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Proposed Residential Development
Avva
19 Anne Avenue
Broadbeach

CONSTRUCTION NOISE MANAGEMENT PLAN






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Maryanne Development Pty Ltd

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1. Introduction

This report is in response to a request by Maryanne Development Pty Ltd for a construction noise management plan for the proposed residential development to be located 19 Anne Avenue, Broadbeach. This report provides a noise management plan including recommendations during excavation and construction of the proposed development.

2. Site Description

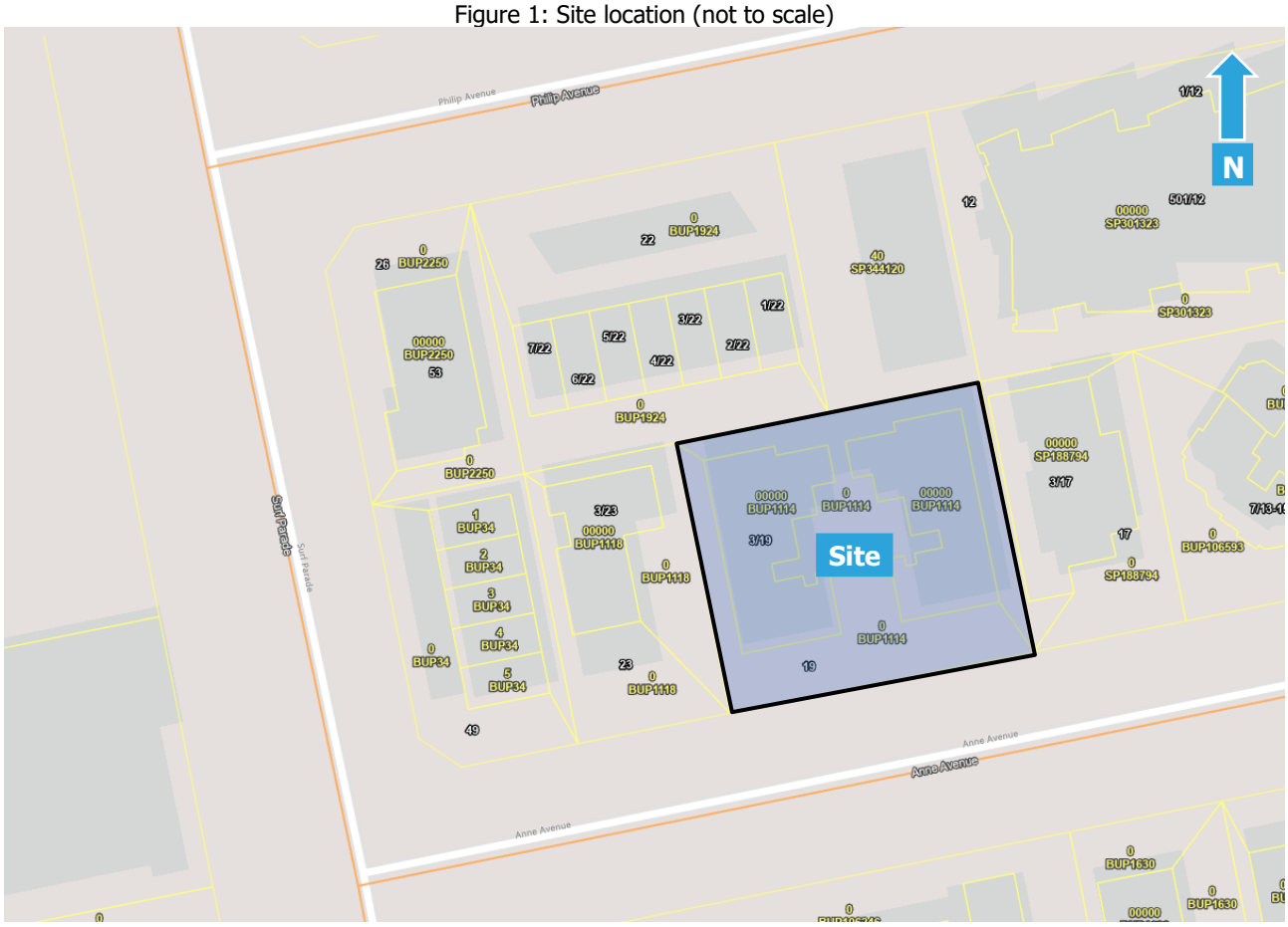
2.1 Site Location

The site is described by the following:

19-21 Anne Avenue, Broadbeach
Lot 0 on BUP1114

Refer to Figure 1 for site location.

Figure 1: Site location (not to scale)



A site survey was conducted on 1 December 2025 and identified the following;

a) The site is currently occupied by a two-storey residential building and will be demolished to make way for the proposed development.
b) Residential land uses bound the site to the east, north and west.
c) Anne Avenue bounds the site to the south and separates the site from residential land uses.

2.2 Proposal

The proposal is to construct a 32-storey residential building. The construction works are expected to consist of the following;

- Contiguous Piling
- Concrete pouring
- Power tools
- Waste collection
- Compressor operation
- Hoist
- Truck movements
- Crane operations
- Dewatering

The allowable hours of construction works are 6.30am to 6.30pm Mondays to Saturdays and no work on Sundays or public holidays.

2.3 Acoustic Environment

The site and surrounding area is primarily affected by surf and local traffic noise.

3. Potentially Affected Receivers

3.1 Receiver Locations

The nearest noise sensitive receiver locations were identified as follows;

1. A two-storey residential building bounds the site to the west at 23 Anne Avenue.
2. A five-storey residential building is located adjacent to the eastern site boundary at 17 Anne Avenue.
3. Two-storey residential buildings bound the site to the north at 20-22 Philip Avenue.
4. A four-storey short-term accommodation building is located to the south of the site at 20-26 Anne Avenue.

The locations were chosen as being representative of the nearest noise sensitive receivers to the proposed development. Refer to Figure 2 for these locations.

Figure 2: Receivers and noise monitoring locations



3.2 Unattended Noise Monitoring

Construction noise from 8 George Avenue (The Sterling Broadbeach) was found to be audible at all the nearby receivers to the site. To minimise potential construction noise affecting the monitoring data previous ambient noise monitoring that was not affected by construction noise and has been utilised. The location of the monitor is detailed in the following sections.

3.2.1 Ambient Noise Levels

The Rion NL42 environmental noise monitor was previously placed at 25 George Avenue to measure the ambient noise levels. The monitor was placed in this location as it was considered representative of the nearest residential receivers. The monitor was located in a free field position with the microphone approximately 1.4 metres above ground surface level. The noise monitor was set to record noise levels between 16 and 23 May 2018.

The environmental noise monitor was set to record noise levels in "A" Weighting, Fast response using 15-minute statistical intervals. Ambient noise monitoring was conducted generally in accordance with Australian Standard AS1055:2018 *Acoustics – Description and measurement of environmental noise*.

For the unattended noise monitoring location refer to Figure 2.

4. Existing Noise Levels

The following table present the measured noise levels from the unattended noise survey. Any periods of inclement weather or extraneous noise were omitted from the measured data prior to determining the results.

