

**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

---

**Rebuttal evidence of Terry Philip Church for the New Zealand  
Transport Agency (Transportation - Design)**

Dated 15 June 2017

---

---

**KENSINGTON SWAN**

18 Viaduct Harbour Avenue Ph +64 9 379 4196  
Private Bag 92101 Fax +64 9 309 4276  
Auckland 1142 DX CP22001

Solicitor: C M Sheard/N McIndoe  
[christina.sheard@kensingtonswan.com](mailto:christina.sheard@kensingtonswan.com)/  
[nicky.mcindoe@kensingtonswan.com](mailto:nicky.mcindoe@kensingtonswan.com)

**Table of contents**

1	Qualifications and experience	2
2	Scope of evidence	2
3	Auckland Council – Traffic and Transport (evidence of Mr Tindall)	2
4	Evidence of Mr Fogarty	3
5	Centre for Urban and Transport Studies (evidence of Mr Willmott)	5

## **STATEMENT OF REBUTTAL EVIDENCE OF TERRY PHILIP CHURCH FOR THE NEW ZEALAND TRANSPORT AGENCY**

### **1 Qualifications and experience**

- 1.1 My full name is Terry Philip Church. I am a Senior Associate at Flow Transportation Specialists, in Auckland.
- 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 the EIC that I have read, and agree to comply with the Code of Conduct for Expert Witnesses 2014.
- 1.4 My rebuttal evidence relates to the resource consent applications and notices of requirement lodged by the New Zealand Transport Agency ('**Transport Agency**') with the Environmental Protection Authority ('**EPA**') on 14 December 2016 for the Northern Corridor Improvements Project ('**Project**').

### **2 Scope of evidence**

- 2.1 In this rebuttal evidence, I will address matters raised in the evidence of:
  - a Auckland Council;
  - b Mr Peter Fogarty; and
  - c Mr David Willmott.
- 2.2 The fact that this rebuttal statement does not respond to every matter raised in the evidence of submitter witnesses within my area of expertise should not be taken as acceptance of the matters raised. In particular, I have not responded to matters which are already addressed in my EIC.

### **3 Auckland Council – Traffic and Transport (evidence of Mr Tindall)**

- 3.1 At paragraphs 7.24 to 7.29, Mr Tindall expresses concerns about the proposed layout at the SH18/Paul Matthews Road intersection. I have addressed the operation of this intersection at Section 10 of my EIC. I understand that **Mr Moore** will respond to Mr Tindall's concerns that the

layout is “highly unusual”<sup>1</sup>, but Mr Tindall continues, to state that the capacity and delay which the intersection creates is “of greater concern”.<sup>2</sup>

- 3.2 Mr Tindall, at paragraph 7.28 expresses concerns associated with queues from the SH18/Paul Matthews Road intersection extending to or potentially through the Barbados Drive roundabout. I note that this already occurs, as observed through my own observations. Mr Fogarty also includes a photograph of queues on Barbados Drive at page 17 of his evidence, while noting that this was observed during a Saturday peak, rather than a commuter peak as assessed and reported in my EIC at paragraph 10.10.
- 3.3 Paragraph 10.9(a) of my EIC states that queues are not predicted to extend through the Barbados Drive intersection, with paragraph 10.10 of my EIC concluding that the intersection is predicted to operate satisfactorily with the 2031 forecasts, so I do not share Mr Tindall’s concerns. In my view the condition which Mr Tindall suggests in paragraph 8.1(d) is unnecessary.
- 3.4 At paragraphs 7.55 to 7.63, 8.1(e) and 8.2(d) Mr Tindall refers to the level of weaving along State Highway 1. However, Mr Tindall’s conclusion is solely that any further reduction in weave length would be “highly undesirable”. He therefore recommends a condition that the weaving is not reduced, and that five northbound lanes are provided. I agree with the response of **Mr Moore**, who states that any reduction in weaving length would be subject to the same review process (as that previously followed) within the Transport Agency, and this matter should not be subject to designation conditions. I agree that 5 lanes should be provided in the northbound direction between the SH18 on-ramp and Greville Road off-ramp.

#### **4 Evidence of Mr Fogarty**

- 4.1 At Section 2 on page 2, Mr Fogarty states that “*the traffic modelling has not taken into account that modern navigation tools take traffic down secondary roads to obtain the best travelling time*”. This is not correct.

---

<sup>1</sup> Evidence of Mr Tindall, paragraph 7.24

<sup>2</sup> Ibid, para 7.28

The traffic models allow vehicles to take the best route available, given the forecast traffic conditions. The models run through a sequence of iterations, until the traffic flows converge (i.e. stop swapping around, given the forecast conditions along each route). All vehicles are allowed to use any links in the model – apart from where specified. So for example, general traffic is not allowed to use bus lanes (unless they need to do so to turn left), and so on.

- 4.2 Mr Fogarty raises a number of other issues relating to the robustness of the modelling (for example, he suggests that the Transport Agency predictions are wrong, either because wrong data has been input, or because the figures have been slanted in favour of the Project<sup>3</sup>). The models have been developed in accordance with standard practice, and they have been subject to peer review. I would be happy to explain to Mr Fogarty how traffic models are developed, prior to the Hearing.
- 4.3 Mr Fogarty suggests at Section 3 on page 7 that the existing bus lane on the Constellation Drive northbound on ramp, if possible, be altered to a T2/truck bypass lane. I note that the inclusion of the SH18 to SH1 northbound connection reduces traffic volumes on the northbound on ramp from 1,250 vehicles per hour (AM and PM peak periods), to 700 vehicles per hour in the AM Peak, and 900 vehicles per hour in the PM peak. These flow reductions will improve the performance of this ramp, while noting that **Mr Moore**, in his response, has indicated that the current bus bypass cannot be altered to a T2/truck bypass lane.
- 4.4 At pages 10 to 12, Mr Fogarty discusses the current and proposed traffic intersections needing to be negotiated on SH18 to travel eastbound and westbound to SH1. Travel time predictions without and with the Project for 2031 are summarised in the Assessment of Traffic Effects Report, Table 20. Route 7 (SH1 to SH18 eastbound) and Route 8 (SH18 to SH1 westbound) provide the predicted travel times as output from the Project traffic SATURN model. Journey time improvements are predicted across each of the periods (morning, inter and evening) for both directions.

---

<sup>3</sup> Evidence of Mr Fogarty, page 14

**5 Centre for Urban and Transport Studies (evidence of Mr Willmott)**

- 5.1 Much of Mr Willmott's evidence does not specifically relate to the effects of the NCI Project, so I will not respond to these general points.
- 5.2 In addition, it is not apparent if Mr Willmott has seen the evidence provided by witnesses for the Transport Agency, as he does not refer to any of that evidence.
- 5.3 In my EIC I responded to some aspects of Mr Willmott's submission, at paragraphs 9.1 to 9.14, relating to the future provision of connections between SH18 (west) and SH1 (south). I will not repeat those points.
- 5.4 Section 5.1 of Mr Willmott's evidence states that the Project has not been developed to plan for future increases in traffic which accompany population increases. This is incorrect. The traffic modelling developed to assess the effects of the Project incorporates a number of assumptions about future population and land use changes in the vicinity of the Project. This is explained in section 6 of the Assessment of Transport Effects.



---

**Terry Philip Church**

15 June 2017