

**IN THE MATTER OF**

The Resource Management Act  
1991

**AND**

**IN THE MATTER OF**

The Ruakura Variation to the  
Proposed Hamilton District Plan

---

**Statement of Evidence of Robert Swears**

**For the NZ Transport Agency (Transport Engineering)**

---



**OPUS**

Robert Swears  
Principal Road Safety/Transport Engineer  
Opus International Consultants Ltd  
Opus House, Princes Street  
Hamilton 3204, New Zealand

Private Bag 3057  
Waikato Mail Centre  
Hamilton 3240  
Phone (07) 838-9344  
Fax (07) 838-9324

Statement of Evidence of Robert Swears for the NZ Transport Agency

Contents

1	Introduction .....	3
1.1	Qualifications and Experience .....	3
1.2	Code of Conduct.....	3
1.3	Scope of Evidence.....	4
2	Executive Summary .....	4
3	Ruakura Variation: Overview .....	5
4	NZ Transport Agency Submissions.....	5
4.1	NZ Transport Agency Submission .....	5
4.2	NZ Transport Agency Further Submission .....	7
4.3	Basis for Transport Agency Submissions .....	7
5	Basis for Potential Effects .....	9
6	Evidence of Alasdair Gray .....	12
7	Conclusion .....	14
8	References.....	15

## **1 Introduction**

### **1.1 Qualifications and Experience**

1 My name is Robert Swears. I am employed as a Principal Road Safety/Transport Engineer in the Hamilton Office of Opus International Consultants.

2 My qualifications include a New Zealand Certificate in Engineering, a Bachelor of Engineering degree with Honours from the University of Canterbury, and a Master of Engineering Science degree (Transport) from the University of New South Wales. I am a Corporate Member of the Institution of Professional Engineers New Zealand (IPENZ), and a Member of the IPENZ Transportation Group.

3 I have been carrying out professional engineering tasks related to the investigation, design, and construction of roading and highway projects for 26 years.

4 I have been engaged by the NZ Transport Agency (Transport Agency) to prepare transport engineering evidence to present to this hearing.

### **1.2 Code of Conduct**

5 While I acknowledge that this is not an Environment Court hearing, I consider it good practice to have prepared evidence in accordance with the current Environment Court Practice Note (2014). I have read and am familiar with the Code of Conduct for Expert Witnesses, have complied with it, and will follow the Code when presenting evidence. I also confirm that the matters addressed in this Statement of Evidence are within my area of expertise, except where relying on the opinion or evidence of other witnesses. I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed.

6 With regard to my reliance on the opinions of others, the key conclusions of this Statement are based on the extensive work carried out by my Opus colleagues in relation to the Hamilton Section of the Waikato Expressway. In

particular, I am relying on work carried out by Messrs Dave Heine and Mike Meister. Based on my 17 years of working with Messrs Heine and Meister, I have confidence in their work and consider it reasonable to rely on their previous findings.

### 1.3 Scope of Evidence

7 This Statement of Evidence provides the following (the relevant subheading is noted in brackets in each case):

- (a) A summary of my evidence (**Executive Summary**);
- (b) An overview of the Ruakura Variation (**Ruakura Variation: Overview**);
- (c) An overview of the NZ Transport Agency submissions (**NZ Transport Agency Submissions**);
- (d) A discussion of the basis on which potential transport engineering effects may arise if appropriate approvals and processes are not in place (**Basis for Potential Effects**);
- (e) Comments on the evidence of the transport engineering statement of Alasdair Gray on behalf of Hamilton City Council (**Evidence of Alasdair Gray**); and
- (f) Conclusions.

## 2 Executive Summary

8 The paragraphs below describe the key findings and conclusions of this Statement.

9 Detailed transport engineering assessments were undertaken in relation to the Hamilton Section of the Waikato Expressway. The findings of those assessments were endorsed by the Board of Inquiry (BOI) that granted the Ruakura Development Plan Change. Some of the changes to the Hamilton

City Proposed District Plan (PDP) for the Ruakura Variation are not in accord with the BOI decision.

10 Potentially significant adverse transport engineering effects may arise if mitigation to manage those effects is not identified through appropriate approvals for activities within the Ruakura Variation Area.

11 I conclude this Statement by noting that I consider it important for the PDP to retain requirements for those approvals in order to protect the transport resource being established through the Hamilton Section of the Waikato Expressway.