4.1 Ambient noise levels

The measured background noise levels from the unattended noise survey are as follows;

Table 1: Measured ambient noise levels – all time periods

Day	Date	L90 dB(A)		
		Day 7am – 6pm	Evening 6pm – 10pm	Night 10pm – 7am
Wednesday	16/05/18	50	47	44
Thursday	17/05/18	50	47	44
Friday	18/05/18	50	50	46
Saturday	19/05/18	50	51	45
Sunday	20/05/18	47	45	42
Monday	21/05/18	48	44	43
Tuesday	22/05/18	47	45	43
Wednesday	23/05/18	48	-	43
Overall value		49	47	44

Refer to the appendix for a graphical representation of the noise monitoring.

5. Noise Standards and Codes

We provide the following summary of noise standards and codes that may be applicable to the construction works at the site, this includes;

- Environmental Protection Act 1994 (effective 1 January 2009)
- Environmental Protection Regulation 2008 (effective July 2009)
- Environmental Protection (Noise) Policy 2008 (effective 1 January 2009)
- DEHP Guideline - Planning For Noise Control January 2016
- Australian Standard AS2107 – *Acoustics-Recommended Design Sound Levels and Reverberation Times for building interiors*
- Australian Standard AS2436 – *Guide to noise control on construction, maintenance and construction sites*.

The relevance of each of these is as follows;

Table 2: Application of codes and regulations

Code/standard title (abbreviated)	Applicable to construction noise?	Sets specific noise goals?	Comments
Environmental Protection Act 1994	Yes	No	Applies time restrictions to construction activities
Environmental Protection Regulation 2008	Not mentioned	No	Prescriptive general methodology only
Environmental Protection (Noise) Policy 2008	Not mentioned	Yes	-
DEHP Guideline - Planning For Noise Control 2016	Not specifically stated	Yes	Term 'construction' only mentioned once however the guideline is not directly applicable to sources with dominating frequencies below 200Hz
Australian Standard AS2107	No	Yes	Not relevant to construction noise
Australian Standard AS2436	Yes	No	Applicable to noise associated with construction

It can be seen from the table that there are no specific noise criteria for building construction works contained in the current Queensland policies and regulations.

Review of each of the codes and standards listed above is provided in the following sections of this report.

5.1 Australian Standard AS2107

Australian Standard 2107-2016 *Acoustics-Recommended design sound levels and reverberation times for building interiors* lists the desired noise levels for residential buildings. This standard includes the assessment of building services noise (i.e. mechanical services, hydraulics etc), and building components that exclude noise external to the building (e.g. traffic noise, industrial noise).

Section 2 *Application*, specifically states that the standard is not intended either for the assessment or prescription of acceptable noise levels from transient or variable noises such as construction.

5.2 Queensland Environmental Protection

This section refers to:

- Environmental Protection Act 1994 (effective 1 January 2009)
- Environmental Protection Regulation 2008 (effective July 2009)
- Environmental Protection (Noise) Policy 2008 (effective 1 January 2009)
- DEHP Guideline - Planning for Noise Control 2016

There are no specific noise limits for construction noise contained in these policies. The main focus of the policy is to stipulate acceptable hours for building works.

The specific restrictions contained in the Environmental Protection Act 1994 are as follows;

Division 3 Default noise standards
440R Building work

> *(1) A person must not carry out building work in a way that makes an audible noise—*
> > *(a) on a business day or Saturday, before 6.30a.m. or after 6.30p.m; or*
> > *(b) on any other day, at any time.*
>
> *(2) The reference in subsection (1) to a person carrying out building work—*
> > *(a) includes a person carrying out building work under an owner-builder permit; and*
> > *(b) otherwise does not include a person carrying out building work at premises used by the person only for residential purposes.*

Therefore, for building works occurring during the hours Monday to Saturday, 6.30 am to 6.30pm there are no noise restrictions. Work occurring outside of these hours or on Sunday or public holidays must not cause audible noise at any receiver location near the site.

In summary, works may be conducted during the specified hours without noise limitation being placed on the site. Noise occurring outside the acceptable work hours shall not be audible at any receiver locations.

5.3 Australian Standard AS2436

Australian Standard AS2436-2010 *Guide to noise control on construction, maintenance and construction sites* provides guidance in noise control in respect of engineering construction, maintenance and construction works. This includes guidance in investigation and identification of noise sources, measurement of sound and assessment, with a view to appropriate planning of measures for noise control.

AS2436 also contains a table of typical sound levels from construction plant and equipment, and a discussion of the effectiveness of acoustic treatments and acoustic screens and enclosures.

Section 1.5 Regulatory Requirements states that the legislation for the control of noise on construction, maintenance and construction sites is generally the responsibility of the relevant State government or local Council body.

5.4 Recommended construction noise assessment criteria

As there are no specific criteria for the assessment of construction noise on the surrounding residents, we recommend applying management controls to minimise any potential noise impact on surrounding residents. This may be achieved in conjunction with hours of operation as specified in Section 5.2.

It should be noted that if construction work continues outside the specified hours all activities are required to be inaudible at any nearby receivers in accordance with the criteria in Section 3.2.

6. Predicted Noise Levels

Predicted noise associated with the construction at the site has been assessed based on the source noise levels. The calculations assume that the activities are located at the closest working position within the development site to each receiver location in each case.

It is noted that the calculations assume that all nominated noise sources are operating simultaneously. In practice, this will generally not occur as major processes will be either spread over the site or occur on different days. The calculations also assume no shielding of noise due to topographic factors or buildings, whereas in practice additional reductions would occur such as topographic screening to earthworks etc.

Based on the supplied preliminary program, we have assessed the following construction phases:

1. Basement construction
2. Tower construction

For the basement construction, the results of the calculations show a predicted maximum noise level up to 94dB(A) Leq 15min at the closest residential receiver locations 2 and 3 (17 Anne Avenue and 20-22 Philip Avenue) assuming all noise sources occur simultaneously.

For the tower construction, the results of the calculations show a predicted typical maximum noise level of up to 75dB(A) Leq 15min at the closest residential receiver locations 1 and 2 (17 and 23 Anne Avenue) assuming all noise sources occur simultaneously.

In practice, due to staggered construction schedules, actual noise levels are likely to be below the predicted levels at most times. Due to staggered construction schedules and acoustic shielding by the building itself, actual construction noise levels are likely to be well below the predicted levels for the majority of the time. For example excavator, piling, bobcat, hand tools, concrete pump are highly unlikely to be used simultaneously at the same location within the site as this is generally not possible in practice, hence noise predicted can be considered as conservative.

The predicted results at the receiver locations are as follows.

