

**Newcastle East Residents Group Inc v – SafeWork NSW
NCAT Proceedings 2019/261798**

Schedule of Information

Doc	Records	Page	Original Decision	Following NCAT CC 19 Nov
1	Email between SafeWork NSW and Pollution Control Consultancy Design (PCCD).	1 - 2	Released in part – personal information redacted.	Released in part – personal information redacted.
2	Newcastle 500 – peer review of Jacobs' Noise Management Plan – dated 22 November 2017 by Pollution Control Consultancy Design (PCCD).	3 - 7	Withheld in full	Released in part – personal information redacted
3	Emails between SafeWork NSW and Supercars Australia	8 - 11	Released in part – business and confidential information redacted	Released in part – personal information redacted
4	Letter to Supercars Australia from SafeWork NSW dated 24 April 2018	12 - 13	Released in part – personal information redacted	Released in part – personal information redacted
5	Emails between SafeWork NSW and the EPA	14 - 15	Released in full	Released in full
6	Letter from the EPA to Destination NSW	16 - 17	Released in full	Released in full
7	Email from Hunter New England Local Health District	18 - 20	Released in part - Personal information redacted	Released in part – personal information redacted
8	Email from the EPA to SafeWork NSW	21 - 22	Released in part - Personal information redacted	Released in part – personal information redacted
9	Email from Hunter New England Local Health District	23 - 24	Released in part - Personal information redacted	Released in part – personal information redacted
10	Email from Supercars Australia to SafeWork NSW	25 - 26	Released in part - Personal information redacted	Released in part – personal information redacted

Doc	Records	Page	Original Decision	Following NCAT CC 19 Nov
11	Jacobs - Newcastle 500 Acoustic Advice Supercars Australia Noise Monitoring Report Final v3 26 April 2018	27 - 56	Withheld in full	Released in part – personal information redacted
12	Email from Supercars Australia to SafeWork NSW	57	Released in part - Personal information redacted	Released in part – personal information redacted
13	Jacobs - Newcastle 500 Acoustic Advice Supercars Australia Noise Management Plan v2 15 November 2018	58 - 86	Withheld in full	Released in part – personal information redacted
14	Email between SafeWork NSW and Pollution Control Consultancy Design (PCCD).	87 - 89	Released in part - Personal information redacted	Released in part – personal information redacted
15	Newcastle 500 – peer review of Jacobs' Noise Management Plan – dated 22 June 2018 by Pollution Control Consultancy Design (PCCD).	90 - 95	Withheld in full	Released in part – personal information redacted
16	Email between Supercars Australia to SafeWork NSW	96 - 98	Released in part - personal, business and confidential information redacted	Released in part – personal information redacted
17	Email between SafeWork NSW and Pollution Control Consultancy Design (PCCD).	99	Released in part - Personal information redacted	Released in part – personal information redacted
18	Peer review of Noise Management Plan for Newcastle 500 by Pollution Control Consultancy Design (PCCD).	100 - 102	Withheld in full	Released in part – personal information redacted
19	Jacobs - Newcastle 500 Acoustic Advice Supercars Australia Noise Monitoring Report Final draft 21 August 2017	103 - 135	Withheld in full	Released in part – personal information redacted
20	Sound level measurements taken by SafeWork NSW	136 - 138	Released in full	Released in full
21	Inspector notebook entries	139 - 141	Released in full	Released in full
22	Email between Supercars Australia to SafeWork NSW	142 - 144	Released in part – Business and personal information redacted	Released in part – personal information redacted

Doc	Records	Page	Original Decision	Following NCAT CC 19 Nov
23	Spreadsheet detailing all requests for service (complaints) in regard to noise at the Newcastle 500 event	145 - 150	Released in part – personal information redacted	Released in part – personal information redacted

From: Tranter, Sarina
Sent: 24 Nov 2017 11:47:22 +1100
To: Blackwell, Shellie
Subject: Newcastle 500 - peer-review of NMP - Acoustic Advice
Attachments: Peer review of Jacobs NMP - 22-11-2017.pdf, image002.jpg
Importance: Normal

Security Classification: UNCLASSIFIED

Please TRIM this under Supercars project

Sarina Tranter
Manager | Hunter (Metro)
Regional Operations & Sector Initiatives

SafeWork NSW, Better Regulation
Department of Finance, Services and Innovation
p 02 4921 2951 | m 0417 674 224

Office location: Level 1, Suite C, Corner Fitzroy & Cowper Streets, Carrington NSW 2294
Postal address: PO Box 2186, Dangar NSW 2309

sarina.tranter@safework.nsw.gov.au | www.safework.nsw.gov.au

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From: admin@pccd.com.au [mailto:admin@pccd.com.au]
Sent: Wednesday, 22 November 2017 10:04 AM
To: Tranter, Sarina; Charlton, Kristy
Subject: Newcastle 500 - peer-review of NMP

Dear Sarina and Kristy,
Please find the attached peer-review of *Newcastle 500 - Acoustic Advice - Supercars Australia - Noise Management Plan* - Final draft of 24 August 2017, prepared by Jacobs Australia Pty Limited.

Kind Regards,



Pollution Control Consultancy and Design (PCCD)
<http://www.pccd.com.au>



Level 57, 19-29 Martin Place (MLC Centre) - Sydney 2000
New South Wales - Australia
Telephone: [REDACTED]
Mobile: [REDACTED]
Facsimile: (02) 9238 7633
[REDACTED]@pccd.com.au

Kind Regards,

[REDACTED]

Pollution Control Consultancy and Design (PCCD)
<http://www.pccd.com.au>



Level 57, 19-29 Martin Place (MLC Centre) - Sydney 2000
New South Wales - Australia
Telephone: [REDACTED]
Mobile: [REDACTED]
Facsimile: (02) 9238 7633
[REDACTED]@pccd.com.au



SafeWork NSW

Pollution Control Consultancy and Design

ABN 71 776 800 318

Air, Noise and Water Pollution
Assessment and Engineering Control



Level 57, 19-29 Martin Place
Sydney - New South Wales 2000 - Australia

Telephone: (02) [REDACTED]
Facsimile: (02) 9238 7633

E-mail: [REDACTED]@pccd.com.au
Web site: www.pccd.com.au

Ms Sarina Tranter
Manager | Hunter (Metro)
Regional Operations & Sector Initiatives
SafeWork NSW, Better Regulation
Department of Finance, Services and Innovation

22 November 2017

Attention:
Ms Kristy Charlton
Manager, Working Environment and Health
SafeWork NSW

Dear Sarina and Kristy,

Newcastle 500 - peer-review of Jacobs' Noise Management Plan.

This is a peer-review of the *Newcastle 500 - Acoustic Advice - Supercars Australia - Noise Management Plan* - Final draft of 24 August 2017 (NMP), prepared by Jacobs Australia Pty Limited (Jacobs) of 710 Hunter Street, Newcastle West.

In a brief for Pollution Control Consultancy and Design (PCCD), SafeWork NSW stated that, we quote:

"SafeWork's role is to ensure that noise is properly controlled within a workplace for those at the workplace. Workplace has a specific meaning limiting it to "a place where work is carried out for a business or undertaking and includes any place where a worker goes, or is likely to be, while at work."

With this in mind, the review of the noise control plan should address:

1. Are there any significant issues with the control measures SuperCars have proposed to ensure workers at the workplace are not at risk from exposure to noise. If yes, what is reasonably practicable for them to put in place for control measures? (racing commences on 24 November).
2. Is the testing they have planned during the event adequate to understand the noise impact on workplaces for future events. If no, what should be undertaken?

Please note SafeWork NSW does not have jurisdiction over controlling noise exposure for residents or members of the community attending the event."

Notwithstanding the above, in this peer-review, PCCD have made some comments about the noise exposure of: (a) residents living along the Newcastle 500 route and (b) spectators of Newcastle 500.

The NMP frequently refers to Jacobs' *Newcastle 500 Acoustic Advice - Noise Assessment (Noise Assessment)*, but PCCD have not had an opportunity to examine this report.



Pollution Control Consultancy and Design (PCCD)
is an independent, accredited acoustical and environmental engineering consultancy:
a member of Association of Australasian Acoustical Consultants (AAAC).



EXECUTIVE SUMMARY

Pollution Control Consultancy and Design (PCCD) was engaged by SafeWork NSW to review the *Newcastle 500 - Acoustic Advice - Supercars Australia - Noise Management Plan (NMP)*, prepared by Jacobs Australia Pty Limited (Jacobs).

DAMAGE TO HEARING

In PCCD's opinion, while the level of noise ($L_{Aeq, 10h}$ and L_{CPeak}) emanating from *Newcastle 500* will cause significant discomfort to workers at the workplace while being outdoors (predominantly at commercial premises in Watt Street, a part of Shortland Esplanade and at the corner of Wharf and Horseshoe Beach Roads), these $L_{Aeq, 10h}$ and L_{CPeak} are unlikely to cause damage to their (workers') hearing, if all noise control measures proposed in the NMP are fully implemented.

This opinion is based on the premise that the workers at the workplace are likely to be correctly instructed by their management on how to use the earplugs and their management is likely to enforce the compulsory use of the earplugs by all workers being outdoors.

In contrast: (a) residents living along the Newcastle 500 route and (b) spectators of Newcastle 500, with all noise control measures proposed in the NMP, may not be sufficiently protected from damage to their hearing, because they may not use or use incorrectly the earplugs, which will otherwise protect them from damage to the hearing caused by the L_{CPeak} predicted by the Noise Assessment to exceed 140 dB(C).

NOISE MANAGEMENT MEASURES

In PCCD's opinion, the noise management measures proposed by the NMP are, at this stage, without a precedent of Newcastle 500, adequate (feasible and reasonable).

PROPOSED NOISE MONITORING

In PCCD's opinion, the noise monitoring proposed by the NMP during the first Newcastle 500 held on 24-26 November 2017 is inadequate.



1. PREDICTED LEVEL OF NOISE

In the *Newcastle 500 Acoustic Advice - Noise Assessment*, Jacobs Australia Pty Limited present results of modelling of dispersion (prediction) of the $L_{Aeq, 10h}$ and L_{Cpeak} emanating from the Newcastle 500.

Without seeing this report and knowing which software was used for noise prediction, PCCD believe that prediction of the L_{Cpeak} provided in this report is uncertain, as the majority of commercial noise prediction software is inaccurate while assessing very short-duration noise, such as noise from loud 'pops' associated with turbo dump valves of Supercars.

Thus, in PCCD's opinion, the L_{Cpeak} may be even higher than predicted in the Noise Assessment.

The L_{Cpeak} predicted in the Noise Assessment or higher may cause immediate damage to the hearing of persons who do not use or use incorrectly the earplugs provided to all (workers at the workplace, residents and spectators) by organisers of Newcastle 500.

PCCD are concerned that there is possible that some residents and/or spectators may not use or may use incorrectly the earplugs.

2 NOISE MANAGEMENT MEASURES

In PCCD's opinion, the noise management measures proposed in Table 6-1 of the NMP under N1 to N7 and N9 to N11 appear, at this stage, to be adequate (feasible and reasonable). These measures should be reviewed and may be modified and/or expanded based on experience from Newcastle 500 held on 24-26 November 2017.

3 PROPOSED NOISE MONITORING

In PCCD's opinion, the noise monitoring proposed in Table 6-1 of the NMP under N8 is not adequate. The proposed noise monitoring will be a lost opportunity to gather essential information on the noise impact of future Newcastle 500 events.

Newcastle 500 in November 2017 is the first of a number of similar events and should be utilised to get comprehensive information about the impact of noise on all commercial and residential properties and on locations of spectators along the entire 2.6-kilometre long track.

To achieve this, we propose the following outdoor noise monitoring during Newcastle 500 on 24-26 November 2017:

- a) continuous, stationary, unattended monitoring (logging of the L_{Cpeak} and $L_{Aeq, Ti}$ in one-second periods), during the entire event, at least:
 - at the corner of Wharf and Horseshoe Beach Roads (gear changes); and
 - in Watt Street, between Hunter and King Streets (a straight);
- b) short-term, progressing along the entire length of the track, attended noise monitoring (logging of the L_{Cpeak} and $L_{Aeq, Ti}$ in one-second periods, over 15 minutes at each location).

If synchronized and while determining time delays between the stationary and short-term monitoring locations, such monitoring will provide a comprehensive data of the L_{Cpeak} and $L_{Aeq, Ti}$ during the entire event and along the entire track. The data will be very useful for planning any future events (for designing noise control measures for future events).

IMPORTANT NOTE

The noise monitoring should be carried out with low-sensitivity, 1/4-inch microphones, which, unlike common microphones, can measure the L_{Cpeak} higher than 140 dB(C).



Should you require additional information, please call me on: [REDACTED] or [REDACTED] at any time.

Yours sincerely,

[REDACTED]

Pollution Control Consultancy and Design (PCCD).



NOTES

From: Tranter, Sarina
Sent: 24 Nov 2017 12:09:05 +1100
To: Blackwell, Shellie
Subject: V8 Supercars Noise Testing Advice - SafeWork
Importance: Normal

Security Classification: UNCLASSIFIED

Please Trim to Supercars Project

Sarina Tranter
Manager | Hunter (Metro)
Regional Operations & Sector Initiatives

SafeWork NSW, Better Regulation
Department of Finance, Services and Innovation
p 02 4921 2951 | m 0417 674 224

Office location: Level 1, Suite C, Corner Fitzroy & Cowper Streets, Carrington NSW 2294
Postal address: PO Box 2186, Dangar NSW 2309

sarina.tranter@safework.nsw.gov.au | www.safework.nsw.gov.au



SafeWork NSW

Please consider the environment before printing this email

From: [REDACTED] [mailto:[REDACTED]@supercars.com]
Sent: Thursday, 23 November 2017 11:23 PM
To: Tranter, Sarina
Cc: Karen Marler; Dunphy, Peter; [REDACTED]@dnsw.com.au
Subject: RE: Noise Testing Advice - SafeWork

Hi Sarina,

I can confirm that Supercars will be increasing the number of noise monitoring locations for the event to 6 around the circuit.

These monitors have been installed today at the following locations:

Location	Inside/Outside	Levels Monitored	Data Collection
Watt St (between Hunter and King)	Outside	Leaq	Realtime
Watt St (between King and Church)	Inside	Leaq	Realtime
Shortland Esp	Outside	Leaq and	Post Event

		Peak	
Scott St (between Zaara and Scott)	Inside	Leaq and Peak	Realtime
Nobbys Rd	Inside (with window open)	Leaq and Peak	Post Event
Cnr Scott St and Pacific Pde	Inside	Leaq	Realtime

The locations above have been chosen to give a broad cross section of indoor and outdoor locations both at ground level and in multi-level buildings.

While most of the locations will be trackside, we have also placed a monitor at one of the quieter locations as shown by our modelling.

I have passed on your email to our consultants as you requested.

Regards,

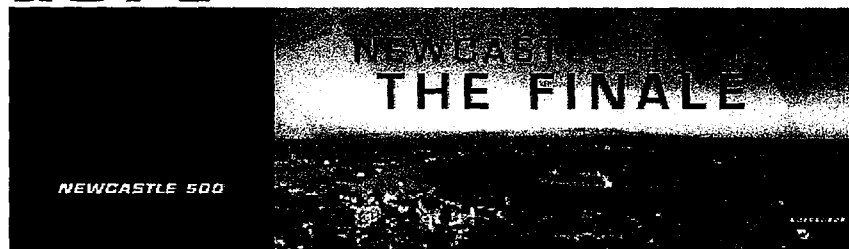
[REDACTED]



— NEWCASTLE

LEVEL 10
124 WALKER STREET
NORTH SYDNEY NSW 2060

M [REDACTED]
SUPERCARS.COM



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From: Tranter, Sarina [mailto:Sarina.Tranter@safework.nsw.gov.au]

Sent: Thursday, 23 November 2017 5:08 PM

To: [REDACTED]@supercars.com>

Cc: Karen Marler <Karen.Marler@epa.nsw.gov.au>; Dunphy, Peter

<Peter.Dunphy@safework.nsw.gov.au>; [REDACTED]@dnsw.com.au

Subject: Noise Testing Advice - SafeWork

Security Classification: UNCLASSIFIED

Dear [REDACTED]

SafeWork has recently engaged an acoustic engineer to review the Noise Management Plan prepared by Jacobs to examine the appropriateness of the mitigation strategies for business/workers in the Race Precinct.

SafeWork acknowledges that this is an inaugural event and it is only noise modelling that the recommended mitigation strategies have been based on and it is for this reason that we see the importance in having accurate data recorded from this event to better inform future mitigation strategies for the event over the coming years.

I understand you have committed to having 6 testing locations for noise testing over the weekend and note that this is double the initial commitment made under the NMP. Further to this, I have been provided some additional recommendations from our independent review which goes into the more technical specifications around best practice for such testing. I have liaised with EPA and they have confirmed that the practical information I have sourced is in line with their approach when conducting noise testing such as this. The recommendations I am referring to are as follows:

PROPOSED NOISE MONITORING

In SafeWork's opinion, the noise monitoring proposed in Table 6-1 of the NMP under N8 is not adequate.

The proposed noise monitoring will be a lost opportunity to gather essential information on the noise impact of future Newcastle 500 events.

Newcastle 500 in November 2017 is the first of a number of similar events and should be utilised to get comprehensive information about the impact of noise on all commercial and residential properties and on locations of spectators along the entire 2.6-kilometre long track.

To achieve this, we propose the following outdoor noise monitoring during Newcastle 500 on 24-26 November 2017:

- a) continuous, stationary, unattended monitoring (logging of the LCPeak and LAeq, Ti in one-second periods), during the entire event, at least:
 - at the corner of Wharf and Horseshoe Beach Roads (gear changes); and
 - in Watt Street, between Hunter and King Streets (a straight);
- b) short-term, progressing along the entire length of the track, attended noise monitoring (logging of the LCPeak and LAeq, Ti in one-second periods, over 15 minutes at each location).

If synchronized and while determining time delays between the stationary and short-term monitoring locations, such monitoring will provide a comprehensive data of the LCPeak and LAeq, Ti during the entire event and along the entire track. The data will be very useful for planning any future events (for designing noise control measures for future events)

IMPORTANT NOTE

The noise monitoring should be carried out with low-sensitivity, ¼-inch microphones, which, unlike common microphones, can measure the LCPeak higher than 140 dB(C).

As we have only been provided limited details around Supercars proposed testing, I appreciate that the above may already be in place for the purpose of the monitoring activities. However I will take this opportunity to provide this information to Supercars and request that you forward the above recommendations to the acoustic engineer that is undertaking the noise testing over the next three days to assist in any way possible with the testing process.

I trust this information is of assistance. If you or your acoustic engineer has any questions regarding the above please do not hesitate to contact me.

Regards,

Sarina Tranter

Manager | Hunter (Metro)
Regional Operations & Sector Initiatives

SafeWork NSW, Better Regulation
Department of Finance, Services and Innovation
p 02 4921 2951 | m 0417 674 224

Office location: Level 1, Suite C, Corner Fitzroy & Cowper Streets, Carrington NSW 2294
Postal address: PO Box 2186, Dangar NSW 2309

sarina.tranter@safework.nsw.gov.au | www.safework.nsw.gov.au



SafeWork NSW
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Date: 24 April 2018

[REDACTED]
Supercars Australia
Level 10, 124 Walker St
North Sydney NSW 2060

By email: [REDACTED]@supercars.com

Dear [REDACTED]

I refer to an email I sent to you on 23 November 2017, outlining the importance in having accurate data recorded from the inaugural Supercars event to better inform mitigation strategies for future events in Newcastle.

As the planning has begun for the 2018 Supercars event, SafeWork NSW considers it is important that there is a review of the noise monitoring data from the 2017 event to inform noise management and local businesses on appropriate mitigation strategies for the event.

It is for this reason that SafeWork is requesting a copy of all noise data that was collected from the 2017 event to conduct a review addressing the following:

- What went well? What noise mitigation strategies worked well and any insights into why certain strategies worked, and others didn't that can inform noise management at future events.
- What does the monitoring data tell us? Is more monitoring required to fill in data gaps, are there specific areas of higher impact that need addressing with further mitigation in future?
- Does the monitoring data align with the predictive model? How can the model be refined to achieve more accurate prediction of noise impacts for future events?

Although SafeWork NSW, as the NSW regulator for WHS, has powers to request information of this nature under statutory notice (section 155 of the WHS Act), I am making this initial request on a voluntary basis to further encourage Supercars to work with SafeWork to ensure appropriate noise mitigation strategies are implemented and communicated to affected businesses.

I further request that the data be provided to SafeWork NSW by 5.00pm on **21 May 2018** to enable the review to be conducted and post-review discussions to be held with Supercars prior to this year's event.

The data can be sent to the Project Lead for this matter, Ms Leisa Tate, Assistant State Inspector at leisa.tate@safework.nsw.gov.au or alternatively she can be contacted on 02 4921 2942.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Sarina Tranter', with a long horizontal flourish extending to the right.

Sarina Tranter
Manager, Hunter (Metro)
Regional Operations & Sector Initiatives
SafeWork NSW

From: Sarina Tranter
Sent: 12 Mar 2018 07:49:47 +1100
To: Shellie Blackwell
Subject: Fwd: Letter from Mr Mark Gifford - Environment Protection Authority
Attachments: DOC17-574471 Letter to Sandra Chipchase 9 March 2018.pdf, ATT00001.htm
Importance: Normal

Hi Shellie
Please trim to Supercars file
Thanks

Regards,
Sarina Tranter

0417 674 224

Begin forwarded message:

From: "Alison Cochrane" <Alison.Cochrane@epa.nsw.gov.au>
To: "sandra.chipchase@dnsw.nsw.gov.au" <sandra.chipchase@dnsw.nsw.gov.au>
Cc: "Sarina Tranter" <Sarina.Tranter@safework.nsw.gov.au>
Subject: Letter from Mr Mark Gifford - Environment Protection Authority

Dear Ms Chipchase,

Please find attached a letter from Mr Mark Gifford, A/Chair and CEO, Environment Protection Authority regarding the Newcastle Supercars event.

Kind regards,

Alison

Alison Cochrane

Manager Executive Services

Corporate Services Branch

NSW Environment Protection Authority

+61 2 9995 6205 +61 417 673 067

alison.cochrane@epa.nsw.gov.au www.epa.nsw.gov.au

or @EPA NSW

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DOC17/574471

Ms Sandra Chipchase
CEO
Destination NSW

By email: Sandra.Chipchase@dnsw.nsw.gov.au

Dear Ms Chipchase

Newcastle Supercars Event – Review of Noise Monitoring Data

I refer to the Environment Protection Authority's (EPA) letter dated 22 November 2017 regarding noise monitoring and information for residents in relation to the Newcastle Supercars event. Indications are that the 2017 Supercars event was a success, and the relatively low numbers of complaints from the community about noise suggest that the event was well managed and noise management and mitigation strategies were successful.

As planning has begun for the 2018 Supercars event, the EPA considers it is important that there is a review of noise monitoring data from the 2017 event to inform noise management and community engagement for future events. Given Destination NSW have already utilised an independent expert to review noise modelling and planning for the event, the EPA suggests that this expert is again engaged to conduct this review.

It is proposed that the review should address:

- What went well? Noise impacts were managed well and there will be useful insights into why certain strategies worked, and others didn't, that can inform noise management at future events;
- What does the monitoring data tell us? Is more monitoring required to fill in data gaps, are there specific areas of higher impact that further extra mitigation in future?
- Does the monitoring data align with the predictive model? How can the model be refined to achieve more accurate prediction of noise impacts for future events?

While it is expected that there will continue to be community concerns regarding noise impacts, a comprehensive review of the 2017 event will go some way to building community confidence that Destination NSW and Supercars are taking all necessary action to ensure the implementation of best practice noise management for future events.



Your cooperation in this matter would be greatly appreciated. If you have any questions please contact Ms Karen Marler, Director Hunter, EPA on (02) 4908 6803.

Yours sincerely

Mark Gifford 9/3/18

MARK GIFFORD
A/Chair and CEO
Environment Protection Authority

cc: Ms Sarina Tranter
Safework NSW
Sarina.tranter@safework.nsw.gov.au

From: [REDACTED]
Sent: 6 Sep 2017 12:30:02 +1000
To: [REDACTED]
Cc: Tate, Leisa; Karen Marler, [REDACTED]
Subject: Re: Newcastle 500 Noise Management Plan
Attachments: image002.png
Importance: Normal

Dear Karen and Leisa

It was really worthwhile discussing the Supercars draft noise management plan.

As indicated the current public health concerns arising from the draft plan include the following:

1. Further details are required wrt the modelling. What inputs were used? Has this modelling approach been validated with measurements at previous supercar events? How does this modelling compare with that done previously for Homebush and Townsville? Was an uncertainty/ sensitivity analysis conducted – this should be provided as well. The narrow 84db contour around the Newcastle track appears at odds with the breadth of the sound contour modelled for other sites and this dissonance should be clarified.
2. The detailed modelling with underpinning assumptions and input data should be provided to the relevant agencies and the community to address the level of community distrust that currently exists.
3. Details of any independent acoustic review/s conducted on the predicted sound impacts should be shared with agencies.
4. The contribution of noise from other sources (loudspeakers, crowds, helicopters, music, etc) should be discussed and included in the modelled noise levels. This should be included in advice to the community.
5. Further consideration of the sound thresholds used including derivation of the 10 hour average value. Is it appropriate to use these workplace derived values for a community that will likely include sensitive receptors including young children, individuals with existing mental health conditions and the elderly?
6. Potential hearing impacts for the properties that have expected peak external sound levels of 147 dB or louder. What would be the hearing impact if residents at those properties did open the front door or windows – this is a reasonable expectation given that the event is in summer in older housing stock? This will need to be clearly set out in household and community information and should be included with the plan. What steps should residents take if they need to urgently leave their premises?
7. Detailed mitigation and protection measures for householders. This should be set out in detail and contextualised with the expectations for workplace mitigation during the event. What are the implications

for people being outside their houses at race times over these three days? What advice will be provided regarding staying indoors and what time periods will this apply to? How will safe use of hearing protection be ensured? How will adequate hearing protection (ear plugs are generally not considered adequate) be provided to children? If residents wish to take the advice provided and leave the racecourse area for multiple hours to reduce cumulative exposure, how will this be possible for residents within the race circuit?

8. Specific details on households that will be visited with information packages and provided with safety briefings. How many households will be included?

9. More details on noise monitoring during the races. How many units will be deployed to ensure a comprehensive assessment? (the current suggestion of a single indoor unit is manifestly inadequate). Is this consistent with monitoring previously conducted at Homebush and Townsville Supercar events? The proposed monitoring locations need to be set out in detail now to allow assessment of their adequacy.

10. Detailed response plan if real time monitoring identifies exceedances above expected levels during the event.

11. Interpretation of the Work Health and Safety Regulation 2011 (2.1 in report). The report implies exposure to levels above 140dB are acceptable provided hearing protection is worn. Is that correct?

Warm regards

[REDACTED]

On 5 Sep 2017, at 9:07 am, [REDACTED]
[REDACTED]@dnsw.com.au<mailto:[REDACTED]@dnsw.com.au>> wrote:

Hi all

Due to a printing error, please find attached a revised version of the Noise Management Plan for review.

Due to this update, the time for comments and feedback has been extended until Friday this week.

Please let me know if you have any issues with meeting this time frame.

Kind Regards

[REDACTED]

Senior Project Manager - Newcastle 500 Coordination Unit

Event Delivery Manager - Sport & Strategic Events

Destination NSW

E

[REDACTED]@dnsw.com.au<mailto:[REDACTED]@dnsw.com.au><mailto:[REDACTED]@dnsw.com.au>
>

D [REDACTED]

www.sydney.com<<http://www.sydney.com>><<http://www.sydney.com>/>
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[cid:image002.png@01D0D029.E59024D0]

[http://www.destinationnsw.com.au/_data/assets/image/0008/46988/DNSW-Cumberland-email-footer.jpg]

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<image002.png>

<IA153000_Noise Management Plan_Final v0 (1).pdf>

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**Destination
NSW**

T +61 (0)2 9931 1111
F +61 (0)2 9931 1490
www.destinationnsw.com.au
GPO Box 7050 Sydney NSW 2001

Level 2
88 Cumberland Street
Sydney, NSW 2000
Australia

Paige Allen

From: Karen Marler <Karen.Marler@epa.nsw.gov.au>
Sent: Thursday, 7 September 2017 3:50 PM
To: [REDACTED] Tate, Leisa; Tranter, Sarina; [REDACTED]
Cc: EPA RSD Hunter Region Mailbox
Subject: FW: Supercars

Hi everyone – as discussed – the EPA spoke with Jacobs yesterday to clarify some aspects of the noise assessment. From that meeting the EPA provides the following comments:

- Although EPA does not regulate motor sport noise and therefore does not have any of its own current noise measurements, the EPA is satisfied that the noise assessment report uses appropriate inputs (including actual measured supercar noise measurements) and modelling methodology to reasonably estimate noise levels from the racing event.

It should be noted that all modelling requires the adoption of some assumptions to account for inherent variables. For the measured noise levels used in the report, the EPA expects any differences in actual levels measured/received to be no more than a few decibels above or below the predicted levels - meaning that the 84dB(C) LAeq,10hr level should be achieved within 5 - 10m or so of the predicted contour. This is within typically acceptable levels of accuracy and precision for such modelling.

The Noise Management Plan (NMP) should better quantify the confidence intervals associated with the predictions (for example rather than just a contour line it could show a shaded area either side of the line where exceedance of the 84 dB criterion may occur). Appropriate recommendations should then be included in the NMP in relation to a conservative approach to the application of impact mitigation measures.

