflicting traffic

⁶ NZ Government (2018), Government Policy Statement on Land Transport 2018/19 – 2017/18, page 8

⁷ Joint Witness Statement: Traffic, 10 September 2019, item 2

⁸ Joint Witness Statement: Traffic, 2 October 2019, item 8

Figure 1: 2018 traffic flows, evening peak (vehicles/hour), prior to CNC

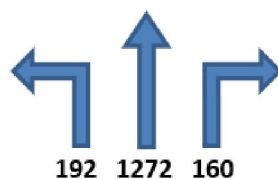
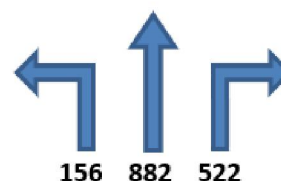


Figure 2: 2021 traffic flows, evening peak (vehicles/hour), with CNC, but without development



- 5.9 It can be seen that the northbound through movement is predicted to decrease, while the right turn flow is forecast to increase, as traffic responds to the CNC project. As a result, while the existing layout includes two northbound through lanes and a single right turn lane, the proposal is to reverse this (with one through lane and two right turn lanes). The analysis indicates that this change has merit, even though it implies a change to a slightly less efficient signal phasing arrangement.
- 5.10 A key issue for this hearing is the fact that there is currently no commitment to this change, as the need for, and merit of, this change only came to light during the expert witness conferencing. The joint witness statements recorded the agreement of all traffic experts that the concept had merit. However, it is my understanding that currently the Transport Agency has no budget for such changes to the intersection (it is not proposed as part of the CNC project) and should such a development be proposed by the Agency, funding for such improvements would compete against other roading improvements proposed across the region.

6 The Assessment of the Proposal

- 6.1 The general approach to the traffic modelling is set out in the evidence of Mr Smith and the report of Mr Gregory. That is to say, the proposal has firstly been tested through the area wide CAST model, then through a more detailed, small area PARAMICS model. This is a common approach.
- 6.2 The report of Mr Gregory notes that one conclusion of the traffic modelling was the intersection of Main North Road/QEII Drive is predicted to operate with a better level of service with the development than without it. His report suggests that this would be *“a counter intuitive outcome, but not a conclusion rejected out of hand”*⁹. I consider this to be a very valid comment, as while the outcome does indeed appear illogical, there are a number of potential reasons for this:

- 6.2.1 It is commonly accepted by transport planners that a significant proportion of trips relating to supermarkets are not new to the network,

⁹ Report of Mr Gregory, paragraph 138

but are already on the network, either passing by the site, or diverting into the site. This point is very relevant to a site adjacent to a busy intersection such as Main North Road/QEII Drive, as there are significant numbers of vehicles able to divert. While the effects of changes in traffic patterns (for example, a through movement becoming a turning movement, due to the proposed supermarket) need to be (and have been) assessed, this issue reduces the level of expected increase in traffic, adjacent to a proposal of this nature.

- 6.2.2 It is apparent that the CAST model is predicting some reassignment out of the local area (and beyond the extent of the PARAMICS model). This would appear to be a valid response, for some traffic to reassign due to possibly a slight change in travel times. However this reassignment should not be ignored, as it could lead to effects of the project, over a wider area.
- 6.2.3 It is noted that the introduction of an all movement T intersection on Main North Road, to serve the proposed Pak and Save, will lead to some vehicles (such as those relating to the existing uses of the site that will remain) being able to avoid using the Main North Road/QEII intersection. In particular, vehicles will be able to turn right out from the new intersection, whereas under the existing situation some vehicles turn left out from the site and might U turn at the Main North Road/QEII Drive intersection. This is a valid effect and clearly the removal of U turns from a signalised intersection without a phase for U turners will have safety benefits.
- 6.2.4 It is assumed in the modelling that there will be a reduction in the peaked profile of Foodstuffs Head Office traffic, due active travel demand management. This may be a valid effect of the proposal, but it will require some carefully worded (and enforceable) condition, to ensure that the change of travel behaviour that has been assumed in the traffic model actually eventuates.
- 6.2.5 I noted in the first joint witness statement that the modelling is predicting an increase in traffic using Winters Road¹⁰. This may well be a valid routing, as traffic exiting from the Pak and Save will be able to turn right out from the new signalised intersection, and join the northbound off ramp at the new CNC/QEII interchange, thereby avoiding the Main North

¹⁰ Joint Witness Statement: Traffic, 12 September 2019, item 7

Road/QEII Drive intersection¹¹. However, while this route (via Winters Road) appears a logical result indicated by the modelling, it would appear to be undesirable, as the road is a quiet residential street.