6.1 Basement Construction

Table 3: Predicted noise levels Leq 15min – Earthworks

Receiver	Description	Source Leq@1m dB(A)	Correction dB(A)*	Corrected Leq@1m dB(A)	No. of events per 15min Day	Duration per event	Distance (m)	Dist atten. @-6dB/dd	LAeq adj,T ext. dB(A) Day	LAeq adj,T int. dB(A) Day
	Receivers 1. 23 Anne Ave (W) 2. 17 Anne Ave (E) 3. 20-22 Philip Ave (N) 4. 20-26 Anne Ave (S)									
1	Criteria									
	Excavator small	92		92	1	900	7	-17	75	65
	Concrete truck	95		95	1	900	19	-26	69	59
	Concrete pump	94	2	96	1	900	16	-25	71	61
	Backhoe/bobcat	98		98	1	900	7	-17	81	71
	Compressor large (silenced)	85	2	87	1	900	9	-20	67	57
	Piling (bored)	103	5	108	1	480	4	-13	92	82
	Truck passby 2	96		96	1	5	16	-25	48	38
	Truck reverse alarm	92	5	97	1	30	19	-26	56	46
	Hand tools (electric)	94		94	10	5	8	-19	62	52
	Dewatering	92	5	97	1	900	37	-32	65	55
	Total								93	83
2	Criteria									
	Excavator small	92		92	1	900	7	-17	75	65
	Concrete truck	95		95	1	900	29	-29	66	56
	Concrete pump	94	2	96	1	900	29	-29	67	57
	Backhoe/bobcat	98		98	1	900	7	-17	81	71
	Compressor large (silenced)	85	2	87	1	900	5	-14	73	63
	Piling (bored)	103	5	108	1	480	4	-12	93	83
	Truck passby 2	96		96	1	5	13	-22	51	41
	Truck reverse alarm	92	5	97	1	30	13	-22	60	50
	Hand tools (electric)	94		94	10	5	8	-18	63	53
	Dewatering	92	5	97	1	900	6	-16	81	71
	Total								94	84
3	Criteria									
	Excavator small	92		92	1	900	7	-17	75	65
	Concrete truck	95		95	1	900	43	-33	62	52
	Concrete pump	94	2	96	1	900	35	-31	65	55
	Backhoe/bobcat	98		98	1	900	6	-16	82	72
	Compressor large (silenced)	85	2	87	1	900	6	-16	71	61
	Piling (bored)	103	5	108	1	480	4	-12	93	83
	Truck passby 2	96		96	1	5	20	-26	47	37
	Truck reverse alarm	92	5	97	1	30	20	-26	56	46
	Hand tools (electric)	94		94	10	5	7	-17	65	55
	Dewatering	92	5	97	1	900	28	-29	68	58
	Total								94	84
4	Criteria									
	Excavator small	92		92	1	900	26	-29	63	53
	Concrete truck	95		95	1	900	19	-26	69	59
	Concrete pump	94	2	96	1	900	27	-29	67	57
	Backhoe/bobcat	98		98	1	900	26	-28	70	60
	Compressor large (silenced)	85	2	87	1	900	26	-28	59	49
	Piling (bored)	103	5	108	1	480	25	-28	77	67
	Truck passby 2	96		96	1	5	18	-25	48	38
	Truck reverse alarm	92	5	97	1	30	18	-25	57	47
	Hand tools (electric)	94		94	10	5	25	-28	53	43
	Dewatering	92	5	97	1	900	31	-30	67	57
	Total								79	69

*Correction due to tonality and impulsiveness as per AS1055:2018.

As previously stated, the listed noise sources may not all operate simultaneously, therefore the predicted noise levels may be higher than occurs in practice.

6.2 Building construction

Table 4: Predicted noise levels Leq 15min - Building Construction

Receivers
1. 23 Anne Ave (W)
2. 17 Anne Ave (E)
3. 20-22 Philip Ave (N)
4. 20-26 Anne Ave (S)

Receiver	Description	Source Leq@1m dB(A)	Correction dB(A)*	Corrected Leq@1m dB(A)	No. of events per 15min Day	Duration per event	Distance (m)	LAeq adj,T ext. dB(A) Day	LAeq adj,T int. dB(A) Day
1	Criteria								
	Concrete truck	95		95	1	900	19	69	59
	Concrete pump	94	2	96	1	900	16	71	61
	Crane	97		97	1	240	21	64	54
	Hand tools (electric)	94		94	10	5	8	62	52
	Compressor large (silenced)	85	2	87	1	900	9	67	57
	Truck passby 2	96		96	1	5	16	48	38
	Truck reverse alarm	92	5	97	1	30	19	56	46
	Waste collection (collection of industrial waste bin)	93		93	1	40	26	50	40
	Forklift unloading	82	2	84	1	240	26	49	39
	Hoist	85		85	1	450	16	57	47
	Total							75	65
2	Criteria								
	Concrete truck	95		95	1	900	29	65	55
	Concrete pump	94	2	96	1	900	29	67	57
	Crane	97		97	1	240	19	66	56
	Hand tools (electric)	94		94	10	5	8	63	53
	Compressor large (silenced)	85	2	87	1	900	5	73	63
	Truck passby 2	96		96	1	5	13	51	41
	Truck reverse alarm	92	5	97	1	30	13	60	50
	Waste collection (collection of industrial waste bin)	93		93	1	40	25	52	42
	Forklift unloading	82	2	84	1	240	25	50	40
	Hoist	85		85	1	450	25	54	44
	Total							75	65
3	Criteria								
	Concrete truck	95		95	1	900	43	62	52
	Concrete pump	94	2	96	1	900	35	65	55
	Crane	97		97	1	240	17	67	57
	Hand tools (electric)	94		94	10	5	7	65	55
	Compressor large (silenced)	85	2	87	1	900	6	71	61
	Truck passby 2	96		96	1	5	20	47	37
	Truck reverse alarm	92	5	97	1	30	20	56	46
	Waste collection (collection of industrial waste bin)	93		93	1	40	41	47	37
	Forklift unloading	82	2	84	1	240	41	46	36
	Hoist	85		85	1	450	29	53	43
	Total							74	64
4	Criteria								
	Concrete truck	95		95	1	900	19	69	59
	Concrete pump	94	2	96	1	900	27	67	57
	Crane	97		97	1	240	23	64	54
	Hand tools (electric)	94		94	10	5	25	53	43
	Compressor large (silenced)	85	2	87	1	900	26	59	49
	Truck passby 2	96		96	1	5	18	48	38
	Truck reverse alarm	92	5	97	1	30	18	57	47
	Waste collection (collection of industrial waste bin)	93		93	1	40	18	54	44
	Forklift unloading	82	2	84	1	240	18	53	43
	Hoist	85		85	1	450	31	52	42
	Total							73	63

*Correction due to tonality and impulsiveness as per AS1055:2018.

As previously stated, the listed noise sources may not all operate simultaneously, therefore the predicted noise levels may be higher than occurs in practice.