- While the EPA is not in a position to comment on the potential health impacts or OH&S exposures, for context, 75dBA is the "Highly noise affected" level (when experienced over **15 minutes**) in the *NSW Interim Construction Noise Guideline*. This means that, at that level, most people (other than patrons of the event) would react strongly.

The EPA notes that Section 5.7 of the NMP states that hearing protection will provide a minimum of 10dB noise reduction, when fitted correctly. This means that if people predicted to experience 84dB(A) over 10 hours wear hearing protection for those ten hours, then their exposure should be reduced to around 74 dB(A) for the 10 hours. It would be helpful for understanding the likely level of impact for the NMP to include appropriate guidance which gives people this context.

- Agencies can rely on the predicted noise levels in the Noise Management Plan as representative of a reasonable worst case scenario, to inform their comments/regulatory response in relation to noise impacts on businesses and residents.
- Please note that the noise impact assessment (and the predicted noise levels in the NMP) is specific to an assessment of noise from the supercars racing event only - and does not include noise from other sources such as helicopters, concert activities or existing industrial noise sources in and around the Port of Newcastle.

I've emailed DNSW regarding a meeting with DPC 11:30 am next Wednesday – so please pencil this in.

Cheers

K

Karen Marler

Director Hunter

North Branch - Newcastle, NSW Environment Protection Authority

+61 2 49086803 +61 0409606368

karen.marler@epa.nsw.gov.au www.epa.nsw.gov.au @EPA NSW

Report pollution and environmental incidents 131 555 (NSW only) or +61 2 9995 5555



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From: [REDACTED]
Sent: 12 Sep 2017 14:58:42 +1000
To: [REDACTED]@dnsw.com.au; [REDACTED]
Cc: [REDACTED] Karen Marler
(Karen.Marler@epa.nsw.gov.au); Tate, Leisa; [REDACTED]
Subject: Newcastle 500 draft Noise Management plan
Importance: Normal

Dear [REDACTED]

Thank you for the chance to consider the draft noise management plan as circulated last week. We identified a range of public health concerns and look forward to further discussion when we meet tomorrow.

1. Further details are required wrt the modelling. What inputs were used? Has this modelling approach been validated with measurements at previous supercar events? How does this modelling compare with that done previously for Homebush and Townsville? Was an uncertainty/ sensitivity analysis conducted – this should be provided as well.
2. The detailed modelling with underpinning assumptions and input data should be provided to the relevant agencies and the community to address the level of community distrust that currently exists.
3. Details of any independent acoustic review/s conducted on the predicted sound impacts should be shared with agencies.
4. The contribution of noise from other sources (loudspeakers, crowds, helicopters, music, etc) should be discussed and included in the modelled noise levels. This should be included in advice to the community.
5. Further consideration of the sound thresholds used including derivation of the 10 hour average value. Is it appropriate to use these workplace derived values for a community that will likely include sensitive receptors including young children, individuals with existing mental health conditions and the elderly?
6. Potential hearing impacts for the properties that have expected peak external sound levels of 140 dB or louder. What would be the hearing impact if residents at those properties did open the front door or windows – this is a reasonable expectation given that the event is in summer in older housing stock? This will need to be clearly set out in household and community information and should be included with the plan. What steps should residents take if they need to urgently leave their premises?
7. Detailed mitigation and protection measures for householders. This should be set out in detail and contextualised with the expectations for workplace mitigation during the event. What are the implications for people being outside their houses at race times over these three days? What advice will be provided regarding staying indoors and what time periods will this apply to? How will safe use of hearing protection be ensured? How will adequate hearing protection (ear plugs are generally not considered adequate) be provided to children? If residents wish to take the advice provided and leave the racecourse area for multiple hours to reduce cumulative exposure, how will this be possible for residents within the race circuit?

8. Specific details on households that will be visited with information packages and provided with safety briefings. How many households will be included?

9. More details on noise monitoring during the races. How many units will be deployed to ensure a comprehensive assessment? (the current suggestion of a single indoor unit appears inadequate). Is this consistent with monitoring previously conducted at Homebush and Townsville Supercar events? The proposed monitoring locations need to be set out in detail now to allow assessment of their adequacy.

10. Detailed response plan if real time monitoring identifies exceedances above expected levels during the event.

11. Interpretation of the Work Health and Safety Regulation 2011 (2.1 in report). The report implies exposure to levels above 140dB are acceptable provided hearing protection is worn. Is that correct?

Warm regards

[REDACTED]
[REDACTED]
Public Health Physician | **Population Health**
Locked bag 10, Wallsend, NSW 2287
Tel (02) 4924 6477 | Fax (02) 4924 6048 | Mob [REDACTED] [\[REDACTED\]@hnehealth.nsw.gov.au](mailto:[REDACTED]@hnehealth.nsw.gov.au)



Health
Hunter New England
Local Health District

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Paige Allen

From: [REDACTED]@supercars.com>
Sent: Tuesday, 8 May 2018 10:59 AM
To: Leisa Tate
Cc: Sarina Tranter; Steve Robins; [REDACTED]
Subject: RE: Noise Monitoring Data
Attachments: IA153000_Monitoring Report_Final v4.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Leisa,

Further to our previous correspondence, please see attached our Noise Monitoring Report from the 2017 Coates Hire Newcastle 500.

We look forward arranging a time to meet with you to discuss further.

Regards,
[REDACTED]



[REDACTED]
45 NERANG STREET, SOUTHPORT QLD 4215
PO BOX 607, SOUTHPORT BC QLD 4215

D [REDACTED]
P [REDACTED]
M [REDACTED]

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From: Leisa Tate [mailto:Leisa.Tate@safework.nsw.gov.au]
Sent: Thursday, 26 April 2018 9:11 AM
To: [REDACTED]@supercars.com>
Cc: Sarina Tranter <Sarina.Tranter@safework.nsw.gov.au>; Steve Robins <Steve.Robins@safework.nsw.gov.au>
Subject: Noise Monitoring Data

Security Classification: UNCLASSIFIED

Hi [REDACTED]

Further to our conversation last week Sarina has asked me to forward this letter requesting the noise monitoring data. If you have any questions please don't hesitate to contact me.

Regards

Leisa Tate

Assistant State Inspector Hunter Regional Operations and Sector Initiatives

SafeWork NSW, Better Regulation
Department of Finance, Services and Innovation
p 02 4921 2942 | m 0429 781 068
e Leisa.Tate@safework.nsw.gov.au | www.safework.nsw.gov.au

Level 1, Suite C Cnr Fitzroy & Cowper Sts Carrington NSW 2294



SafeWork NSW

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Supercars Australia

Noise monitoring report

1 | Final v3

26 April 2018

Monitoring Report

JACOBS

Supercars noise monitoring report – Newcastle 500

Project No: IA153000
Document Title: Monitoring Report
Document No.: 1
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Date: 26 April 2018
Client Name: Supercars Australia

Project Manager: [REDACTED]

Author: [REDACTED]

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Jacobs Australia Pty Limited

710 Hunter Street
Newcastle West NSW 2302 Australia
PO Box 2147 Dangar NSW 2309 Australia
T +61 2 4979 2600
F +61 2 4979 2666
www.jacobs.com

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Document history and status

Revision	Date	Description	By	Review	Approved
Draft A	31/11/2017	Practice review	[REDACTED]		
Final v2	19/03/2018	Client review	[REDACTED]		

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Appendix A. Acoustic Terminology

Appendix B. Detailed unattended noise monitoring results

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- B.4 Watt Street central (Scenic Travel)
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Important note about your report

The sole purpose of this report and the associated services performed by Jacobs is to report on noise levels during the 2017 Newcastle 500 Supercars event in accordance with the scope of services set out in the contract between Jacobs and Supercars. That scope of services, as described in this report, was developed with the Client.

Jacobs derived information in this report from Supercars and/or available in the public domain at the time or times outlined in this report. Jacobs has prepared this report in accordance with the usual care and thoroughness of the consulting profession, for the sole purpose described above and by reference to applicable standards, guidelines, procedures and practices at the date of issue of this report. For the reasons outlined above, however, no other warranty or guarantee, whether expressed or implied, is made as to the data, observations and findings expressed in this report, to the extent permitted by law.

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1. Introduction

1.1 Project background

In November 2017, Supercars Australia held the inaugural Newcastle 500 event in Newcastle.

The race circuit passed numerous business and residential properties within the Newcastle CBD, and had the potential to generate high noise levels in the area. As part of its commitment to manage the event's noise impacts, Supercars Australia committed to noise monitoring during the event.

In a previous study, Jacobs Group (Australia) Pty Ltd (Jacobs) assessed the potential for noise impacts against NSW Work Health Safety legislation which aims to protect hearing damage by providing Occupational Health and Safety (OHS) noise limits for workplace noise exposure. The assessment also recommended noise mitigation and management measures to reduce the residual noise impacts identified.

1.2 Purpose and scope of report

This monitoring report details the key aspects and results of the noise monitoring program during the Supercars 2017 event. This report outlines:

- noise monitoring locations
- noise monitoring results
- assessment of results against event noise criteria
- comparison of monitoring and predicted noise levels

2. Legislation

2.1 Work Health and Safety Regulation 2011

There are two parts to the exposure standard for noise. The Regulations set an exposure standard defined as an:

- LCPeak of 140dB(C) (peak exposure level), or
- LAeq(8hour) of 85dB(A) (LAeq exposure level).

Peak noise levels greater than 140dB(C) are usually associated with very short term noise events such as impacts or explosive noise. Relative to the Supercars event, loud 'pops' associated with gear changes would be assessed against this standard.

The exposure standard of 85dB(A) LAeq(8h) is applied to an eight hour time period (the nominal length of a working day). Where the exposure period extends beyond eight hours this level will be reduced.

The race duration for the Newcastle 500 was nine to ten hours per day, and as such the LAeq criteria must be reduced to account for this longer exposure period. To provide a conservative analysis, a period of ten hours has been assumed.

It is important to note that the regulations for noise exposure are intended as protection measures for workers exposed to high noise levels throughout their working lives.

Table 2.1 : Proposed race schedule

Day	Start of racing	End of racing	Exposure period (hh:mm)	Base exposure limit	Exposure limit
Friday	8:05	17:30	9:25	85dB(A) LAeq(8hr)	84dB(A) LAeq(10hr)
Saturday	8:05	17:50	9:45		84dB(A) LAeq(10hr)
Sunday	8:05	17:50	9:45		84dB(A) LAeq(10hr)

In summary vehicle noise will be assessed against the following criteria:

- LCPeak **140dB(C)**
- LAeq(10 hour) **84dB(A)**

3. Existing environment

3.1 Supercars race circuit

The Supercars race circuit at Newcastle is 2.6km in length, commencing westbound on Wharf Road, adjacent to Foreshore Park. The circuit then turns left into Watt Street past the old Newcastle Train Station and continues south before turning east onto Church Street / Shortland Esplanade. The route then weaves through Zaara and Scott Streets and into Parnell Place / Nobbys Road, returning to the finishing line on Wharf Road.

3.2 Noise sensitive receivers

Residential properties are located though the eastern areas of the race circuit, primarily along:

- Watt Street
- Church Street / Shortland Esplanade
- Zaara Street
- Scott Street
- Parnell Place / Nobbys Road

Residential buildings along much of this route are typically mixed use, multi-story apartments, with commercial land use on the ground floor and residential properties located above. Terrace style apartments are also common along Watt Street, Scott Street and Parnell Place.

Existing noise sources in the proposed track area are typical of a coastal, city environment and include traffic, pedestrians and residential noise, including air conditioning units. Noise from the ocean is common audible, particularly during night time hours when noise from other sources decreases.

4. Noise monitoring

4.1 Monitoring locations

Unattended noise monitoring was undertaken at six trackside locations identified in agreement with Supercars. The six locations were chosen to either capture the exposure of residences within each area most exposed to the event or exposures of receivers further back from the race track.

Attended noise monitoring was also carried out throughout the event.

The locations where attended and unattended noise monitoring was conducted are presented in Figure 4.1.



Figure 4.1 : Site layout and unattended noise monitoring locations

4.2 Attended noise monitoring

4.2.1 Methodology

Attended noise monitoring was carried out using a hand held SVAN 958 Sound Level Meter.

This meter was fitted with a 100mm foam windshield and calibration was checked prior to and following each measurement using a B&K Calibrator. The instrument was calibrated by a NATA accredited laboratory and complies with Australian Standard AS-1259: *Sound Level Meters*.

As the attended monitoring is based on one minute measurements, it is unable to capture long term L_{Aeq} (10 hour) noise exposure levels, however provides a good indication of L_{CPeak} levels and general noise exposure.

4.2.2 Results

The results of the attended noise monitoring events are presented in Table 4.1. All readings were taken during race events and include multiple vehicle passbys.

Table 4.1 : Attended measured noise levels

Date	ID	Location	L_{Aeq} (1 minute) dB(A)	L_{CPeak} (1 minute) dB(C)
24 November 2017	1	28 Scott Street (internal)	67	84
	2	28 Scott Street (internal)	76	86
	3	60 Nobbys Road (external)	97	141
	4	2 Scott Street (external / behind noise barrier)	99	142
25 November 2017	5	F18 Flyover – Corner of Watt Street	89	128
	6	Supercars office (ECC) – Corner of Watt - With window open	99	132
26 November 2017	7	Overhead bridge – Watt Street	95	122
	8	Nobbys Road (opposite Allan apartments)	95	125
	9	Parnell Place (opposite 2 Scott Street)	91	120
	10	F18 Flyover – Corner of Watt Street	100	128
	11	Start of final race - Corner of Watt Street (all cars passby)	103	140

The attended monitoring results show that external L_{Aeq} (1 minute) noise levels at properties adjacent to the course were between 90 to 105dB(A), and that L_{CPeak} levels may have marginally exceeded 140dB(C) OHS limits under worst case exposure conditions.

All attended noise measurements taken within buildings indicated race noise levels to be less than the 140dB(C) L_{CPeak} criterion.

4.3 Unattended noise measurements

4.3.1 Method for unattended noise measurements

Long-term unattended noise monitoring was carried out at six locations using three Acoustic Research Labs Environmental Noise Loggers (Type NGARA) and three SVAN Sound Level Meters (various models).

All loggers were fitted with 100mm foam windshields and calibration was checked prior to and following each measurement using a B&K Calibrator. Instrument sets were calibrated by a NATA accredited laboratory and comply with Australian Standard AS-1259: *Sound Level Meters*.

Three sound level meters capable of monitoring L_{CPeak} noise levels could be sourced. These were placed at residential locations where the L_{CPeak} noise criterion was at greatest risk of being exceeded.

Long term noise monitoring was deployed to capture L_{Aeq} (10 hour) noise exposure levels at all six locations but to also provide an indication of L_{CPeak} levels at three sites.

4.3.2 Unattended measurement locations

Unattended noise monitoring sites (using noise loggers) were selected to be representative of the worst affected residential receivers exposed to noise during the race. The final logger was placed towards the centre of the event precinct to determine noise transmission to these less affected areas.

A summary of the unattended noise monitoring locations is provided in Table 4.2

Table 4.2 : Description of unattended measurement locations

Location	Logger type	Calibration Before / After	Notes
Shortland Esplanade*	SVAN 957 14566	94.0 / 94.0	Located outside, attached to camera scaffolding with clear 180° track view. Highly wind affected. Windsock missing upon logger retrieval. Microphone removed from holder / support No noise barrier
Nobbys Road (Department of Housing)	SVAN 957 28048	93.7 / 93.7	Located inside nearest DOH property. House was unoccupied and window was left open. Logger was placed 40cm from open window. Noise barrier
Scott Street west (Joy Cummings Centre)	NGARA 87807D	94.0 / 94.1	Located inside office window (closed) facing Scott Street. Office unoccupied. No noise barrier
Watt Street central (Scenic Travel)	NGARA 878012	93.9 / 94.0	Located on edge of rooftop balcony overlooking Watt St with clear 180° track view. No noise barrier
Scott Street east	SVAN 977 59805	93.6 / 93.6	Located inside terrace property on Scott Street, adjacent to track. Logger located 1m from closed window.

Location	Logger type	Calibration Before / After	Notes
			Noise barrier
Watt Street south (United Services Club)	NGARA 878042	93.8 / 93.9	Located inside office at club. Logger located 30cm from closed window, facing track. No noise barrier

Notes: * This logger was exposed to high wind levels and had been tampered with – the reported results are potentially unreliable.

4.3.3 Results of unattended noise monitoring

A summary of the unattended noise monitoring for each day is presented in Table 4.3. Detailed results at each monitoring location are presented in graphical format in Appendix B. The graphs in Appendix B show measured values of L_{Aeq} and L_{CPeak} for 1-minute monitoring periods.

Table 4.3 : Unattended noise monitoring results

Location	L_{Aeq} (10 hour)			L_{CPeak} (10 hour)		
	Friday	Saturday	Sunday	Friday	Saturday	Sunday
Shortland Esplanade (external)	98	99	100	N/A*	N/A*	N/A*
Nobbys Road (internal) (Department of Housing)	82	84	85	128	128	128
Scott Street west (internal)** (Joy Cummings Centre)	57	56	57	-	-	-
Watt Street central (external)** (Scenic Travel)	95	96	97	-	-	-
Scott Street east (internal)	69	70	70	104	107	107
Watt Street south (internal)** (United Services Club)	69	71	72	-	-	-

Notes: All values expressed as dB(A) and rounded to nearest 1 dB(A)

* This logger was exposed to high wind gusts and had been tampered with – the L_{CPeak} levels are considered unreliable.

** These loggers were unable to monitor L_{CPeak} noise levels (due to limited availability of loggers at the time of testing)

The logger situated at Shortland Esplanade was damaged during the monitoring period. Upon retrieval, the foam windsock had been removed and the unit was knocked from its stand. This location was attached to steel scaffolding and may have been knocked and exposed to high wind during the event. Although the results broadly appear to reflect overall race times, upon further breakdown, several peak noise events occurred during times when racing was not underway. This would insinuate that these events are unrelated to vehicle passbys, and may be associated with activities on or immediately surrounding the camera scaffolding. The measured L_{CPeak} results are not considered to be reliable.

The results of unattended noise monitoring indicate that, internal building noise levels complied with OHS L_{Aeq} and L_{CPeak} limits at Nobbys road and Scott Street east. Given these locations are directly adjacent to the circuit, these levels are likely to be indicative of other internal monitoring locations and the highest internal noise exposures around the circuit.

A minor exceedance of L_{Aeq} limits was noted at Nobbys Road on Sunday, however it is noted that windows were left open during this testing.

External noise levels exceed the OHS L_{Aeq} limit in some areas and in the most exposed locations may have also have exceeded L_{CPeak} levels.

5. Comparison of monitoring and predicted noise levels

Prior to the event, Jacobs provided predictions of event noise levels using an acoustic noise modelling software package, Soundplan (version 7.4). This modelling was based on measurements of Supercars operating at a racetrack in Queensland.

This section of the report compares the results of this noise assessment to the measured noise levels so as to enable refinement of future noise modelling efforts.

As discussed in Section 4.3 above, the logger situated at Shortland Esplanade was damaged during the monitoring period the monitoring results at this location are not considered to be reliable.

5.1 L_{Aeq} (10 hour) comparison

A comparison of predicted L_{Aeq} (10 hour) noise exposure levels against the measured results for each day is provided in Table 5.1.

Table 5.1 : Comparison of measured and predicted L_{Aeq} (10 hour) noise exposure levels

Location	Predicted noise level L_{Aeq} (10 hour)	Measured L_{Aeq} (10 hour) noise level		
		Friday	Saturday	Sunday
Shortland Esplanade	97	98	99	100
Nobbys Road (Department of Housing)	90	82	84	85
Scott Street west (Joy Cummings Centre)	50	57	56	57
Watt Street central (Scenic Travel)	97	95	96	97
Scott Street east	73	69	70	70
Watt Street south (United Services Club)	76	69	71	72

The results of noise modelling and monitoring presented above show that L_{Aeq} noise exposure predictions agreed with measured results. In most cases of discrepancy, the noise modelling was conservative and over-predicted event noise exposure levels. In two cases, the noise modelling under-predicted the $L_{eq}(10\text{hour})$ noise exposure by -3dB(A) (The Esplanade) and -7dB(A) (Joy Cummings Centre, Scott Street (west)).

Given the low overall level of noise at the Joy Cummins Centre and the complex acoustic environment between the circuit and this monitoring location, this impact is not considered to be significant. Noise at this level is below the estimated average daytime L_{Aeq} level expected in an area with dense transportation or some industry or commerce (Category R4 - AS1055.2-1997 *Acoustics – Description and measurement of environmental noise. Part 1: General procedures*).

5.2 $L_{C,Peak}$ comparison

A comparison of predicted $L_{C,Peak}$ levels against the measured results for each day is provided in Table 5.1.

Table 5.2 : Comparison of measured and predicted $L_{C,Peak}$ noise levels

Location	Predicted noise level $L_{C,Peak}$	Measured $L_{C,Peak}$ noise level		
		Friday	Saturday	Sunday
Nobbys Road (Department of Housing)	119	128	128	128
Scott Street east	112	107	107	107

Predicted $L_{C,Peak}$ noise levels correlated reasonable well at Scott Street, but did not correlate well at Nobbys Road where differences of up to 10dB(A) were registered. The cause of this discrepancy should be further investigated, but is likely to be related to the unpredictability of peak noise levels.

As discussed in Section 4.3, the logger located at the Shortland esplanade had been damaged or tampered with during the monitoring event and $L_{C,Peak}$ levels at this site are considered unreliable.

6. Discussion

Attended and unattended noise monitoring was conducted during the Newcastle 500 Supercars event in order to evaluate noise impacts at locations around the circuit and to determine the accuracy of noise predictions prior to the event.

The results of the noise monitoring program indicated that measured L_{Aeq} (10 hour) noise exposures agreed to within +/- 6.5dB(A) of the levels predicted in the Newcastle 500 Noise Assessment (Jacobs, 2017). This indicates that actual noise levels within the internal areas of all buildings likely complied with predicted levels within the noise assessment.

The noise monitoring results also indicated that both L_{Aeq} and L_{CPeak} exposure OHS criteria were exceeded for the 10 hour assessment period at external areas of most trackside areas. These exceedances likely extended to a distance of up to 20m from the trackside.

Further, this monitoring program determined:

- Watt Street
 - External L_{Aeq} (10 hour) levels likely exceeded OHS limits at properties facing the track and up to 20m along side roads.
 - External L_{CPeak} levels likely complied with OHS limits at building facades
 - Internal L_{Aeq} (10 hour) and L_{CPeak} levels likely complied with OHS limits within all buildings
 - Measured L_{Aeq} (10 hour) levels were marginally lower than predicted noise levels
- Shortland Esplanade
 - External L_{Aeq} (10 hour) levels likely exceeded OHS limits at properties facing the track and up to 20m along side roads.
 - Internal L_{Aeq} (10 hour) and L_{CPeak} levels likely remained below the limits within all buildings
 - Measured L_{Aeq} (10 hour) levels correlated very closely with predicted noise levels
 - Measured L_{CPeak} levels are not considered to be reliable at this location
- Scott Street east
 - External L_{CPeak} levels likely exceeded OHS limits by a marginal degree at properties facing the track and up to 20m along side roads.
 - External L_{Aeq} (10 hour) levels likely to comply with OHS limits at building facades
 - Internal L_{Aeq} (10 hour) and L_{CPeak} levels are likely to remain below the limits within all buildings
 - Measured L_{Aeq} (10 hour) levels correlated closely with predicted noise levels
 - Measured L_{CPeak} levels correlated closely with predicted noise levels
- Nobbys Road
 - External L_{Aeq} (10 hour) levels likely exceeded OHS limits at building facades. This is consistent with predicted noise levels for this area.
 - External L_{CPeak} levels were likely to be close to the OHS limits at building facades
 - Internal L_{Aeq} (10 hour) and L_{CPeak} levels likely remained below the legislation within all buildings
 - Measured L_{Aeq} (10 hour) levels were approximately 6dB lower than predicted noise levels
 - Measured L_{CPeak} levels were approximately 10dB higher than predicted, however remained 12dB below the OHS limits
- External noise levels within the central areas of the precinct were measured to be 5 to 6dB higher than predicted levels, however still below OHS criteria.

7. Conclusion

Operator-attended and unattended (noise loggers) noise monitoring was conducted during the Newcastle 500 Supercars event (24 to 26 November 2017) in order to determine noise impacts at sensitive receivers from the event.

Unattended noise monitoring was undertaken at six trackside locations identified in agreement with Supercars. The six locations were chosen to either capture the exposure of residences within each area most exposed to the event or exposures of receivers further back from the race track.

Attended noise monitoring was also carried out during the event to capture noise levels at other locations not covered by the unattended monitoring program and in response to any noise complaints (it is understood that none were received).

The results of the noise monitoring program indicated that:

- pre-event Leq(10hour) noise exposure predictions were in general agreement with measured event Leq(10hour) noise exposure levels. In most cases of discrepancy, the noise modelling was conservative and over-predicted event noise exposure levels. In two cases, the noise modelling under-predicted the Leq(10hour) noise exposure by -3dB(A) (The Esplanade) and -7dB(A) (Joy Cummings Centre, Scott Street (west)).
- given the low overall level of noise at the Joy Cummins Centre and the complex acoustic environment between the circuit and this monitoring location, this impact is not considered to be significant. Noise at this level is below the estimated average daytime LAeq level expected in an area with dense transportation or some industry or commerce (Category R4 - AS1055.2-1997 *Acoustics – Description and measurement of environmental noise. Part 1: General procedures*).
- at most monitoring locations, race day Leq(10hour) noise levels were 2-3dB(A) louder than corresponding noise levels measured during "warm up" days (particularly Friday)
- measured LCPeak noise levels correlated reasonably well with predicted levels at Scott Street
- measured LCPeak noise levels at Shortland esplanade are considered to be unreliable due to interference with the unit
- measured LCPeak noise levels at Nobbys Road were approximately 10dB(A) higher than predicted levels, however still complied with OHS criteria. The cause of this discrepancy should be further investigated, but is likely to be related to the unpredictability of peak noise events.
- internal noise levels within all buildings surrounding the race track likely complied with OHS limits during the event (based on the results of external noise monitoring)
- external LAeq noise levels exceeded the OHS criteria at the front façade of most buildings along the race circuit, and out to a distance of approximately 20m where a direct line of sight existed
- external LCPeak noise levels likely exceeded criteria at the front façade of most buildings along the race circuit and out to a distance of approximately 7m

Appendix A. Acoustic Terminology

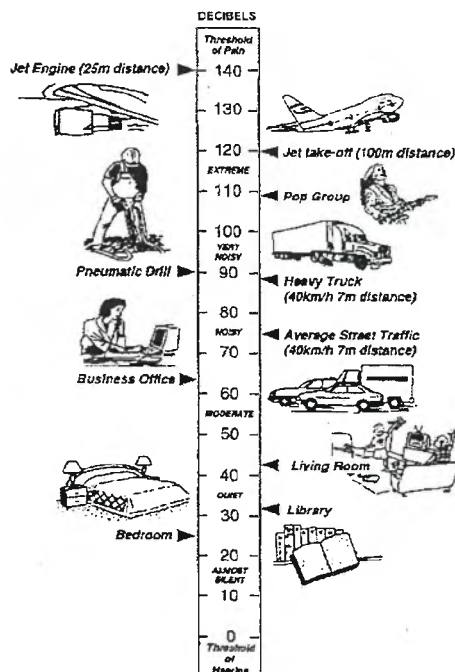
A-weighted sound pressure	The human ear is not equally sensitive to sound at different frequencies. People are more sensitive to sound in the range of 1 to 4 kHz (1000 – 4000 vibrations per second) and less sensitive to lower and higher frequency sound. During noise measurement an electronic ' <i>A-weighting</i> ' frequency filter is applied to the measured sound level <i>dB(A)</i> to account for these sensitivities. Other frequency weightings (B, C and D) are less commonly used. Sound measured without a filter is denoted as linear weighted <i>dB(linear)</i> .
Ambient noise	The total noise in a given situation, inclusive of all noise source contributions in the near and far field.
Community annoyance	<p>Includes noise annoyance due to:</p> <ul style="list-style-type: none"> ■ character of the noise (e.g. sound pressure level, tonality, impulsiveness, low-frequency content) ■ character of the environment (e.g. very quiet suburban, suburban, urban, near industry) ■ miscellaneous circumstances (e.g. noise avoidance possibilities, cognitive noise, unpleasant associations) ■ human activity being interrupted (e.g. sleep, communicating, reading, working, listening to radio/TV, recreation).
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Cumulative noise level	The total level of noise from all sources.
Extraneous noise	Noise resulting from activities that are not typical to the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Feasible and reasonable measures	<p>Feasibility relates to engineering considerations and what is practical to build; reasonableness relates to the application of judgement in arriving at a decision, taking into account the following factors:</p> <ul style="list-style-type: none"> ■ Noise mitigation benefits (amount of noise reduction provided, number of people protected). ■ Cost of mitigation (cost of mitigation versus benefit provided). ■ Community views (aesthetic impacts and community wishes). ■ Noise levels for affected land uses (existing and future levels, and changes in noise levels).

Impulsiveness	Impulsive noise is noise with a high peak of short duration or a sequence of these peaks. Impulsive noise is also considered annoying.
Low frequency	Noise containing major components in the low-frequency range (20 to 250 Hz) of the frequency spectrum.
Noise criteria	The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).
Noise level (goal)	A noise level that should be adopted for planning purposes as the highest acceptable noise level for the specific area, land use and time of day.
Noise limits	Enforceable noise levels that appear in conditions on consents and licences. The noise limits are based on achievable noise levels, which the proponent has predicted can be met during the environmental assessment. Exceedance of the noise limits can result in the requirement for either the development of noise management plans or legal action.
Performance-based goals	Goals specified in terms of the outcomes/performance to be achieved, but not in terms of the means of achieving them.
Rating Background Level (RBL)	The rating background level is the overall single figure background level representing each day, evening and night time period. The rating background level is the 10 th percentile min L _{A90} noise level measured over all day, evening and night time monitoring periods.
Receptor	The noise-sensitive land use at which noise from a development can be heard.
Sleep disturbance	Awakenings and disturbance of sleep stages.