### **3 Ruakura Variation: Overview**

12 Hamilton City Council (HCC) "... notified the Ruakura Variation to its Proposed District Plan (PDP) on 11 November 2015 for public consultation and submissions. The purpose of the Variation is to rezone approximately 822ha (sic) of land in Ruakura, ensuring a consistent approach to managing development in the area." (Hamilton City Council, 2016a)

13 "Submissions on the Ruakura Variation closed on 18 December 2015. Council received 50 submissions,..." one of which was from the NZ Transport Agency.

### **4 NZ Transport Agency Submissions**

#### **4.1 NZ Transport Agency Submission**

14 The NZ Transport Agency obtained designation for the Hamilton Section of the Waikato Expressway in 2005 after an Environment Court hearing. The designation at that time included the Greenhill Interchange but not the Ruakura Interchange.

15 The designation for the addition of the Ruakura Interchange was obtained in 2015 after a hearing before independent commissioners and subsequent to the decision of the Board of Inquiry (BOI) on the Ruakura Development Plan Change.

- 16 I understand that, as part of the consultation that occurred in advance of the BOI, the Transport Agency reached understandings and agreements with various parties in relation to land use and property effects associated with the Hamilton Section and the Ruakura Interchange in particular. The various parties included some of those with an interest in the land affected by the Ruakura Variation.
- 17 The key points of the Transport Agency submission (NZ Transport Agency, 2015) for the Ruakura Variation are as follows:
- (a) The Transport Agency supports the Ruakura Variation, "... insofar as it reflects the decisions made by the Board of Inquiry (BOI) in respect of the Ruakura Private Plan Change." (page 2).
  - (b) The BOI decision on the Ruakura Plan Change included three key areas requiring affected party approval from the NZ Transport Agency, as follows:
    - (i) Land Development Plan (LDP) applications
    - (ii) Non-compliance with the staging requirements
    - (iii) High traffic generating activities (1500 vehicles per day (vpd))
  - (c) However, the Notification Rule (3.7.3.2.3 in the version that was notified) for the Ruakura Variation only requires affected party approval from the Transport Agency for "... applications for activities generating 1500 or vehicle movements per day..." (vpd).
  - (d) The key transport engineering points of the Transport Agency submission relate to various components of the Ruakura Variation including the following rules:
    - (i) 3.7.3.2.3 Notification Rule
    - (ii) 3.7.3.3.6 Staging Activity Status
    - (iii) 3.7.3.3.7 Traffic Generation. In addition, the Transport Agency submission notes that the Rule does not include a

cross-reference to the Integrated Transportation Assessment (ITA) requirements.

#### **4.2 NZ Transport Agency Further Submission**

18 In addition to its original submission (NZ Transport Agency, 2015), the Transport Agency presented a further submission (NZ Transport Agency, 2016) that provides feedback on the submissions of Tainui Group Holdings and Chedworth Properties Ltd.

19 In particular, the further submission (NZ Transport Agency, 2016) raised concerns in relation to the following:

- (a) The proposal by Tainui Group Holdings (TGH) and Chedworth Properties Ltd that some residential activities generating more than 1500 vehicles per day be excluded from the requirement to obtain affected party approval.
- (b) An unsubstantiated proposal by TGH to amend traffic information, despite the detailed consideration of staging and traffic effects by the BOI.

#### **4.3 Basis for Transport Agency Submissions**

20 The key transport engineering issue behind the submission (and further submission) from the Transport Agency is the potential for traffic generated within the Ruakura Variation Area to adversely affect the performance of the Hamilton Section of the Waikato Expressway and the wider Hamilton transport network.

21 As illustrated in Figure 1 (Hamilton City Council, 2016b), the Ruakura Variation Area is bordered to the east by the Hamilton Section of the Waikato Expressway.

