

**Before a Board of Inquiry
Northern Corridor Improvements Project**

Under the Resource Management Act 1991 ('the Act')

In the matter of a Board of Inquiry appointed under section 149J of the Act to consider notices of requirement for designations and resource consent applications by the New Zealand Transport Agency for the Northern Corridor Improvements Project

Second Supplementary evidence of Ian David Clark for the New Zealand Transport Agency (Transportation - General overview)

Dated 12 August 2017

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STATEMENT OF SECOND SUPPLEMENTARY EVIDENCE OF IAN DAVID CLARK FOR THE NEW ZEALAND TRANSPORT AGENCY

1 Qualifications and experience

- 1.1 My full name is Ian David Clark. I am a Director of Flow Transportation Specialists Limited.
- 1.2 My qualifications and experience are set out in my Evidence in Chief ('EIC') dated 20 April 2017.
- 1.3 I repeat the confirmation that I provided in my EIC that I have read, and agree to comply with the Code of Conduct for Expert Witnesses 2014.

2 Scope of evidence

- 2.1 In this supplementary evidence I address the following issues:
 - a The suggestion by Counsel assisting the Board, that a traffic monitoring condition is required; and
 - b The effects of closing the Unsworth Drive off ramp from SH18.

3 Consideration of Monitoring Conditions

- 3.1 The latest version of the proposed conditions is appended to the Supplementary Statement of Evidence of **Mr McGahan**, dated 4 August 2017. Condition CTMP 5 now includes reference to monitoring of public transport, to ensure that performance thresholds are reached, while condition CTMP 6 now refers to monitoring of construction traffic. However, the conditions do not include monitoring of general traffic.
- 3.2 The main transport effects of the construction works were set out in paragraph 11.2 of my EIC. These are:
 - a Temporary speed limits;
 - b Temporary lane width reductions along SH1 and SH18;
 - c Temporary works along Rosedale Road;
 - d Temporary right turn bans to/from Paul Matthews Road;

- e Effects of construction related traffic, to and from the work sites.
- 3.3 In my view monitoring should only be required if options exist to mitigate any effects encountered as a result of the monitoring. I will consider each of items (a) to (d) identified above, in turn, noting that item (e) is now covered by CTMP 6.
- 3.4 **Reducing speed limits** is a measure which will be required along the State Highways for the duration of the construction, in order to maintain a satisfactory level of safety in very close vicinity to a construction site. The lower speeds imply an inevitable increase in travel times, but there is no mitigation envisaged. As a result, there is, in my view, little purpose in monitoring solely the effects of reduced speed limits (along State Highways 1 and 18).
- 3.5 **Reductions in the lane widths** along the State Highways are also likely to be required in order to ensure sufficient space between “live” traffic lanes and the construction zone. This reduction in lane widths is likely to reduce capacity, which will in turn lead to an increase in travel times at any times when the State Highways are already operating at or close to capacity. Section 8.1 of the Assessment of Transport Effects states that it has currently been assumed that the works will reduce the midblock capacity by 10%. This is at the upper end of observed effects during the construction of other projects, and the traffic modelling has been carried out on this basis. If the effects of these lane width restrictions are greater than expected, it is unlikely that mitigation would be carried out, on the basis that:
- a It can reasonably be assumed that the lane width reductions will only be implemented where absolutely necessary and where required for safety reasons. As a result, it is very unlikely that the lane widths would be increased if there are temporary traffic effects;
 - b It is unlikely that the Transport Agency or Auckland Transport would wish to encourage traffic to divert off the State Highways to other streets, meaning that the scope for mitigation is limited;

