

MEMORANDUM

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Dear Andrew

Development Application for Oakdale Central Lots 1C, 2B and 3 Cumulative Noise Impact Existing, Currently Proposed and Future Facilities

1 Introduction

SLR Consulting is pleased to provide commentary in relation to the cumulative noise impact associated with the entire Oakdale Central. Four (4) warehouses are currently operating within the Oakdale Central site as presented in **Figure 1**.

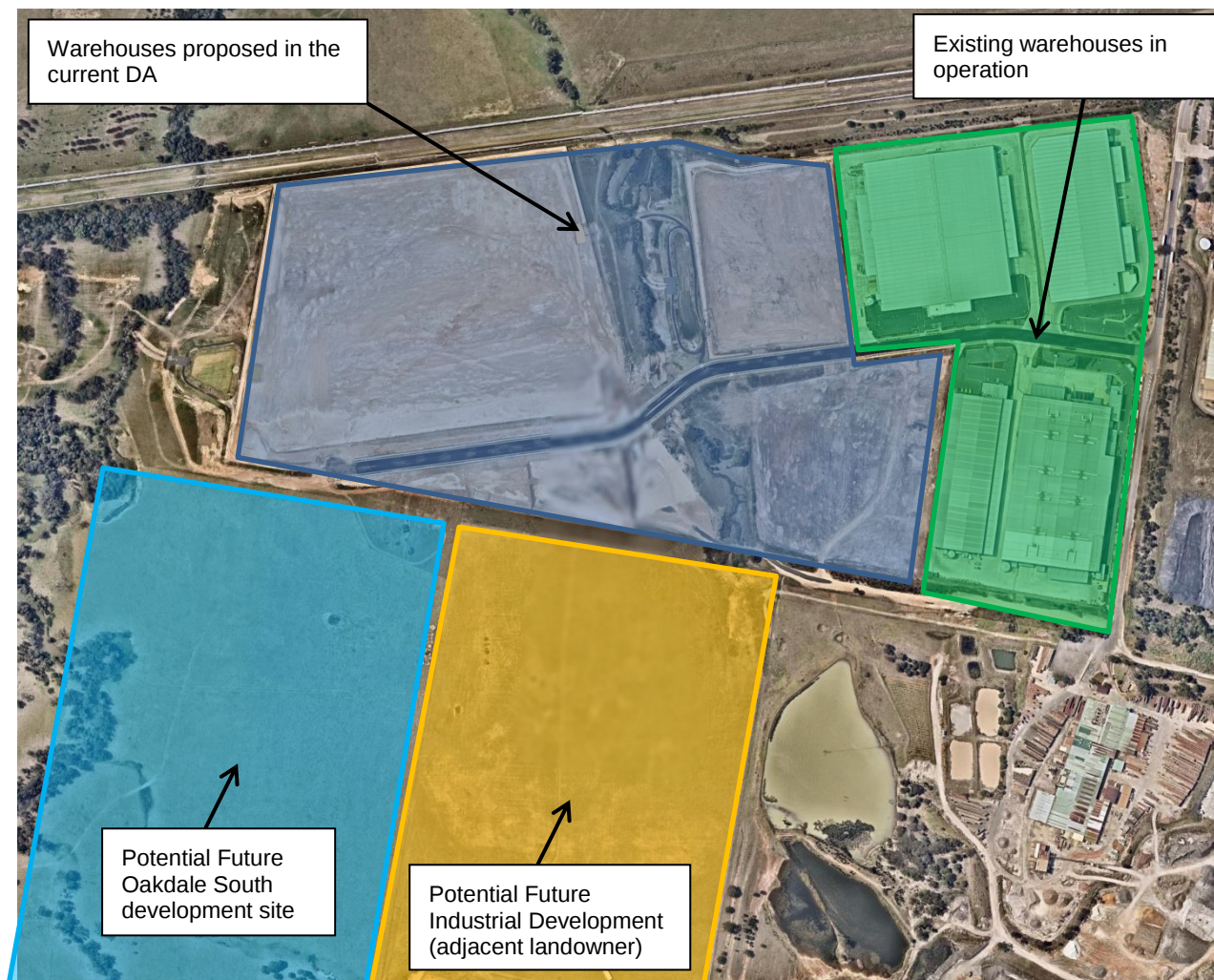
The current Development Application consists of an additional three (3) warehouses on Lots 1C, 2B and 3. Upon completion of these additional warehouses, the development of the entire Oakdale Central site will be regarded as complete. A Noise Assessment for this Development Application was given in SLR report ref 670.10585_Noise_R1 dated 11 October 2013.

