

SECTION 42A REPORT OVERVIEW; CHAPTER 6 WORKING ENVIRONMENT

OPENING STATEMENT- TRANSPORT

1 INTRODUCTION

- 1.1 My name is Don Wignall. I am a transport planning consultant and in this capacity I have provided advice to Council on a range of planning, development and road network proposals since 2010. This has included the District Plan Review and Proposed District Plan (PDP) process.
- 1.2 I am experienced in the operation and application of all traffic models currently in use in Kāpiti. In this opening statement I provide a brief overview and explanation of the modelling work undertaken to inform the District Plan Review process and the development of the PDP.
- 1.3 I believe that a summary of the key points from the advice provided to Council may assist the Hearings Panel in relation to the following matters:

SATURN and SIDRA modelling

Micro-simulation

VISSIM model

Access to modelling information

Other matters

2 THE DEVELOPMENT AND APPLICATION OF SATURN AND SIDRA MODELS

SATURN modelling underpinning the District Plan Review and PDP development.

- 2.1 SATURN is a traffic assignment model, which means it is able to estimate route choice, and is therefore important for assessing the impacts of development on the transport network. The Kāpiti Traffic Model, referred to as KTM, is a district-wide SATURN model and is the main model used for District Plan Review and PDP development purposes. In my opinion SATURN is an appropriate modelling tool for District Plan purposes.
- 2.2 The first version of the SATURN model was developed by Council, was termed KTM1, and was in use up to 2010.
- 2.3 From 2010 to 2014, NZTA took control of the model, and improved and developed it as KTM2, mainly for the Mackays to Peka Peka and the Peka Peka to Otaki Expressway projects. KTM2 was developed to be more consistent with the high level regional Wellington Transport Strategy Model (WTSM). Throughout the development of the KTM2 model, Council supplied demographic and employment forecasts, land use assumptions and details of district plan changes. During this process, Council also maintained full access to the model for planning, development and road network evaluation purposes.
- 2.4 Following the outcome of the Expressway Board of Inquiry processes, Council re-assumed full control of the KTM and from late 2014 onwards, Council has further refined and improved the model and retitled it KTM3.

Application of SIDRA and other models

- 2.5 Other more detailed models (such as SIDRA) are used by Council when necessary to examine potential traffic impacts in more detail. SIDRA is the most commonly used traffic engineering program in NZ and the SIDRA network model can take account of the interaction between closely spaced junctions in localised areas. SIDRA, like all more detailed models, is reliant on traffic demand outputs from the SATURN model.
- 2.6 At various times, locations, for particular purposes, SIDRA and other models have been applied by Council over the period 2006-2016. Of most current relevance for District Plan Review and PDP development purposes are the following:
- i) KTM1 and KTM2 SATURN models have been used for a range of assessments of major developments (including proposed plan changes), potential new road links and modifications to the existing road network.
- 2.7 Since the PDP was notified, further reviews and updates to the SATURN and SIDRA model have been undertaken by Council, including:
- ii) The KTM3 SATURN model was used together with a SIDRA network model, developed in 2014, to evaluate the Kāpiti Road Relief Route (KRRR) for funding application purposes.
 - iii) The KTM3 SATURN model was used together with a SIDRA network model in 2015 to review Airport GFA (traffic related) thresholds. Tests using SIDRA were also undertaken in 2015 to assess the potential traffic effects of the Airport Private Plan Change proposal.
- 2.8 As expressed in advice to Council, in my opinion, an appropriate and consistent approach has been taken to the traffic modelling work underpinning and supporting Council planning processes, including the PDP.

3 MICRO-SIMULATION MODELS - APPLICATION AND USE.

- 3.1 Micro-simulation models (such as VISSIM) simulate the interaction between individual vehicles and are useful for a variety of purposes, including providing visual animations of traffic network performance.
- 3.2 Like all models, micro-simulation models have strengths and weaknesses, and are therefore more appropriate in some circumstances than others. For example:
- i) Micro-simulation models are rarely used as wide area traffic assignment models, where SATURN has a number of advantages, and as a result SATURN is the industry standard for this type of model in NZ.
 - ii) Where initial high level testing is required, SIDRA models are often more appropriate than more detailed micro-simulation modelling.
- 3.3 In my opinion, micro-simulation models are most suitable for more detailed traffic management testing and design, rather than for broader transport planning purposes in support of planning and development strategies, which need to consider potential effects across much wider geographical areas.