7. Recommendations - Noise

The following general acoustic treatments and management principles are recommended for the project:

1. Allowable construction hours as follows:

   Monday to Saturday inclusive, from 6.30am to 6.30pm.
   No construction work to take place on Sundays or Public Holidays.
2. Workers or delivery trucks do not congregate outside the site before 6.30am.
3. Based on the calculations the dewatering plant may require acoustic treatment.
4. Assign the task of managing noise emissions to a person (the 'responsible person') that is likely to be present on-site most of the time that activity is occurring (usually the Site Manager). This person would be responsible for handling noise complaints, and ensuring that work does not commence before the specified allowable times. The name and contact details of the 'responsible person' should be displayed outside the principal construction office.
5. If complaints arise regarding noise, the complaint will be directed to the 'responsible person', who will determine the source of the noise, and take immediate steps to investigate further or mitigate the noise as required. This may involve moving the noise source further away from affected premises, replacing the equipment, installing high performance silencers, or in some cases, engaging a qualified acoustic consultant to provide specialist control advice.
6. The Responsible Person should notify the adjacent residential premises of the intention to commence work that may cause adverse impacts on surrounding residents. If plant is to be operated in close proximity to residential premises, the Responsible Person must advise the occupants of the premises the length of time that the plant will be in operation proximate to the property boundary.
7. Any moveable plant (e.g. compressors) should be located as far as is practical from the adjacent residential premises.
8. The Responsible Person maintain a record of complaints, which records the following details (refer to the example complaint record sheet in the appendix to this plan):
   - The time and date of lodgement of the complaint;
   - The name and telephone number of the complainant;
   - The nature of the complaint, including a description of the noise (e.g. likely noise source, duration of the noise event - is the noise continuous, or of a short duration);
   - The outcome of the investigation.
9. If a complaint is raised regarding a particular piece of plant, the plant shall be inspected for working condition, with particular attention given to the condition of engine covers or enclosures, and exhaust system. If machinery is in good condition, a high performance silencer should be installed.

The noise management plan is described in more detail in Section 7.1 with recommendations for noise monitoring (where necessary) provided in Section 7.2.

7.1 Construction Noise Management Plan

The overall aim of the noise management plan is to provide a program of actions and practices to minimise potential noise annoyance associated with onsite activities impacting adjacent properties.

Site management are to elect a "Responsible Person" who is responsible for implementation of the Noise Management Plan to ensure the aims and objectives are achieved. The "Responsible Person" should ensure actions are being carried out by management, staff and subcontractors and that it is reviewed at appropriate times.

Where possible, performance indicators should be used to ensure noise annoyance from onsite activities is minimised. The most apparent performance indicator is the number of complaints made with regards to noise annoyance.

The effectiveness and time spent to act and remediate noise issues, if complaints are made, is also considered a performance indicator for the site.

The "Responsible Person" should also document comments by others on the performance of the Noise Management Plan and provide his/her own performance overview during reviews of the plan. The various elements, aims and actions of the noise management plan are as follows;

7.1.1 All activities

Element	Operation of Construction Site
Aim	To limit the times of potentially noisy onsite activities
Action	Allowable construction hours as follows: Monday to Saturday inclusive, from 6.30am to 6.30pm. No construction work to take place on Sundays or Public Holidays. Workers or delivery trucks do not congregate outside the site before 6.30am.

7.1.2 Implementation of Management Plan

Element	Responsible Person
Aim	Provide a personnel contact for the Noise Management Plan
Action	The builder is to elect a "Responsible Person" who is onsite during construction hours and who has sufficient time and authority to implement the management plan. The Responsible Person will be required to receive, document and respond in an appropriate manner to complaints made against the centre with regards to noise. The Responsible Person is to keep record of performance indicators and feedback from management, staff, subcontractors and adjacent noise receivers as appropriate. The person would also be responsible for documenting changes/modifications to the Noise Management Plan.

7.1.3 Active Involvement

Element	Responsible Person
Aim	All management, staff and sub-contractors actively support and implement the noise management plan.
Action	The management, staff and Responsible Person should show active support and implementation for the management plan so that all are aware of the importance of the plan. Notify staff and subcontractors of the importance of the management plan. Actions and practices of the management plan, where relevant, should also be placed in appropriate locations. Responsible Person to implement notification new staff or subcontractors with respect to the Noise Management Plan.

7.1.4 Deliveries

Element	Deliveries
Aim	Minimise noise impacts from vehicle activities delivering to the site.
Action	Deliveries only between 6.30am to 6.30pm Mondays to Saturdays. No deliveries on Sundays or Public Holidays. Delivery trucks do not congregate outside the site before 6.30am.

7.1.5 Onsite Mechanical Plant

Element	New equipment
Aim	Ensure new onsite equipment does not cause annoyance to noise sensitive receivers.
Action	All onsite mechanical plant must be designed and installed to comply with GCCC and state noise requirements.

7.1.6 Dewatering

Element	Dewatering
Aim	Ensure dewatering does not cause annoyance to noise sensitive receivers.
Action	A review of the plant and attenuation is recommended once the type and location of the plant is known.

7.1.7 Complaints

Element	Response to complaints
Aim	Provide a friendly and immediate response to complaints.
Action	Occupants of surrounding commercial premises should be provided with a telephone number for the "Responsible Person" in the event of a noise complaint. If a complaint is made, the "Responsible Person" responds to it in an appropriate and friendly manner and investigates the source of the complaint, and takes action to immediately reduce the noise level, if it is reasonable complaint. The "Responsible Person" maintains a record of complaints, which records the following details (refer to the example noise complaint record sheet): -The time and date of lodgement of the complaint; -The address, name and telephone number of the complainant; -The nature of the complaint, including a description of the noise (e.g. likely noise source, duration of the noise event - is the noise continuous, or of a short duration); If the complaint is on-going, an investigation by a qualified acoustical consultant may be necessary to determine if the complaint is bona-fide (i.e. noise is occurring beyond the limits set out in the approved acoustic assessment), and if so, recommend noise controls to achieve the approved noise limits. In cases where a compliant has been determined to be bona-fide, the "Responsible Person" should contact the complainant (if the complainant wishes) to advise on noise control measures, if any, adopted to reduce the noise impact. The noise control measures may include behavioural or physical, or a combination of the two.

7.1.8 Review

Element	Schedule for the Review Process
Aim	To review the incidents/ complaints register and to ensure the Noise Management Plan remains relevant to the operations/activities of the site.
Action	Management is to review the incident/complaints register on a regular basis (at least fortnightly) to determine any common or recurring issues to be addressed. The plan should be reviewed if processes or activities onsite are change/modified or new activities are introduced. The plan should also be reviewed if noise complaints are being made with regards to a single activity or type of noisy activity occurring onsite. Document all changes/modifications to the Noise Management Plan.

7.2 Construction noise monitoring

If required, short-term operator-attended noise measurements will be suitable for investigating 'spot-checks' of noise complaints in most situations. The methodology must establish the difference between the ambient noise level and the noise source being investigated and check for compliance.

7.2.1 Equipment

Sound level meters must have accuracy at least equivalent to a Type 1 meter, as described in Australian Standard AS1259. The sound level meter must be fitted with a windshield and must have a current laboratory calibration certificate or label in accordance with calibration requirements outlined in AS1259 and AS2659. Equipment should also be calibrated in the field in accordance with these standards.

The sound level meter must be capable of L_{eq} measurement and statistical L_n measurement (e.g. L_{10}, L_{90} etc), using the broadband 'A' scale frequency weighting.

7.2.2 Parameters

For measurement of ambient noise (without site noise), the sound level meter must be set to the following parameters;

- 15 minute measurement duration.
- 'Fast' time response.
- 'A' frequency weighting.
- Broadband spectrum (when available on a sound meter).