Sound and
decibels (dB)

Sound (or noise) is caused by minute changes in atmospheric pressure that are detected by the human ear. The ratio between the quietest noise audible and that which should cause permanent hearing damage is a million times the change in sound pressure. To simplify this range the sound pressures are logarithmically converted to decibels from a reference level of 2×10^{-5} Pa.

The picture below indicates typical noise levels from common noise sources.



dB is the abbreviation for decibel – a unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.

Sound power Level
(SWL)

The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in $dB(A)$.

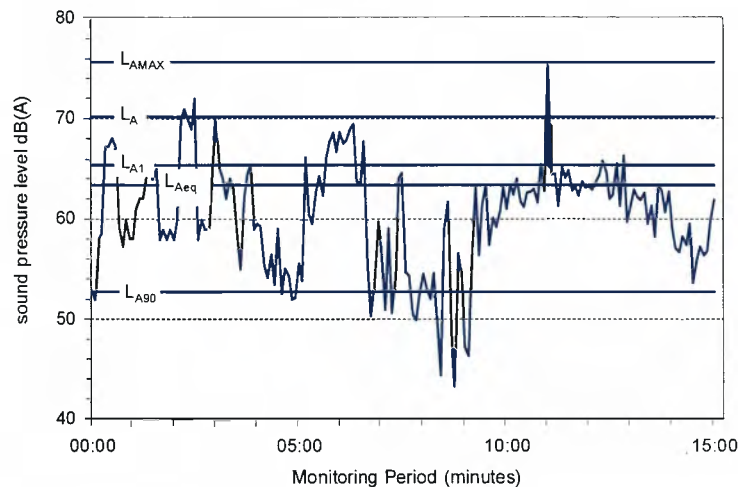
Sound Pressure
Level (SPL)

The level of noise, usually expressed as SPL in $dB(A)$, as measured by a standard sound level meter with a pressure microphone. The sound pressure level in $dB(A)$ gives a close indication of the subjective loudness of the noise.

Statistic noise levels

Noise levels varying over time (e.g. community noise, traffic noise, construction noise) are described in terms of the statistical exceedance level.

A hypothetical example of A weighted noise levels over a 15 minute measurement period is indicated in the following figure:



Key descriptors:

L_{Amax} Maximum recorded noise level.

L_{A1} The noise level exceeded for 1% of the 15 minute interval.

L_{A10} Noise level present for 10% of the 15 minute interval. Commonly referred to the average maximum noise level.

L_{Aeq} Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.

L_{A90} Noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

Threshold

The lowest sound pressure level that produces a detectable response (in an instrument/person).

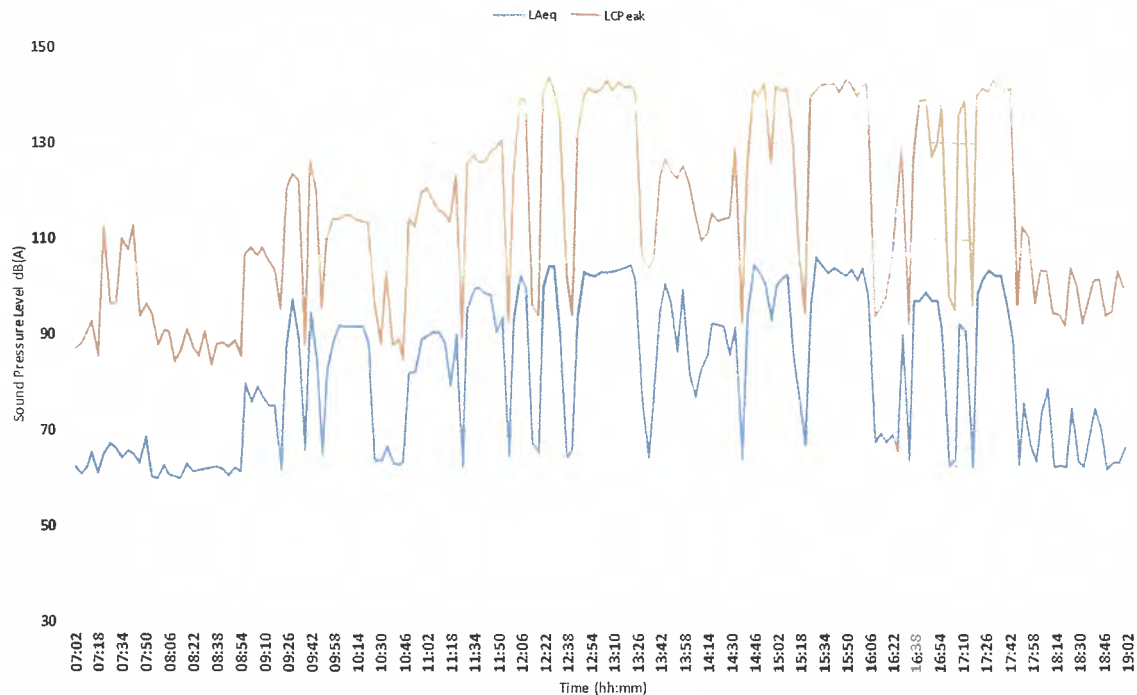
Tonality

Tonal noise contains one or more prominent tones (and characterised by a distinct frequency components) and is considered more annoying. A 2 to 5 dB(A) penalty is typically applied to noise sources with tonal characteristics

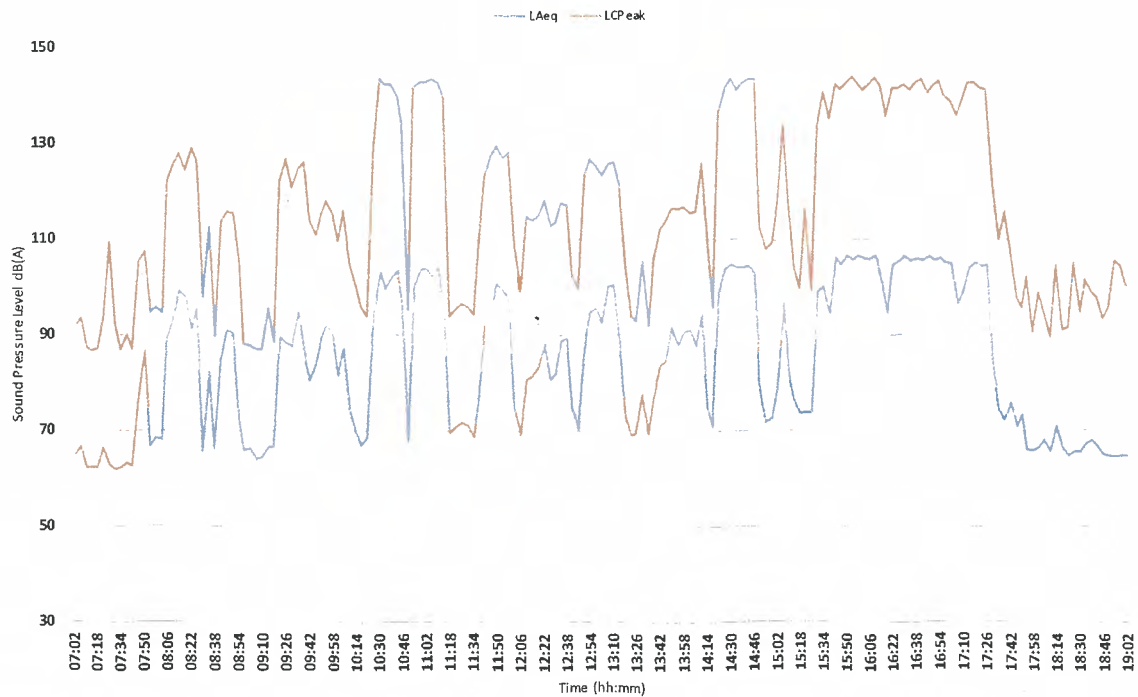
Appendix B. Detailed unattended noise monitoring results

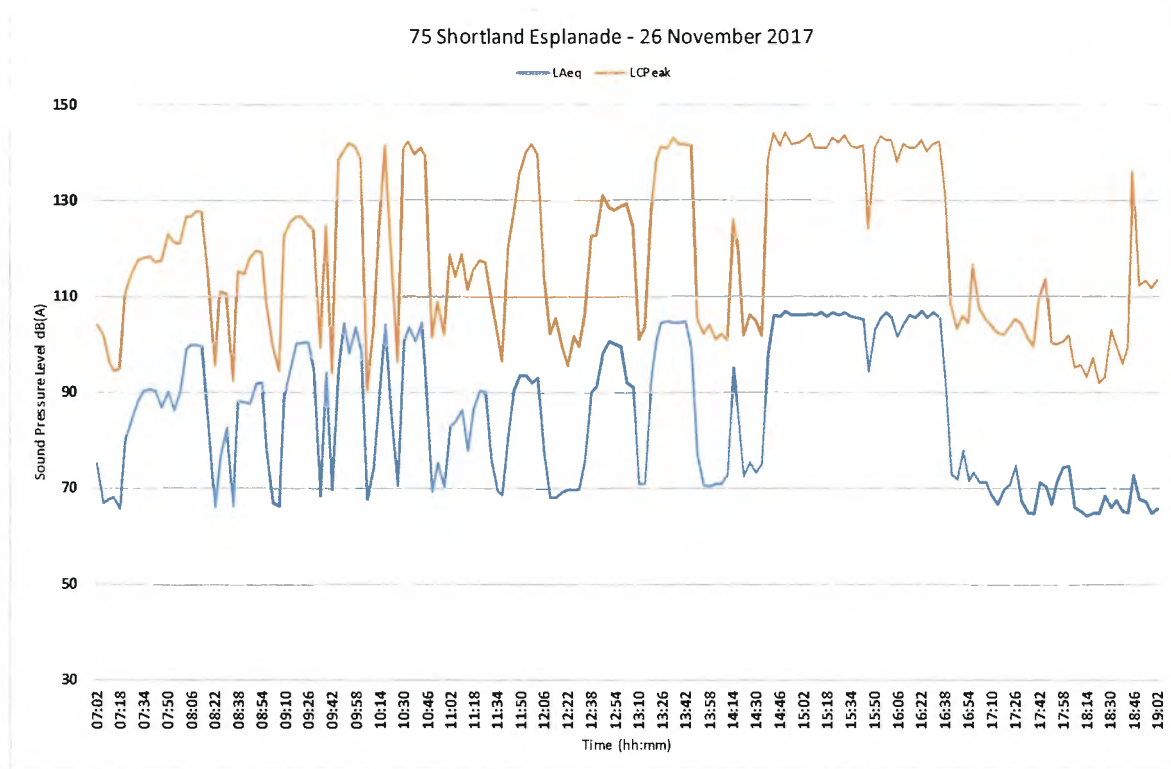
B.1 Shortland Esplanade

75 Shortland Esplanade - 24 November 2017

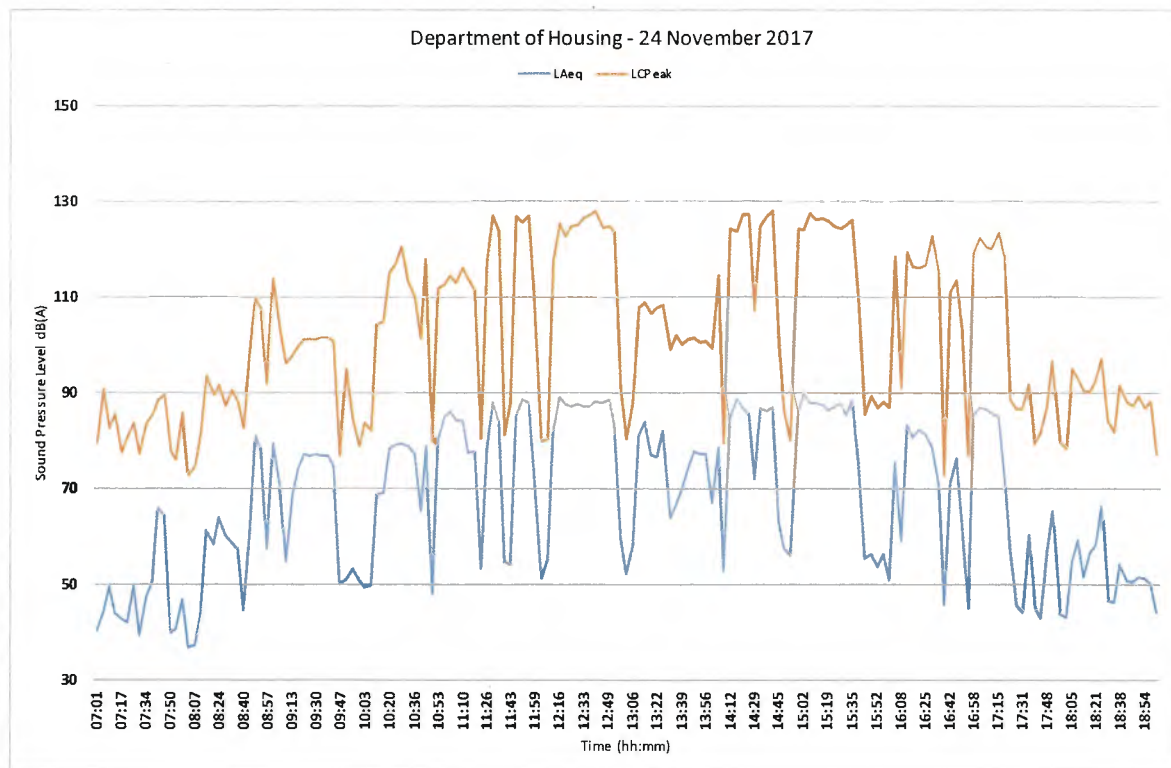


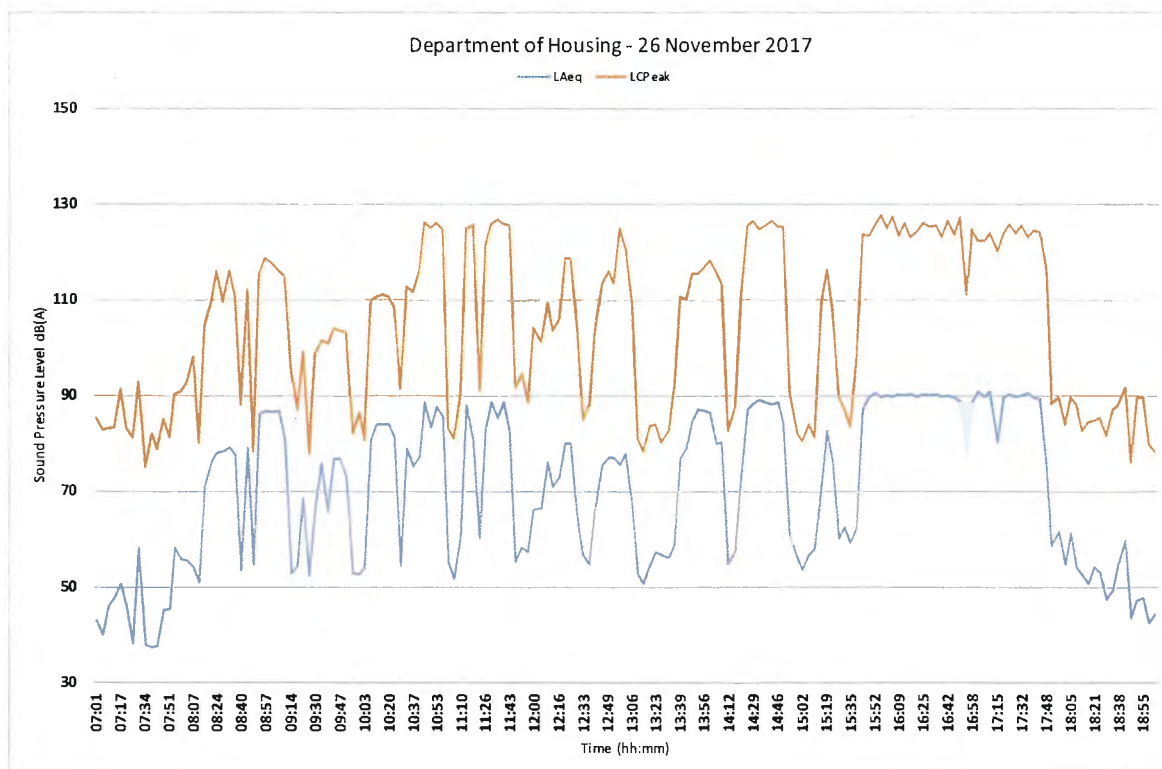
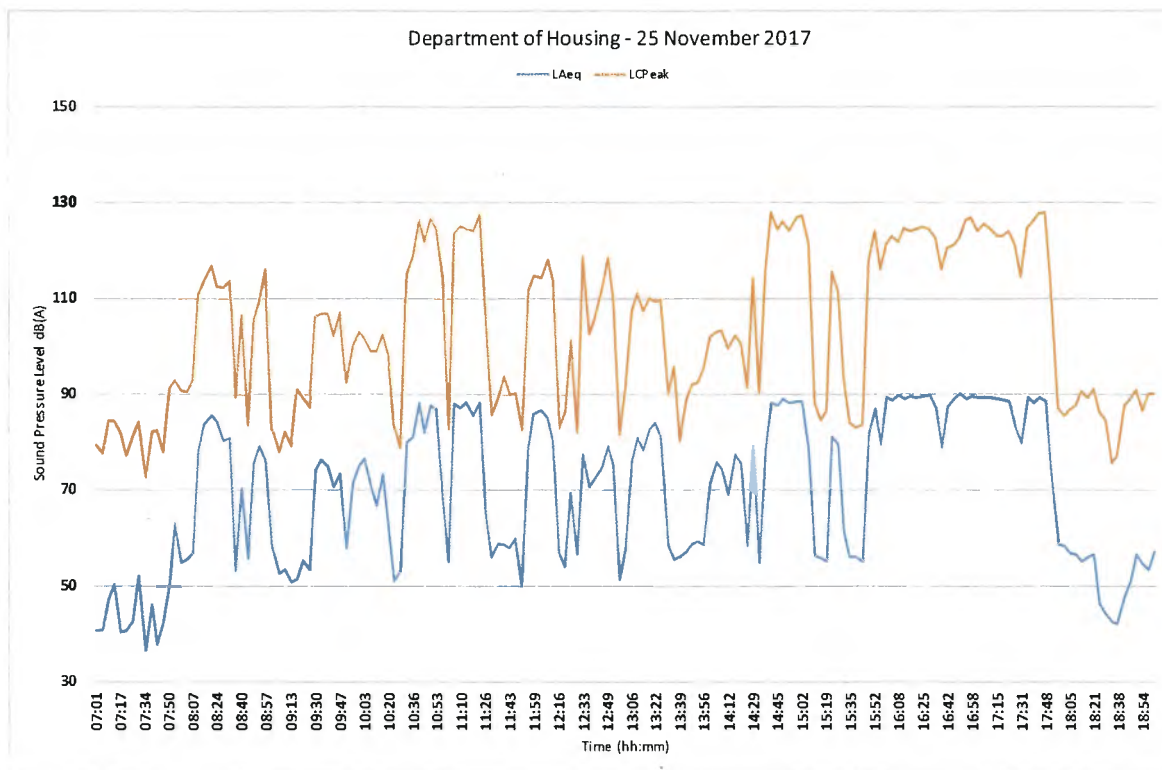
75 Shortland Esplanade - 25 November 2017

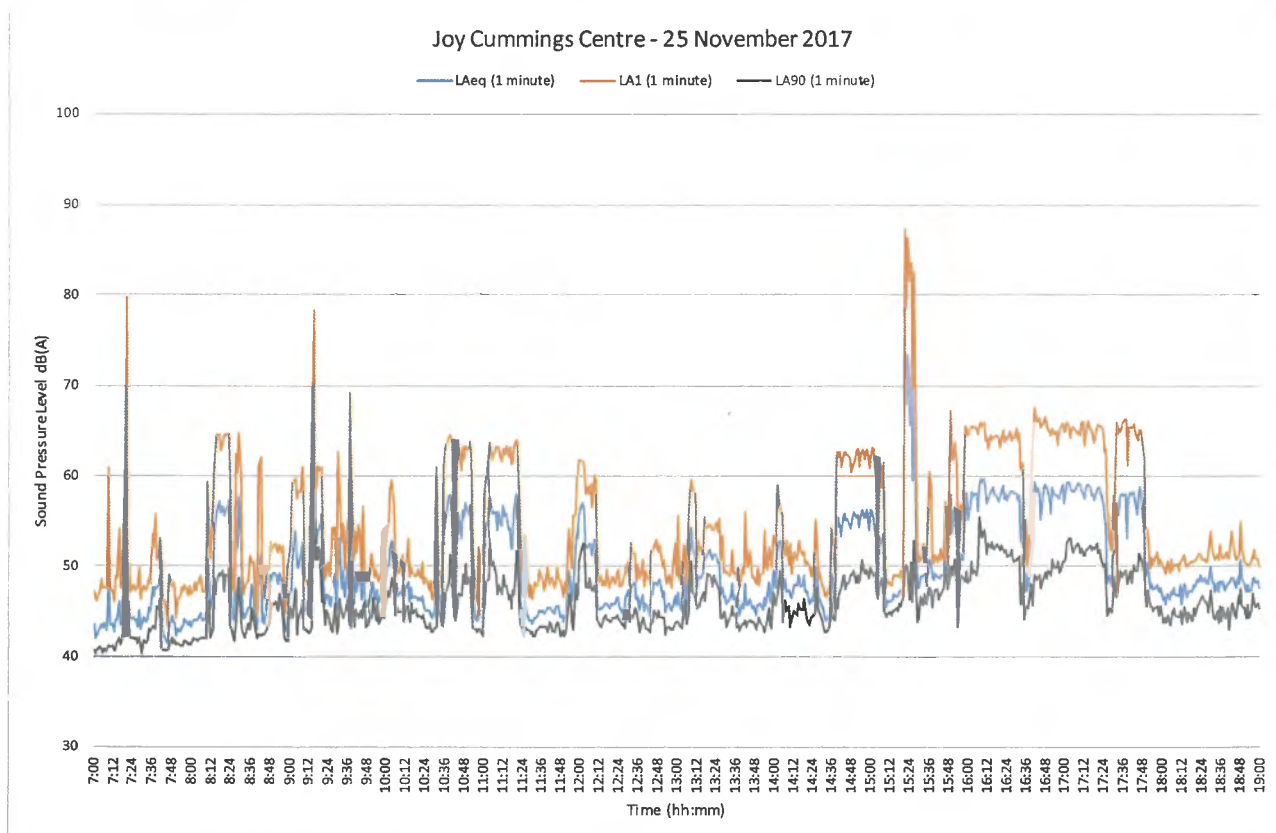
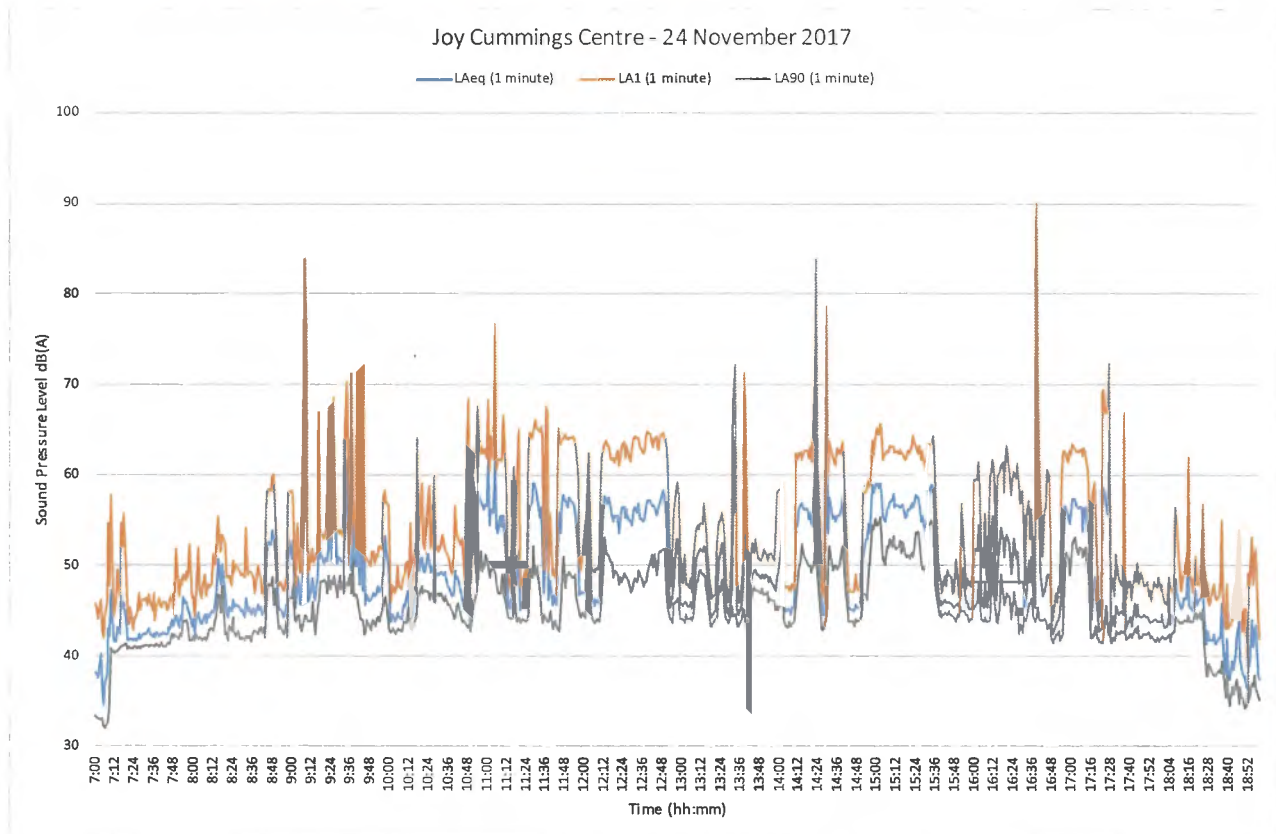


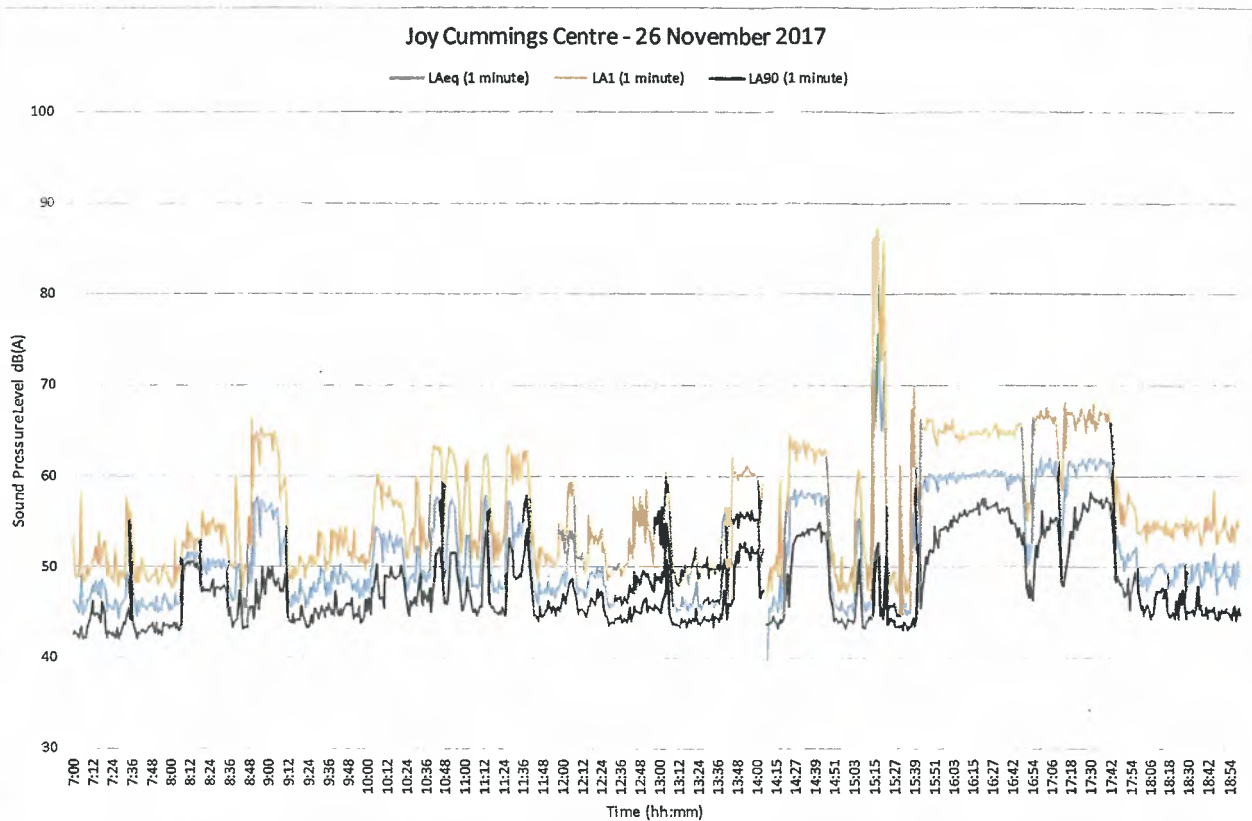


B.2 Nobbys Road (Department of Housing)