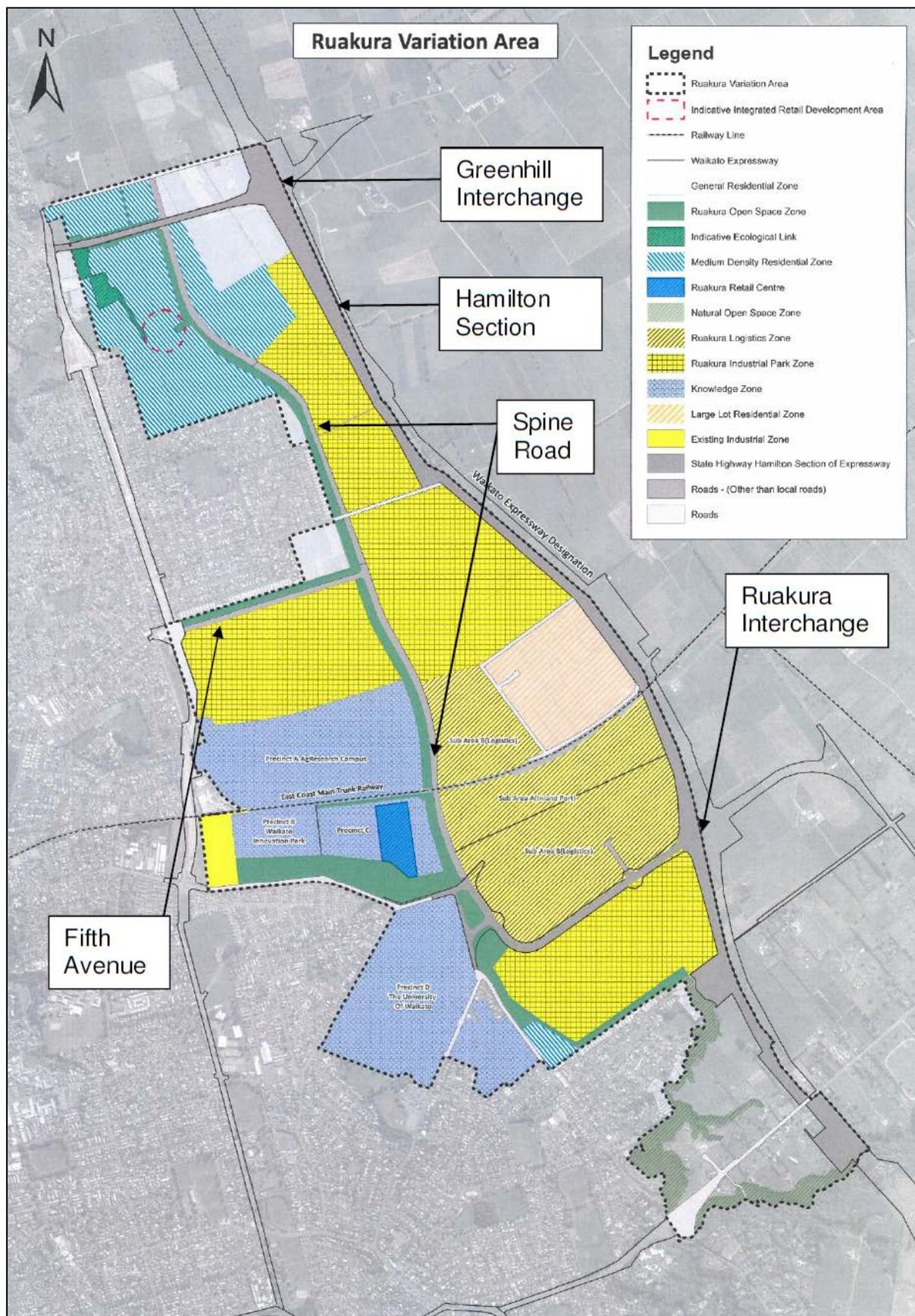


Figure 1: Ruakura Variation Area and Hamilton Section of Waikato Expressway (annotated version of original (Hamilton City Council, 2016b))

22 With regard to the Ruakura Variation, the key features of the transport network, and matters affecting the transport network, that are of particular interest to the Transport Agency are the following:

- (a) Greenhill Interchange
- (b) Ruakura Interchange
- (c) Development of Spine Road
- (d) Nature and intensity of land use development

## **5 Basis for Potential Effects**

23 The effects of development of the Ruakura Variation Area on the Waikato Expressway and the interchanges (Greenhill and Ruakura) will vary depending on the land use within the Variation Area and the manner in which the roading network to service the Variation Area is developed.

24 The modelling presented to the BOI by Mr Meister is based on the roading network illustrated by Hamilton City (Hamilton City Council, 2016b) and the land use shown on that diagram.

25 As determined by the BOI, the traffic associated with the land use illustrated in the Variation Area can be accommodated on the Hamilton Section, the interchanges, and the connecting Hamilton City transport network. However, any fundamental changes to that land use (and the associated trip generation) may result in a transport demand that cannot be adequately accommodated on the transport network. Therefore, I consider that appropriate safeguards need to be in place.