However, it is understood that the land adjacent to the Oakdale Central site to the south may potentially also be developed.

This memorandum primarily presents the following:

- Results of noise level measurements associated with the existing operation.
- Results of noise level predictions associated with the currently proposed warehouses.
- Discussion on the cumulative noise impact associated with both the existing and currently proposed warehouses.
- Initial high-level commentary in relation to cumulative noise impact associated with the existing, currently proposed and potential future warehouses.

Figure 1 Aerial Photograph - Existing and Future Developments

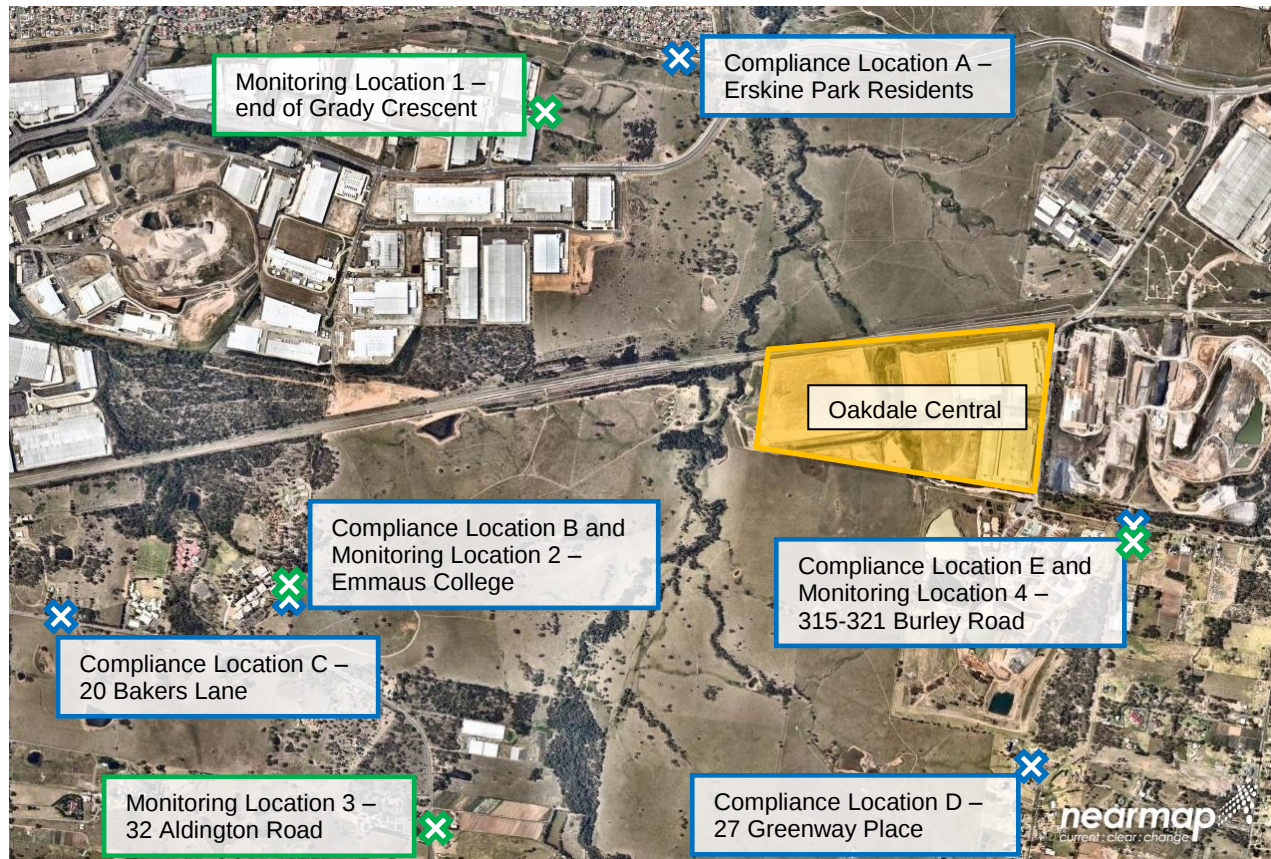


2 Assessment Criteria – NSW Industrial Noise Policy

2.1 Noise Compliance Location

Based on the Concept Plan Approval for the Oakdale Central development, the noise compliance locations and noise monitoring locations used on 15 December 2014 are presented in **Figure 2**.