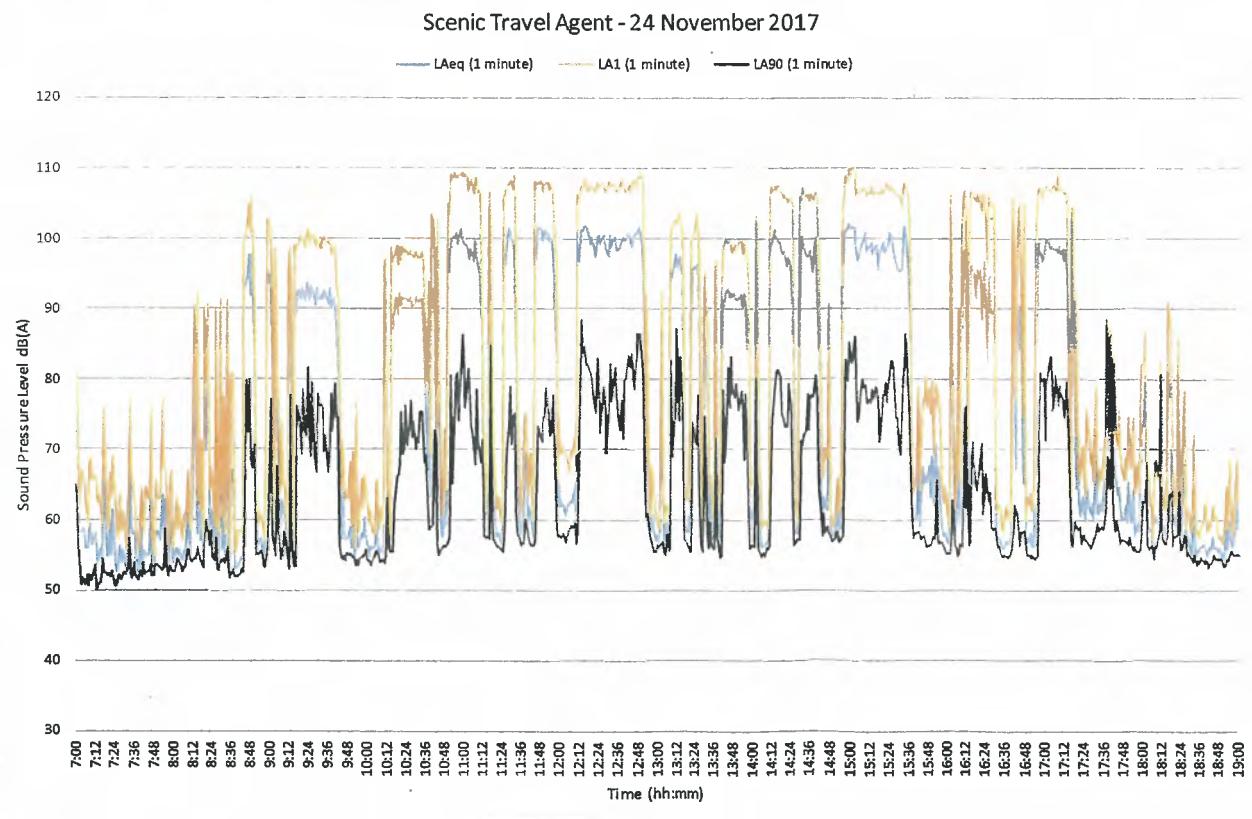




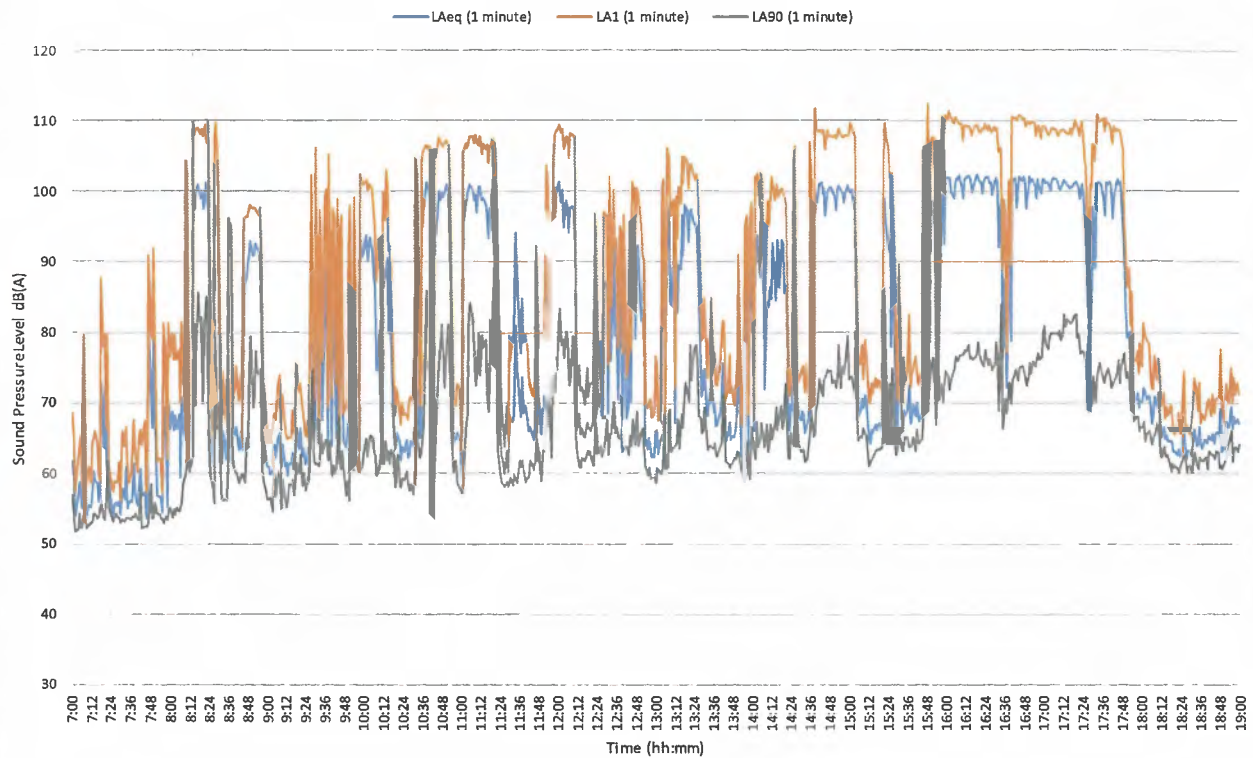
B.3 Scott Street west (Joy Cummings Centre)



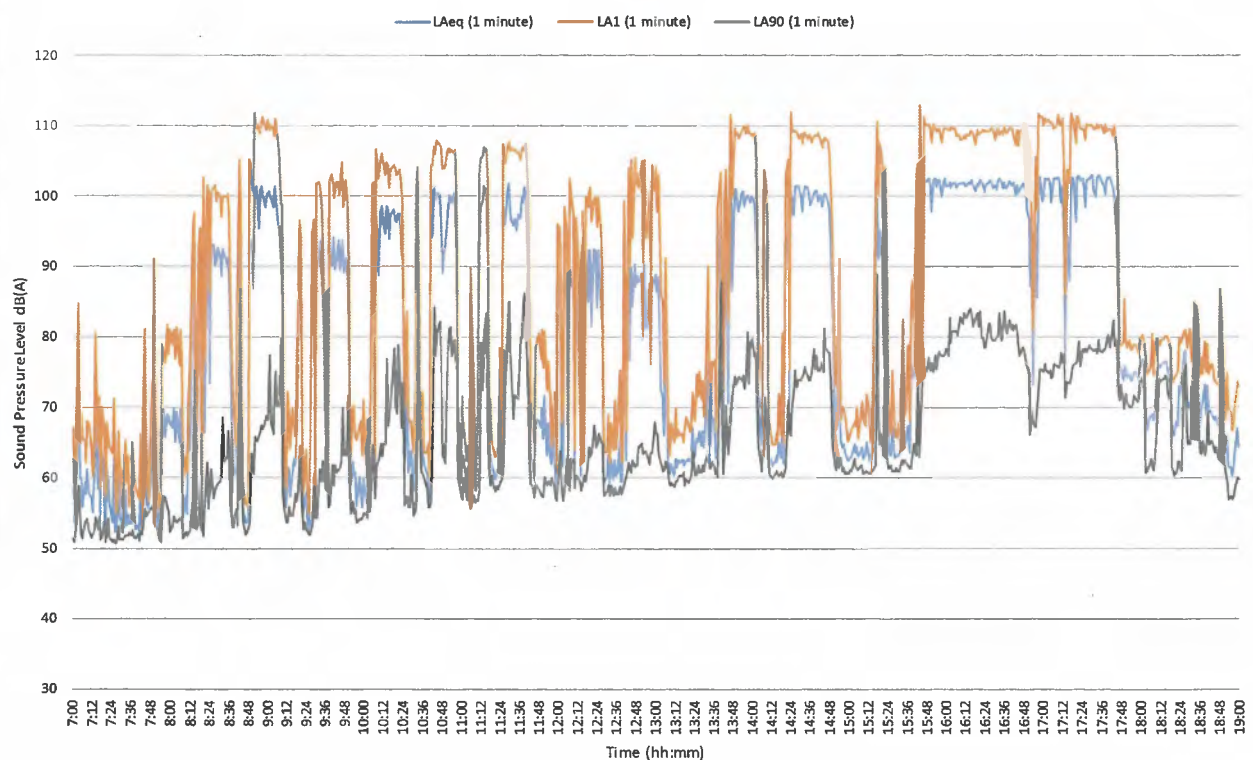
B.4 Watt Street central (Scenic Travel)



Scenic Travel Agent - 25 November 2017

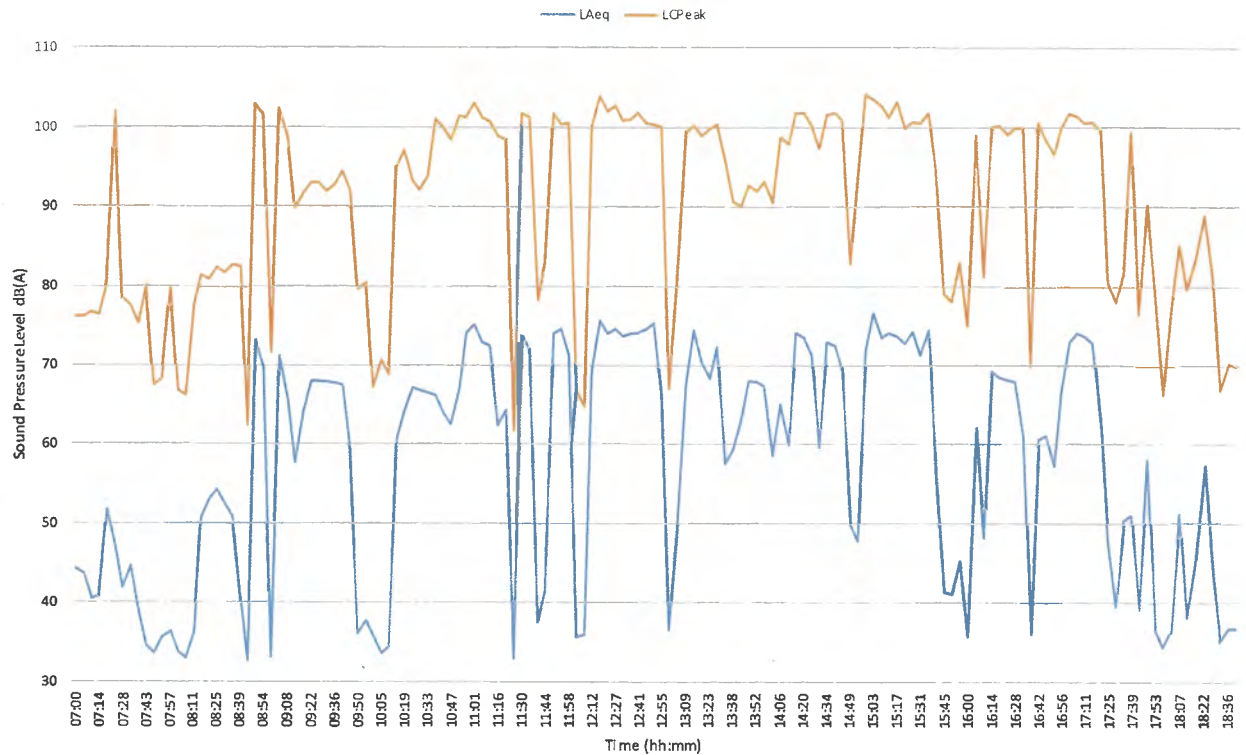


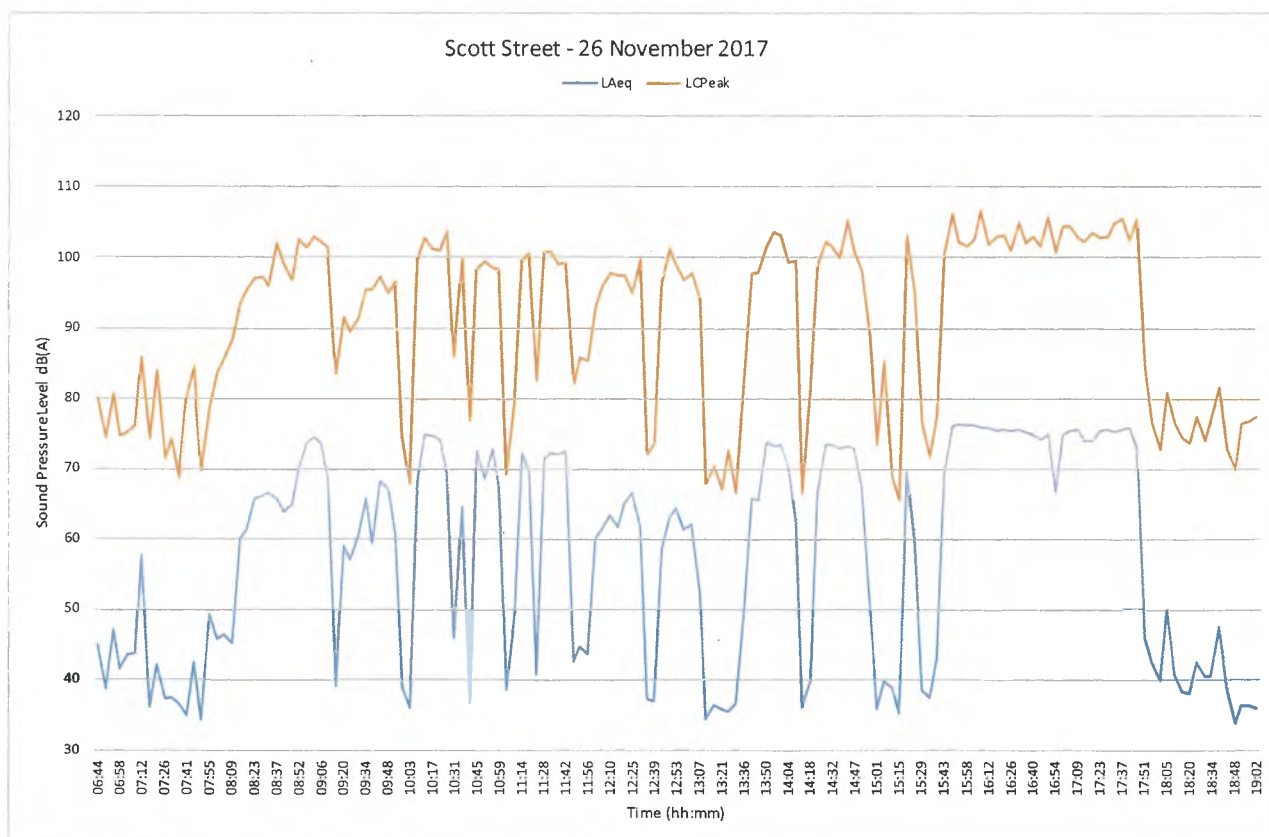
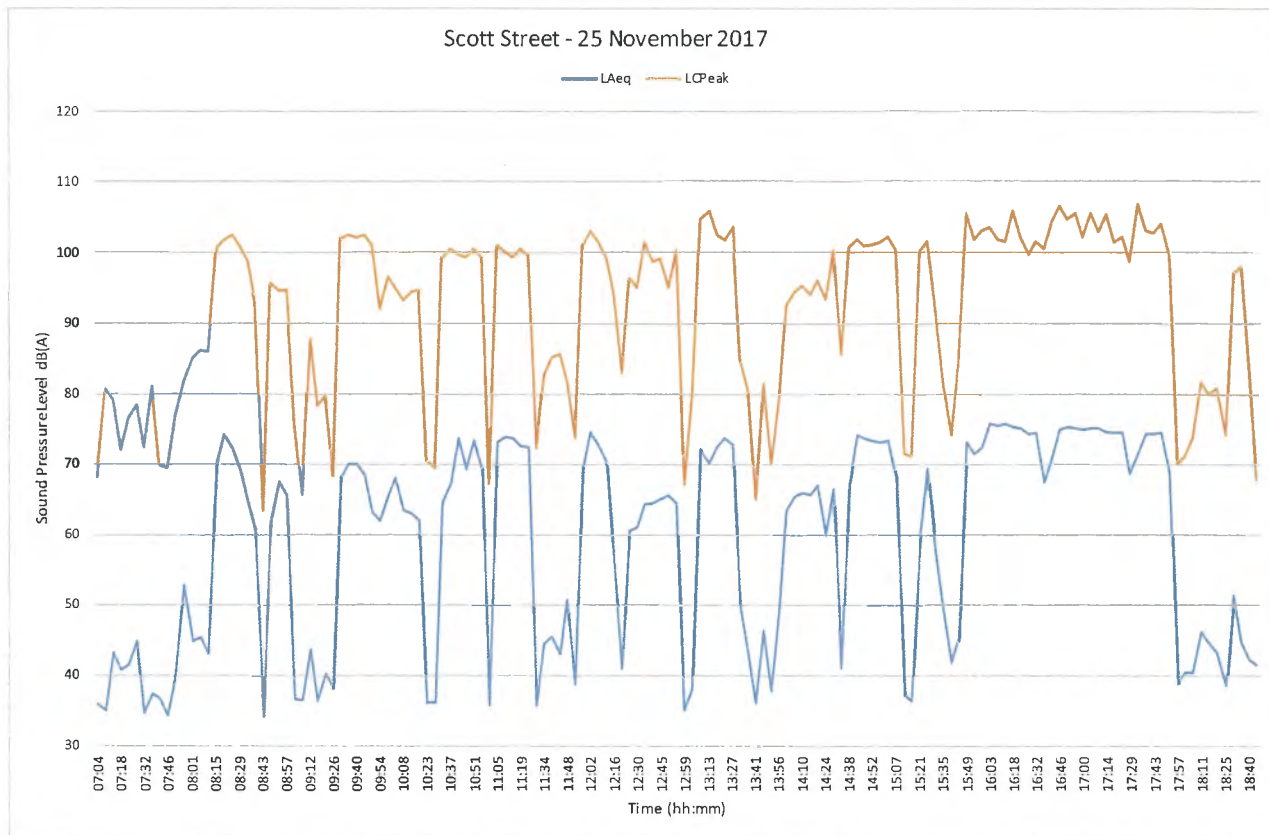
Scenic Travel Agent - 26 November 2017



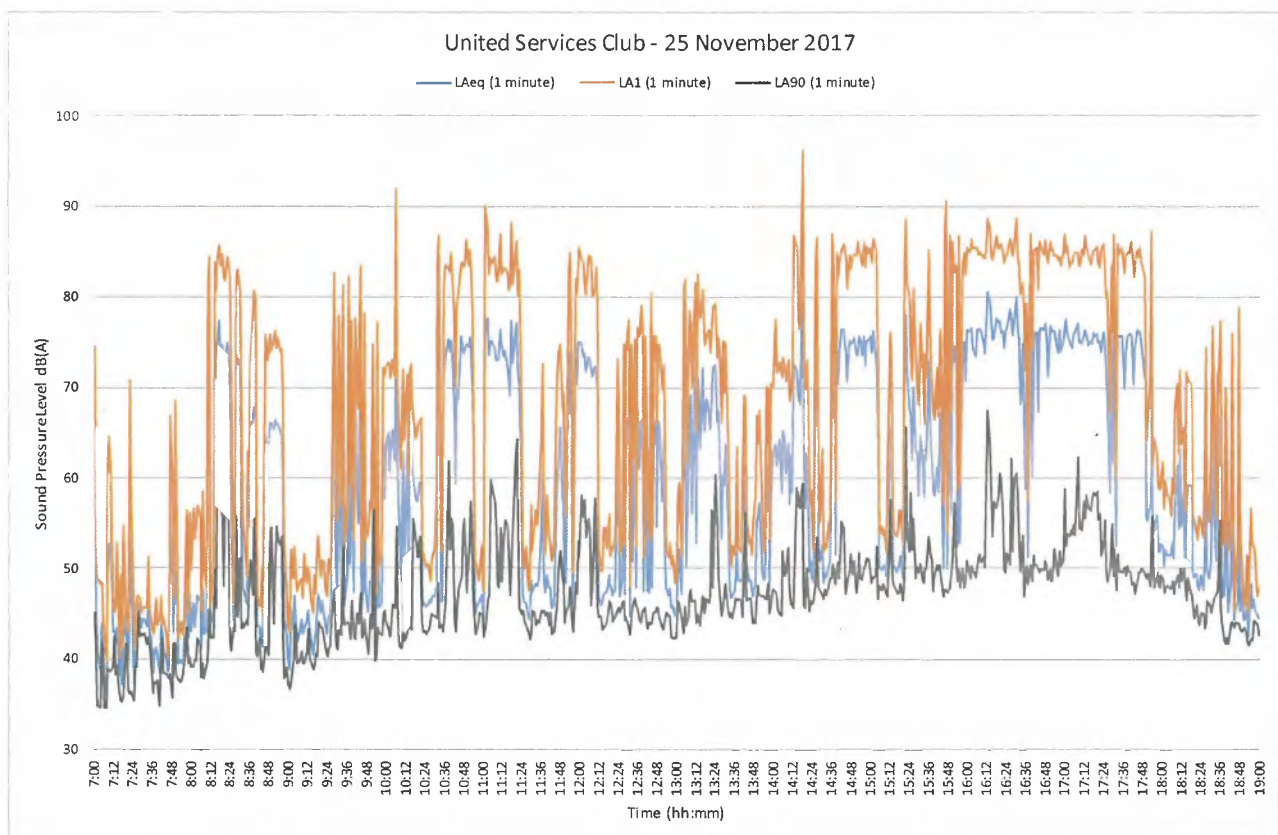
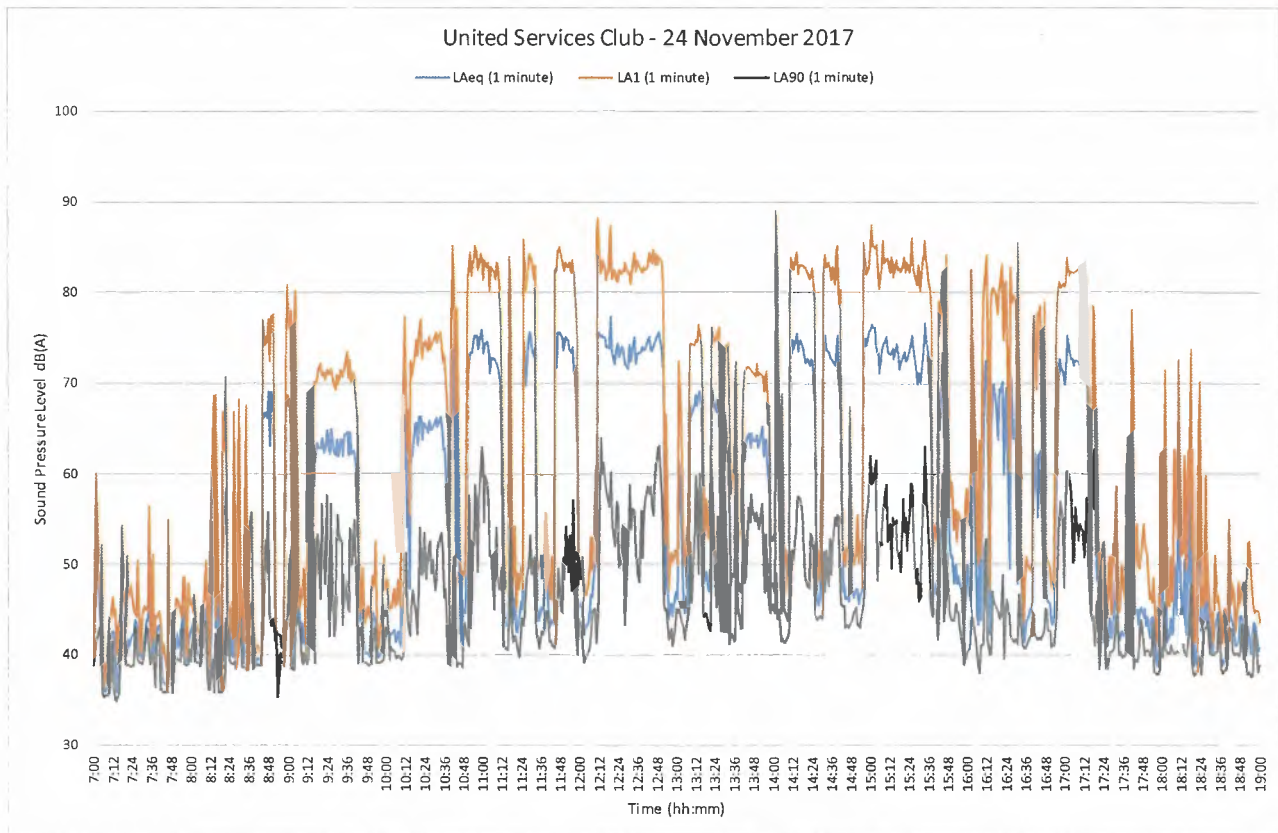
B.5 Scott Street east

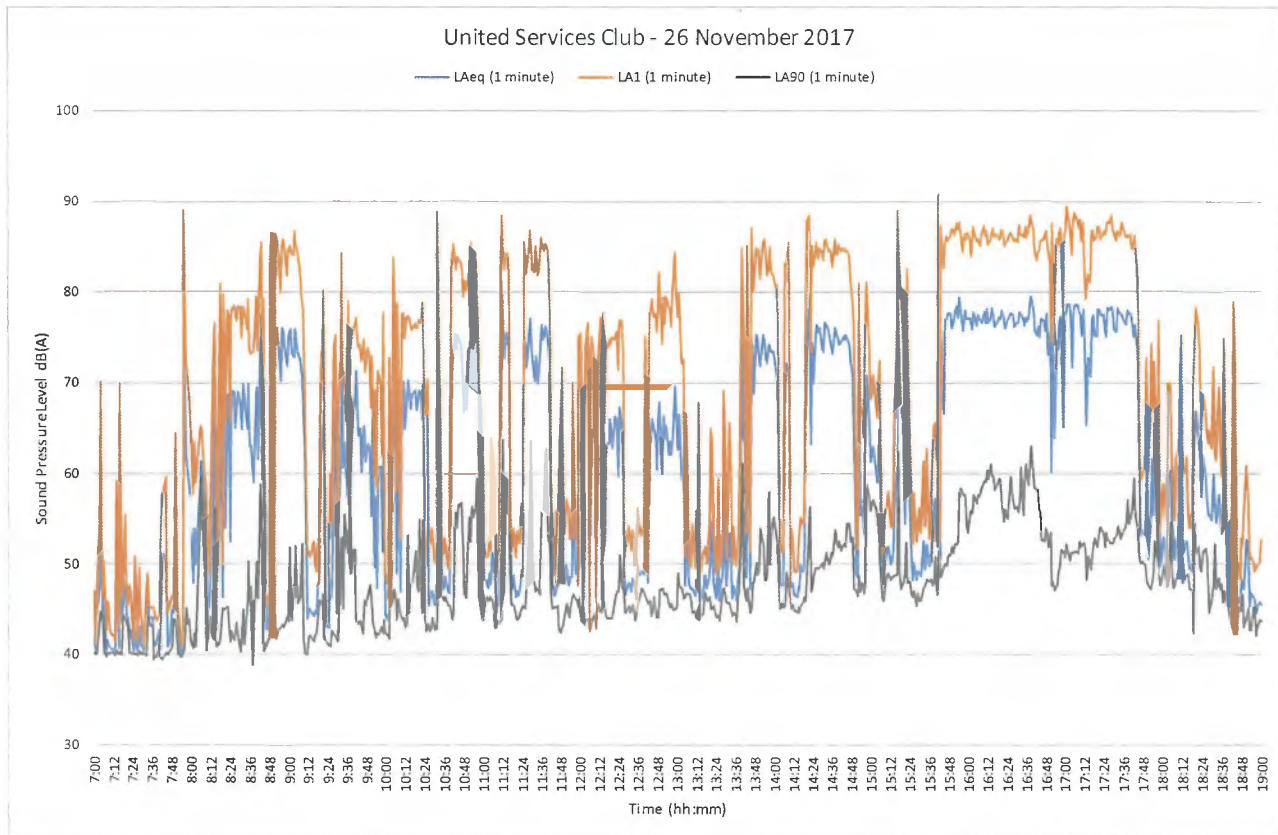
Scott Street- 24 November 2017





B.6 Watt Street south (United Services Club)





Paige Allen

From: [REDACTED]@supercars.com>
Sent: Wednesday, 21 November 2018 11:08 AM
To: Leisa Tate
Cc: [REDACTED]
Subject: 2018 Newcastle Noise Management Plan
Attachments: 9. 2018 Noise Management Plan_Final v2.pdf

Hi Leisa,

Please find attached V2 of the 2018 Newcastle 500 Noise Management Plan.