The measured descriptors of ambient noise are background noise $L_{A90,15min}$ and $L_{Aeq,15min}$.

For measurement of noise from construction activities at the site, the sound level meter must be set to the following parameters;

- 'Fast' time response.
- 'A' frequency weighting.
- Broadband spectrum (when available on a sound meter).

The measured descriptors of site noise should include (when available on a sound meter); L_{A90}, L_{Aeq}, L_{A10}, L_{A1}, L_{pA}.

Measurement duration may change depending on the duration of each relevant source.

7.2.3 Procedure for measuring noise

7.2.3.1 Where to measure noise

Noise should be measured at the affected receiver locations. Typically this would be an outdoor location in the most exposed position in a receivers' yard. The address of locations for assessment should be those locations where complaints have been received.

The sound level meter should be held at arm's length or set up on a tripod so the microphone is 1.2 to 1.5 metres above the ground. Where possible the measurement position should be 3 to 5 metres from walls, buildings and other reflecting surfaces.

The location of vegetation also needs to be considered, because noise levels can be increased locally by even a light breeze rustling leaves. Noise due to wind in vegetation can make accurate measurement difficult. Where possible, move away from nearby plants if rustling noise is present.

7.2.3.2 When to measure ambient noise

Ambient noise should be measured when it is representative of minimum levels that would occur during the time the activity would typically be conducted. Suitable times may include;

- Prior to commencement of daily activities.
- During smoko or lunchbreak.
- On RDO's (rostered days off).
- After completion of daily activities.

Ideally, a number of ambient noise measurements should be taken at various times of day. Ambient noise measurement should only be done at times or locations unaffected by noise from the site.

7.2.3.3 When to measure noise from construction

Measurements of construction noise should be taken at the time(s) when the noise is representative of the current maximum level of noise emanating from the site, or at times when complaint has been received.

7.2.3.4 What to avoid

The following conditions shall be avoided during the noise assessment;

- Average wind speed (at the microphone height) greater than 5m/s (approximately 20km/h). Typically at a wind speed of 5 m/s, leaves and branches would be in constant motion and the wind would extend a small flag.
- Rain periods (if intermittent, any affected data can be excluded).
- Other extraneous noise, such as noisy vehicle passby etc.
- Noise such as talking or physically bumping the sound level meter in a manner that will affect the readings.

7.2.3.5 Steps for measurement

The steps for performing a noise measurement are as follows;

1. Calibrate the sound level meter before commencing noise measurements. The sound pressure level shown on the meter should match the stated sound pressure level for the calibrator being used. The equipment should not vary by more than 1 dB. If it has then the measurements may be invalid.
2. Ensure the meter is set to 'Fast' time weighting and 'A' frequency weighting. Descriptors include L_{A90}, L_{Aeq}, L_{A10}, L_{A1}, LpA.
3. Measure the ambient noise level continuously for 15 minutes (where possible), excluding all distinct extraneous noises. If extraneous noise is present, pause the meter when this occurs or choose another measuring time or restart the measurement at another location. If more than one valid noise measurement of the ambient noise for a location is obtained, use the lowest level as the ambient noise level. Note the $L_{A90,15min}$ value and other relevant values as described above. Where it is not possible to continuously measure over a 15-minute period, then note the duration of the measurement.

4. Measure the noise emanating from the site, excluding all distinct extraneous noises. Note the duration of the measurement. Note the relevant measured values and description of the types of noise that were audible/measurable from the site.
5. Note whether the measured noise appears to contain tonal or impulsive characteristics and apply correction factors where appropriate.
6. Check the field calibration at the end of the monitoring period in accordance with Australian Standard IEC 61672.1-2004 and Australian Standard 2659. Re-monitoring may be required where there is a calibration drift greater than that allowed by the standards.

7.2.3.6 Information to be reported

Any reporting should be concise. The minimum requirements to be included in a report are;

- Date of measurements.
- Time of measurements.
- Person(s) performing measurements.
- Equipment used for measurements.
- Location of measurements.
- Measured values.
- Corrected values (where applicable).
- Notes regarding audibility of noise sources.
- Notes regarding any extraneous sources that may have influenced measurements.
- Detail of instrumentation and calibration.
- Meteorological conditions.

8. Conclusion

An assessment of construction noise has been conducted for the proposed development 19 Anne Avenue, Broadbeach. It is noted that there are no specific noise limit criteria for construction detailed by Council or state policies which govern Queensland. Therefore, a management strategy has been recommended for noise complaints and includes a system for reasonable outcomes for all parties.

The essence of the construction noise management plan is to ensure good communication between the site manager and the nearby residents, and to limit the hours of operation of construction activities in accordance with state government requirements.

If you should have any queries please do not hesitate to contact us.