26 For example, there is a 180 vehicle per hour (vph) trip generation limit in the peak hour associated with the inland port area. The modelling and associated effects presented to the BOI were based on the 180 vph trip generation. If there is a proposed change to the use of the land, there is potential for the associated change to have significant adverse effects on the transport network (including, but not limited to, the Hamilton Section and the interchanges).

- 27 Therefore, it is appropriate and important that any changes in effect (from those anticipated and modelled as part of the BOI process) are considered by the road controlling authorities whose networks are potentially affected.
- 28 Any staged implementation of the Ruakura Variation Area must be managed to allow for the long-term solution, which incorporates the Spine Road. I understand that the Spine Road is intended to function as a major arterial to the south of Fifth Avenue and as a minor arterial to the north of Fifth Avenue.
- 29 The cross city connector (Fifth Avenue, Boundary Road, Mill Street, Hall Street, Massey Street (SH 23), Whatawhata Road (SH 23)) intersects with the Spine Road approximately halfway between the two interchanges.
- 30 If the land use within the Ruakura Variation Area is significantly different from that considered by the modelling presented to the BOI and/or the Hamilton City transport network is significantly different to that proposed, this will have effects on the function of the interchanges (Ruakura and Greenhill) and the Hamilton Section. In addition, depending on the nature and magnitude of the effects, development of the transport network and land use within the Variation Area may influence the choices made by road users such that more road users than expected enter Hamilton at the Hamilton South (Cambridge Road) Interchange.
- 31 As noted in paragraph 17(b) of this Statement, the key matters of concern for the Transport Agency relate to:
- (a) Land Development Plan (LDP) applications
  - (b) Non-compliance with the staging requirements
  - (c) High traffic generating activity (1500 vehicles per day (vpd))
- 32 From a transport engineering perspective, the reasons for these concerns are described in the following paragraphs.
- 33 If land within the Ruakura Variation Area is developed in a manner different to that illustrated by Hamilton City (Hamilton City Council, 2016b), there is the potential for the trip generation within the Ruakura Variation Area to affect the

performance of the interchanges and the Hamilton Section. While land development also has the potential to affect the Hamilton City transport network, I understand the Transport Agency submission was primarily (although not exclusively) focused on the effects on the Waikato Expressway.

34 However, there is potential for amended LDPs to be produced and supplied to the affected parties (including the Transport Agency) for their consideration for approval. Therefore, I consider that the three criteria (described in paragraph 17(b) of this Statement) provide both flexibility for those parties seeking to develop the land and a level of comfort for the potentially affected parties in relation to the traffic generation associated with that land development.

35 Similarly, if the Variation Area is not developed in the staged manner anticipated (whether that staged manner is established from the outset or incrementally determined through the approval of affected parties), this has the potential to affect the performance of the interchanges and the Hamilton Section. For example, if the Variation Area develops in a manner that promotes the use of the Greenhill Interchange in preference to the Ruakura Interchange, this means that northbound traffic will remain on the Hamilton Section longer than is appropriate. Not only is this an inappropriate use of the state highway resource, but it will have an effect on the Hamilton City local transport network.

36 In my opinion, the 1500 vehicles per day (vpd) threshold, below which specific affected party approval from the Transport Agency is not required, is a relatively high threshold. Depending on the composition of the traffic and the times of day at which the traffic is moving, 1500 vpd could have significant adverse effects on the safety and efficiency of the transport network. Therefore, to remove this threshold altogether, and not require Transport Agency approval for trip generation above 1500 vpd could create significant adverse effects on the network.

37 While the value of 1500 vpd is relatively arbitrary, it does set a liberal threshold for trip generation and, in my opinion, is a very accommodating threshold.

38 My understanding is that an LDP simply defines the intended nature of the land use and indicative configurations of the transport network within the area covered by the LDP, but not necessarily the intensity of the land use. Therefore, even if a portion of the Ruakura Variation Area is being developed in accordance with an approved LDP and the staging requirements of that LDP are being followed, this does not mean that the trip generation from the LDP area will not cause effects that need to be considered by the Transport Agency.

39 For example, while an LDP may identify an area of land as being intended for residential purposes, until the intensity of the residential development is known, the trip generation cannot be determined and, therefore, the effects of that trip generation cannot be determined.

40 Unless an LDP very clearly specifies the nature and intensity of land use, I consider it important for the 1500 vpd threshold to be retained to allow the Transport Agency to determine whether the trip generation associated with the land use has the potential to create adverse effects that require additional mitigation.