- 6.2.6 The fourth joint witness statement referred to the possibility of other “cut throughs” that could be possible within the area of the PARAMICS model, namely from Northcote Road to Main North Road either via Vagues Road, or through the development site¹². Mr Smith has not explicitly responded to these two points, but his evidence does confirm that checks have been made and there is no rerouting within the PARAMICS model¹³.
- 6.2.7 The peer review by QTP, provided as Appendix Q of the Officers Report, suggested that the development related traffic assumed within the PARAMICS was less than anticipated¹⁴. I was concerned at this suggestion (and the peer review rated this issue as “high risk”), as it could have meant that the effects of the development were being (unintentionally) understated. However, I note that the evidence of Mr Smith¹⁵ quotes the QTP peer review as stating that “the model is in the right ball park”. Paragraph 6.2.6 of the peer review, referred to by Mr Smith, was not included within the Officers Report. The finalised peer review has been provided on line, at the time that I have been finalising this evidence, and it appears that the issue has been resolved (although I note that this has not allowed Mr Gregory to change his views on the proposal¹⁶).
- 6.2.8 Lastly, I note that the report of Mr Gregory refers to additional modelling carried out after the caucusing, which gives a more intuitive outcome¹⁷. This is somewhat awkward, as I agree with Mr Smith that to carry out modelling post caucusing feels somewhat irregular¹⁸, even though I accept that Mr Gregory will have had good intentions in seeking to explore a counter intuitive outcome, and he did note within the third joint

¹¹ Plans of the CNC project are appended to the evidence of Ms Deborah Hewett

¹² Joint Witness Statement: Traffic, 15 October 2019, items 2 and 4

¹³ Evidence of Mr Smith, paragraph 68

¹⁴ QTP Peer Review, issue 14

¹⁵ Evidence of Mr Smith, paragraph 71

¹⁶ Addendum evidence of Mr Gregory, paragraph 23

¹⁷ Report of Mr Gregory, paragraph 143

¹⁸ Evidence of Mr Smith, paragraph 154

witness statement that he considered there would be merit in running sensitivity tests¹⁹.

6.3 Thus there is a range of issues at play in terms of the counter intuitive outcome.

7 Potential effects of the Proposal

7.1 The conclusion of Mr Gregory is that he cannot the proposal at this stage²⁰, although Paragraph 14 notes that if six matters are addressed, then support could be given. The six matters, listed in paragraph 13 are:

7.1.1 There is a need to demonstrate the safeguarding of the core public transport route;

7.1.2 The need to demonstrate integration with the public transport corridor;

7.1.3 The need to demonstrate that the site can function and operate with Lydia Street as left in, left out;

7.1.4 The need to demonstrate the network effects, with all access movements operating safety, and with modelling risks suitably managed;

7.1.5 The need to suitably demonstrate plausible mitigation of effects upon the Redwood Family Practice;

7.1.6 The need to address matters relating to safe cycle and pedestrian access.

7.2 Section 8 below will provide comment on matters relating to public transport, but I will focus on Mr Gregory's fourth point, which can be divided into issues relating to traffic operations, and safety (by all modes, including pedestrians and cyclists). In my view, the fifth point, relating to access to the Redwood Family Practice, is a minor point within the overall safety issue.

7.3 I also note that the evidence of Ms Hewett considers the issue of the appropriateness of this location for development of this nature, in planning terms.

