

**IN THE MATTER OF** the Resource Management  
Act 1991

**AND**

**IN THE MATTER OF** a private plan change  
request ('Proposed (Private)  
Plan Change 40:  
Wallaceville') to the Upper  
Hutt City District Plan made  
by Wallaceville  
Developments Limited.

## **STATEMENT OF EVIDENCE OF ANDREW DUGALD JACKSON**

### **1.0 EXECUTIVE SUMMARY**

- 1.1 Based on our assessment of the existing infrastructure, our investigations on-site, our discussions with Council and other service providers, and our preliminary design I am satisfied that the development that will be facilitated by this Plan change (Area A and Area B) can be adequately serviced in terms of wastewater, stormwater, potable water, roading, electricity, gas, and telecommunications. Although the structure plan has not yet been completed for Area B I have reviewed and assessed the infrastructure requirements of this area based on the likely yield and I am confident that adequate capacity exists to service Area B as well as Area A.
- 1.2 Preliminary yield estimates indicated approximately 700-800 residential dwellings could be developed across the Wallaceville Structure Plan area (including 200 dwellings in Area B). The site may also include some commercial development which is proposed to be concentrated towards the Ward Street end of the site but may also occur elsewhere. For the infrastructure calculations carried out we have assumed 800 residential units and 2.5Ha Light Commercial. These numbers have been used in our preliminary calculations to assess likely infrastructure requirements. We note that due to uncertainty with covenant positions a structure plan has not been completed for Area B. We have included an assessment of infrastructure requirements for Area B based on the structure plan description of this area and likely yield that has been based on an assessment of opportunities and constraints for this area by the technical experts involved in the structure planning process.

### **2.0 INTRODUCTION**

- 2.1 My name is Andrew Dugald Jackson. I hold a Bachelor of Civil Engineering (Hons) from the University of Canterbury. I am a graduate member of the IPENZ, a member of the NZIOB, and a Land Development Manager with Harrison Grierson.
- 2.2 I appear in relation to a private plan change request ('Proposed (Private) Plan Change 40: Wallaceville') to the Upper Hutt City District Plan made by Wallaceville Developments Limited to rezone approximately 63 hectares of former Wallaceville Ag-Research site and a small part of the Trentham Racecourse property for residential and commercial uses.
- 2.3 I have 13 years' experience in providing professional services associated with civil design and construction.

- 2.4 My involvement in the Wallaceville site commenced in June 2014 during the initial feasibility investigations and early liaison with Council and utility providers.
- 2.5 I am familiar with the subject site and its surrounds. I first visited the area in November 2014 to review the existing infrastructure on-site and the suitability of this for re-use as well as viewing any constraints that needed to be considered during preliminary design of civil infrastructure and development of the structure plan.
- 2.6 Although this is a Council hearing I note that I have read the Code of Conduct for Expert Witnesses in the Environment Court Practice Note (2014) and agree to comply with the Code. Except where I state that I am relying upon the specified evidence of another person, my evidence in this statement is within my area of expertise. I have not omitted to consider material facts known to me that might alter or detract from the opinions which I express.

### **3.0 SCOPE OF EVIDENCE**

- 3.1 In my evidence I propose to:
- a) Describe my technical report submitted with the Plan Change Request and further information I have prepared post-lodgement;
  - b) Summarise and comment on the submissions received on the application that are relevant to my area of expertise;
  - c) Provide comments on the recommendation of the Officer's s Section 42A Report related to my area of expertise; and,
  - d) Provide my recommendation on the Plan Change Request.

### **4.0 SUMMARY OF TECHNICAL REPORT**

- 4.1 A brief summary of the civil engineering infrastructure issues is outlined in the Infrastructure Assessment report, of which I was the author, is listed below:

#### **Wastewater**

We have discussed the proposed development plans with Upper Hutt City Council ('Council') and Wellington Water. Following these discussions, and based on our review of existing services, we understand that connections to the existing main public Council wastewater network are available as follows:

1. the existing 225mm $\varnothing$  public sewer in Ward Street;
  2. the existing 250mm $\varnothing$  public sewer on Alexander Road.
- 4.2 Council have advised that there is 10l/s (Peak Wet Weather Flow, PWWF) capacity within the network on Alexander Road that can be utilised by this development. Based on our preliminary concept drawings and invert of existing gravity connection available on Alexander Road we have assessed that wastewater from 220 residential dwellings (this includes all of Area B and 20 dwellings from Area A) will go to Alexander Road and wastewater from 580 residential dwellings and 2.5Ha Commercial will be discharged at Ward Street.
- 4.3 Council have advised that there is some spare capacity within the Ward Street network and that wastewater in excess of what can be accommodated at Alexander Road should be discharged at Ward Street. Council have also advised that, dependent on the volumes involved, some downstream upgrades may be required but that the upgrades required are feasible and are in the process of being added to the already planned downstream upgrade

and renewal works. The necessity for such upgrades can be addressed at the resource consent and subsequent engineering approval stages of the development and the Code contains enough information, performance criteria, standards and requirements, to ensure that any upgrades will meet Council standards. As the development of the site will be staged it is anticipated that the upgrade works can be scheduled and completed alongside Council's planned maintenance and upgrade works.

- 4.4 As the site is relatively flat (an average fall to the west of approx 0.7%) the expectation is that some pump stations with rising mains will be required to service the site. These rising mains will feed into the proposed points of a connection via a gravity feed sanitary sewer or directly into the existing public sewer network. A concept wastewater scheme was provided with the plan change application.

## **Water**

- 4.5 Development of this site has been discussed with Council and Wellington Water. Following these meetings and discussions Wellington Water have confirmed that the existing water main has sufficient capacity to supply the proposed development of this site. No pressure or flow rate testing has been undertaken on the existing public watermains but Wellington Water confirm these are adequate for the site including supply of water for firefighting.
- 4.6 The existing watermain pipework coincides with the proposed road layout shown on the latest structure plan. Therefore, at this stage, it is not envisaged that any of this existing pipework will need to be relocated.
- 4.7 It is likely that the majority of new water pipework installed will be 100mm $\varnothing$  to 200mm $\varnothing$  and these will be looped back to the existing main to provide a double-ended supply where possible. 50mm $\varnothing$  rider mains will also be used throughout the development to provide water supply both sides of the new roads. An indicative water layout is shown on drawings 135652-PC500-503 (note that rider mains are not shown on these drawings). Proposed connection points are shown for Area B on drawing 135652-PC500, the water main concept plan for Area B has not been determined yet but will be similar, in principle, to Area A with double ended supplies provided where possible.

## **Earthworks**

- 4.8 The site is essentially flat with a very slight slope of approximately 0.7% away from the southern hills.
- 4.9 Minor cut and fill earthworks will be required to ensure that new roads have appropriate cross fall and longitudinal gradient so as not to pond, house building platforms are located above any localised overland flow paths, and to allow filling and/or relocation of existing drainage trenches.
- 4.10 Earthworks volumes and maximum cut and fill heights will be confirmed at the detailed design stage.
- 4.11 The geotechnical assessment carried out by Engeo (17/12/14) that was included with the Plan Change request application confirms that, in their opinion, there are no geotechnical reasons why the development cannot be successfully be completed. Evidence by Ms Karen Jones describes the geotechnical aspects in more detail.

## Power

- 4.12 We have liaised with and discussed plans for development of this site with Wellington Electricity Lines Ltd (WEL). They have confirmed that there is sufficient capacity in the network to supply power to this development without major infrastructure upgrades. Over the areas where structure plans have been completed the existing overhead powerlines coincide with the proposed road layout shown on the latest structure plan. WEL have indicated that it is likely that this line will be used to supply the new development with the overhead line being progressively undergrounded.

## Telecommunications

- 4.13 We have discussed the proposed development plans with Chorus and they have confirmed that they have sufficient capacity within their network to supply fibre reticulation to each new lot on the site. This will include the staged removal of existing overhead power lines which will be replaced with underground power supply to all new lots. The staging of this will coincide with the staged development of the site.

## Gas

- 4.14 We have discussed the proposed development plans with Powerco who have existing gas supply infrastructure passing through the site. Powerco have confirmed that they have sufficient capacity to service the proposed development of this site.

## 5.0 RESPONSE TO SUBMISSIONS

- 5.1 In the following sections of my evidence I have evaluated and responded to the submission points that are relevant to my area of expertise.