## **6 Evidence of Alasdair Gray**

41 I have reviewed the evidence prepared by Alasdair Gray (Gray, 2016) and identified various matters that I consider need to be considered by the hearings panel; these matters are described in the following paragraphs.

42 In general, I agree with the findings of Mr Gray and, in particular, with his conclusion (paragraph 30) that "... the proposed combination of objectives, policies, rules and assessment criteria... are sufficient to manage adverse effects from transport...".

43 However, I have concerns about the apparent reliance placed on the preparation of Integrated Transport Assessments (ITAs) to identify and mitigate adverse transport engineering effects. In his response to the Broadbent submission (attachment 2, page 2) Mr Gray states "ITA's for Land Development Plans will assess impacts, levels of service and mitigation."

- 44 While I agree with Mr Gray that an ITA is the most appropriate approach for identifying impacts and levels of service, an ITA of itself does not guarantee that the effects of any development, including that described by an LDP, can be adequately mitigated. For this reason, I consider it very important that specific parties (including the Transport Agency) are provided with the opportunity to give their approval (or otherwise) to an LDP, high traffic generating activity, and for non-compliance with staging requirements.
- 45 I agree with Mr Gray (attachment 2, page 4) in relation to the importance of the Spine Road. While the Spine Road will not fall under the jurisdiction of the Transport Agency, the function of the Spine Road has significant potential to affect the performance of the Hamilton Section and the interchanges (Greenhill and Ruakura). In my opinion, the Spine Road (particularly to the south of Fifth Avenue) is an important part of the cross city corridor. Therefore, if the Spine Road is unable to adequately fulfil its function, it is likely to lead to local traffic using the Hamilton Section for a greater distance than is appropriate and potentially load traffic onto interchanges not intended to accommodate that traffic.
- 46 I note that Mr Gray (Gray, 2016) supports the position adopted by the Transport Agency in relation to the importance of the Agency providing affected party approval for LDPs and non-compliance with staging. Based on advice I have received from Mr Meister, there may be a significant difference in transport engineering outcomes, to those illustrated in the modelling results presented to the BOI, if the traffic environment (and associated adverse effects) is significantly different to the transport network and land use that was considered by the BOI. Therefore, it would be undesirable for the identified and mitigated effects associated with the Hamilton Section to be compromised through amending the provisions in the PDP as proposed by some submitters.
- 47 Mr Gray (paragraph 25) refers to a proposal by TGH for the Spine Road to have a collector road function rather than an arterial function. As noted in paragraph 45 above, the traffic movement function of the Spine Road is an important component of the cross city corridor and, as a result, has an influence on the performance of the Greenhill Interchange. Therefore, I concur

with Mr Gray's view that "... the through traffic function of the Spine Road [is] necessary for mitigation of wider network effects...".

## **7 Conclusion**

48 In my opinion, there does not appear to be any technical basis to justify the removal or reduction in the requirement for the Transport Agency to provide affected party approvals in relation to the Ruakura Variation Area as determined by the BOI. Therefore, from a transport engineering perspective, I consider it important for the PDP to retain the requirement for those approvals in order to protect the transport resource being established through the Hamilton Section of the Waikato Expressway and the associated changes to the Hamilton City transport network.

49 I also consider it important for the staging requirements identified through the BOI process to be followed, unless the effects of a proposed non-compliance with the staging requirements (which may include additional or varied mitigation) have been fully considered by the potentially affected parties, which includes the Transport Agency.

## 8 References

- (a) Gray, A., 2016. Statement of Evidence of Alasdair David Angus Gray on Behalf of Hamilton City Council. Hamilton: s.n.
- (b) Hamilton City Council, 2016a. Ruakura Variation. [Online] Available at: <http://www.hamilton.govt.nz/our-council/council-publications/districtplans/proposeddistrictplan/Pages/Ruakura-Variation.aspx> [Accessed 27 June 2016].
- (c) Hamilton City Council, 2016b. Ruakura Variation Area. [Online] Available at: <http://www.hamilton.govt.nz/our-council/council-publications/districtplans/proposeddistrictplan/Documents/Ruakura%20Variation/Ruakura%20Variation%20Area%20Nov%202015.pdf> [Accessed 27 June 2016].
- (d) NZ Transport Agency, 2015. NZ Transport Agency Submission to Hamilton City Council on Ruakura Variation. Hamilton: NZ Transport Agency.
- (e) NZ Transport Agency, 2016. NZ Transport Agency Further Submission to Hamilton City Council on Ruakura Variation. Hamilton: NZ Transport Agency.