Report Prepared By



Khoi Phan
Acoustic Consultant
acousticworks

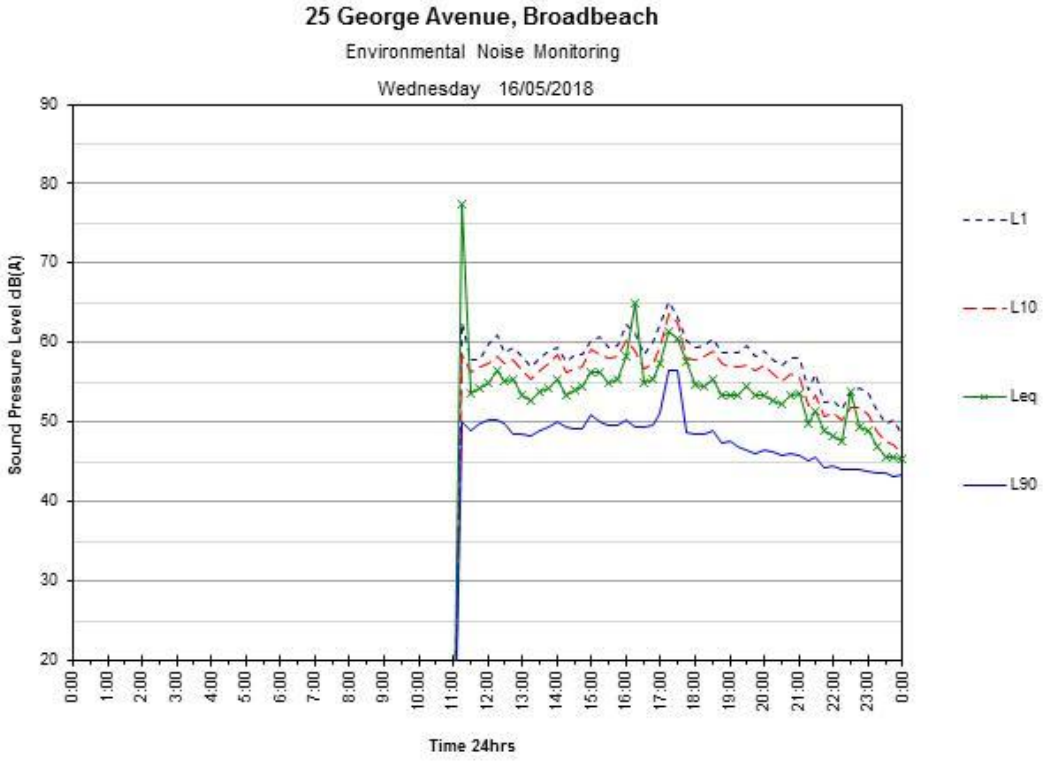
9. Appendices

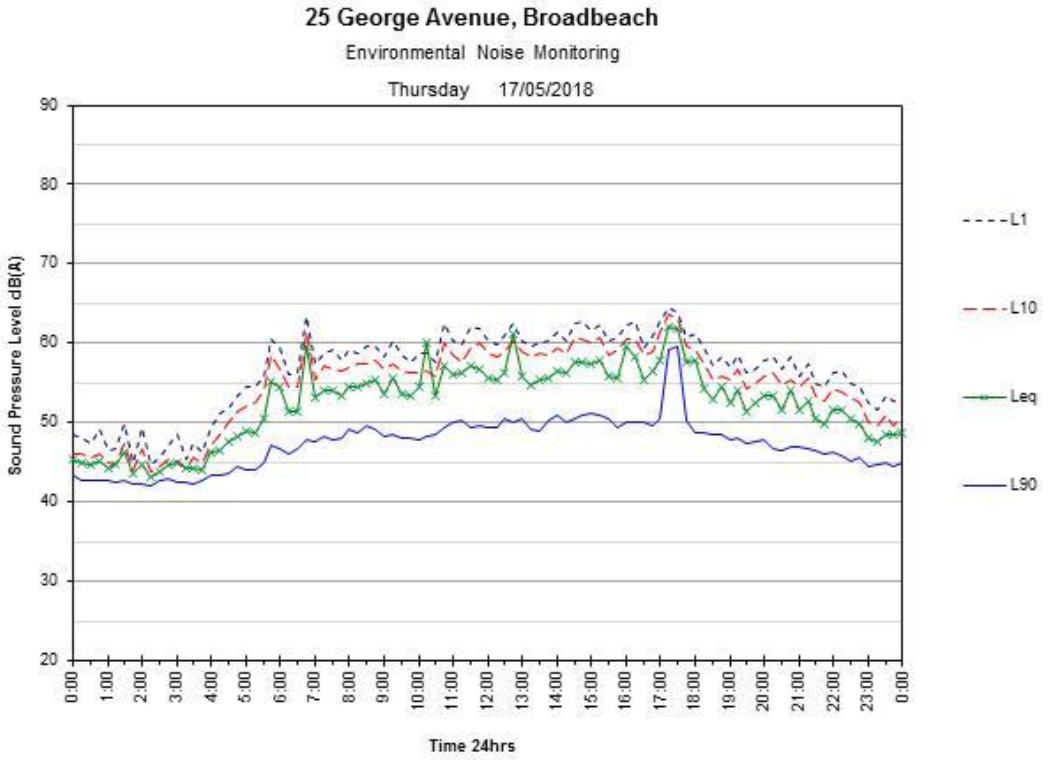
9.1 Example noise complaint record sheet

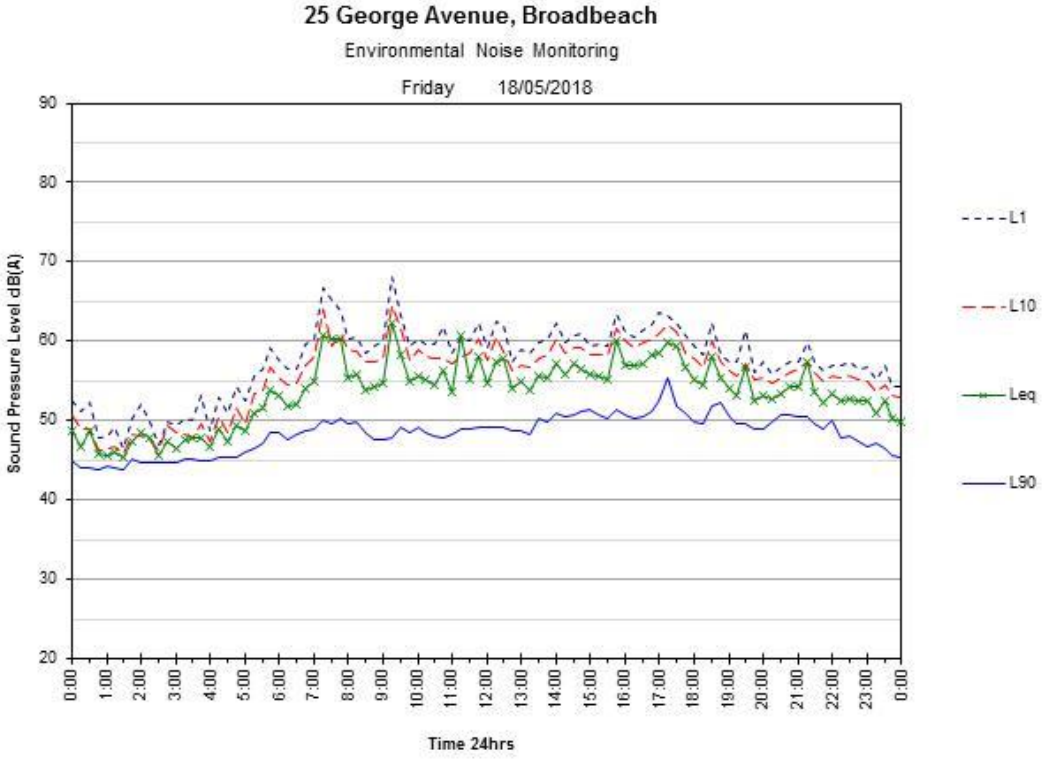
COMPLAINT LODGEMENT INFORMATION	
Date of complaint	
Time of complaint	
Address of complainant	
Name of complainant (if given)	
Contact telephone number of complainant	
Description of noise (e.g. mechanical plant, vehicle noise)	
Duration of noise (e.g. did it last a short time, or is it continuous)	