- c Any increase in congestion which adversely affects buses would be of significant concern, but these effects will already be identified through the public transport monitoring already proposed.
- 3.6 The Project is expected to require **temporary restrictions along Rosedale Road**, including shuttle signals (allowing two way traffic, with one direction at a time using a single lane) at the motorway bridge. The traffic modelling indicated that this restriction will increase travel times along Rosedale Road, leading to increases in daily traffic flows on Greville Road of about 7% and of 3% along McClymonts Road, these being the adjacent east-west routes across the motorway. Condition CTMP 4(h) already refers to the need to avoid road closures or restrictions, so it can be reasonably assumed that the restrictions along Rosedale Road will be absolutely necessary. If this is the case, then presumably the alternative mitigation of fully reopening Rosedale Road will not be possible. Furthermore, Greville Road, which is the road expected primarily to be adversely affected, has no on street parking, very little frontage access and very few intersections, indicating that the scope for mitigation along this route is fairly limited.
- 3.7 The Project is also expected to require the **temporary closure of right turns between SH18 and Paul Matthews Road**. As movements are to be banned, (not restricted, as is to be the case along Rosedale Road), the area of effects may be greater, as drivers will need to change their routes. This may be an issue where the effects could be monitored. Indeed, it is likely that the traffic signal timings at a number of intersections will need to be reoptimised in response to the changes in traffic patterns (for example, at the SH18 Albany Highway interchange and the SH1 Upper Harbour interchange and further afield. However, I would consider this form of active monitoring of signal timings to be “business as usual” for the Auckland Transport Operating Centre (ATOC, who manage the traffic signals), so the value of adding a condition may be limited.
- 3.8 Traffic monitoring requirements were included within the conditions relating to the Notices of Requirement for the City Rail Link (**CRL**). However, I consider NCI Project to be quite different to the CRL:

- a The works relating to the CRL may include the temporary full closure of certain intersections (such as the Albert Street/Victoria Street intersection). This implies greater effects than those envisaged with the NCI Project;
 - b While the effects of such full closures could be quite significant, the road network within the city centre is much more complex. This implies on the one hand that the effects of the CRL can be “spread out” and therefore reduced, but this also implies a greater level of uncertainty on the routes actually taken;
 - c There is significantly greater scope for trips to change mode in the city centre (from car to bus, or car to walking, for short trips). Again, while this mode change would reduce the effect of the CRL, it increases the level of uncertainty;
 - d Mitigation measures were identified within the city centre, including removal of on street parking close to key intersections, or banning of certain turns at signalised intersections to simplify signal phasing, where alternative routes exist. As noted above, these alternatives are less obvious in the area of the NCI Project.
- 3.9 On the other hand, the conditions for the SH20 Waterview Connection required monitoring of general traffic flows and speeds, but no monitoring of bus travel times. I consider it preferable to monitor bus travel times for the NCI Project.
- 3.10 As a result, while I have supported the concept of traffic monitoring in other locations, I consider that the benefit of introducing further monitoring in the NCI conditions will offer limited value. If any condition is to be considered, it should relate to the period of time when right turns are banned between SH18 and Paul Matthews Road.

4 Effects of Closure of Unsworth Drive off ramp

- 4.1 The Project includes the permanent closure of the existing off ramp from SH18 to Unsworth Drive. This is due to the proximity of the off ramp to the new on ramp from the Paul Matthews Road/Caribbean Drive intersection.

- 4.2 A traffic count was carried out of the use of the off ramp in August 2016, as reported within Section 7.3.9 of the Assessment of Transport Effects. These counts indicate that the daily flow currently using the off ramp is about 1,450 vehicles/day. Clearly these vehicles will have to reroute following the closure of the ramp, and it is likely that most vehicles will turn left from SH18 into Caribbean Drive. Through traffic currently using the Unsworth Drive off ramp, having reassigned to Caribbean Drive, may continue up that road, but traffic heading for more local destinations is likely to turn into Barbados Drive in order to reach destinations such as Unsworth Drive or Bluebird Crescent. As a result, the model indicates that traffic flows on Barbados Drive, approaching the roundabout with Unsworth Drive, will increase marginally due to the Project.
- 4.3 Therefore, in terms of traffic in the vicinity of the shops on Greenwich Way, the reduction in traffic on Unsworth Drive (both north and south of the roundabout) will be offset by a slight increase in flows on Barbados Drive.
- 4.4 The reasons for the closure of the Unsworth Drive off ramp were set out in a Technical Note dated 25 November 2016, prepared by Aurecon, which was appended to the Supplementary Evidence of **Ms Brock**. This Technical Note referred to the speed differential on SH18 between traffic accelerating from the proposed on ramp and traffic decelerating to exit at Unsworth Drive (if that off ramp were to remain open). In particular, it is relevant to note that the radius on the turn into Unsworth Drive is very tight, meaning that traffic needs to be decelerating to take the bend at a low speed.

- 4.5 Details regarding the crash records for SH1 and SH18 were set out in Section 3.12 of the Assessment of Transport Effects. This analysis noted that a significant number of accidents within the study area was as a result of changing lanes, following too closely, failure to notice cars slowing and so on. Therefore, in my view, there will be safety benefits associated with closing the Unsworth Drive off-ramp.

Ian Clark

Ian David Clark

12 August 2017