

**BEFORE AN INDEPENDENT HEARINGS PANEL  
OF THE WAIKATO DISTRICT COUNCIL**

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

**AND**

**IN THE MATTER** of the proposed Waikato  
District Plan (Stage 1)  
Hearing 25

---

**EVIDENCE OF LAURIE COOK ON BEHALF OF HYNDS PIPE SYSTEMS LIMITED  
AND THE HYNDS FOUNDATION**

**LIGHTING**

**17 February 2021**

---

---

 **Simpson Grierson**  
Barristers & Solicitors

W S Loutit / S J Mitchell  
Telephone: +64-9-358 2222  
Facsimile: +64-9-307 0331  
Email: sarah.mitchell@simpsongrierson.com  
Private Bag 92518  
Auckland

## 1. INTRODUCTION

1.1 My name is Laurie Cook.

1.2 I am an Illumination Design Executive employed by the Independent Electrical and Illumination Engineers LDP Ltd. I have been working in the lighting industry for more than 43 years.

1.3 I have completed the IES Illumination Engineering Course and passed my lighting examinations at AIT, later AUT, in 1994. I trained under national and international illumination engineers from Thorn and Philips Lighting and have held the position of specialist illumination lead for engineering consultants, Beca Ltd before joining LDP. I am a Fellow (FIES) and Registered Lighting Practitioner (RLP) of the Illuminating Engineering Societies of Australia and New Zealand.

1.4 I have been involved with numerous lighting environmental assessments as an expert. These include the Christchurch Stadium Development, Growers Stadium Counties Manukau, Diocesan School for Girls with their Erin Street Development, Stevenson Group for the Drury South Structure Plan Area and representing Tainui Group Holdings Ltd with their Ruakura Inland Port Development.

1.5 I have read the Code of Conduct for Expert Witnesses (**Code**) outlined in the Environment Court's Consolidated Practice Note 2014 and confirm that I will comply with it in preparing my evidence. I confirm that the issues I will address are within my area of expertise, except where I state that I rely upon the evidence of other expert witnesses. I also confirm that I will not omit to consider material facts known to me that might alter or detract from my opinions.

## 2. SCOPE OF EVIDENCE

2.1 I have been asked to provide evidence on behalf of Hynds Pipe Systems Limited and the Hynds Foundation in relation to their submissions/further submissions on the Proposed Waikato District Plan (**Proposed Plan**). Hynds Pipe Systems Limited and the Hynds Foundation are referred to collectively as **Hynds** in this evidence unless the distinction is made between the two organisations.

2.2 The focus of this evidence is Hynds' request that a portion of the land owned by the Hynds Foundation at 62 Bluff Road be rezoned from Rural (notified) to Heavy Industrial (**Expansion Land**).

2.3 My evidence will cover the following matters:

- (a) An overview of Hynds' properties;
- (b) An explanation of potential lighting effects;
- (c) Assessment of spill light and glare effects of Hynds' rezoning proposal;  
and
- (d) Assessment of Skyglow effects of Hynds' rezoning proposal.

### 3. SUMMARY OF EVIDENCE

3.1 In my opinion, the lighting effects of rezoning this small portion of 62 Bluff Road from Rural to Heavy Industrial will be inconsequential, given it is a relatively small area and it is next to the main Hynds Factory Site.

### 4. HYNDS PROPERTIES

4.1 The Hynds' properties include the existing Hynds Factory Site (9 McDonald Road) and 62 Bluff Road (together, **Hynds Properties**).

#### Planning Provisions

4.2 The existing Hynds Factory Site is zoned Industrial 2 in the operative Waikato District Plan (**OWDP**).<sup>1</sup> It is zoned Heavy Industry in the Proposed Plan. The relevant standards that apply to the Hynds Factory Site are set out in Appendix 1.

4.3 The Expansion Land at present is zoned Aggregate Extraction in the OWDP. It is zoned Rural in the Proposed Plan. Hynds is seeking that the lower portion of 62 Bluff Road be rezoned Heavy Industrial. The Expansion Land is small, in relation to the size of the existing Hynds Factory Site and the remaining portion of the site which would retain its notified Rural zoning.

---

<sup>1</sup> Section 10 Appendix 1 – (A) WDP 29.B.

- 4.4** The land to the southwest of the Hynds Factory Site (the Synlait site) is zoned Industrial 2 in the OWDP and Heavy Industrial in the Proposed Plan. The land to the west and northwest is zoned Light Industrial in the OWDP and Industrial in the Proposed Plan. Pokeno Township is situated further to the north. To the south and southwest the land is zoned Aggregate Extraction, and further south, southwest, Rural in the OWDP. Under the Proposed Plan the Aggregate Extraction zone is removed and that land is rezoned as Rural.