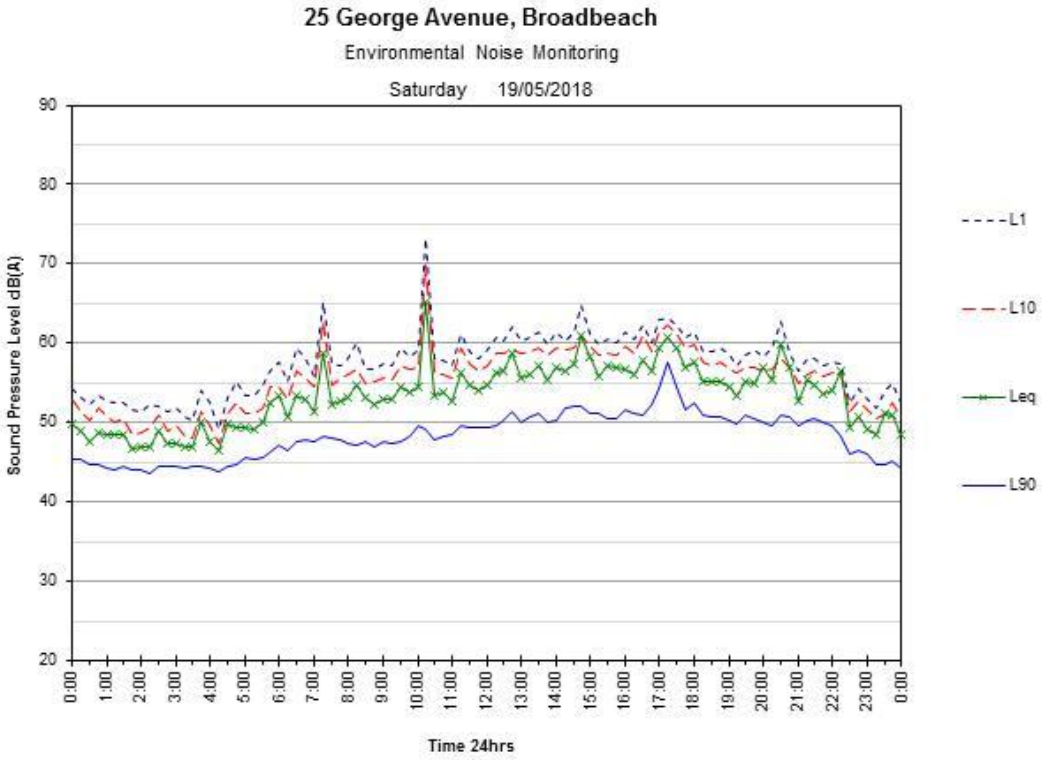
ACTION TAKEN	
Identification of noise source by Responsible Person	
Immediate action taken	
Previous similar complaints	
Contact with complainant after noise control implemented (e.g. is noise still an issue?)	
Is further action required (e.g. is an Acoustical Consultant required?)	