If you have any questions, please do not hesitate to contact me.

Regards,

[REDACTED]



[REDACTED]

45 NERANG STREET, SOUTHPORT QLD 4215
PO BOX 607, SOUTHPORT BC QLD 4215

[REDACTED]

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Newcastle 500 Acoustic Advice

Supercars Australia

Noise Management Plan

1 | Final v2

15 November 2018

Newcastle 500 Acoustic Advice

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v2.docx

Jacobs Australia Pty Limited

710 Hunter Street
Newcastle West NSW 2302 Australia
PO Box 2147 Dangar NSW 2309 Australia
T +61 2 4979 2600
F +61 2 4979 2666
www.jacobs.com

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Draft B	23/08/2017	Practice review	[REDACTED]	[REDACTED]	[REDACTED]
Final draft	24/08/2017	Client review	[REDACTED]	[REDACTED]	[REDACTED]
Final v0	03/10/2017	DNSW review	[REDACTED]	[REDACTED]	[REDACTED]
Final v1	19/10/2018	2018 Client review v1	[REDACTED]	[REDACTED]	[REDACTED]
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Appendix A. Detailed 2017 noise modelling results (with mitigation)

- A.1 L_{Aeq} (10 hour) noise levels
- A.2 L_{CPeak} noise levels

Glossary

Term	Description
Acoustic Barrier	Solid walls or partitions, solid fences, earth mounds, earth berms, buildings, etc used to reduce noise, without eliminating it.
Ambient Noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Audible Range	The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.
Background Noise	The term used to describe the underlying level of noise present in the ambient noise environment, measured in the absence of the noise under investigation. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L_{90} noise level (see below).
Decibels (dB)	<p>The level of noise is measured objectively using a Sound Level Meter. This instrument has been specifically developed to mimic the operation of the human ear. The human ear responds to minute pressure variations in the air. These pressure variations can be likened to the ripples on the surface of water but of course cannot be seen.</p> <p>The pressure variations in the air cause the eardrum to vibrate and this is heard as sound in the brain. The stronger the pressure variations, the louder the sound is heard.</p> <p>The range of pressure variations associated with everyday living may span over a range of a million to one. On the top range may be the sound of a jet engine and on the bottom of the range may be the sound of a pin dropping.</p> <p>Instead of expressing pressure in units ranging from a million to one, it is found convenient to condense this range to a scale 0 to 120 and give it the units of decibels. The following are examples of the decibel readings of every day steady or quasi-steady sounds.</p> <p>20dB <i>quiet bedroom at night or recording studio</i> 30dB <i>quiet library or quiet location in the country</i> 40dB <i>living room</i> 50dB <i>typical office space or ambience in the city at night</i> 60dB <i>normal conversational speech</i> 70dB <i>a car passing by</i> 80dB <i>kerbside of a busy road</i> 90dB <i>truck passing by</i> 100dB <i>nightclub</i> 110dB <i>rock band or 2m from a jackhammer</i></p>

Term	Description
	<p>120dB 70m from a jet aircraft</p> <p>130dB threshold of pain</p> <p>140dB 25m from a jet aircraft</p>
dB(A); A-weighted decibels	The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched in is denoted as dB(A). Most environmental noise is measured using the A filter.
dB(C); C-weighted decibels	C weighted adjustments are relatively flat across lower frequencies, and as such are better suited for the assessment of low frequency noise.
Diffraction	The distortion around solid obstacles of waves travelling past.
Frequency	Of a periodic quantity: the time rate of repetition. The reciprocal of the period. Frequency is measured in Hertz (Hz).
Loudness	A 3dB increase represents a doubling of the sound pressure, however an increase of about 10dB is required before the sound will subjectively appear to be twice as loud. That is, a sound of 85dB is twice as loud as a sound of 75dB which is twice as loud as a sound of 65dB and so on. That is, the sound of 85dB is four times as loud as a sound of 65dB. The smallest change which can be readily heard is about 2dB. An increase beyond 5dB is considered to represent the level at which a change in loudness begins to be clearly perceived.
L ₁₀	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L ₉₀	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L ₉₀ noise level expressed in units of dB(A).
L _{eq}	Equivalent sound pressure level – the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring. The sound weighting of the noise measurement is commonly added, for example L _{Aeq} or L _{Ceq} .
Reflection	Sound wave changed in direction of propagation due to a solid object obscuring its path.
SEL	Sound Exposure Level (SEL) is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain L _{eq} sound levels over any period of time and can be used for predicting noise at various locations.
Sound Level Meter	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure sound pressure levels.

Term	Description
Sound Pressure Level	The level of sound pressure, expressed in decibels, as measured by a standard sound level meter with a microphone.
Sound Power Level	Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power.

1. Introduction

1.1 Background

In November 2018, Supercars Australia is hosting the second Newcastle 500 event in Newcastle. This event will be one of the biggest events to be held in Newcastle, and is expected to draw 150,000 spectators during the race weekend.

The proposed race circuit will pass numerous business and residential properties within the Newcastle CBD, potentially generating high noise levels in the area. Supercars Australia has committed to assessing potential noise levels and managing any identified impacts. Two evening concert events will also be held on the site.

In a study undertaken prior to the inaugural 2017 event, Jacobs Group (Australia) Pty Ltd (Jacobs) modelled potential noise impacts against NSW Work Health Safety legislation, which aims to protect hearing damage. Following the completion of this assessment, a Noise Management Plan was developed to assist with the management of identified noise impacts.

During the 2017 event, attended and unattended noise monitoring was carried out to verify the modelled noise impacts.

This document is an update to the 2017 Noise Management Plan (NMP) and has considered the findings of these studies and feedback from race attendees and residents following the 2017 event.

1.2 Purpose and objectives

1.2.1 Purpose

This Plan assesses the effectiveness of proposed noise mitigation measures and describes how Supercars Australia proposes to manage any residual noise impacts resulting from the event's operation.

1.2.2 Objectives

The key objective of this Noise Management Plan (NMP) is to ensure that impacts to the local community from noise are minimised. Specific objectives include:

- Identifying sensitive receivers and ensuring appropriate noise controls and procedures are implemented during the Newcastle 500 event
- Engagement of the community to understand their issues and noise management preferences
- Minimising potential adverse noise impacts to community
- Managing any predicted impacts
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2 of this Plan.

2. Legislation

2.1 Work Health and Safety Regulation 2011

There are two parts to the exposure standard for noise. The regulations set an exposure standard defined as an L_{CPeak} of 140dB(C) (peak exposure level) or an $L_{Aeq(8h)}$ of 85dB(A) (L_{Aeq} exposure level). Where noise levels exceed these guidelines, hearing protection should be worn to reduce potential impacts.

Peak noise levels greater than 140dB(C) are usually associated with very short term noise events such as impacts or explosive noise. Relative to the Supercars event, loud 'pops' associated with turbo dump valves particularly during gear changes would be assessed against this standard. Any exposure above this peak may cause almost instant damage to hearing.

The exposure standard of 85dB(A) $L_{Aeq(8h)}$ is applied to an eight hour time period (the nominal length of a working day). Where the exposure period extends beyond eight hours this level will be reduced.

Table 2.1 presents the proposed racing duration for the 2018 Newcastle 500 event. The proposed race duration is nine to ten hours per day, and as such the L_{Aeq} criteria must be reduced to account for this longer exposure period. To provide a conservative analysis, a period of ten hours has been assumed.

It is important to note that the regulations for noise exposure are intended as protection measures for workers exposed to high noise levels throughout their working lives. One-off exposure to these noise levels is not likely to cause any long-term effects.

Table 2.1 : Proposed race schedule

Day	Start of racing	End of racing	Exposure period (hh:mm)	Base exposure limit	Exposure limit
Friday	8:05	17:30	9:25	85dB(A) $L_{Aeq(8hr)}$	84dB(A) $L_{Aeq(10hr)}$
Saturday	8:05	17:50	9:45		84dB(A) $L_{Aeq(10hr)}$
Sunday	8:05	17:50	9:45		84dB(A) $L_{Aeq(10hr)}$

In summary vehicle noise will be assessed against the following criteria:

- L_{CPeak} 140dB(C)
- $L_{Aeq(10\text{ hour})}$ 84dB(A)

2.2 Concert noise legislation

In NSW there is no specific legislation that addresses noise emissions from outdoor concerts.

The City of Newcastle is responsible for management of noise emissions from concerts and similar one-off events however the City does not have published noise limits for this type of event.

3. Existing environment

3.1 Proposed route

The proposed route at Newcastle is 2.6km in length, commencing westbound on Wharf Road, adjacent to Foreshore Park. The circuit then turns left into Watt Street past the old Newcastle Train Station and continues south before turning east onto Church Street / Shortland Esplanade. The route then weaves through Zaara and Scott Streets and into Parnell Place / Nobbys Road, returning to the finishing line on Wharf Road.

3.2 Noise sensitive receivers

Residential properties are primarily located though the eastern areas of the proposed circuit, primarily along:

- Watt Street (south)
- Church Street / Shortland Esplanade
- Zaara Street
- Scott Street
- Parnell Place / Nobbys Road

Residential buildings on much of this route are typically mixed use, multi-story apartments, with commercial land use on the ground floor and residential properties located above. Terrace style apartments are also common along Watt Street, Scott Street and Parnell Place.

A map showing the land uses and property types is provided below in Figure 3.1.

Existing noise sources in the proposed track area are typical of a coastal, city environment and include traffic, pedestrians and residential noise, including air conditioning units. Noise from the ocean is common audible, particularly during night time hours when noise from other sources decreases.



Figure 3.1 : Noise sensitive receivers

4. Assessment of noise impacts (without mitigation)

The prediction of noise impacts expected from the operation of the Supercars event is detailed in Jacobs' report '*Newcastle 500 Acoustic Advice - Noise Assessment*'. A summary of the assumptions and findings of this assessment is presented in the following section. This assessment did not incorporate the benefit of any potential noise mitigation measures, as they had yet to be confirmed at that time. The re-assessment of the event's predicted noise impact including the effect of its noise control measures is outlined in Section 5.

4.1 Noise exposure at outdoor areas (without mitigation)

4.1.1 External $L_{Aeq(10 \text{ hour})}$ noise exposure (without mitigation)

The predicted total duration $L_{Aeq(10 \text{ hour})}$ noise exposure for each receiver has been presented graphically in Figure 4.1. This shows external areas where an $L_{Aeq(10 \text{ hour})}$ of 84dB may be exceeded on the busiest day (Saturday) and includes highlighting of properties where the maximum affected Sound Pressure Level (SPL) outside the most affected building façade may exceed 84dB(A) $L_{Aeq(10 \text{ hour})}$.

It is noted that this assessment assumes all vehicles to be Supercars. These are the loudest vehicles proposed for the event, however will comprise only approximately 10% of vehicle movements on Friday and 50% on Saturday and Sunday.

Buildings within this affected zone are located along the following streets:

- Watt Street
- Shortland Esplanade
- Zaara Street
- Scott Street
- Parnell Place / Nobbys Road

These results indicated that Saturday event SPLs are likely to exceed an $L_{Aeq(10 \text{ hour})}$ of 84dB(A) outside most buildings directly facing the race circuit, and within other public areas such as footpaths, parks, outdoor seating areas and balconies that have direct exposure to the circuit.

SPLs are found to generally decrease towards the upper floor of buildings, although due to site specific factors such as screening and reflection from intervening buildings or barriers, this is not always the case.

SPLs on other event days are likely to be broadly similar to these levels.

Predicted, unmitigated SPLs inside these buildings are discussed in Section 4.2.

Event SPLs external to the Newcastle City Police Station are predicted to range between 84 - 87dB(A) $L_{Aeq(10 \text{ hour})}$, which marginally exceeds the $L_{Aeq(10 \text{ hour})}$ of 84dB(A). Section 4.2 assesses noise exposure at internal areas, and shows that internal SPLs at the police station are expected to comply with the $L_{Aeq(10 \text{ hour})}$ of 84dB(A).

The proposed 2018 race schedule contains a reduced number of events and as such, $L_{Aeq(10 \text{ hour})}$ noise levels will be somewhat lower than during the 2017 event.



Figure 4.1 : External $L_{Aeq}(10 \text{ hour})$ noise affected areas and buildings (Unmitigated)

4.1.2 External L_{CPeak} (Maximum) noise exposure (without mitigation)

Modelling has shown that external peak SPLs may exceed an L_{CPeak} of 140dB(C) at the external facades of a number of properties. These are primarily located along the lower floors of Zaara Street, Scott Street and Watt Street.

External areas of all other building facades are predicted to comply with an L_{CPeak} of 140dB(C) during the Newcastle 500 event. External L_{CPeak} SPLs are predicted to be less than 140dB(C) at distances greater than 10m from vehicle passbys.

4.2 Indoor noise levels (without mitigation)

The analysis above relates to predictions of noise in outside areas. The follow sections relate SPLs inside buildings. Determining whether noise exposures within these properties exceed the $L_{Aeq}(10 \text{ hour})$ of 84dB(A), requires knowledge of the total acoustic performance of the building elements such as

walls, doors, windows, and eaves. A detailed building inspection of each potentially affected property was not undertaken as part of this assessment. However the assumed acoustic performance of each building is outlined in the following sections.

4.2.1 Internal calculation assumptions

Advice provided to the public will be to keep doors and windows closed during the event. As such the following calculations assume that doors and windows will be kept closed.

Facade reductions presented in the noise assessment are indicative only and have been based on an external, visual inspection. Generally all buildings have been categorised as weatherboard or concrete / brick, whilst windows are assumed to be of standard 5mm to 6mm glazing. In general a solid and well-sealed concrete wall will provide up to 50dB(A) noise reduction across the facade, whilst glazing will usually provide approximately 15-20dB(A) noise reduction.

For the purposes of this assessment conservative values of facade noise reduction have been assumed. These are:

- 15 dB(A) for weatherboard wall with timber sash windows (which remain closed)
- 20 dB(A) for concrete / brick walls with aluminium framed windows (which remain closed)

Some adjustments of these values have been made for those properties at which windows or doors have been observed to seal poorly, or where concrete / double brick walls contain small or no windows.

Predicted noise levels are an estimation of likely noise levels in the most exposed, front room(s) of each property only. Supercar noise levels in rooms setback from the circuit will be lower than these values.

4.2.2 Internal noise predictions (without mitigation)

These results show that internal SPLs may exceed an $L_{Aeq(10 \text{ hour})}$ of 84dB(A) at up to 55 individual residential properties and 18 businesses where no noise management measures are employed. These specific properties are detailed in the noise assessment. In summary the following general observations are made:

- L_{CPeak} (Short term peak) SPLs within all assessed properties are expected to comply an L_{CPeak} of 140dB.
- Dwellings on the ground and first floors of Zaara Street, Scott Street and the western side of Parnell Place / Nobbys Road are those residential properties at which internal $L_{Aeq(10 \text{ hour})}$ SPL exposure is expected to be highest and may marginally exceed 84dB(A) L_{Aeq} over the ten hour race period without mitigation.
- At all other properties, internal $L_{Aeq(10 \text{ hour})}$ SPL exposure is expected to comply with the limit. This value assumes doors and windows are left closed.

It is noted that this assessment assumes all vehicles to be Supercars. This is the loudest vehicle type proposed for the event. Supercars are expected to represent approximately 10% of all vehicle movements on Friday and 50% on Saturday and Sunday.

It is important to note that the regulations for noise exposure are intended as protection measures for workers exposed to high noise levels throughout their working lives. For this report assessment has been based on an $L_{Aeq(10 \text{ hour})}$ of 84dB(A).

It is also important to emphasise that the predicted levels only apply if the person stands in essentially the same position for the 10 hour duration of the event. Normally a resident would not be outside the

building for the entire day, hence the importance and relevance of the internal noise levels. Similarly the internal noise levels only apply to the front facing rooms of the building and are relevant only if the person spends all the time in that front facing room. Presumably some time would be spent in other rooms of the dwelling during each race day.

The assessment has been based on all race car movements on the busiest day (Saturday) proposed for the weekend.

As such these predictions consider a worst case scenario approach in several areas.

Although predicted SPL exposure inside most residential properties are expected to comply with L_{Aeq} of 84dB(A) during the event (subject to doors and windows being kept closed), SPLs would generally be considered loud and outside the typical character of the area. Ongoing noise impacts for the duration of the event are likely to cause nuisance or discomfort for some members of the community.

4.2.3 Internal noise predictions (with mitigation)

In response to the SPLs predicted from the operation of the 2017 event, Supercars installed temporary noise barriers at the following locations to reduce noise exposure:

- Watt Street, western side, King Street to Church Street
- Shortland Esplanade, northern side, Watt Street
- Zaara Street, western side, Shortland Esplanade to Scott Street
- Scott Street, both sides, Zaara Street to Parnell Place
- Parnell Place, western side, Scott Street to Alfred Street

The barriers were 2m high and installed on top of concrete safety barriers.

With the implementation of the identified noise control measures, event noise levels within buildings were predicted to comply with the noise exposure criterion for all ground floor areas.

Internal areas of all buildings were expected to comply with an L_{CPeak} of 140dB.

Internal noise levels may still exceed the L_{Aeq} exposure criterion after implementation of the barriers at some first floor locations along Zaara Street, Scott Street and Parnell Place.

4.3 2017 Noise monitoring

Operator-attended and unattended (noise loggers) noise monitoring was conducted during the Newcastle 500 Supercars event (24 to 26 November 2017) to determine noise impacts at sensitive receivers from the 2017 event.

Unattended noise monitoring was undertaken at six trackside locations identified in agreement with Supercars. The six locations were chosen to either capture the exposure of residences within each area most exposed to the event or exposures of receivers further back from the race track.

Attended noise monitoring was also carried out during the event to capture noise levels at other locations not covered by the unattended monitoring program and in response to any noise complaints (it is understood that none were received).

The results of the noise monitoring program indicated that:

- Pre-event $L_{eq(10 \text{ hour})}$ noise exposure predictions were in general agreement with measured event $L_{eq(10 \text{ hour})}$ noise exposure levels. In most cases of discrepancy, the noise modelling was conservative and over-predicted event noise exposure levels. In two cases, the noise modelling under-predicted the $L_{eq(10 \text{ hour})}$ noise exposure by -3dB(A) (The Esplanade) and -7dB(A) (Joy Cummings Centre, Scott Street (west)).
- Given the low overall level of noise at the Joy Cummins Centre and the complex acoustic environment between the circuit and this monitoring location, this impact is not considered to be significant. Noise at this level is below the estimated average daytime L_{Aeq} level expected in an area with dense transportation or some industry or commerce (Category R4 - AS1055.2-1997 *Acoustics – Description and measurement of environmental noise. Part 1: General procedures*).
- At most monitoring locations, race day $L_{eq(10 \text{ hour})}$ noise levels were 2-3dB(A) louder than corresponding noise levels measured during “warm up” days (particularly Friday)
- Measured L_{CPeak} noise levels correlated reasonably well with predicted levels at Scott Street
- Measured L_{CPeak} noise levels at Shortland esplanade are considered to be unreliable due to interference with the unit
- Measured L_{CPeak} noise levels at Nobbys Road were approximately 10dB(A) higher than predicted levels, however still complied with OHS criteria. The cause of this discrepancy is likely to be related to the unpredictability of peak noise events.

4.4 Summary of noise impacts

In consideration of the previous studies outlined above, the following noise impacts are expected during the 2018 event:

- Internal L_{Aeq} noise levels within all buildings surrounding the race track will likely comply with OHS limits at ground floor locations during the event
- Internal L_{CPeak} noise levels within all buildings surrounding the race track will likely comply with OHS limits during the event
- Internal noise levels may still exceed the L_{Aeq} exposure criterion after implementation of the barriers at some first floor locations along Zaara Street, Scott Street and Parnell Place.
- External L_{Aeq} noise levels may exceed the OHS criteria at the front façade of most buildings directly adjacent to the race circuit
- External L_{Aeq} noise levels may exceed the OHS criteria out to a distance of approximately 20m where a direct line of sight exists
- External L_{CPeak} noise levels are likely to exceed the OHS criteria out to a distance of approximately 7m from the track alignment

5. Noise management measures

5.1 Temporary noise barriers

In response to the likely identified noise impacts during the event, Supercars has proposed the use of temporary noise barriers to reduce noise exposure to residential properties. The following section outlines the recommended areas for these barriers.

In addition to potential noise benefits, the selection of barrier locations requires the consideration of other factors such as spectator and race official access, safety consideration and engineering issues.

Preliminary barrier locations have been presented in Figure 5.1 and in more details in the following Sections.



Figure 5.1: Overview of recommended barrier locations

5.1.1 Watt Street / Shortland Esplanade noise barriers

A noise barrier has been recommended along the western side of Watt Street extending from north of 46 Watt Street to the southern side of Church Street (adjacent to Newcastle Police Station). Additionally a barrier from the corner of the intersection between Watt and Shortland Esplanade,

extending east along the northern side of the road will benefit several residential properties located at ground level of these units.

A double thickness barrier at these locations would reduce the possibility of gaps between acoustic panels and will reduce the rate of noise transmission through the barrier itself.



Figure 5.2: Preliminary location of Watt Street / Shortland Esplanade barrier

5.1.2 Scott Street noise barriers

It is understood that access is required during the event from the race circuit to western area of Scott Street, as such a barrier across Scott Street (west of Zaara Street) is not suitable. In this case it is recommended that a partial barrier is provided. This barrier should extend as far south as possible, whilst still allowing access along Scott Street.

There is a need for continual, unbroken barriers to be installed along the northern side of Scott Street eastwards from the western side of Zara Street. However it is understood that local businesses have expressed a desire to have viewing areas for the race. The northern side of Scott Street, adjacent to Zaara Place may be a suitable location for the installation of clear noise barriers, which would allow viewing whilst still providing screening for residential areas.

To the east of Zaara Place, traditional barriers should be installed along the northern side of Scott Street. These would provide noise reductions for the ground floor of these properties. A double barrier layer in this location may provide additional noise reductions.

A traditional barrier along the southern side of Scott St has been recommended. This barrier should be installed from 23 Zaara Street to opposite Parnell Place Park. It is understood that some residents at apartments within 1 Scott Street have requested no barriers be provided at this site, however given the number of receivers at this property some form of noise mitigation is considered suitable.



Figure 5.3: Preliminary locations for Scott Street< Parnell Place and Nobbys Road barriers

5.1.3 Parnell Place and Nobbys Road noise barriers

A continual noise barrier should be provided from 36 Scott Street to the end of the Department of Housing buildings at the northern end of Nobbys Road. This barrier would provide noise reductions for the ground floor of properties along this corridor.

A double barrier layer in this location may provide additional noise reductions.

5.1.4 Installation of barriers

All screens should be installed as per manufacturer's instructions. Gaps at the base of screens should be eliminated and security should ensure that these barriers are not interfered with.

The barriers will be 2m high and be positioned against the gutter (ie, as close as practical to the noise source) to maximise their screening benefit.

Where double layer barriers are installed, the second layer of barrier material should be offset to ensure that no visible gaps exist between matting sections.

5.1.5 Barrier specifications

Most temporary noise barriers offer noise reduction of 25 to 30dB when properly installed and lab tested. In an outside environment such as this, reductions in the order of 10 to 15dB should be achievable for sites located close to the barriers.

Clear noise screens do offer somewhat lower noise protection and would be expected to provide noise reductions of approximately 10dB, depending upon their precise location and the local track configuration.

5.1.6 Other barrier locations

The following section provides information on barrier locations that have been considered, however due to external factors are not considered reasonable or feasible.

- Zaara Street noise barriers
 - Properties at 48 Zara Street (Kingston Apartments) are protected by a 2m brick boundary fence, which will reduce noise transmission into residences. It is unlikely that the proposed temporary barriers would provide negligible additional reduction in noise transmission.
 - A barrier in front of 44 Zara Street would protect two ground floor residences. Communication with residents of this building have indicated a preference for noise barriers not being installed at this location.
 - A barrier along the eastern side of Zara Street would provide negligible protection for residential properties above Sticky Rice, and as such has not been recommended.
- 75 – 77 Shortland Esplanade (Street level)
 - This barrier is unlikely to provide effective noise reduction. Due to the elevation of the ground floor at this property, any barrier at street level would benefit two properties only. Additionally the road alignment in this area would substantially reduce the noise reduction provided.
- 75 – 77 Shortland Esplanade (Court yard)
 - This area was an informal spectator viewing area in 2017 and a television camera platform was also located in this area. The barrier may be located around the south facing courtyard on top of the retaining wall and provide mitigation for ground level and first floor properties located at 75-77 Shortland Esplanade. Given the level of spectator involvement at this site in 2017 and the need for access to the area, no barrier has been recommended at this site. If other ground floor residents express a desire for barriers at this location, the installation of a clear barrier may be an agreeable compromise.
- Tyrell Towers Shortland Esplanade
 - It is understood that residents from this property have been in touch with Supercars and communicated their desire for no barrier at this site. If other ground floor residents express a desire for barriers at this location, the installation of a clear barrier may be an agreeable compromise.

5.1.7 Effectiveness of noise barriers

Modelling of barrier effectiveness was undertaken as part of planning for the 2017 event. This study found that the barriers were expected to provide effective noise mitigation for properties on the ground floor of affected buildings. This mitigation was found to reduce event noise levels by a maximum of 15dB, with an average reduction of 4dB. Reductions were highest where a direct line of sight between vehicles and the dwelling were interrupted.

The modelling showed that minor internal exceedances may still be experienced at the first floor of residential properties along the race circuit on Watt Street, Zaara Street, Scott Street and Parnell Place.

No exceedances are predicted for internal areas of any ground floor properties.

Although ground level noise levels have been substantially reduced in areas protected by the barriers, exceedances of OHS L_{Aeq} criteria may still be experienced at external, race side areas.

L_{Cpeak} levels behind screened areas are likely to comply with OHS criteria.

Further noise management measures are discussed in the following sections.

5.2 Rescheduling of race events

In addition to the use of acoustic barriers, it is recommended that Supercars run the weekend's events within the minimum reasonable timeframe.

Reductions in the scheduling of events have been implemented since the 2017 event, which in turn formed a substantial reduction from the typical race weekend schedule.

5.3 Static noise testing

All vehicles participating in these events are required to comply with CAMS or Supercar rules and undergo static noise monitoring in order to enter. There is also an ongoing noise monitoring by course officials to ensure that the noise level for an individual car does not exceed a prescribed noise level. If these levels are found to be exceeded, the vehicle must be removed from the race. Although this is not a site specific mitigation measure, it is however an important part of the overall noise management for the event.

5.4 Noise reduction by reducing exposure

Figure 5.4 below shows the reduction in noise exposure with the reduction in the number of vehicles observed during a particular event.

It is noted that where the total number of vehicle pass bys per day can be reduced to 2,000, noise would be expected to reduce by 5dB. Given that the busiest day (Saturday) is predicted to involve approximately 6,500 pass bys, where a resident is able to leave the race precinct for more than six of the nine hours event period, noise exposure is expected to be reduced to $L_{Aeq(10 \text{ hour})}$ SPLs below 84dB for all internal areas on this day. Avoiding the main race event is likely to reduce noise levels by approximately 2dB, thereby making compliance likely at all properties, with the exception of the upper floor of 40 Zaara Street.

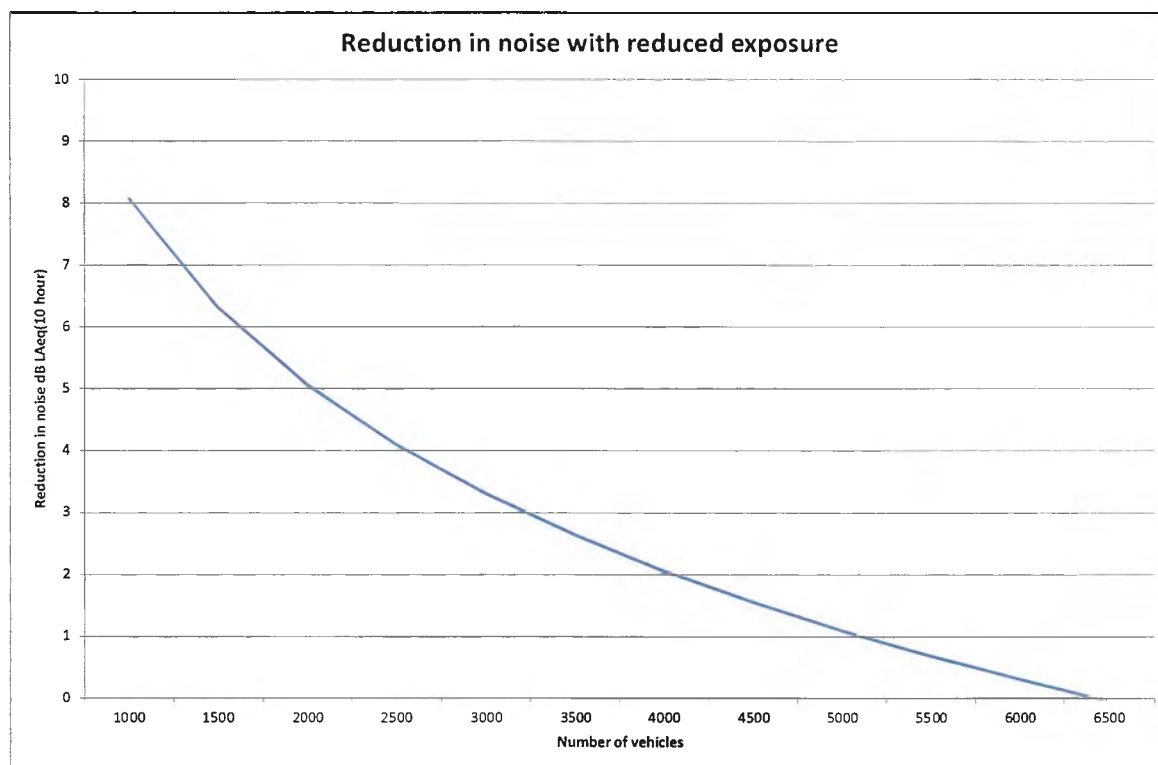


Figure 5.4 : Noise reduction with reduced exposure

5.5 Hearing protection

Supercars will provide hearing protection to residents located within the race precinct. These will be in the form of ear buds.