Figure 2 Concept Plan Compliance Locations and Monitoring Locations – Oakdale Central



Based on baseline noise level measurement conducted at a number of representative locations prior to the commencement of the Oakdale Central development, the operational project specific noise criteria for the Oakdale Central development were determined in accordance to the NSW Industrial Noise Policy and presented in **Table 1**.

Table 1 Project Specific INP Noise Criteria (based on 2008 Noise Monitoring Data)

2008 Noise Monitoring Location	Representative of Compliance Location	Period	Measured Rating Background Level (RBL)	Intrusiveness Criteria LAeq(15minute) (RBL plus 5 dB)	Acceptable Amenity Criteria LAeq(Period)	Project Specific Noise Criteria LAeq(15minute)
Lenore Lane	A – Erskine Park Residents	Daytime	36	41	55	41
		Evening	33	38	45	38
		Night	30	35	40	35
Emmaus College	B – Emmaus College	When in use	32 – 37	N/A	45 (35 internal)	45
Emmaus College	C – 20 Bakers Lane	Daytime	37	42	55	42
		Evening	35	40	45	40
		Night	32	37	40	37

2008 Noise Monitoring Location	Representative of Compliance Location	Period	Measured Rating Background Level (RBL)	Intrusiveness Criteria LAeq(15minute) (RBL plus 5 dB)	Acceptable Amenity Criteria LAeq(Period)	Project Specific Noise Criteria LAeq(15minute)
32 Aldington Road	-	Daytime	33	38	55	38
		Evening	33	38	45	38
		Night	33	38	40	38
315-321 Burley Road	D – 27 Greenway Place	Daytime	37	42	60	42
		Evening	37	42	50	42
	E - 315-321 Burley Road	Night	37	42	45	42

3 Noise Survey – Existing Operation (December 2014)

Noise measurements were undertaken at all four compliance locations on 15 December 2014 during the expected time of peak operation (11 am to 2 pm) to quantitatively determine the current noise levels. Noise measurements were conducted a B&K 2250 1/3 octave band, integrating sound level meter (S/N 3004635). The instrument calibration was checked before and after the measurements, with the variation in calibrated levels not exceeding the acceptable variation of ± 0.5 dB (in accordance with AS 1055).

The acoustic instrumentation (SLM and calibrator) employed throughout the monitoring programme was designed to comply with the requirements of AS IEC 61672.1-2004 *Electroacoustics - Sound Level Meters* and carry current NATA or manufacturer calibration certificates.

The results of the noise measurements are tabulated in **Table 2**.

Table 2 Noise Measurement Results – Existing Operation (15 December 2014)

Monitoring Location	Representative of Compliance Location	Time (Hours)	Primary Noise Descriptor (dB re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dB
			LAmix	LA1	LA10	LA90	LAeq	
Location 1 Grady Crescent	A – Erskine Park Residents	11:41 26°C 2.5 m/s NNE	73	66	54	44	54	Aircraft ~ 48 to 51 dBA Industry ~ 47 to 61 dBA Traffic ~ 45 to 58 dBA Truck activity ~ 63 to 72 dBA Local Traffic ~ 53 to 73 dBA Comments Oakdale Central operations not Audible
			Estimated Operational LAeq(15minute) contribution <30 dBA.					
Location 2 Emmaus College	B – Emmaus College	12:23 26°C 3 m/s N	63	56	53	39	48	Plane ~ 44 to 63 dBA Lawn Mower ~ 54 to 56 dBA Cow ~ 47 dBA Birds ~ 42 to 45 dBA Children ~ 33 to 44 dBAQ Other Industry ~ <30 dBA Insects ~ <30 dBA Traffic ~ 42 to 47 dBA Comments Oakdale Central operations not Audible
	C – 20 Bakers Lane		Estimated Operational LAeq(15minute) contribution <30 dBA.					