## Infrastructure

- 5.2 Powerco have made a submission requesting that

*“Any works enabled by PC40 are undertaken in a manner that avoids or mitigates adverse effects on Powerco’s gas distribution assets, including:*

- *Physical damage to assets;*
- *Disruption of gas supply to customers during the period of works;*
- *Level changes that result in too little or too much coverage over underground assets;*
- *Restrictions on access to underground infrastructure for maintenance purposes either during or on completion of the works, including by the inappropriate placement of structures or vegetation over underground assets.”*

Response to submission:

- 5.3 The existence of existing infrastructure (along with associated easements) is acknowledged and has been taken into consideration when producing the Structure plan. Generally the easements follow the existing road alignment across the site and it is planned that the new road alignment will be similar to this. Due to the relatively flat site, major changes in site levels due to bulk earthworks are not envisaged. If excavation is planned in the vicinity of existing infrastructure Powerco will be contacted to provide advice on both the position and depth of existing assets as well as acceptable variations to depth.

## 6.0 THE SECTION 42A REPORT

6.1 In the following sections of my evidence I have evaluated and responded to the points that are relevant to my area of expertise.

Recommendation: Include specific provision to ensure that wastewater services within Area A would be sized to accommodate their anticipated use by land use within Area B.

6.2 Part A of the UHCC Code of Practice for Civil Engineering Works requires that wastewater systems be designed to adequately service the catchment including future lots compatible with the district plan zoning. Similar provisions for consideration of future development are included within NZS4404. This is good practice and is typical of all multi-stage developments. Area B is part of this Plan Change and is proposed to be zoned as residential. Therefore design of wastewater systems across the site (Area A and Area B) will include adequate consideration of future wastewater servicing across the entire site. I agree with the recommendation but don't believe that specific provision is required as it is already a requirement of the Code of Practice of Civil Engineering Works.

6.3 In this respect, I note that Ms Blick has recommended that 'the extent of compliance with the Code of Practice for Civil Engineering Works' be included as a matter of discretion in the proposed new subdivision rules for the Wallaceville Structure Plan area. I support the inclusion of this matter.

6.4 Additionally, as noted in our Infrastructure Report, based on preliminary investigations and design we believe that all wastewater from Area B will be discharged from the site at the proposed connection point to the existing Council network on Alexander Road and therefore will not cross Area A.

Recommendation: Discuss the potential for the development of wastewater/water supply principles similar to those provided for stormwater management.

6.5 Adequate connection points to reticulated Council networks for wastewater and water are available to service all anticipated development across the site. The design and construction requirements for wastewater and water reticulation across the development site is already covered by various NZ Standards (Including NZS4404) and the UHCC Code of Practice therefore bespoke principles for this site are not required.

6.6 As noted above, I support the inclusion of specific reference to the Code as a matter of discretion in the new subdivision rules.

Recommendation: Requirement for consideration of the impacts of development on Council's infrastructure network.

6.7 I, along with my colleague Mr Alan Blyde, met with Mr Jeff Haste and Mr Lachlan Wallach of UHCC on Wednesday the 24<sup>th</sup> June 2015 to discuss a range of engineering issues associated with development of this site. With respect to water Mr Haste confirmed that he had liaised with Wellington Water and was able to confirm that adequate capacity existed in the water network to service this development. With respect to wastewater, Mr Haste and Mr Wallach confirmed that the proposed connection points to Council's existing network are suitable. Some upgrades to the network downstream of the Ward St connection would be required to service the full development but these upgrades are not extensive.

**7.0 CONCLUSION AND RECOMMENDATIONS**

7.1 It is my considered opinion, that, based on the assessments I have undertaken and discussion I have had with Council, Wellington Water, and other infrastructure providers, there are no potable water, wastewater, stormwater, electricity, telecommunications, roading or earthworks constraints that could preclude the development of the Wallaceville Structure Plan Area for the proposed land uses.

7.2 I am of this opinion for the following reasons:

- Suitable connection points to an adequate potable water source are available.
- Suitable connection points for wastewater are available.
- Suitable power and telecommunications supplies are available.
- Based on reports and evidence prepared by Mr Mark Georgeson suitable roading access points to the site are available.
- Based on reports and evidence prepared by Ms Karen Jones and my inspection, the site is suitable for the earthworks required to develop the site as proposed.
- Based on reports and evidence prepared by Mr Alan Blyde, stormwater on the site can be adequately discharged through soakage.

The points above relate to the entire Wallaceville Structure Plan Area (Area A and Area B) noting that the Code of Practice for Civil Engineering Works requires that provision for future development be included during design of staged developments.

<b>DATE</b>	2 <sup>nd</sup> July 2015
<b>NAME</b>	Andrew Dugald Jackson
<b>POSITION</b>	Land Development Manager
<b>SIGNED</b>	