When correctly fitted all commercially available forms of hearing protection will provide a minimum of 10dB noise reduction.

Where hearing protection is used in accordance with manufacturer instructions, this will reduce noise exposure to within acceptable levels at all internal locations.

6. Recommended noise management measures

Noise level predictions outlined in Section 4.2.3 show that levels inside some residential and business properties may exceed L_{Aeq} noise limits during the event. Noise levels at external areas may exceed both L_{Aeq} and L_{Cpeak} criteria.

A range of noise management measures have been agreed with Supercars Australia and are outlined in Table 6-1.

Table 6-1 Noise and vibration management and mitigation measures

ID	Measure / Requirement
Planning / Pre-event	
N1	Community notification / provision of information to all properties where interior exceedances of criteria have been predicted. Advice would be provided with the aim of reducing unwarranted complaints and discomfort during the event. The brochure would include: <ul style="list-style-type: none"> a) Background and explanation of relevant noise criteria b) Details of noise assessment and results c) Recommended noise management measures, these would include: <ul style="list-style-type: none"> • Keep doors and windows closed • Seal cracks, doors and window frames using commercial or make shift products. Basic protection measures may include: <ul style="list-style-type: none"> - Adhesive sealing strips for door frames and windows - Temporary vent seals - Under door strip seals / draught stoppers - Fill cracks using commercial foam fillers or silicon • Remain in back rooms • Use hearing protection • Leave property during some or all of the race period
N2	Provision of a noise information brochure to all properties within the event precinct. This would contain similar details to those outlined above.
N3	Provision of hearing protection (and training on its use) to all properties within the externally affected area
N4	Provision of an information session on noise management and responsibilities for businesses within the potentially affected area
N5	Installation of 2m temporary acoustic screening at the locations described in Section 5.1.
N6	A community consultation program will identify particularly sensitive residential receivers and make provision for them during the event. The nature of this provision will depend upon individual circumstances but may include alternative accommodation or focused education or care prior to the event.
Race weekend	
N7	Establishment of a community complaints phone line
N8	Conduct noise monitoring during the event.

ID	Measure / Requirement
----	-----------------------

	<p>Unattended noise monitoring will be conducted at one internal area, one affected external area and one unaffected external area within the precinct during the race. Precise locations will be confirmed closer to the event.</p>
--	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p>Attended noise monitoring will be conducted throughout the event at spectator and residential areas. This monitoring will include prompt assessment of any noise complaints that are received during the event.</p>
--	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

	<p>Proposed noise monitoring locations include the following sites:</p>
--	-------------------------------------------------------------------------

- | | |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| | <ul style="list-style-type: none"> - Joy Cummings Centre (Scott Street) - SMEC (Watt Street) - 6-8 Church Street - 75 Shortland Esplanade (Apartment TBC) - Retort Building / Old Newcastle train station (Watt Street) - 32 Scott Street |
|--|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

Review and follow up	
----------------------	--

N9	Prepare a noise monitoring report outlining the results of event noise monitoring
----	-----------------------------------------------------------------------------------

N10	Review complaints history, monitoring results and the effectiveness of these noise management measures
-----	--------------------------------------------------------------------------------------------------------

N11	If required, review and update this Noise Management Plan prior to next year's proposed event
-----	-----------------------------------------------------------------------------------------------

7. Compliance management

7.1 Roles and responsibilities

Noise management during the Newcastle 500 event would be the responsibility of the Community Engagement Manager for Supercars.

7.2 Training

It is recommended that all relevant employees, contractors and utility staff working at the event will undergo site induction training that includes noise impact management issues. The induction training will address elements related to noise impact management including:

- Existence and requirements of this sub-plan
- Relevant legislation
- Location of noise sensitive areas
- Complaints reporting
- General noise management measures
- The use of hearing protection

7.3 Inspections and monitoring

It is recommended that noise monitoring is carried out during the Newcastle 500 event at the locations identified in **Table 6-1** (at a minimum).

Monitoring will be conducted by an experienced acoustic specialist and in accordance with relevant standards and guidelines.

Where noise monitoring indicates noise exceeds the predicted noise levels, the source of excessive noise generation will be identified, and any additional feasible and reasonable measures available will be implemented to either reduce noise emissions or reduce the impacts on receivers for future events.

Acoustic instrumentation employed in the noise monitoring surveys will comply with the requirements of AS IEC 61672.1 (2004) *Electro Acoustics - Sound Level Meter Specifications*, AS1259.2-1990 *Acoustics – Sound Level Meters, Part 2: Integrating – Averaging* and carry appropriate NATA (or manufacturer) calibration certificates.

7.4 Non-conformances

Non-conformances will be dealt with and documented in a Noise Monitoring report prepared after the Newcastle 500 event.

7.5 Complaints

Noise complaints will be recorded and responded to. Information to be recorded shall include location of complainant, time/s and nature of the noise complaint, corrective action taken and other relevant details. All resident complaints will be responded to in a timely manner and any action taken recorded and reported in the post event noise report.

7.6 Reporting

It is recommended that the results of noise monitoring, complaints and any changes to noise management measures are reported in a post-event noise monitoring report prepared at the completion of the Newcastle 500.

This report will capture detail including, but not limited, to:

- The locations and description of monitoring undertaken
- A tabulation of results (e.g. for noise including L_{CPeak} and L_{Aeq} noise levels)
- Summary of any measurements exceeding the nominated criteria, and descriptions of the time and / or vehicle type causing these exceedances
- Details of any corrective actions and their effectiveness
- Details of noise complaints during the event
- Details of any potential improvements to the noise management measures outlined in Section 5.

8. Review and improvement

As the Newcastle 500 event has been proposed to be held in Newcastle for the next five years, it is important that any non-conformances are identified and managed for future events.

8.1 Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of noise management performance against the SafeWork criteria for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of noise management and performance
- Determine the cause(s) of any non-conformances and deficiencies
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies
- Verify the effectiveness of the corrective and preventative actions
- Document any changes in procedures resulting from process improvement
- Make comparisons with objectives and targets

8.2 Update and amendment

The identification of any non-conformances or improvement opportunities may result in the need to update or revise this Plan. This will occur as needed.

A copy of the updated plan and changes will be distributed to all relevant stakeholders, this would usually include:

- SuperCars Australia / Newcastle 500
- SafeWork NSW

Where relevant it may also be prudent to inform the occupants of affected properties of improvements and updates, although they would not typically be provided with the complete Noise Management Plan.

9. References

- *Newcastle 500 Acoustic Advice, Noise Assessment*, SuperCars Australia, Jacobs Australia Group Pty Ltd, 2017
- *Newcastle 500 Acoustic Advice, 2017 Noise Management Plan*, SuperCars Australia, Jacobs Australia Group Pty Ltd, 2017
- *Newcastle 500 Acoustic Advice, 2017 Noise Monitoring Report*, SuperCars Australia, Jacobs Australia Group Pty Ltd, 2018

From: Sarina Tranter
Sent: 30 May 2019 04:47:47 +0000
To: Paige Allen
Cc: Leisa Tate; John Ringland
Subject: TRIM: FW: Review of Newcastle 500 Supercars Event Acoustic Advice
Attachments: Newcastle 500 - peer review of noise monitoring report - 22-6-2018.pdf

Hi Paige,

Report attached and email from Leisa below confirming receipt of report.

Apologies this did not appear to be saved on TRIM.

Can you advise the scope of the GIPA to see if there was anything else I need to provide.

Regards,

Sarina Tranter
Departmental Liaison Officer
Office of the Hon Kevin Anderson MP
Minister for Better Regulation and Innovation

T: +61 2 8574 5565
M: 0417 674 224

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From: Sarina Tranter <Sarina.Tranter@safework.nsw.gov.au>
Sent: Thursday, 30 May 2019 2:43 PM
To: Sarina Tranter <Sarina.Tranter@minister.nsw.gov.au>
Subject: Fwd: Review of Newcastle 500 Supercars Event Acoustic Advice

Regards,
Sarina Tranter
0417 674 224

Begin forwarded message:

From: Leisa Tate <Leisa.Tate@safework.nsw.gov.au>
Date: 25 June 2018 at 10:40:09 am AEST

To: [REDACTED]@pccd.com.au, Sarina Tranter
<Sarina.Tranter@safework.nsw.gov.au>, Kristy Charlton <Kristy.Charlton@safework.nsw.gov.au>
Subject: RE: Review of Newcastle 500 Supercars Event Acoustic Advice

Security Classification: UNCLASSIFIED

Hi [REDACTED]

Thank you for that. I will review and get back to you if we need further clarification.

Regards

Leisa Tate

Acting Manager Hunter Regional Operations and Sector Initiatives

SafeWork NSW, Better Regulation

Department of Finance, Services and Innovation

p 02 4921 2942 | m 0429 781 068

e Leisa.Tate@safework.nsw.gov.au | www.safework.nsw.gov.au

Level 1, Suite C Cnr Fitzroy & Cowper Sts Carrington NSW 2294



Please consider the environment before printing this email

From: [REDACTED]@ccd.com.au
Sent: Monday, 25 June 2018 10:34 AM
To: Sarina Tranter <Sarina.Tranter@safework.nsw.gov.au>; Kristy Charlton
<Kristy.Charlton@safework.nsw.gov.au>; Leisa Tate <Leisa.Tate@safework.nsw.gov.au>
Subject: RE: Review of Newcastle 500 Supercars Event Acoustic Advice

Dear Sarina, Kristy and Leisa,
Please find the attached peer-review of the "Newcastle 500 Acoustic Advice - Supercars
Australia - Noise monitoring report" of 26 April 2018,
prepared by Jacobs Australia Pty Ltd of 710 Hunter Street, Newcastle West.

Should you require more information, please call me on [REDACTED]
at any time.

Kind Regards,

[REDACTED]
[REDACTED] Pollution Control Consultancy and Design (PCCD)
<http://www.pccd.com.au>



Level 57, 19-29 Martin Place (MLC Centre) - Sydney 2000
New South Wales - Australia
Telephone: [REDACTED]
Mobile: [REDACTED]
Facsimile: [REDACTED]
mailto: [REDACTED]@pccd.com.au

With our comprehensive academic qualifications coupled with practical engineering experience and technical skills,
and with our all-inclusive, world-class specialist measuring equipment and software,
we will deliver effective solutions literally to any of your industrial and/or domestic
noise problems and requirements.

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Pollution Control Consultancy and Design

ABN 71 776 800 318

Air, Noise and Water Pollution
Assessment and Engineering Control



Level 57, 19-29 Martin Place
Sydney - New South Wales 2000 - Australia

Telephone: [REDACTED]
Facsimile: (02) 9238 7633

E-mail: [REDACTED] pccd.com.au
Web site: www.pccd.com.au

Ms Sarina Tranter
Manager | Hunter (Metro)
Regional Operations & Sector Initiatives
SafeWork NSW, Better Regulation
Department of Finance, Services and Innovation

22 June 2018

Attention:
Ms Kristy Charlton
Manager, Working Environment and Health
SafeWork NSW

Ms Leisa Tate
Assistant State Inspector Hunter Regional Operations and Sector Initiatives
SafeWork NSW

Dear Sarina, Kristy and Leisa,

Newcastle 500 - peer-review of noise monitoring report.

This is a peer-review of the "Newcastle 500 Acoustic Advice - Supercars Australia - Noise monitoring report" of 26 April 2018, prepared by Jacobs Australia Pty Ltd of 710 Hunter Street, Newcastle West.

In a brief for Pollution Control Consultancy and Design (PCCD), SafeWork NSW requested to examine:

- How the data collected compares to the noise modelling done prior to the event;
- Are there any areas of concern now that the data has been collected?
- What appropriate mitigating strategies are required and in what areas?



Pollution Control Consultancy and Design (PCCD)
is an independent, accredited acoustical and environmental engineering consultancy:
a member of Association of Australasian Acoustical Consultants (AAAC).



EXECUTIVE SUMMARY

Pollution Control Consultancy and Design (PCCD) was engaged by SafeWork NSW to review the *Newcastle 500 Acoustic Advice - Supercars Australia - Noise monitoring report (NMR)*, prepared by Jacobs Australia Pty Limited (Jacobs).

In short, in PCCD's opinion, the monitoring of noise during the inaugural Newcastle 500 held on 24-26 November 2017 did not collect essential information on the noise impact of future Newcastle 500 events during the next 5 years, because this monitoring did not:

1. determine the highest [exceeding 140 dB(C)] C-weighted, peak sound pressure level (L_{Cpeak}) due to inadequate measuring instrumentation; and
2. cover the entire race circuit despite of a long, ten-hour duration of races, which would allow to carry out attended measurements in all important rather than in only seven, less important locations.



1. INSTRUMENTATION

It appears that the instrumentation used for monitoring of noise from Newcastle 500 held on 24-26 November 2017 was unsuitable for measurements of the C-weighted, peak sound pressure level ($L_{C\text{Peak}}$) exceeding 140 dB(C), which were predicted in the *Newcastle 500 Acoustic Advice - Noise Assessment* and in the *Newcastle 500 Acoustic Advice - Noise Management Plan* of 24 August 2017, both prepared by Jacobs.

Measurements of the $L_{C\text{Peak}}$ exceeding 140 dB(C), should be carried out with special, low-sensitivity, 1/4-inch microphones.

We believe that the instrumentation used by Jacobs (various types of Svantek sound level meters and analysers) was fitted out with common, 1/2-inch microphones, which were able to measure the $L_{C\text{Peak}}$ of only up to 140 dB(C).

This is a serious omission, as in the *Newcastle 500 Acoustic Advice - Noise Management Plan* of 24 August 2017, Jacobs rightly stated that, we quote:

"Peak noise levels greater than 140dB(C) are usually associated with very short-term noise events such as impacts or explosive noise. Relative to the Supercars event, loud 'pops' associated with turbo dump valves particularly during gear changes would be assessed against this standard.
Any exposure above this peak may cause almost instant damage to hearing."

Thus, the proper measurement of the $L_{C\text{Peak}}$ during monitoring of noise from Newcastle 500 was an explicit imperative.

2 LOCATION OF NOISE MONITORING

In our opinion, the locations of noise monitoring, as in Appendix 1, did not include the most important parts of the race circuit, viz. it did not include:

- the entire Wharf Street and Horseshoe Beach Road, and the northern part of Nobbys Road, where, as we guess, was the majority of expected 150,000 spectators who probably did not have any personal hearing protectors;
- the entire Zaara Street;
- the vast part of Shortland Esplanade, especially between Zaara Street and Ocean Street (there was only just one unattended monitoring location in Shortland Esplanade);

where, according to predictions from the Jacobs *Newcastle 500 Acoustic Advice - Supercars Australia - Noise Management Plan* of 24 August 2017, the $L_{C\text{Peak}}$ would exceed 140 dB(C), as in Appendix 2.

We believe that with the nine- to ten-hour duration of 'Newcastle 500' per day, on the two-and-half-kilometre long circuit, the noise monitoring could have encompassed all important parts of the circuit and certainly all parts, where the $L_{C\text{Peak}}$ was predicted to exceed potentially harmful 140 dB(C).

3 ADEQUATE NOISE MONITORING

In PCCD's opinion, the proper noise monitoring during the inaugural Newcastle 500 held on 24-26 November 2017 should have included:

- a) continuous, stationary, unattended monitoring (logging of the $L_{C\text{Peak}}$ and $L_{Aeq, T1}$ in one-second periods), during the entire event, at least:
 - at the corner of Wharf and Horseshoe Beach Roads (gear changes); and
 - in Watt Street, between Hunter and King Streets (a straight);
- b) short-term, progressing along the entire length of the track, attended noise monitoring (logging of the $L_{C\text{Peak}}$ and $L_{Aeq, T1}$ in one-second periods, over 15 minutes at each location, not over 1 minute, as on 24-26 November 2017), especially in locations of the $L_{C\text{Peak}}$ predicted to be over 140 dB(C), as in Appendix 2.



If synchronized and while determining time delays between the stationary and short-term monitoring locations, such monitoring would have provided a comprehensive data of the L_{CPeak} and $L_{Aeq, Ti}$ during the entire event and along the entire track.

The data will be indispensable for planning any future events (for designing necessary noise control measures for future Newcastle 500 events).

Should you require additional information, please call me on: [REDACTED] or [REDACTED] at any time.

Yours sincerely,

[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]

- Pollution Control Consultancy and Design (PCCD).



Noise monitoring locations on 24-26 November 2017.



C-weighted, peak sound pressure level (L_{CPeak}) predicted in Jacobs
Newcastle 500 Acoustic Advice - Supercars Australia - Noise Management Plan of 24 August 2017.

From: Sarina Tranter
Sent: 30 May 2019 04:58:22 +0000
To: Paige Allen
Subject: TRIM: FW: SafeWork NSW information/query

Another email for you – apologies

Sarina Tranter
Departmental Liaison Officer
Office of the Hon Kevin Anderson MP
Minister for Better Regulation and Innovation

T: +61 2 8574 5565
M: 0417 674 224

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From: Sarina Tranter <Sarina.Tranter@safework.nsw.gov.au>
Sent: Thursday, 30 May 2019 2:55 PM
To: Sarina Tranter <Sarina.Tranter@minister.nsw.gov.au>
Subject: Fwd: SafeWork NSW information/query

Regards,
Sarina Tranter
0417 674 224

Begin forwarded message:

From: Kurt Sakzewski <kurts@supercars.com>
Date: 6 November 2017 at 7:57:41 pm AEDT
To: "Tranter, Sarina" <Sarina.Tranter@safework.nsw.gov.au>
Subject: RE: SafeWork NSW information/query

Hi Sarin,

Please see our responses below to your queries.

Regards,
Kurt



LEVEL 10
124 WALKER STREET
NORTH SYDNEY NSW 2060
M
SUPERCARS.COM



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From: Tranter, Sarina [<mailto:Sarina.Tranter@safework.nsw.gov.au>]

Sent: Friday, 3 November 2017 8:53 AM

To: [REDACTED]@supercars.com>

Subject: SafeWork NSW information/query

Security Classification:UNCLASSIFIED

Hi [REDACTED]

I have had a meeting with my Executive regarding the upcoming Supercars event and he has requested some further clarification/confirmation on the following:

I understand the NMP states that Supercars is planning on conducting actual noise testing during the event – can you confirm that this testing/data collection will be conducted over all three days and in areas as recommended in the NMP?

Yes, Supercars will be engaging Jacobs to conduct testing across the three days at a minimum of 3 separate locations.

Additionally, can you provide some details as to what Supercars intend to do if during the noise monitoring at the Event they detect levels higher than what was predicted in the Jacobs modelling? I note that in the NMP it states:

“Where noise monitoring indicates noise exceeds the predicted noise levels, the source of the excessive noise generation will be identified, and any additional feasible and reasonable measures available will be implemented to either reduce noise emissions or reduce the impacts on the receivers for future events.”

Can you please elaborate on what additional measures may be considered by Supercars if this was to occur?

In the event that we have confirmed that the noise level exceeds the predicted noise levels we will investigate what the cause of the increased levels may be.

Once this has been confirmed we may employ the following additional mitigations:

- If the higher noise level is due to a defective vehicle, have the vehicle repaired so that it is operating at normal noise levels.
- Installation of additional acoustic barriers
- Provide additional hearing protection
- Provide additional advice to the effected properties.
- Relocated effected parties to a quieter location.

Additionally, after the recent risk exercises I thought it would be helpful to provide Supercars with information regarding Notifiable Events. I appreciate you operate over multiple jurisdictions and for that reason I have provided some reference material attached on the requirements in NSW for when workplace incidents occur what your obligations are as a PCBU. Essentially the most efficient way to notify is to call 13 10 50 immediately when you become aware of the Incident.

Thanks Sarina, I will make sure our team has this number noted.

I look forward to your response.

Regards,

Sarina Tranter

Manager | Hunter (Metro)

Regional Operations & Sector Initiatives

SafeWork NSW, Better Regulation

Department of Finance, Services and Innovation

p 02 4921 2951 | m 0417 674 224

Office location: Level 1, Suite C, Corner Fitzroy & Cowper Streets, Carrington NSW 2294

Postal address: PO Box 2186, Dangar NSW 2309

sarina.tranter@safework.nsw.gov.au | www.safework.nsw.gov.au



SafeWork NSW

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From: Sarina Tranter
Sent: 30 May 2019 05:24:15 +0000
To: Paige Allen
Cc: Leisa Tate
Subject: FW: Peer-review of "Noise Management Plan" for "Newcastle 500".

Leisa/Paige

Here is an initial email I received from consultant. I cannot locate the report that followed. Leisa is trying to obtain it from another SW Manager that was involved at the time.

Regards,

Sarina Tranter
Departmental Liaison Officer
Office of the Hon Kevin Anderson MP
Minister for Better Regulation and Innovation

T: +61 2 8574 5565
M: 0417 674 224

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From: Sarina Tranter <Sarina.Tranter@safework.nsw.gov.au>
Sent: Thursday, 30 May 2019 3:19 PM
To: Sarina Tranter <Sarina.Tranter@minister.nsw.gov.au>
Subject: Fwd: Peer-review of "Noise Management Plan" for "Newcastle 500".
Sensitivity: Confidential

Regards,
Sarina Tranter
0417 674 224

Begin forwarded message:

From: [REDACTED] <[REDACTED]@pccd.com.au>
Date: 14 November 2017 at 1:21:27 pm AEDT
To: "Tranter, Sarina" <Sarina.Tranter@safework.nsw.gov.au>
Subject: Peer-review of "Noise Management Plan" for "Newcastle 500".

Dear Sarina,
Thank you again for meeting me in my Sydney office in Martin Place.

After having a very short glance at the "Noise Management Plan" for "Newcastle 500" prepared by Jacobs Australia Pty Ltd, I wish to make three initial comments, which I believe should be considered as soon as possible:

1. We are quite alarmed that the C-weighted peak sound pressure level (L_{Cpeak}) may (or will) exceed 140 dB(C).

On page 9, the "Noise Management Plan" states the commonly accepted view that *Any exposure above this peak* [i.e. the L_{Cpeak} of 140 dB(C)] *may cause almost instant damage to hearing*.

Yet, later on, the "Noise Management Plan" predicts that the L_{Cpeak} may exceed this dangerous level at a number of properties in Zaara Street, Scott Street and Watt Street, reaching up to 150 dB(C), and then appears to be comfortable with controlling such levels with personal hearing protectors (earplugs).

We all know that if not properly fitted (the "Noise Management Plan" talks about it on page 18 and in Table 6-1, under N3), the earplugs do not provide or provide only marginal protection.

How we can be confident that anyone from the number of properties in Zaara Street, Scott Street and Watt Street will have the earplugs correctly fitted while being outdoor?

How we can be confident that some residents (especially children) may not open a window without wearing the earplugs at all, during the three-day event.

Even one person having a damage to hearing is a great tragedy.

In Section 7.3 on page 21, the "Noise Management Plan" states that "Where noise monitoring indicates [that] noise exceeds the predicted noise levels, the source of excessive noise generation will be identified, and any additional feasible and reasonable measures available will be implemented to either reduce noise emissions or reduce the impacts on receivers for future events."

The "Noise Management Plan" does not even provide any examples of "additional feasible and reasonable measures available".

This is not good enough, if we have already known already that the L_{Cpeak} is to exceed 140 dB(C). **Knowing that the L_{Cpeak} will reach the dangerous levels, we have to insist on implementation of all feasible and reasonable measures now, prior to commencement of Newcastle 500 on 24 November 2017.**

While providing the earplugs to all persons that will be potentially exposed to excessive noise and teaching how to use these earplugs, the organizers of Newcastle 500 should clearly inform all who may be exposed to the L_{Cpeak} exceeding 140 dB(C) that: *Any exposure above this peak may cause almost instant damage to hearing.*

Anyone who will be potentially exposed to the L_{Cpeak} exceeding 140 dB(C) should be advised that the earplugs must be worn while going outside.

2. Are all patrons only in locations, where the L_{CPeak} does not exceed 140 dB(C).

The organizers of Newcastle 500 must ensure that all 150,000 patrons, or so, are allowed to remain only in areas where the L_{CPeak} does not exceed 140 dB(C) (there should be enough buffer zones between the track and areas where patrons reside), regardless of whether they use or they do not use the earplugs.

3. As we discussed yesterday, the noise monitoring program during "Newcastle 500" should be much wider than proposed in the "Noise Management Plan".

In Table 6-1, under N9, the "Noise Management Plan" proposes unattended noise monitoring. In our opinion, such a monitoring is utterly inadequate.

"Newcastle 500" in November 2017 is the first of a number of similar events and should be utilised to get comprehensive information about the noise impact on all properties along the 2.6 km long track.

We propose the following outdoor noise monitoring during Newcastle 500 on 24-26 November 2017:

- a) continuous, stationary, unattended monitoring (logging of the L_{CPeak} and $L_{Aeq, Ti}$ in one-second periods), during the entire event, at or near:
 - (i) 48 or 50 Nobbys Road, (ii) corner of Scott Street and Parnell Place, and (iii) 67 Watt Street;
- b) short-term, progressing along the entire length of the track, attended noise monitoring (logging of the L_{CPeak} and $L_{Aeq, Ti}$ in one-second periods, over 15 minutes).

If synchronized and while determining time delays between the stationary and short-term monitoring locations, such monitoring will provide a comprehensive data of the L_{CPeak} and $L_{Aeq, Ti}$ during the entire event and along the entire track. The data will be very useful while planning the future events (noise control measures for the future events).

IMPORTANT NOTE

The monitoring should be carried out with low-sensitivity microphones, which, unlike common microphones, are able to measure the L_{CPeak} higher than 140 dB(C).

As we agreed yesterday, we will e-mail our formal peer-review of the "Noise Management Plan" for "Newcastle 500" prepared by Jacobs Australia Pty Ltd, on 21 or 22 November 2017.