### **The Site**

- 4.5** The Hynds Factory Site area is approximately 22 hectares. Two large factory buildings are located within the Hynds Factory Site. The McDonald Road entrance driveway and company carparks are located to the north of the buildings. Exterior to the buildings, a storage yard is situated to the north and northeast. The storage area is in operation 24/7.
- 4.6** A second storage yard is being developed to the south - southwest of the buildings. The operational aspects of this yard will be similar to the existing yard to the northeast.
- 4.7** The Expansion Land is situated to the south, adjacent to the Hynds Factory site.
- 4.8** State Highway 1 (**SH1**) is located to the east of the Hynds Factory Site and the adjacent Expansion Land. SH1 is elevated some 15 metres above the Hynds Factory Site and approximately 70 metres away from the Hynds Factory Site operational area at its closest point. The Expansion Land abuts the SH1 designation and is approximately 13 metres from the SH1 road shoulder.
- 4.9** Further east residential/lifestyle blocks are located some 260 metres from the Hynds Factory Site on Cricket Lane on the other side of SH1. The residential/lifestyle blocks and land packages further east are elevated higher than the Hynds Factory Site.
- 4.10** Towards the southeast of the Hynds Factory Site and the adjacent Expansion Land, the dwelling at 10 Bluff Road, is located on the opposite side of the hills that face the Hynds Factory Site and expansion land. Further along, the dwelling at 62 Bluff

Road, is on elevated land, positioned well above that of the Hynds Factory Site, approximately 45-50 metres higher, and to the south of the Expansion Land.

## **5. LIGHTING EFFECTS**

**5.1** There are three main lighting effects that could have varying degrees of obtrusiveness to vehicles and residents adjacent to the Hynds' properties (including the Expansion Land). They are:

(a) Spill light;

(b) Glare; and

(c) Sky glow.

**5.2** This section of my evidence describes these three types of effects.

### **Spill Light**

**5.3** If luminaires are not correctly chosen for the appropriate beam spread and then not properly aimed, there is a percentage of light that is not efficiently used to illuminate the intended target. The result is wasted "light spill" which can fall into areas where it is not wanted.

**5.4** With the use of computers, the use of modern road and flood lights can be more accurately designed and aimed to reduce this spill light component.

### **Glare**

**5.5** Glare is the brightness of a road or flood light when compared with the brightness of the background against to which it is seen. For instance, a floodlight appears much brighter (and has greater glare) when viewed against a black background, than when viewed in the surroundings of a brightly lit city street.

**5.6** There are two forms of glare:

(a) Disabling glare, which is so intense it prevents adequate vision for accomplishing a task; and

- (b) Discomfort glare, which can generally be tolerated, but can be a nuisance, as it tends to draw eyes towards the light source.

5.7 Both forms of glare as described can be minimised by careful selection of luminaire technology and best practice lighting design.

### **Skyglow**

5.8 Skyglow manifests itself as a glow above a lighting installation, especially noticeable when there is high humidity, atmospheric dust or particles of pollution present. Skyglow can reduce the visibility of the night sky.

5.9 Skyglow can be minimised by avoiding direct upward light and/or using darker coloured reflective surfaces, (i.e. darker tone of bitumen, and dark painted or coloured concrete, rather than white). It can also be reduced by the appropriate specification of light fittings that can provide good optical control and with best practice lighting design.

## **6. ASSESSMENT OF SPILL LIGHT AND GLARE EFFECTS OF HYNDS' REZONING PROPOSAL**

6.1 This section assesses expected lighting effects from Hynds' rezoning proposal.

6.2 As I have noted above, the area that is proposed to be rezoned Heavy Industrial is small in relation to the size of the existing Hynds Factory Site and the remainder of 62 Bluff Road which will be zoned Rural.

6.3 I have been advised by Hynds that the Expansion Land will not have 'fixed' floodlighting for the purposes of its operations through the hours of darkness. While it is anticipated that the Expansion Land will be part of a 24/7 operation, the lighting during the hours of darkness will be provided by lighting mounted on the machines being used for the operation. It is anticipated that the lighting from the machines will be directed downwards at a limited angle in order for the operator to carry out their task.

6.4 In my opinion, rezoning the Expansion Land from Rural to Heavy Industrial will be inconsequential for the surrounding residents, given it is such a small area and it is next to the main Hynds Factory Site. In my opinion, exterior lighting can be designed

such that spill light and glare at the Expansion Land's boundary will be compliant with the OWDP Part 29B Industrial 2 Zone standards and the Proposed Plan's standards as set out in Appendixes 1 and 2 of this evidence.