4 VISSIM BACKGROUND, USE AND APPLICABILITY TO CHAPTER 6.

VISSIM modelling undertaken

- 4.1 Council and NZTA have developed several micro-simulation models in Kāpiti over the period 2006-2016, the most recent applications in Paraparaumu are:
- i) In 2015 the KTM3 SATURN model was used together with the development of a Paraparaumu VISSIM model for Town Centre enhancement and SH1 revocation design purposes.
 - ii) In 2016 work commenced to adjust the KTM3 SATURN model and to extend the Town Centre VISSIM model to include the Airport. However, the main purpose of the VISSIM model remains the detailed design of Town Centre enhancements, the development and evaluation of the KRRR project and SH1 revocation.

Uncertainty in model development

- 4.2 It is often the case that the development of new complex models takes time and several iterations to reach the required standard. Modifying the KTM3 and developing a large VISSIM model to encompass the whole of central Paraparaumu, the entire length of Kāpiti Road, Paraparaumu Beach and Raumati Road has proved to be a difficult and complex task and one that requires further scrutiny.
- 4.3 Notwithstanding the fact that the VISSIM model results have been ruled out of consideration for PDP purposes by the Hearings Panel, an explanation as to why the results from the latest SATURN and VISSIM work are not yet available is provided, for the purposes of assisting the Panel's understanding, as follows:

VISSIM model adjustments needed (for future applications)

- 4.4 Several tasks needed prior to the VISSIM results being applied to future projects, including:
- i) Review of modelled Kāpiti Road traffic volumes against actual counts to ensure these are reasonable.
 - ii) Adjustment to better correlate Airport model traffic generation with estimated PC73 (Airport) traffic generation estimates.
 - iii) Review of future transport network assumptions, including the expected timing of network changes and planned investments.
 - iv) Review of modelled signal settings and capacity assumptions in comparison with other modelling undertaken.
 - v) Review of earlier peer review findings, which recommended the need for improvement and further development of the Town Centre VISSIM model.
- 4.5 For these reasons and until the VISSIM model has been reviewed and adjusted, it is not possible to apply any results. Whilst the VISSIM model could be useful in further understanding the impacts of development, the Council's strategic transport and land use planning, District Plan Review and PDP development have never been dependent on VISSIM outputs in any sense. Consequently, the Council has not relied on or used VISSIM model outputs for the purposes of informing the PDP.

5 ACCESS TO MODELLING INFORMATION.

- 5.1 The basis of the modelling method used in KTM (SATURN) modelling has been accessible online: for KTM2 since 2012 and for KTM3 since 2014.
- 5.2 Meetings have been held over the last 3 years with technical representatives of various parties. These included Coastlands Shoppingtown, Kāpiti Coast Airport Holdings and St Heliers Capital, where specific discussions for various purposes have taken place relating to transport assessments and modelling analysis.
- 5.3 Most recently, as a result of the Chapter 11 PDP hearing, a briefing meeting with all submitters on PDP modelling related matters was held on 23 August 2016 and further explanatory material has been issued by Council as a result of this.

6 OTHER MATTERS I WOULD LIKE TO DRAW TO THE PANEL'S ATTENTION

- 6.1 I would like to reiterate in the Section 6 memorandum on Traffic and Transport Issues, where in 4.4 the Environment Court is quoted as stating: *"..we find that although the Expressway is clearly a significant change of circumstances at Paraparaumu, it is far from the game changer..."* In the same document in paragraph 2.20 I express the view that the same reasoning equally applies to the Airport, namely, that the pattern of retail development in the District Plan does not need to be radically changed due to Expressway-induced changes in traffic patterns.
- 6.2 I would like to correct the Section 6 memorandum on Traffic and Transport Issues where, in Annex 2, A2. 7, (iv) relating to the Airport Private Plan Change proposal, I said that *"....This means the proposed plan change is likely to result in a substantial deterioration in operational conditions on the local network."* In respect of this, instead of *"the proposed plan change is..."* I should have said *"larger supermarket and department store uses on Airport land are..."*
- 6.3 I would like to confirm to the Panel that the Section 42A Chapter 6 memorandum on Traffic Activity Thresholds in 4b) and 4c) recommends universal standards for Transport Assessments of 200 vehicles per day (VPD) for centres, retail areas and work zones and 100 VPD for all other locations or on strategic and major roads. These thresholds are recommended to apply throughout the District unless specific localised information is available to allow requirements to be varied and separately specified in the plan.

Don Wignall

15 September 2016