Kind Regards,

[REDACTED] - Pollution Control Consultancy and Design (PCCD)
<http://www.pccd.com.au>



Level 57, 19-29 Martin Place (MLC Centre) - Sydney 2000
New South Wales - Australia
Telephone: (02) [REDACTED]
Mobile: [REDACTED]
Facsimile: (02) 9238 7633
mailto:[REDACTED]@pccd.com.au

With our comprehensive academic qualifications coupled with practical engineering experience and technical skills,
and with our all-inclusive, world-class specialist measuring equipment and software,
we will deliver effective solutions literally to any of your industrial and/or domestic
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JACOBS®

Newcastle 500 Acoustic Advice

Supercars Australia

Noise Management Plan

1 | Final draft

24 August 2017

Newcastle 500 Acoustic Advice

Project No: IA153000
Document Title: Noise Management Plan
Document No.: 1
Revision: Final draft
Date: 24 August 2017
Client Name: Supercars Australia

Project Manager: [REDACTED]
Author: [REDACTED]
File Name: J:\IE\Projects\04_Eastern\IA153000\21 Deliverables\Noise\Report\Noise Management Plan\IA153000_Noise Management Plan_Final Draft.docx

Jacobs Australia Pty Limited

710 Hunter Street
Newcastle West NSW 2302 Australia
PO Box 2147 Dangar NSW 2309 Australia
T +61 2 4979 2600
F +61 2 4979 2666
www.jacobs.com

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Document history and status

Revision	Date	Description	By	Review	Approved
Draft A	03/07/2017	Practice review	[REDACTED]	[REDACTED]	[REDACTED]
Draft B	23/08/2017	Practice review	[REDACTED]	[REDACTED]	[REDACTED]

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Appendix A. Updated event schedule

Glossary

Term	Description
Acoustic Barrier	Solid walls or partitions, solid fences, earth mounds, earth berms, buildings, etc used to reduce noise, without eliminating it.
Ambient Noise	The all-encompassing noise associated within a given environment at a given time, usually composed of sound from all sources near and far.
Audible Range	The limits of frequency which are audible or heard as sound. The normal ear in young adults detects sound having frequencies in the region 20 Hz to 20 kHz, although it is possible for some people to detect frequencies outside these limits.
Background Noise	The term used to describe the underlying level of noise present in the ambient noise environment, measured in the absence of the noise under investigation. It is described as the average of the minimum noise levels measured on a sound level meter and is measured statistically as the A-weighted noise level exceeded for ninety percent of a sample period. This is represented as the L ₉₀ noise level (see below).
Decibels (dB)	<p>The level of noise is measured objectively using a Sound Level Meter. This instrument has been specifically developed to mimic the operation of the human ear. The human ear responds to minute pressure variations in the air. These pressure variations can be likened to the ripples on the surface of water but of course cannot be seen.</p> <p>The pressure variations in the air cause the eardrum to vibrate and this is heard as sound in the brain. The stronger the pressure variations, the louder the sound is heard.</p> <p>The range of pressure variations associated with everyday living may span over a range of a million to one. On the top range may be the sound of a jet engine and on the bottom of the range may be the sound of a pin dropping.</p> <p>Instead of expressing pressure in units ranging from a million to one, it is found convenient to condense this range to a scale 0 to 120 and give it the units of decibels. The following are examples of the decibel readings of every day steady or quasi-steady sounds.</p> <p>20dB <i>quiet bedroom at night or recording studio</i> 30dB <i>quiet library or quiet location in the country</i> 40dB <i>living room</i> 50dB <i>typical office space or ambience in the city at night</i> 60dB <i>normal conversational speech</i> 70dB <i>a car passing by</i> 80dB <i>kerbside of a busy road</i> 90dB <i>truck passing by</i> 100dB <i>nightclub</i> 110dB <i>rock band or 2m from a jackhammer</i> 120dB <i>70m from a jet aircraft</i></p>

Term	Description
	<p>130dB threshold of pain</p> <p>140dB 25m from a jet aircraft</p>
dB(A); A-weighted decibels	The ear is not as effective in hearing low frequency sounds as it is hearing high frequency sounds. That is, low frequency sounds of the same dB level are not heard as loud as high frequency sounds. The sound level meter replicates the human response of the ear by using an electronic filter which is called the "A" filter. A sound level measured with this filter switched in is denoted as dB(A). Most environmental noise is measured using the A filter.
dB(C); C-weighted decibels	C weighted adjustments are relatively flat across lower frequencies, and as such are better suited for the assessment of low frequency noise.
Diffraction	The distortion around solid obstacles of waves travelling past.
Frequency	Of a periodic quantity: the time rate of repetition. The reciprocal of the period. Frequency is measured in Hertz (Hz).
Loudness	A 3dB increase represents a doubling of the sound pressure, however an increase of about 10dB is required before the sound will subjectively appear to be twice as loud. That is, a sound of 85dB is twice as loud as a sound of 75dB which is twice as loud as a sound of 65dB and so on. That is, the sound of 85dB is four times as loud as a sound of 65dB. The smallest change which can be readily heard is about 2dB. An increase beyond 5dB is considered to represent the level at which a change in loudness begins to be clearly perceived.
L ₁₀	The sound pressure level that is exceeded for 10% of the time for which the given sound is measured.
L ₉₀	The level of noise exceeded for 90% of the time. The bottom 10% of the sample is the L ₉₀ noise level expressed in units of dB(A).
L _{eq}	Equivalent sound pressure level – the steady sound level that, over a specified period of time, would produce the same energy equivalence as the fluctuating sound level actually occurring. The sound weighting of the noise measurement is commonly added, for example L _{Aeq} or L _{Ceq} .
Reflection	Sound wave changed in direction of propagation due to a solid object obscuring its path.
SEL	Sound Exposure Level (SEL) is the constant sound level which, if maintained for a period of 1 second would have the same acoustic energy as the measured noise event. SEL noise measurements are useful as they can be converted to obtain L _{eq} sound levels over any period of time and can be used for predicting noise at various locations.
Sound Level Meter	An instrument consisting of a microphone, amplifier and indicating device, having a declared performance and designed to measure

Term	Description
	sound pressure levels.
Sound Pressure Level	The level of sound pressure, expressed in decibels, as measured by a standard sound level meter with a microphone.
Sound Power Level	Ten times the logarithm to the base 10 of the ratio of the sound power of the source to the reference sound power.

1. Introduction

1.1 Background

In November 2017, Supercars Australia is hosting the inaugural Newcastle 500 event in Newcastle. This event will be one of the biggest events to be held in Newcastle, and is expected to draw 150,000 spectators during the race weekend.

The proposed race circuit will pass numerous business and residential properties within the Newcastle CBD, potentially generating high noise levels in the area. Supercars Australia has committed to assessing potential noise levels and managing any identified impacts.

In a previous study, Jacobs Group (Australia) Pty Ltd (Jacobs) has modelled potential noise impacts against NSW Work Health Safety legislation which aims to protect hearing damage. This report assesses the effectiveness of proposed noise mitigation measures and recommends further management measures to reduce any identified residual impacts.

1.2 Purpose and objectives

1.2.1 Purpose

This Plan assesses the effectiveness of proposed noise mitigation measures and describes how Supercars Australia proposes to manage any residual noise impacts resulting from the event's operation.

1.2.2 Objectives

The key objective of this Noise Management Plan (NMP) is to ensure that impacts to the local community from noise are minimised. Specific objectives include:

- Identifying sensitive receivers and ensuring appropriate noise controls and procedures are implemented during the Newcastle 500 event
- Engagement of the community to understand their issues and noise management preferences
- Minimising potential adverse noise impacts to community
- Managing any predicted impacts
- Ensure appropriate measures are implemented to comply with all relevant legislation and other requirements as described in Section 2 of this Plan.

2. Legislation

2.1 Work Health and Safety Regulation 2011

There are two parts to the exposure standard for noise. The regulations set an exposure standard defined as an L_{CPeak} of 140dB(C) (peak exposure level) or an $L_{Aeq(8h)}$ of 85dB(A) (L_{Aeq} exposure level). Where noise levels exceed these guidelines, hearing protection should be worn to reduce potential impacts.

Peak noise levels greater than 140dB(C) are usually associated with very short term noise events such as impacts or explosive noise. Relative to the Supercars event, loud 'pops' associated with turbo dump valves particularly during gear changes would be assessed against this standard. Any exposure above this peak may cause almost instant damage to hearing.

The exposure standard of 85dB(A) $L_{Aeq(8h)}$ is applied to an eight hour time period (the nominal length of a working day). Where the exposure period extends beyond eight hours this level will be reduced.

presents the proposed race schedule for the Newcastle 500 event. It can be seen that the proposed race duration is nine to ten hours per day, and as such the L_{Aeq} criteria must be reduced to account for this longer exposure period. To provide a conservative analysis, a period of ten hours has been assumed.

It is important to note that the regulations for noise exposure are intended as protection measures for workers exposed to high noise levels throughout their working lives. One-off exposure to these noise levels is not likely to cause any long-term effects.

Table 2.1 : Proposed race schedule

Day	Start of racing	End of racing	Exposure period (hh:mm)	Base exposure limit	Exposure limit
Friday	8:05	17:30	9:25	85dB(A) $L_{Aeq(8hr)}$	84dB(A) $L_{Aeq(10hr)}$
Saturday	8:05	17:50	9:45		84dB(A) $L_{Aeq(10hr)}$
Sunday	8:05	17:50	9:45		84dB(A) $L_{Aeq(10hr)}$

In summary vehicle noise will be assessed against the following criteria:

- L_{CPeak} 140dB(C)
- $L_{Aeq(10\text{ hour})}$ 84dB(A)

3. Existing environment

3.1 Proposed route

The proposed route at Newcastle is 2.6km in length, commencing westbound on Wharf Road, adjacent to Foreshore Park. The circuit then turns left into Watt Street past the old Newcastle Train Station and continues south before turning east onto Church Street / Shortland Esplanade. The route then weaves through Zaara and Scott Streets and into Parnell Place / Nobbys Road, returning to the finishing line on Wharf Road.

3.2 Noise sensitive receivers

Residential properties are primarily located though the eastern areas of the proposed circuit, primarily along:

- Watt Street
- Church Street / Shortland Esplanade
- Zaara Street
- Scott Street
- Parnell Place / Nobbys Road

Residential buildings on much of this route are typically mixed use, multi-story apartments, with commercial land use on the ground floor and residential properties located above. Terrace style apartments are also common along Watt Street, Scott Street and Parnell Place.

A map showing the land uses and property types is provided below in **Figure 3.1**.

Existing noise sources in the proposed track area are typical of a coastal, city environment and include traffic, pedestrians and residential noise, including air conditioning units. Noise from the ocean is common audible, particularly during night time hours when noise from other sources decreases.



Figure 3.1 : Noise sensitive receivers

4. Assessment of noise impacts (without mitigation)

The prediction of noise impacts expected from the operation of the Supercars event is detailed in Jacobs' report 'Newcastle 500 Acoustic Advice - Noise Assessment'. A summary of the assumptions and findings of this assessment is presented in the following section. This assessment did not incorporate the benefit of any potential noise mitigation measures, as they had yet to be confirmed at that time. The re-assessment of the event's predicted noise impact including the effect of its noise control measures is outlined in Section 5.

4.1 Noise exposure at outdoor areas (without mitigation)

4.1.1 External $L_{Aeq(10 \text{ hour})}$ noise exposure (without mitigation)

The predicted total duration $L_{Aeq(10 \text{ hour})}$ noise exposure for each receiver has been presented graphically in **Figure 4.1**. This shows external areas where the 84dB $L_{Aeq(10 \text{ hour})}$ criterion may be exceeded on the busiest day (Saturday) and includes highlighting of properties where the maximum affected noise level outside the most affected building façade may exceed 84dB(A) $L_{Aeq(10 \text{ hour})}$.

It is noted that this assessment assumes all vehicles to be Supercars. These are the loudest vehicles proposed for the event, however, will comprise only approximately 10% of vehicle movements on Friday and 50% on Saturday and Sunday.

Buildings within this affected zone are located along the following streets:

- Watt Street
- Shortland Esplanade
- Zaara Street
- Scott Street
- Parnell Place / Nobbys Road

These results indicate that Saturday event noise levels are likely to exceed the $L_{Aeq(10 \text{ hour})}$ criterion outside most buildings directly facing the race circuit, and within other public areas such as footpaths, parks, outdoor seating areas and balconies that have direct exposure to the circuit.

Noise levels from Friday activities and operations are predicted to be approximately 1dB below these values, whereas Sunday is likely to be 0.5dB below these levels.

Predicted, unmitigated noise levels inside these buildings are discussed in Section 4.2.

Event noise levels external to the Newcastle City Police Station are predicted to range between 84 - 87dB(A) $L_{Aeq(10 \text{ hour})}$, which marginally exceeds the exposure criterion. Section 4.2 assesses noise exposure at internal areas, and shows that internal noise levels at the police station are expected to comply with the criterion.



Figure 4.1 : External $L_{Aeq}(10 \text{ hour})$ noise affected areas and buildings (Unmitigated)

4.1.2 External L_{CPeak} (Maximum) noise exposure (without mitigation)

Modelling has shown that external peak noise levels may exceed L_{CPeak} noise criterion at the external facades of a number of properties. These are primarily located along the lower floors of Zaara Street, Scott Street and Watt Street.

External areas of all other building facades are predicted to comply with the criteria during the Newcastle 500 event. External noise levels are predicted to be less than $140\text{dB(C)}L_{CPeak}$ at distances greater than 10m from vehicle passbys.

4.2 Indoor noise levels (without mitigation)

The analysis above relates to predictions of noise in outside areas. The follow sections relate to noise levels inside buildings. Determining whether noise exposures within these properties exceed the noise criterion, requires knowledge of the total acoustic performance of the building elements such as walls,

doors, windows, and eaves. A detailed building inspection of each potentially affected property was not undertaken as part of this assessment. However, the assumed acoustic performance of each building is outlined in the following sections.

4.2.1 Internal calculation assumptions

Advice provided to the public will be to keep doors and windows closed during the event. As such the following calculations are based on the assumption that doors and windows will be kept closed.

Facade reductions presented in the noise assessment and **Table 5.2** are indicative only and have been based on an external, visual inspection. Generally, all buildings have been categorised as weatherboard or concrete / brick, whilst windows are assumed to be of standard 5mm to 6mm glazing. In general, a solid and well-sealed concrete wall will provide up to 50dB(A) noise reduction across the facade, whilst glazing will usually provide approximately 15-20dB(A) noise reduction.

For the purposes of this assessment conservative values of facade noise reduction have been assumed. These are:

- 15 dB(A) for weatherboard wall with timber sash windows (which remain closed)
- 20 dB(A) for concrete / brick walls with aluminium framed windows (which remain closed)

Some adjustments of these values have been made for those properties at which windows or doors have been observed to seal poorly, or where concrete / double brick walls contain small or no windows

Predicted noise levels are considered to be an estimation of likely noise levels in the most exposed, front room(s) of each property only. Supercar noise levels in rooms setback from the circuit will be lower than these values.

4.2.2 Internal noise predictions (without mitigation)

These results show that internal noise levels may exceed the project criteria of 84dB(A) $L_{Aeq(10\text{ hour})}$ at up to 55 individual residential properties and 18 businesses where no noise management measures are employed. These properties are detailed in the noise assessment. Additionally the following observations are made:

- L_{CPeak} (Short term peak) noise levels within all assessed properties are expected to comply with the Regulation's noise exposure limit.
- Dwellings on the ground and first floors of Zaara Street, Scott Street and the western side of Parnell Place / Nobbys Road are those residential properties at which internal $L_{Aeq(10\text{ hour})}$ noise exposure levels are expected to be highest.
- At all other properties, internal $L_{Aeq(10\text{ hour})}$ noise exposure levels are expected to comply with the limit. This value assumes doors and windows are left closed.

It is noted that this assessment assumes all vehicles to be Supercars. This is the loudest vehicle type proposed for the event. Supercars are expected to represent approximately 10% of all vehicle movements on Friday and 50% on Saturday and Sunday.

Although predicted noise exposure levels inside most residential properties are expected to comply with noise criteria during the event (subject to doors and windows being kept closed), noise levels would generally be considered loud and outside the typical character of the area. Ongoing noise impacts for the duration of the event are likely to cause nuisance or discomfort for some members of the community.

5. Assessment of noise impacts (with mitigation)

5.1 Temporary noise barriers

In response to the noise levels predicted from the operation of the event, Supercars has proposed the use of temporary noise barriers at the following locations to reduce noise exposure:

- Watt Street, western side, King Street to Church Street
- Shortland Esplanade, northern side, Watt Street
- Zaara Street, western side, Shortland Esplanade to Scott Street
- Scott Street, both sides, Zaara Street to Parnell Place
- Parnell Place, western side, Scott Street to Alfred Street

The barriers will be 2m high and be positioned against the gutter (ie, as close as practical to the noise source) to maximise their screening benefit.

5.2 Rescheduling of race events

In addition to the use of acoustic barriers, Supercars has reviewed the event schedule, removing several proposed events and shortening several others. The updated race schedule can be reviewed in **Appendix A**. These modifications have resulted in an approximate 0.5dB reduction in $L_{Aeq(10\text{ hour})}$ noise levels during each day.

5.3 Assessment of noise impacts including noise control measures

The following sections outline the noise predictions based on inclusion of the noise level reductions as a result of the noise mitigation measures outlined above,

5.4 Predicted external noise levels (with mitigation)

The results of the remodelling for external areas are presented in detail in show that noise levels may exceed the $L_{Aeq(10\text{ hour})}$ criterion outside most buildings directly facing the race circuit, and within other public areas such as footpaths, parks, outdoor seating areas and balconies that have direct exposure to the circuit.

Buildings within this affected zone are located along the following streets:

- Watt Street
- Shortland Esplanade
- Zaara Street
- Scott Street
- Parnell Place / Nobbys Road

Properties where external L_{Cpeak} noise criterion may be exceeded are presented below in **Table 5.1**. Internal noise levels are discussed in the following section.

Table 5.1 : External areas potentially exceeding LC_{Peak} criterion

Name	Floor	Usage	LP NMP
2 Scott St	F 1	RES	147
38 Zaara St	F 1	RES	145
23 Scott St	F 1	RES	145
40 Zaara St	F 1	RES	145
48 Zaara St	F 1	RES	142
23 Scott St	F 2	RES	142
38 Zaara St	F 2	RES	142
18-26 Parnell Pl	F 1	RES	141
19 Scott St	F 1	RES	141
48 Zaara St	F 2	RES	140
18-26 Parnell Pl	GF	RES	140

L_{Aeq} noise levels from Friday activities are predicted to be approximately 1dB below these values, whereas Sunday is likely to be 0.5dB below these levels.

The noise barriers have been found to provide effective noise mitigation for properties on the ground floor of affected buildings. For ground floor receivers located behind the barriers, this mitigation has been found to reduce event noise levels by a maximum of 15dB, with an average reduction of 4dB. Reductions are highest where a direct line of sight between vehicles and the dwelling can be interrupted.

5.5 Predicted internal noise levels (with mitigation)

Noise levels for internal areas of affected properties have also been predicted. The method for these calculations is presented in the Noise Assessment for the event. These calculations have shown that internal exceedances may still be experienced on the first floor of residential properties along the race circuit on Zaara Street, Scott Street and Parnell Place. Previous exceedances predicted for Watt Street, Shortland Esplanade and Nobby's Road have been eliminated.

With the implementation of the identified noise control measures, event noise levels within buildings are predicted to comply with the noise exposure criterion for all ground floor areas.

Internal areas of all buildings are expected to comply with noise criterion for L_{CPeak} noise levels.

Properties where internal event L_{Aeq(10 hour)} noise levels may still exceed the exposure criterion after implementation of the considered noise controls are presented in **Table 5.2**.

Table 5.2 : Internal exceedance locations - Saturday (including barriers)

Property ID	Floor	Name	Façade reduction dB(A)	Number of residences	With Barriers	
					External LAeq (10 hour)	Internal LAeq (10 hour)
1062	F 1	40 Zaara Street	17	1	106	89
791	F 1	23 Scott Street	20	1	106	86
1044	F 1	38 Zaara Street	20	2	106	86
588	F 1	11-13 Scott Street	15	2	101	86
651	F 1	15-17 Scott Street	15	2	101	86

431	F 1	8-36 Scott Street	15	15	100	85
254	F1	2 Scott Street	20	1	105	85
690	F 1	18-26 Parnell Place	15	5	99	84
1190	F 1	48 Zaara Street	20	2	104	84

5.6 Noise reduction by controlling race event

The results presented in Table 5.1 indicate that predicted event noise within all dwellings could be made to comply with the exposure criterion where the noise levels can be reduced by a further 5dB(A).

Figure 5.1 below shows the reduction in noise exposure with the reduction in the number of vehicles participating in a particular event.

It is noted that where the total number of vehicle pass bys per day can be reduced to 2,000, noise would be expected to reduce by 5dB. Given that the busiest day (Saturday) is predicted to involve approximately 6,500 pass bys, where a resident is able to leave the race precinct for more than six of the nine hours event period, noise exposure is expected to be reduce to levels below the noise criteria for all internal areas on this day. Avoiding the main race event is likely to reduce noise levels by approximately 2dB, thereby making compliance likely at all properties, with the exception of the upper floor of 40 Zaara Street.

Due to the reduced schedule, noise levels on Friday and Sunday are likely to be approximately 1.7dB and 0.5dB below these levels respectively. On Friday compliance with criteria is expected at properties 431, 690 and 1190. On Sunday compliance is predicted for properties 690 and 1190.

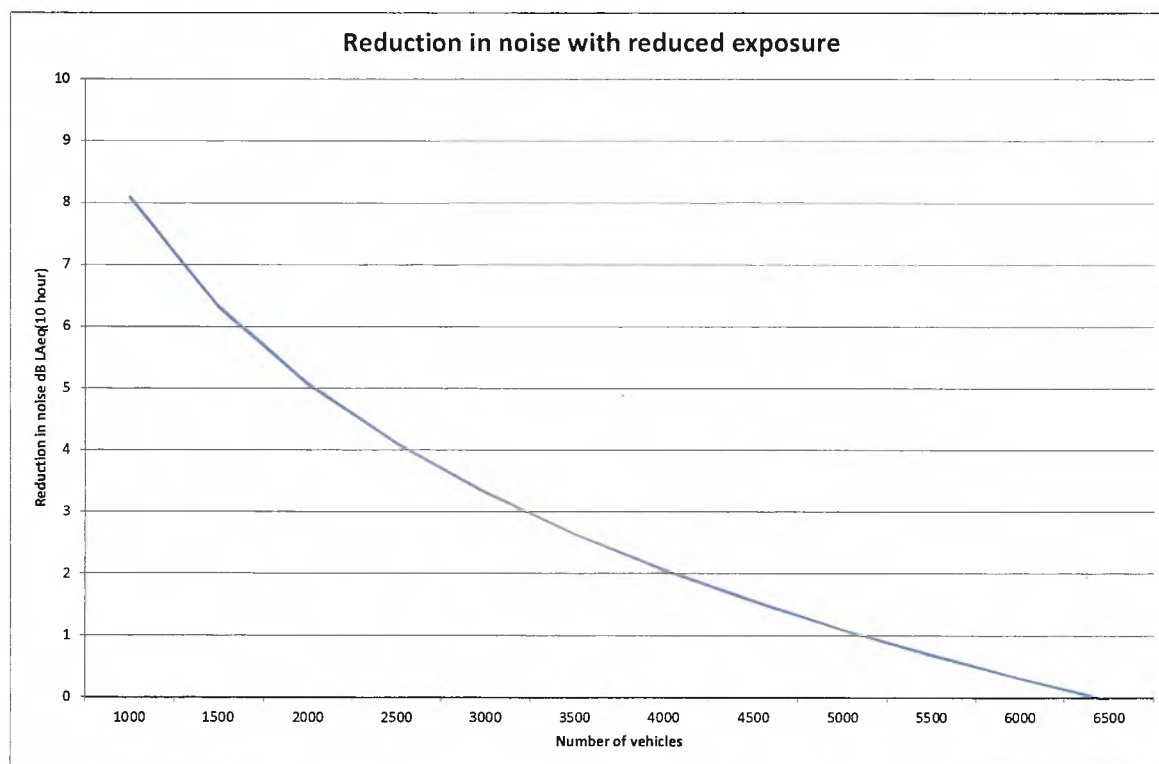


Figure 5.1 : Noise reduction with reduced exposure

5.7 Hearing protection

Supercars has proposed to provide hearing protection to residents located within the race precinct. These are likely to be in the form of ear buds.

When correctly fitted all commercially available forms of hearing protection will provide a minimum of 10dB noise reduction.

Where hearing protection is used in accordance with manufacturer instructions, this will reduce noise exposure to within acceptable levels at all internal locations.

6. Recommended noise management measures

Noise level predictions outlined in **Section 5** show that levels inside some residential and business properties may exceed L_{Aeq} noise limits during the event. Noise levels at external areas may exceed both L_{Aeq} and L_{Cpeak} criteria.

A range of noise management measures have been agreed with Supercars Australia and are outlined in **Table 6-1**.

Table 6-1 Noise and vibration management and mitigation measures

ID	Measure / Requirement
Planning / Pre-event	
N1	Community notification / provision of information to all properties where interior exceedances of criteria have been predicted. Advice would be provided with the aim of reducing unwarranted complaints and discomfort during the event. The brochure would include: <ul style="list-style-type: none"> a) Background and explanation of relevant noise criteria b) Details of noise assessment and results c) Recommended noise management measures, these would include: <ol style="list-style-type: none"> 1. Keep doors and windows closed 2. Seal cracks, doors and window frames using commercial or make shift products. Basic protection measures may include: <ul style="list-style-type: none"> • Adhesive sealing strips for door frames and windows • Temporary vent seals • Under door strip seals / draught stoppers • Fill cracks using commercial foam fillers or silicon 3. Remain in back rooms 4. Use hearing protection 5. Leave property during some or all of the race period (Optional)
N2	Provision of a noise information brochure to all properties within the event precinct. This would contain similar details to those outlined above.
N3	Provision of hearing protection (and training on its use) to all properties within the externally affected area
N4	Provision of an information session on noise management and responsibilities for businesses within the potentially affected area
N5	Provision of entertainment vouchers to noise sensitive residents within the potentially affected area. These will be confirmed closer to the event date.
N6	Installation of 2m temporary acoustic screening at the following locations: <ul style="list-style-type: none"> • Watt Street, western side, King Street to Church Street • Shortland Esplanade, northern side, Watt Street 150m length • Zaara St, western side, Shortland Esplanade to Scott Street • Scott Street, both sides, Zaara Street to Parnell Place • Parnell Place, western side, Scott Street to Alfred Street

ID	Measure / Requirement
Race weekend	
N7	Establishment of a community complaints phone line
N8	Conduct unattended noise monitoring at one internal area, one affected external area and one unaffected external area within the precinct during the race. Precise locations will be confirmed closer to the event.
Review and follow up	
N9	Prepare a noise monitoring report outlining the results of event noise monitoring
N10	Review complaints history, monitoring results and the effectiveness of these noise management measures
N11	If required, review and update this Noise Management Plan prior to next year's proposed event

7. Compliance management

7.1 Roles and responsibilities

Noise management during the Newcastle 500 event would be the responsibility of the Community Engagement Manager for Supercars.

7.2 Training

It is recommended that all relevant employees, contractors and utility staff working at the event will undergo site induction training that includes noise impact management issues. The induction training will address elements related to noise impact management including:

- Existence and requirements of this sub-plan
- Relevant legislation
- Location of noise sensitive areas
- Complaints reporting
- General noise management measures
- The use of hearing protection

7.3 Inspections and monitoring

It is recommended that noise monitoring is carried out during the 2017 Newcastle 500 event at the locations identified in **Table 6-1** (at a minimum).

Monitoring will be conducted by an experienced acoustic specialist and in accordance with relevant standards and guidelines.

Where noise monitoring indicates noise exceeds the predicted noise levels, the source of excessive noise generation will be identified, and any additional feasible and reasonable measures available will be implemented to either reduce noise emissions or reduce the impacts on receivers for future events.

Acoustic instrumentation employed in the noise monitoring surveys will comply with the requirements of AS IEC 61672.1 (2004) *Electro Acoustics - Sound Level Meter Specifications*, AS1259.2-1990 *Acoustics – Sound Level Meters, Part 2: Integrating – Averaging* and carry appropriate NATA (or manufacturer) calibration certificates.

7.4 Non-conformances

Non-conformances will be dealt with and documented in a Noise Monitoring report prepared after the Newcastle 500 event.

7.5 Complaints

Noise complaints will be recorded and responded to. Information to be recorded shall include location of complainant, time/s and nature of the noise complaint, corrective action taken and other relevant details. All resident complaints will be responded to in a timely manner and any action taken recorded and reported in the post event noise report.

7.6 Reporting

It is recommended that the results of noise monitoring, complaints and any changes to noise management measures are reported in a post-event noise assessment prepared at the completion of the Newcastle 500.

This report will capture detail including, but not limited, to:

- The locations and description of monitoring undertaken
- A tabulation of results (e.g. for noise including L_{CPeak} and L_{Aeq} noise levels)
- Summary of any measurements exceeding the nominated criteria, and descriptions of the time and / or vehicle type causing these exceedances
- Details of any corrective actions and their effectiveness
- Details of noise complaints during the event
- Details of any potential improvements to the noise management measures outlined in Section 5.

8. Review and improvement

As the Newcastle 500 event has been proposed to be held in Newcastle for the next five years, it is important that any non-conformances are identified and managed for future events.

8.1 Continuous improvement

Continuous improvement of this Plan will be achieved by the ongoing evaluation of noise management performance against the SafeWork criteria for the purpose of identifying opportunities for improvement.

The continuous improvement process will be designed to:

- Identify areas of opportunity for improvement of noise management and performance.
- Determine the cause(s) of any non-conformances and deficiencies.
- Develop and implement a plan of corrective and preventative action to address any non-conformances and deficiencies.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from process improvement.
- Make comparisons with objectives and targets.

8.2 Update and amendment

The identification of any non-conformances or improvement opportunities may result in the need to update or revise this Plan. This will occur as needed.

A copy of the updated plan and changes will be distributed to all relevant stakeholders, this would usually include:

- SuperCars Australia / Newcastle 500
- SafeWork NSW

Where relevant it may also be prudent to inform the occupants of affected properties of improvements and updates, although they would not typically be provided with the complete Noise Management Plan.