- 6.5** In addition, I note that the lighting used for the yard operations of the Hynds Factory Site and Expansion Land (if the rezoning request is successful) could possibly impact on potential sensitive land uses in the future if land surrounding the site were developed into rural residential (or residential) uses. I understand that Hynds is seeking a buffer zone as part of this hearings process to prevent sensitive land uses establishing in close proximity to Hynds' properties, due to concerns with reverse sensitivity effects if residential uses were to establish in close proximity.

## **7. ASSESSMENT OF SKYGLOW EFFECTS OF HYNDS' REZONING PROPOSAL**

- 7.1** The effect of skyglow is additive. In this instance, lighting at other nearby properties as well as in Pokeno Township also contribute to local skyglow.

- 7.2** In my opinion, the contribution of the anticipated future lighting on the Expansion Land to local skyglow effects will be low-negligible.

## **8. CONCLUSION**

- 8.1** In my opinion, the lighting effects of rezoning part of 62 Bluff Road from Rural to Heavy Industrial will be inconsequential, given it is a relatively small area and it is next to the main Hynds Factory Site.

- 8.2** The exterior lighting within the existing site, which would be used for part of the Expansion Land if the rezoning is approved, is appropriate for the safe working operations of the factory.

- 8.3** The lighting effects at the site boundary (of both the existing Hynds Factory Site and proposed Expansion Land) can comply with the OWDP (refer to Appendix 1) and the Proposed Plan as notified (refer to Appendix 2).

**Laurie Cook**

**17 February 2021**

## Appendix 1: Operative Waikato District Plan – Lighting Rules

### A) WDP – Franklin Section – Part 29B Industrial 2 Zone

#### 29B.5.3 LIGHT SPILL AND GLARE

1. All exterior lighting must be designed, located and at all times directed, screened, adjusted and maintained to ensure that the direct luminance from the lighting shall not exceed:
  - (a) 10 lux (lumens per square metre) at or within the boundary of all affected residential sites between the hours of 10:00pm and 7:00am;
  - (b) 20 lux at or within the boundary of all affected residential sites at all other times when lighting is required.
  
2. For exterior lighting near to any residential zone, and in any other case where the applicant, or the Council is unsure as to the ability of the lighting to comply with these performance standards, the applicant shall provide the Council with a report from a Professional Illumination Engineer confirming that the lighting installation has been designed, installed and aimed in a manner that will ensure compliance with this RULE. In the case of a new installation design, information must be provided at the time of applying for a building consent.

#### *Explanation*

*While sunlight is perceived in a positive way, other artificial sources of light because of quantitative, directional or spectral features can cause annoyance, discomfort, distraction, loss of sleep, loss of amenity or a reduction in the ability to see.*

*The rules reflect the need to control these adverse effects of light spill and glare within residential environments.*

### B) WDP – Franklin Section – Part 35 Aggregate Extraction and Processing Zone;

#### 35.5.13 LIGHTING

Any security or other lighting shall be designed and operated to ensure that it does not cause any direct light spill or disturbing glare for any occupiers of adjoining properties or users of roads.



## Appendix 2: Proposed (Notified) Waikato District Plan – Lighting Rules

### A) Industrial Zone Heavy – Glare and Artificial Light Spill (21.2.4)

P1	Glare and artificial light spill must not exceed 10 lux measured horizontally and vertically within any other site.
RD1	<p>(a) Illumination that does not comply with Rule 21.2.4 P1.</p> <p>(b) Council’s discretion is restricted to the following matters:</p> <ul style="list-style-type: none"> <li>(i) effects on amenity values;</li> <li>(ii) light spill levels on another site;</li> <li>(iii) road safety;</li> <li>(iv) duration and frequency;</li> <li>(v) location and orientation of the light source; and</li> <li>(vi) mitigation measures.</li> </ul>

### B) Rural Zone – Glare and Artificial Light Spill (22.2.2)

P1	<p>(a) Illumination from glare and artificial light spill shall not exceed 10 lux measured horizontally and vertically at the notional boundary on any other site in the Rural Zone; at any road boundary or within any other site in the Residential, Village or Country Living Zones;</p> <p>(b) Rule 22.2.2 P1 (a) does not apply to vehicles used in farming activities and agricultural equipment;</p> <p>(c) Any artificial lighting from vehicles used in farming activities and agricultural equipment shall be operated so that direct or indirect illumination does not create a nuisance to occupants of adjoining or nearby sites.</p>
RD1	<p>(a) Illumination from glare and artificial light spill that does not comply with Rule 22.2.2 P1</p> <p>(b) Council's discretion is restricted to the following matters:</p> <ul style="list-style-type: none"> <li>(i) effects on amenity values;</li> <li>(ii) light spill levels on other sites;</li> <li>(iii) road safety;</li> <li>(iv) duration and frequency;</li> </ul>

	<p>(v) location and orientation of the light source;</p> <p>(vi) mitigation measures;</p> <p>(vii) location and orientation of the light source.</p>
--	--