¹⁹ Joint Witness Statement: Traffic, 2 October 2019, item 6

²⁰ Report of Mr Gregory, paragraph 367

8 Actual effects of the Project

Traffic Operations

- 8.1 Section 5 above set out the changes to the local traffic environment that are expected to occur without or with the proposed supermarket. These changes relate to the expected effects of the opening of the CNC, and the resulting redistribution of traffic. These changes lead on to the expectation that the signal phasing at the Main North Road/QEII Drive intersection will change to a safer arrangement, due to the reduction in delays and that the lane allocation on the southern approach may change in response to the change in traffic patterns.
- 8.2 As noted above, the above changes are expected by the traffic experts to take place, irrespective of the proposed supermarket, although as noted above, no funds have been allocated for the Transport Agency for these works. The additional changes in traffic operations expected due to the supermarket are as follows:
- 8.2.1 A new signalised T intersection is proposed on Main North Road, roughly half way between the intersections of Main North Road/QEII Drive and Main North Road/Cranford Street;
- 8.2.2 The turning patterns at the Main North Road/QEII Drive intersection will change, due to existing trips diverting into the supermarket;
- 8.2.3 Additional traffic turning to or from Main North Road and Northcote Road will increase the potential for interaction between the signalised intersections along Main North Road, due to the additional signalised intersection;
- 8.2.4 On the other hand, the new signalised intersection will remove the need for undesirable manoeuvres to continue, such as U turns at the Main North Road/QEII Drive intersection.
- 8.3 The above issues have been examined at length by the traffic modelling experts. Overall the modelling indicates that the local road network will not be significantly adversely affected by the proposed supermarket. However, the report of Mr Gregory notes some concerns relating to the results of the modelling, and I concur with some of his concerns. There is some risk of some of the assumptions input to the modelling, or some of the predictions of the modelling, not eventuating, for example:

- 8.3.1 Both Mr Smith and Mr Gregory appear to be concerned about the likelihood of area wide reassignment (i.e. to roads outside the PARAMICS modelled area) actually happening²¹;
- 8.3.2 The model indicates some reassignment onto Winters Road, which is not desirable. If measures are introduced to minimise this issue, then the effects of the development on the Main North Road/QEII Drive intersection may be greater;
- 8.3.3 Measures need to be implemented to ensure that the input assumptions relating to the dampening down of evening peak traffic associated with the Foodstuffs Head Office actually occur.
- 8.4 As a result, while I do not necessarily disagree with the outcomes of the modelling, I note that the intersection of Main North Road/QEII Drive is predicted to be operating at capacity in the evening peak, without the development. In my opinion, there is a risk of the intersection operating poorly (i.e. worse than currently anticipated by the traffic modelling) following the introduction of the supermarket, due to the reasons set out above.

Safety Effects

- 8.5 As noted in paragraph 5.6, the GPS places very high priority on matters relating to safety. Safety issues relating to this proposal include the following:
- 8.5.1 Firstly, safety at the Main North Road/QEII Drive intersection will be improved, without or with proposal, if the proposed signal phasing change proceeds. I note that this situation is different from that suggested within the evidence of Mr Durdin, which indicates that this phasing change will be a result of the proposed development. I accept that the change will benefit persons heading to/from the development, but the improvement will no longer be due to the development;
- 8.5.2 The provision of a new signalised intersection on Main North Road will improve safety, as it will remove the need for vehicles to U turn at the Main North Road/QEII Drive intersection;

²¹ Report of Mr Gregory, paragraphs 227 to 232, and evidence of Mr Smith, paragraph 67

- 8.5.3 However, the increased turning movements on Main North Road, and the provision of the additional signalised intersection, will increase the chance of queuing between the closely spaced intersections;
- 8.5.4 The proposal includes a series of site accesses along Main North Road. The transport planning joint witness statement noted concerns over this issue, and agreed that some consolidation of accesses was desirable²². It was confirmed by Mr Smith as a “post conferencing note” that access 1 (the one closest to the QEII Drive intersection is to be changed to left in only (with no exit), but in my opinion, further consolidation could be considered to reduce vehicle interactions within the kerbside bus lane, and to minimise lane changes. For example, it would appear that left out movements from Access 2 may be awkward for vehicles then wishing to turn right into QEII Drive;
- 8.5.5 On the other hand, I acknowledge that some potential safety issues have been avoided or mitigated through a number of turn bans, such as the ban on right turns out from Lydia Street, and on all right turns at the Oil Changers access;
- 8.5.6 I acknowledge that pedestrian safety will be improved by the provision of crossing facilities at the new signalised intersection on Main North Road.
- 8.5.7 The safety of pedestrians and cyclists at the Main North Road/QEII Drive intersection would be improved if the give way left turn movements at the intersection are replaced with signalised left turns. This would improve safety for the increase in pedestrians expected due to the proposed development, and for turning traffic.
- 8.5.8 Mr Gregory’s fifth issue of concern relates to access to Redwood Family Practice (opposite the new signalised intersection). Mr Smith notes that the Clinic have withdrawn their submission. I consider that the access to the Clinic, which will be an unsignalised access within a signalised intersection, may be of some concern from a safety point of view. However, I am aware of a couple of accesses of this nature, along Jervois Road in central Auckland, and am not aware of significant issues arising.