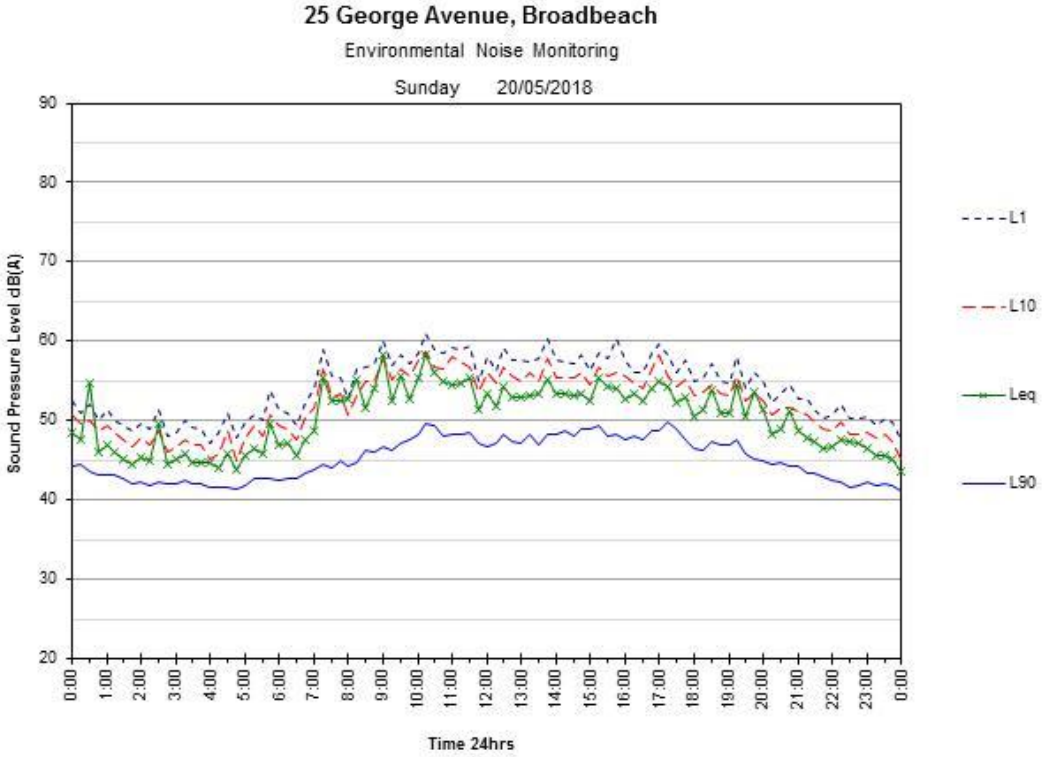
9.2 Ambient Noise Monitoring Charts

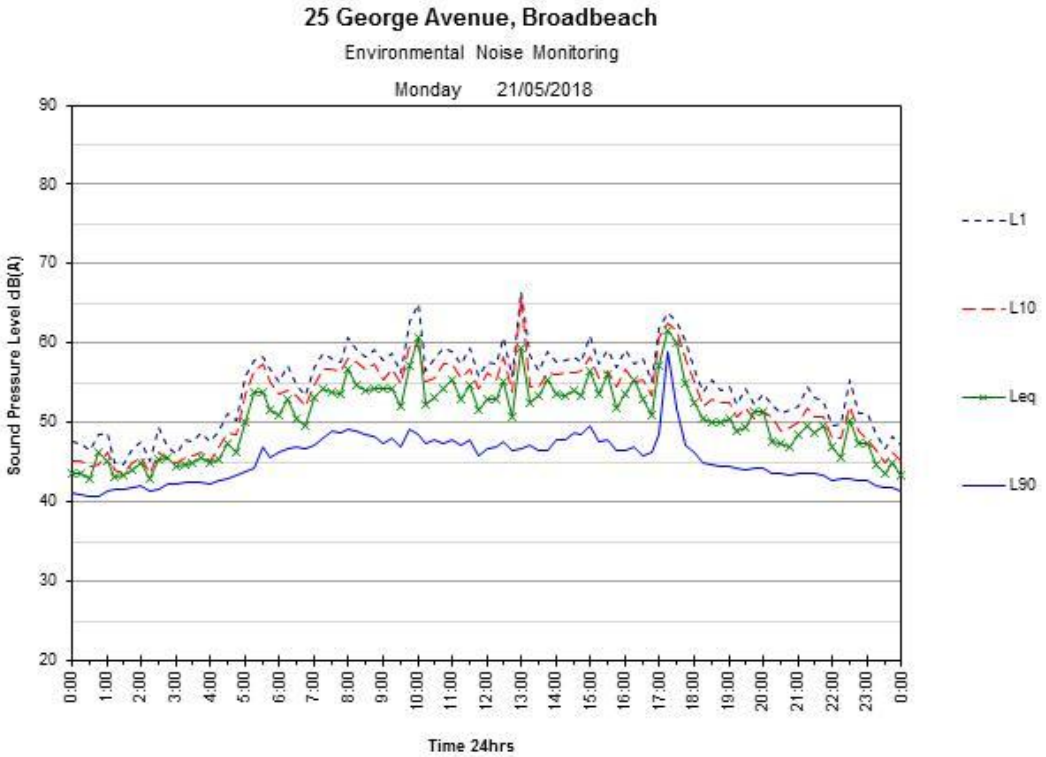


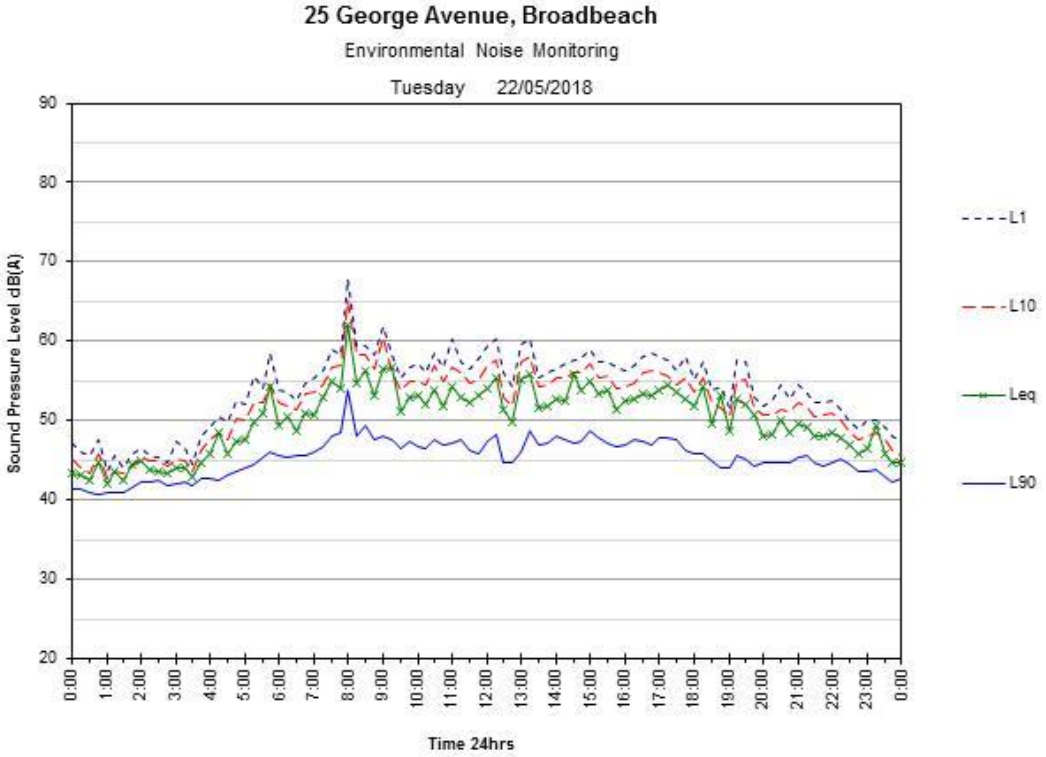


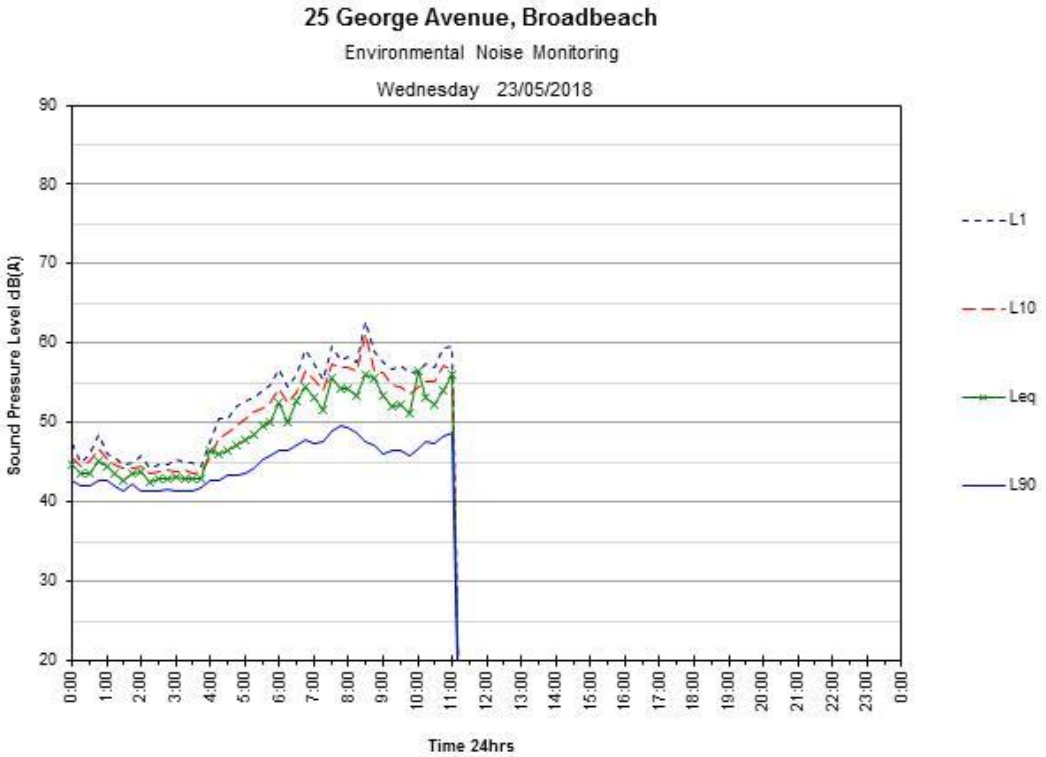

25 George Avenue, Broadbeach
Environmental Noise Monitoring
Friday 18/05/2018
Sound Pressure Level dB(A)
90
80
70
60
50
40
30
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
0:00
Time 24hrs
L1
L10
Leq
L90


25 George Avenue, Broadbeach
Environmental Noise Monitoring
Saturday 19/05/2018
Sound Pressure Level dB(A)
90
80
70
60
50
40
30
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
0:00
Time 24hrs
L1
L10
Leq
L90


25 George Avenue, Broadbeach
Environmental Noise Monitoring
Sunday 20/05/2018
Sound Pressure Level dB(A)
90
80
70
60
50
40
30
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
0:00
Time 24hrs
L1
L10
Leq
L90


25 George Avenue, Broadbeach
Environmental Noise Monitoring
Monday 21/05/2018
Sound Pressure Level dB(A)
90
80
70
60
50
40
30
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
0:00
Time 24hrs
L1
L10
Leq
L90


25 George Avenue, Broadbeach
Environmental Noise Monitoring
Tuesday 22/05/2018
Sound Pressure Level dB(A)
90
80
70
60
50
40
30
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
0:00
Time 24hrs
L1
L10
Leq
L90


25 George Avenue, Broadbeach
Environmental Noise Monitoring
Wednesday 23/05/2018
Sound Pressure Level dB(A)
90
80
70
60
50
40
30
20
0:00
1:00
2:00
3:00
4:00
5:00
6:00
7:00
8:00
9:00
10:00
11:00
12:00
13:00
14:00
15:00
16:00
17:00
18:00
19:00
20:00
21:00
22:00
23:00
0:00
Time 24hrs
L1
L10
Leq
L90