Monitoring Location	Representative of Compliance Location	Time (Hours)	Primary Noise Descriptor (dB re 20 µPa)					Description of Noise Emission and Typical Maximum Levels LAmax – dB
			LAmax	LA1	LA10	LA90	LAeq	
Location 3 32 Aldington Road	-	12:53 27°C 2.5 m/s NNE	69	61	50	38	49	Plane ~ 46 to 57 dBA Resi Gardening ~ 44 to 46 dBA Birds ~ 50 dBA Resi Tractor ~ 45 to 58 dBA Traffic ~ 66 to 69 dBA Comments Oakdale Central operations not Audible
Estimated Operational LAeq(15minute) contribution <30 dBA.								
Location 4 315-321 Burley Road, Horsley Park	D – 27 Greenway Place E - 315-321 Burley Road	11:08 25°C 1.9 m/s N	62	55	51	44	48	Birds ~ 60 dBA Plane ~ 53 to 62 dBA Insects ~ 47 dBA 'Bang' NE industry ~ 52 to 56 dBA Industry hum SW ~ 46 to 52 dBA Other Industry Trucks NW~ 46 to 51 dBA Comments Oakdale Central operations not Audible
Estimated Operational LAeq(15minute) contribution <34 dBA.								
Location 4 315-321 Burley Road, Horsley Park	D – 27 Greenway Place E - 315-321 Burley Road	13:48 27°C 4 m/s SE	70	57	49	41	47	Plane ~ 45 to 60 dBA Birds ~ 48 to 59 dBA Industry Bang NE ~ 55 dBA Other Industry Trucks NW~ 42 to 50 dBA Industry hum SW ~ 40 to 43 dBA Local Traffic ~ 61 to 70 dBA Race cars ~ 30 to 36 dBA Distant Traffic ~ 38 dBA Comments Oakdale Central operations faintly audible in lulls of ambient background noise - air release ~ <30 dBA - rev tone ~ <30 dBA
Estimated Operational LAeq(15minute) contribution <31 dBA.								

4 Cumulative Noise Impact – Existing and Currently Proposed Warehouses

Based on noise measurement results presented in **Table 2** and noise prediction results for the currently proposed warehouses (Lots 1C, 2B and C) reported in SLR report reference *670.10585 Noise R1* dated 11 October 2013, the potential cumulative noise impact associated with both the existing and currently proposed development is presented in **Table 3**.

Table 3 Cumulative Noise Impact Assessment – Existing and Currently Proposed Facilities

Compliance Location	INP Assessment Criteria	LAeq(15minute) Sound Pressure Level, dB		
		Existing Operation	Currently proposed (Lots 1C, 2B and 3, under calm weather conditions)	Cumulative (Existing + currently proposed)
A – Erskine Park Residents	41 (day)			
	38 (evening)	<30	33	<35
	35 (night)			
B – Emmaus College	45	<30	33	<35
	(when in use)			
C – 20 Bakers Lane	42 (day)			
	40 (evening)	<30	32	<34
	37 (night)			
D – 27 Greenway Place	42	<34	36	<38
	(day, evening and night)			
E - 315-321 Burley Road	42	<34	38	<39
	(day, evening and night)			

5 Discussion

5.1 Existing and Proposed Operations

Based on observations made at the compliance locations on 15 December 2014 during expected peak operation period, noise associated with the existing operation within Oakdale Central was generally not audible at the monitoring locations. The existing ambient noise environment at the compliance locations was generally dominated by items not related to the operation of Oakdale Central.

Based on results provided in **Table 3**, the cumulative noise impact of existing operation and currently proposed warehouses within Oakdale Central was determined to comply with the assessment criteria determined in accordance to the NSW Industrial Noise Policy.

5.2 Potential Future Operations

It is understood that the site directly south of Oakdale Central (named Oakdale South) will potentially be developed in the future (subject to a separate application). No noise assessment has been undertaken for this potential development. However, based on the results provided in **Table 3**, additional development is still expected to be possible before reaching the noise limits based on the NSW INP assessment criteria.

For example, at the most impacted receiver at Compliance Location E (Burley Road), the estimated cumulative noise impact associated with existing and currently proposed development within Oakdale Central is <39 dBA, which is >3 dB lower than assessment criteria. Theoretically, a doubling of the number of noise sources equates to an increase in noise level of 3 dB assuming that any new sources have equal or lower sound pressure level to the existing sources.

This implies that any potential future development could be allowed to have an equal noise contribution to the current cumulative noise levels without exceeding the noise limit based on the INP assessment criteria.

Further noise study is recommended as soon as the detail of possible future development is better understood.

I trust the preceding provides sufficient information for your current requirements. Should you require any further information please do not hesitate to contact me on 0417 903 521.

Yours sincerely

A handwritten signature in purple ink, appearing to be 'Zhang Lai', with a stylized, flowing script.

ZHANG LAI
Senior Consultant