²² Joint Witness Statement: Transport Planning, 16 October 2019, Section 4

Effects on Public Transport

- 8.6 I note that the joint witness statement on transport planning included a statement that there should be a condition that ensures that public transport priority (on Main North Road) is maintained or enhanced.
- 8.7 The report of Mr Gregory indicates that he still has concerns over this issue, and I am unclear at this stage whether the evidence of the applicant is sufficient to overcome those concerns.
- 8.8 I note that Table 4 within the evidence of Mr Smith indicates that northbound bus travel times on Main North Road will improve as a result of the development. The reasons given overlap with the issues relating to the assessment of general traffic, (see Section 6 above), which suggest that this may be an area in which there is a risk of the benefits predicted by the traffic modelling not materialising. In particular I note the following:
- 8.8.1 There is potential for interactions between vehicles entering and exiting the minor access points along Main North Road, and buses. This is one of the reasons for the suggestion above, that Access 2 on Main North Road could be closed (or maybe limited to left in only);
- 8.8.2 I note and accept Mr Gregory's concerns relating to the "squeezing" of the bus lanes²³, proposed in order to accommodate the new signalised intersection;
- 8.9 I also note Council's concern at the establishment of a supermarket away from a Key Activity Centre²⁴, and I would anticipate that the evidence of Environment Canterbury may discuss this matter further.
- 8.10 There is potential that demands on the public transport, cycling and walking networks may grow given both that the proposal could increase demands on these alternative means of transport and also the applicant has previously mentioned the potential development of a school close by. It is therefore important that connections to the public transport, cycle and pedestrian networks are appropriate and that they are able to operate safely with the proposal not having detrimental impacts such as on bus or cycle lanes.

²³ Report of Mr Gregory, paragraphs 9 and 329

²⁴ Report of Mr Gregory, paragraph 301

9 Conditions

9.1 Draft transport conditions are set out in Appendix P of the Officers Report, and I note that:

- 9.1.1 The conditions do not refer the need to maintain or enhance public transport on Main North Road;
- 9.1.2 The conditions do not refer to the need to reduce movements (or ban turns) at Accesses 1 and 2 on Main North Road;
- 9.1.3 The conditions refer to a travel plan for supermarket staff, and to a barrier arm to restrict Head Office staff from accessing the supermarket car parking areas. I am not sure if these proposed conditions will be sufficient to ensure that the assumptions within the model on reduced peak flows within the weekday evening peak from the Head Office will actually materialise;
- 9.1.4 The conditions do not refer to the need to minimise adverse effects on Winters Road, and the measures (and maybe monitoring) that should be required to ensure that this routing does not become an issue;
- 9.1.5 Conditions should also be considered to identify the measures at the Main North Road/QEII Drive intersection which are to be implemented by the NZ Transport Agency, irrespective of the proposed development, and those to be implemented by the applicant, if Transport Agency funding is not forthcoming.

10 Conclusions

10.1 I note that the conclusions of the various traffic/transport experts differ, even though a significant level of agreement was reached through the various joint witness conferences.

- 10.1.1 Mr Smith considers that overall the effects of the development are positive²⁵;

²⁵ Evidence of Mr Smith, paragraph 161

10.1.2 Mr Falconer (of QTP) considers that the traffic effects may not necessarily be an improvement as currently reported, but likely to be less than minor²⁶;

10.1.3 Mr Gregory is unable to recommend support at this stage²⁷.

10.2 My view is close to those of Mr Falconer and Mr Gregory. I consider that there will be some positive and some negative effects, and that overall, the effects may be minor, but only if the issues I have identified can be included within the conditions. These issues are:

10.2.1 Confirmation of the process to be followed to identify measures at the Main North Road/QEII Drive intersection to be implemented by the Transport Agency, and those to be implemented by the applicant;

10.2.2 Confirmation that public transport priority can be maintained on Main North Road, to the satisfaction of Christchurch City Council and Environment Canterbury;

10.2.3 Confirmation that movements at Accesses 1 and 2 on Main North Road can be restricted;

10.2.4 Confirmation that the assumptions within the model on reduced peak flows within the weekday evening peak from the Head Office will actually materialise;

10.2.5 Confirmation of measures (or a process) to minimise adverse effects on Winters Road.

Ian David Clark

26 November 2019

²⁶ Evidence of Mr Smith, paragraph 71

²⁷ Evidence of Mr Gregory, paragraph 367