9. References

- Newcastle 500 Acoustic Advice, Noise Assessment, SuperCars Australia, Jacobs Australia Group Pty Ltd, 2017

Appendix A. Updated event schedule

Day	Event	Period (Minutes)	Number of vehicles	Number of passbys per location
Friday	Aussie race cars	20	32	427
	Toyota 86	20	34	429
	V8 utes	20	18	240
	Touring car masters	20	30	400
	Dunlop Super2 series	30	22	528
	Supercars (Practice/qualifying)	40	13	416
	Aussie race cars	20	32	427
	Toyota 86	20	34	429
	Dunlop Super2 series	30	22	528
	Supercars (Practice/qualifying)	40	13	416
	Course experience	15	5	19
	Course experience	25	5	31
	Course experience	15	5	19
	Course experience	30	5	38
	TOTAL			4347
Saturday	Course experience	15	5	19
	V8 utes	20	18	240
	Touring car masters	15	30	300
	Aussie race cars	20	32	427
	Toyota 86	20	34	429
	Dunlop Super2 series	15	22	264
	Supercars (Practice/qualifying)	20	13	208
	Course experience	15	5	19
	V8 utes	20	18	240
	Touring car masters	20	30	400
	Aussie race cars	20	32	427
	Supercars (Parade)	15	26	26
	Toyota 86	20	34	429
	Dunlop Super2 series	30	22	528
	Supercars	120	26	2496
	TOTAL			6452
Sunday	Course experience	15	5	19
	V8 utes	20	18	240
	Touring car masters	25	30	500
	Toyota 86	20	34	429
	Aussie race cars	20	32	427
	Dunlop Super2 series	15	22	264
	Supercars (Practice/qualifying)	20	13	208
	Course experience	15	5	19
	V8 utes	40	18	480
	Supercars (Shootout)	30	10	240
	Touring car masters	20	30	400
	Dunlop Super2 series	30	22	528
	Supercars	120	26	2080
	TOTAL			5834

Appendix B. Detailed noise modelling results (with mitigation)

B.1 External noise levels

B.1.1 L_{Aeq} (10 hour) noise levels



B.1.2 L_{CPeak} noise levels



B.2 Predicted external noise levels

Name	Floor	Direction	Usage	L _{Aeq} (10 hour) dB	L _{Cpeak} dB
1-7 Alfred St_1	F 1	E	RES	87	129
1-7 Alfred St_1	GF	E	RES	84	125
2-18 Alfred St	F 1	S	RES	86	128
1-7 Stevenson Pl	F 1	S	RES	85	122
1 Bond St	F 1	W	COM	97	139
1 Bond St	GF	W	COM	93	135
1 Church St_1	F 4	E	COM	86	118
1 Church St_1	F 2	E	COM	86	118
1 Church St_1	F 3	E	COM	86	119
1 Church St_1	F 1	N	COM	84	115
10-30 Church St	F 1	E	RES	100	134
10-30 Church St	F 2	E	RES	98	132
10-30 Church St	GF	E	RES	89	123
1 King St_1	F 4	SE	RES	86	115
1 King St_1	F 5	SE	RES	85	114
1 King St_1	F 3	SE	RES	85	114
1 King St_1	F 6	SE	RES	85	114
1 King St_1	F 7	SE	RES	85	114
1 King St_2	F 2	S	RES	97	126
1 King St_2	F 3	S	RES	96	125
1 King St_2	F 4	S	RES	95	124
1 King St_2	F 5	S	RES	94	123
1 King St_2	F 6	S	RES	93	122
1 King St_2	F 1	SE	RES	99	128
1 King St_2	GF	SE	COM	100	129
5 King St	F 4	S	COM	87	116
5 King St	F 5	S	COM	87	116
5 King St	F 6	S	COM	87	116
5 King St	F 7	S	COM	87	116
5 King St	F 8	S	COM	87	116
5 King St	F 9	S	COM	87	116
5 King St	F 10	S	COM	86	115
5 King St	F 11	S	COM	86	115
5 King St	F 3	S	COM	85	114
5 King St	F 12	S	COM	84	113
5 King St	F 13	S	COM	84	113
8 King St	F 4	S	RES	87	117
8 King St	F 2	S	RES	87	116
8 King St	F 3	S	RES	87	116
8 King St	F 6	W	RES	89	118
8 King St	F 5	W	RES	88	118
25 King St	F 1	E	COM	99	128
25 King St	GF	E	COM	95	124
27-35 King St	F 2	N	RES	88	118
27-35 King St	F 3	N	RES	87	117
27-35 King St	F 1	N	RES	86	115
1 Moroney Ave_1	F 5	N	RES	86	124
1 Moroney Ave_1	F 6	N	RES	85	123
1 Moroney Ave_1	F 4	N	RES	84	123
1 Moroney Ave_2	F 2	W	RES	84	123
1 Moroney Ave_2	F 1	W	RES	84	123
1 Parnell Pl_1	F 1	W	RES	87	122

Name	Floor	Direction	Usage	L _{Aeq} (10 hour) dB	L _{CPeak} dB
1 Parnell Pl 1	GF	W	RES	84	122
2-4 Parnell Pl	F 1	E	RES	94	135
2-4 Parnell Pl	GF	E	RES	87	126
2 Parnell Pl	F 1	E	RES	95	132
2 Parnell Pl	GF	E	RES	88	125
3-5 Parnell Pl	F 1	W	RES	86	123
8-12 Parnell Pl	F 1	E	RES	98	140
8-12 Parnell Pl	GF	E	RES	88	130
18-26 Parnell Pl	F 1	E	RES	99	141
18-26 Parnell Pl	GF	E	RES	98	140
21 Parnell Pl	F 4	W	COM	88	130
21 Parnell Pl	F 3	W	COM	88	130
21 Parnell Pl	F 2	W	COM	85	127
21 Parnell Pl	F 1	W	COM	85	127
2 Scott St	GF	S	COM	92	134
2 Scott St	F 1	S	RES	105	147
5 Scott St	F 2	N	RES	98	136
5 Scott St	F 3	N	RES	97	136
5 Scott St	F 1	N	RES	94	133
5 Scott St	GF	N	RES	89	127
7-9 Scott St	F 1	N	RES	95	134
7-9 Scott St	GF	N	RES	90	129
8-36 Scott St	F 1	S	RES	100	138
8-36 Scott St	GF	S	RES	93	132
11-13 Scott St	F 1	N	RES	101	139
11-13 Scott St	GF	N	RES	92	131
15-17 Scott St	F 1	N	RES	101	139
15-17 Scott St	GF	N	RES	93	131
19 Scott St	GF	N	COM	98	136
19 Scott St	F 1	N	RES	102	141
19 Scott St	F 2	N	RES	101	139
23 Scott St	F 1	E	RES	106	145
23 Scott St	F 2	E	RES	103	142
23 Scott St	GF	E	RES	95	133
31 Scott St	F 2	S	RES	88	126
42 Scott St	F 1	S	RES	91	130
89 Scott St 1	F 2	W	COM	98	127
89 Scott St 1	GF	W	COM	97	126
89 Scott St 1	F 3	W	COM	97	126
89 Scott St 1	F 4	W	COM	96	125
89 Scott St 1	F 5	W	COM	95	124
89 Scott St 1	F 6	W	COM	94	124
89 Scott St 1	F 1	W	RES	99	128
89 Scott St 2	F 3	S	COM	93	123
89 Scott St 2	F 2	S	COM	92	122
89 Scott St 2	F 1	S	COM	88	118
89 Scott St 2	GF	S	COM	86	115
97 Scott St	GF	E	COM	101	130
97 Scott St	F 3	E	RES	97	127
97 Scott St	F 4	E	RES	96	126
97 Scott St	F 5	E	RES	95	126
97 Scott St	F 6	E	RES	94	126
97 Scott St	F 1	E	RES	100	129

Name	Floor	Direction	Usage	L _{Aeq} (10 hour) dB	L _{CPeak} dB
97 Scott St	F 2	E	RES	99	128
109 Scott St	F 4	N	RES	84	122
109 Scott St	F 5	N	RES	84	123
109 Scott St	F 6	N	RES	84	124
109 Scott St	F 7	N	RES	84	124
109 Scott St	F 3	N	RES	84	117
7-15 Colliers Cl	F 2	E	RES	100	129
7-15 Colliers Cl	F 3	E	RES	99	128
7-15 Colliers Cl	F 4	E	RES	98	127
7-15 Colliers Cl	F 1	E	RES	86	115
23 Colliers Cl 1	F 4	E	RES	97	126
23 Colliers Cl 1	F 3	E	RES	94	123
23 Colliers Cl 1	F 2	N	RES	88	118
23 Colliers Cl 2	F 3	E	RES	98	128
23 Colliers Cl 2	F 4	E	RES	98	128
23 Colliers Cl 2	F 2	E	RES	88	117
23 Colliers Cl 3	F 2	E	RES	95	124
23 Colliers Cl 3	F 3	E	RES	101	130
23 Colliers Cl 3	F 4	E	RES	100	129
23 Colliers Cl 3	F 1	N	RES	88	117
9-11 Watt St 1	GF	E	COM	100	129
9-11 Watt St 1	F 1	E	COM	99	128
9-11 Watt St 1	F 2	E	COM	98	127
9-11 Watt St 1	F 3	E	COM	96	125
9-11 Watt St 2	F 2	N	COM	90	119
9-11 Watt St 2	F 1	N	COM	89	119
9-11 Watt St 2	GF	N	COM	84	113
14 Watt St	GF	E	COM	100	129
14 Watt St	F 1	E	COM	99	128
14 Watt St	F 2	E	COM	98	127
14 Watt St	F 3	E	COM	97	126
16 Watt St	GF	E	COM	99	128
16 Watt St	F 2	E	RES	98	127
16 Watt St	F 1	E	RES	99	128
20 Watt St	GF	E	COM	99	129
20 Watt St	F 2	E	RES	98	127
20 Watt St	F 1	E	RES	99	128
25 Watt St	F 1	W	COM	99	129
25 Watt St	GF	W	COM	99	128
25 Watt St	F 2	W	COM	98	128
25 Watt St	F 3	W	COM	97	126
26 Watt St	GF	E	COM	100	129
26 Watt St	F 2	E	RES	98	127
26 Watt St	F 1	E	RES	99	128
27-29 Watt St	F 1	W	COM	99	128
27-29 Watt St	GF	W	COM	97	126
28-30 Watt St	GF	E	RES	101	130
28-30 Watt St	F 1	E	RES	100	129
28-30 Watt St	F 2	E	RES	98	128
28-30 Watt St	F 3	E	RES	97	126
28-30 Watt St	F 4	E	RES	96	125
28-30 Watt St	F 5	E	RES	95	124
28-30 Watt St	F 6	E	RES	93	123

Name	Floor	Direction	Usage	L _{Aeq} (10 hour) dB	L _{CPeak} dB
31 Watt St	F 1	W	COM	98	128
31 Watt St	GF	W	COM	95	124
35 Watt St	F 1	W	COM	98	128
35 Watt St	F 2	W	COM	98	127
35 Watt St	GF	W	COM	95	125
40 Watt St	F 2	E	COM	89	118
40 Watt St	F 1	E	COM	87	116
44-46 Watt St	F 1	E	RES	98	128
44-46 Watt St	F 2	E	RES	98	127
44-46 Watt St	F 3	E	RES	96	126
44-46 Watt St	GF	E	RES	90	120
45 Watt St	GF	W	COM	98	127
45 Watt St	F 1	W	COM	98	127
45 Watt St	F 2	W	COM	97	126
45 Watt St	F 3	W	COM	96	125
45 Watt St	F 4	W	COM	95	124
45 Watt St	F 5	W	COM	94	124
48 Watt St 1	F 1	E	COM	98	127
48 Watt St 1	F 2	E	COM	97	126
48 Watt St 1	GF	E	COM	89	119
50-62 Watt St	F 2	E	RES	98	127
50-62 Watt St	F 1	E	RES	96	126
50-62 Watt St	GF	E	RES	88	117
55 Watt St	F 1	W	COM	97	127
55 Watt St	GF	W	COM	96	125
67 Watt St	GF	S	RES	92	125
67 Watt St	F 2	S	RES	100	129
67 Watt St	F 3	S	RES	99	128
67 Watt St	F 4	S	RES	97	127
67 Watt St	F 1	S	RES	96	129
67 Watt St	F 5	S	RES	95	126
67 Watt St	F 6	S	RES	94	125
67 Watt St	F 7	S	RES	93	124
67 Watt St	F 8	S	RES	91	123
29 Zaara St	GF	W	COM	98	136
29 Zaara St	F 1	W	COM	98	136
29 Zaara St	F 2	W	COM	97	136
29 Zaara St	F 3	W	COM	96	135
29 Zaara St	F 4	W	COM	96	134
29 Zaara St	F 5	W	COM	95	134
29 Zaara St	F 6	W	COM	95	133
29 Zaara St	F 7	W	COM	94	132
38 Zaara St	GF	E	GAR	110	150
38 Zaara St	F 1	E	RES	106	145
38 Zaara St	F 2	E	RES	103	142
38 Zaara St	F 3	E	RES	100	139
40 Zaara St	GF	E	GAR	109	148
40 Zaara St	F 1	E	RES	106	145
48 Zaara St	F 1	E	RES	104	142
48 Zaara St	F 2	E	RES	102	140
48 Zaara St	F 3	E	RES	100	138
48 Zaara St	F 4	E	RES	98	136
48 Zaara St	F 5	E	RES	97	135

Name	Floor	Direction	Usage	L _{Aeq} (10 hour) dB	L _{CPeak} dB
48 Zaara St	F 6	E	RES	96	134
48 Zaara St	F 7	E	RES	95	133
48 Zaara St	GF	E	RES	94	132
33 Hunter St	F 9	W	RES	86	115
33 Hunter St	F 6	W	RES	85	115
33 Hunter St	F 7	W	RES	85	115
33 Hunter St	F 8	W	RES	85	114
33 Hunter St	F 5	W	RES	85	114
33 Hunter St	F 4	W	RES	84	114
41-45 Hunter St	GF	W	COM	97	126
41-45 Hunter St	F 2	W	RES	98	127
41-45 Hunter St	F 3	W	RES	97	126
41-45 Hunter St	F 4	W	RES	95	125
41-45 Hunter St	F 5	W	RES	94	124
41-45 Hunter St	F 6	W	RES	93	123
41-45 Hunter St	F 1	W	RES	99	128
49-51 Hunter St	F 1	E	COM	99	128
49-51 Hunter St	GF	E	COM	98	128
49-51 Hunter St	F 2	E	COM	98	127
50 Hunter St	F 5	S	COM	89	118
50 Hunter St	F 4	N	COM	89	118
50 Hunter St	F 3	N	COM	88	118
50 Hunter St	F 2	N	COM	85	114
53-57 Hunter St	F 5	S	COM	88	117
53-57 Hunter St	F 2	N	COM	89	118
53-57 Hunter St	F 3	N	COM	89	118
53-57 Hunter St	F 4	N	COM	88	118
53-57 Hunter St	F 1	N	COM	86	115
65 Hunter St	F 4	N	RES	85	114
65 Hunter St	F 3	N	RES	85	114
65 Hunter St	F 5	N	RES	84	113
65 Hunter St	F 6	N	RES	84	113
68 Hunter St	F 1	W	COM	98	127
68 Hunter St	GF	W	COM	96	125
68 Hunter St	F 2	W	RES	97	127
74 Hunter St	GF	E	COM	99	128
74 Hunter St	F 1	E	COM	98	127
88 Hunter St	F 1	S	COM	90	119
88 Hunter St	GF	S	COM	85	114
36-66 Nobbys Rd	F 1	E	RES	101	130
36-66 Nobbys Rd	GF	E	RES	95	124
49 Telford St	F 2	S	RES	84	119
55 Shortland Esplanade 1	F 1	S	RES	91	122
55 Shortland Esplanade 1	F 2	S	RES	90	122
55 Shortland Esplanade 1	F 3	S	RES	90	122
55 Shortland Esplanade 1	F 4	S	RES	89	122
55 Shortland Esplanade 1	F 5	S	RES	88	121
55 Shortland Esplanade 1	F 6	S	RES	88	121
55 Shortland Esplanade 1	F 7	S	RES	87	120
55 Shortland Esplanade 1	GF	S	RES	85	116
61 Shortland Esplanade	GF	E	COM	96	125
61 Shortland Esplanade	F 1	E	RES	96	125
61 Shortland Esplanade	F 2	E	RES	95	124

Name	Floor	Direction	Usage	L _{Aeq} (10 hour) dB	L _{CPeak} dB
61 Shortland Esplanade	F 3	E	RES	94	123
61 Shortland Esplanade	F 4	E	RES	93	123
61 Shortland Esplanade	F 5	E	RES	92	122
61 Shortland Esplanade	F 6	E	RES	91	122
61 Shortland Esplanade	F 7	E	RES	90	121
61 Shortland Esplanade	F 8	E	RES	89	120
61 Shortland Esplanade	F 9	E	RES	89	120
61 Shortland Esplanade	F 10	E	RES	88	119
61 Shortland Esplanade	F 11	E	RES	87	118
75 Shortland Esplanade	F 8	S	RES	93	122
75 Shortland Esplanade	F 9	S	RES	92	121
75 Shortland Esplanade	F 10	S	RES	91	120
75 Shortland Esplanade	F 11	S	RES	91	120
75 Shortland Esplanade	F 12	S	RES	90	119
75 Shortland Esplanade	F 13	S	RES	90	119
75 Shortland Esplanade	F 6	SE	RES	96	125
75 Shortland Esplanade	F 7	SE	RES	94	123
75 Shortland Esplanade	F 2	SE	RES	101	130
75 Shortland Esplanade	F 4	SE	RES	100	129
75 Shortland Esplanade	F 3	SE	RES	100	129
75 Shortland Esplanade	F 5	SE	RES	98	127
75 Shortland Esplanade	F 1	SE	RES	96	125
75 Shortland Esplanade	GF	S	RES	92	121
116 Shortland Esplanade_1	F 1	N	RES	98	137
116 Shortland Esplanade_1	F 2	N	RES	97	137
116 Shortland Esplanade_1	GF	N	RES	92	131
116 Shortland Esplanade_2	F 2	NE	RES	87	129
116 Shortland Esplanade_5	F 6	W	RES	90	128
116 Shortland Esplanade_5	F 7	W	RES	89	128
116 Shortland Esplanade_5	F 4	W	RES	87	127
116 Shortland Esplanade_5	F 3	W	RES	86	125
116 Shortland Esplanade_5	F 5	N	RES	88	128
100 Wharf Rd_1	F 1	S	COM	86	127
100 Wharf Rd_3	GF	SE	GAR	87	124
100 Wharf Rd_4	GF	E	COM	101	139
100 Wharf Rd_5	GF	S	COM	85	124
Newcastle Station_1	GF	E	COM	93	124

Sound level meter



Instantaneous level [dB(A)]

89.0

Total run time	--:--:--
Instantaneous level	89.0 dB(A)
LAeq	--.- dB
Max. level	--.- dB
LCpeak	--.- dB
TWA	--.- dB
Dose	--.- %
Projected dose	--.- %



dB



Sound level meter



Instantaneous level [dB(A)]

80.8

Total run time	00:01:05
Instantaneous level	80.8 dB(A)
LAeq	87.2 dB
Max. level	98.7 dB
LCpeak	119.2 dB
TWA	60.7 dB
Dose	0.4 %
Projected dose	162.3 %



dB



Sound level meter



Instantaneous level [dB(A)]

73.4

Total run time	00:02:01
Instantaneous level	73.4 dB(A)
LAeq	79.8 dB
Max. level	94.4 dB
LCpeak	104.9 dB
TWA	54.8 dB
Dose	0.1 %
Projected dose	22.4 %



dB



Readings taken
at Estabarr
Conversation with
people having
breakfast and in
corporate reserved
area. Able to
maintain conversations
noting intermittent
groups of cars
going by. Readings
taken at counter

73.4 (dB(A)); outside

80.8 (dB(A)); outside

track side 89 (dB(A)).

Estabarr #61 Shortland

Esplanade, Newcastle

NSW 2300.

Noted noise mitigation
at residential area
with pads on

0057

use of ppe, especially
track side. Noted
use of hearing
protection with
microphone built
in. Communication
discussed with
regards to expectation
around conduct
and location
monitoring. Attended
first aid site
and discussed
resident hearing
protection supply
noted hearing
protection for
children available.
System in place
for supply to residents.
Ute race commenced. 0056

WSMS

7.30am
23/11/18.

Supercars - Newcastle,
Gate 1 Newcastle East
2300 NSW

Attended event
with focus on
noise protection
and random
samples with
surrounding
business focus
Attended contractor
Induction area
and noted hearing
PPE available and
signage post on
PPE fitting. Attended
pre-race toolbox
talk to volunteers.
Covered Fitness for
work, noise and

0055

From: Tim Filan
Sent: 21 Nov 2018 02:17:09 +0000
To: James Kelly; Kristy Charlton
Subject: Supercars- Noise Management Plan 2018
Attachments: FW: 2018 Newcastle Noise Management Plan

Security Classification: UNCLASSIFIED

Hi Jim/ Kristy,

Just a heads up that we have received the noise Management plan from Supercars and I reviewed it today.

Key points in report- reduced racing (they have taken a class out), introduction of clear noise barriers and obviously modelling based off last year's race.

Favourably written, however science seems sound.

I am heading up tomorrow and will take noise samples and monitor PPE compliance.

Thanks

Tim Filan
State Inspector- The Working Environment
Health & Return Work
SafeWork NSW
p +61 2 9841 8586 | m 0477014360
e Tim.Filan@safework.nsw.gov.au | www.safework.nsw.gov.au
PO BOX 1291 LIVERPOOL NSW 1871



SafeWork NSW

From: Leisa Tate
Sent: 21 Nov 2018 00:57:49 +0000
To: Tim Filan
Subject: FW: 2018 Newcastle Noise Management Plan
Attachments: 9. 2018 Noise Management Plan_Final v2.pdf

Security Classification: UNCLASSIFIED

Hi Tim

Noise Management Plan for your review.

Cheers

Leisa Tate

Assistant State Inspector Hunter | Regional Operations and Sector Initiatives

SafeWork NSW, Better Regulation

Department of Finance, Services and Innovation

p 02 4921 2942 | **m** 0429 781 068

e Leisa.Tate@safework.nsw.gov.au | www.safework.nsw.gov.au

Level 1, Suite C Cnr Fitzroy & Cowper Sts Carrington NSW 2294



Please consider the environment before printing this email

From: [REDACTED]@supercars.com]
Sent: Wednesday, 21 November 2018 11:08 AM
To: Leisa Tate <Leisa.Tate@safework.nsw.gov.au>
Cc: [REDACTED]@supercars.com>
Subject: 2018 Newcastle Noise Management Plan

Hi Leisa,

Please find attached V2 of the 2018 Newcastle 500 Noise Management Plan.

If you have any questions, please do not hesitate to contact me.

Regards,
[REDACTED]



45 NERANG STREET, SOUTHPORT QLD 4215
PO BOX 607, SOUTHPORT BC QLD 4215

D
P
M
SUPERCARS.COM



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RFS Ref	Date Received	RFS Type	Issue Description	RFS Result
1-382170	13/12/2017	Safety Concerns / WHS Complaints	<p>* Please triage back to Manager, Sarina Tranter - RSD North Newcastle</p> <p>Email sent to Peter Dunphy regarding hearing problems during and after the Supercars race in November.</p> <p>Text from email...</p> <p>I made the worst mistake of my life by remaining home for 2 days of the Supercars Newcastle 500 motor race. I was eventually forced to leave home on the Saturday afternoon and stay with a friend outside the race zone. I returned late on Sunday afternoon after the last race had ended.</p> <p>I awoke on Monday morning to extreme tinnitus which has since shown no signs of ending. The yellow ear plugs issued by Supercars have clearly failed to protect my hearing. Without a doubt, I have now suffered permanent hearing damage as a direct result of this motor race.</p> <p>Could you please contact me to discuss? Issues and Actions taken:</p> <p>Issue 1:</p> <p>Requestor concerned about noise exposure due to Newcastle 500 Supercar event. He believes his hearing has been damaged.</p> <p>Action Taken:</p> <p>On 15 December 2017, I attempted to contact [REDACTED] on two occasions. Ms Tranter then asked me to draft a letter in response.</p> <p>That draft was provided to Ms Tranter and subsequently she provided him with a response advising that we would continue to work with Supercars and DNSW to review noise issues. The response also advised him to contact his employer and their Workers Compensation insurer if he has concerns about his health.</p> <p>No further action was taken.</p> <p>Inspector Recommendations:</p> <p>Due to the response provided to [REDACTED] by Ms Tranter and the ongoing dealings with Supercars, I recommend no further action.</p>	No Further Action
1-381950	07/12/2017	Safety Concerns / WHS Complaints	<p>Please triage back to Newcastle - requested by Manager, Sarina Tranter</p> <p>V8 Supercar Event - Noise complaint</p> <p>Email - with attachment</p> <p>Sound exposure levels were measured during the recent Newcastle 500 motor racing event. These confirmed expected high and damaging noise exposures to tens of thousands of people, both working, attending as well as bystanders, the significant majority of whom were observed to be without any form of hearing protection. Please find attached a letter detailing brief results of attended sound level measurements, as well as a strategy to reduce exposure levels to a significant unprotected population.</p> <p>I look forward to a response from SafeWork on this important public health issue.</p> <p>Regards,</p> <p>Issues and Actions taken:</p> <p>Letter response prepared by S. Tranter</p> <p>Approved by L. Richey on 20/12/2017</p> <p>Letter sent to [REDACTED] on 21/12/2017</p> <p>NFA</p>	No Further Action
1-381998	07/12/2017	Safety Concerns / WHS Complaints	<p>Please triage back to Newcastle - requested by Manager, Sarina Tranter</p> <p>V8 Supercar Event - Noise complaint</p> <p>Email in relation to questions and sound engineers and the Supercars Events. Issues and Actions taken:</p> <p>A letter response to [REDACTED] was prepared by S. Tranter on 20/12/2017</p> <p>This response was approved by L. Richey on 20/12/2017</p> <p>The letter response was emailed to [REDACTED] on 21/12/2017 and [REDACTED] was CCd into response.</p> <p>[REDACTED] was originally CCd by [REDACTED] and her issues in separate email (SafeWork were CCd) were in line with [REDACTED]</p>	No Further Action
1-379827	11/10/2017	Safety Concerns / WHS Complaints	<p>Please triage to Newcastle (Hunter) - Sarina Tranter, Manager</p> <p>V8 Supercars complaint email concerning noise during motor race event in November. Issues and Actions taken:</p> <p>Correspondance was sent to Peter Dunphy and uploaded onto Cameo for a Brief/Draft response.</p> <p>S. Tranter drafted brief and response and sent to Legal Services for review.</p> <p>Once legal review was conducted matter went through approval channels on Cameo.</p> <p>Response was sent to [REDACTED] on 25 Oct 2017</p> <p>S. Tranter spoke to [REDACTED] prior to response being sent to confirm Supercars have consulted as per requirements under s46 of the WHS Act - these discussions are continuing.</p>	No Further Action

1-379583	02/10/2017	Safety Concerns / WHS Complaints	<p>** Please triage back to Hunter (Metro) - Newcastle Office as requested by Sarina Tranter, Manager</p> <p>x2 emails sent to Peter Dunphy complaining about the road works in relation to the V8 Supercar track.</p> <ol style="list-style-type: none"> 1. Dust management issues 2. Trucks not covering their loads 3. Streets, gutters and cars are now contaminated with soil. 4. The Supercars acoustic engineer has informed that will be under health risks from noise during the race. Supercars and council have not made any attempts to mitigate this noise or vibration levels. has written on 2 occasions to Supercars and CAMs and not rec'd any response. Issues Identified In Complaint: <p>Issue 1: Noise exposure.</p> <p>Action Taken (including Notices Issued):</p> <ol style="list-style-type: none"> 1. On the 05.10.17 I had a teleconference with [REDACTED] e-mail of the 29.09.17 to Peter DUNPHY. I was advised of the: <ul style="list-style-type: none"> • [REDACTED] 'door knocked' on the 16.09.17 by Jacobs Group (Australia) Pty Ltd [REDACTED] discussed the Noise Management Plan with [REDACTED] approximately 60 minutes. • Information provided to [REDACTED] included a letter detailing noise mitigation tailored to [REDACTED] address and a copy to the Supercars Australia: Newcastle 500 Noise Management Fact Sheet. The fact sheet identifies properties that may be at risk from noise exposure and mitigation measures in the noise management plan. • Supercars are in the process of engaging Hemisphere Management Group's medical services to assess persons with 'special needs' [REDACTED] with consideration of potential relocation during the event. • Supercars were in the process of responding directly to an e-mail from [REDACTED] dated the 20.09.17 in relation to noise exposure and mitigation strategies, 2. The Supercars Australia: Newcastle 500 Noise Management Fact Sheet and the Jacobs Noise Management Plan Newcastle 500 Acoustic Advice are both available on the Supercars Internet site @ http://www.supercars.com/newcastle/community/noise-management-plan/. The Noise Management Plan also identifies properties that may be at risk from noise exposure and mitigation measures. <p>Inspector Recommendations:</p> <p>I recommend no further action.</p>	No Further Action
1-379324	25/09/2017	Safety Concerns / WHS Complaints	<p>**** Please triage back to Manager, Sarina Tranter - Hunter, Newcastle Office Office.</p> <p>Email to Leisa Tate concerning the release of the Supercars Noise Management Plan.</p> <p>would like a written response in relation to his concerns. Issues and Actions taken:</p> <p>Manager Sarina Tranter drafted a written response to the requestor and emailed the response to him on 27 September 2017. No further action is warranted at this time.</p>	No Further Action

1-379293	22/09/2017	Safety Concerns / WHS Complaints	<p>Subject: Newcastle 500 Supercars motor race 24-26 November</p> <p>I hold grave concerns for the safety and health impacts that the Newcastle 500 may have on them.</p> <p>I am less than impressed by the recommendations and discussions that I have had so far with your Safework NSW officer. Leisa Tate from your Newcastle office has contacted me by phone in June / July. At that time Leisa made a recommendation that should my building have a basement, perhaps I could consider taking my breaks in there during the race event. Unfortunately my building does not have a basement.</p> <p>To my knowledge no one from Safework NSW has visited my work place. I have also requested a copy of the Destination NSW noise report for the Newcastle 500 motor race and now lack the ability to make informed decisions because this request has been ignored.</p> <p>I wish to know what my legal responsibilities are as a workplace manager?</p> <p>Issue 1: Noise from the Newcastle 500 event.</p> <p>Action Taken (including Notices Issued):</p> <ol style="list-style-type: none"> 1. I met with [REDACTED] and was provided with a short tour of the ground and second floor of the building. There were five bedrooms, a common room and a kitchen on the ground floor and 5 bedrooms, a common area / kitchen and two bathrooms on the second floor. [REDACTED] alleged that the windows on the second floor could not be completely closed. 2. [REDACTED] and I discussed the mitigation strategies identified in the Supercars Australia: Newcastle 500 Noise Management Fact Sheet and how leaving the property for periods of time during the event and / or the use of hearing protection where the only practical options for building residents. 3. I advised [REDACTED] that Supercars Australia intended to make hearing protection in the form of earplugs readily available to residents and businesses. 4. [REDACTED] alleged that he had approached Supercars Australia in relation to the noise levels modelled for [REDACTED] advised [REDACTED] that he should recontact Supercars Australia in relation to this information and if not provided to recontact me. Additionally I advised [REDACTED] that I was aware of the modelling undertaken by Supercars Australia (Jacobs Group (Australia) Pty Ltd) and that this model data indicated that the noise within the building would be below occupational exposure levels. 5. [REDACTED] sought clarification on the application of Section 19(2) of the Work Health and Safety Regulation 2017. I advised [REDACTED] that noise pollution was a matter normally addressed by the Environment Protection Authority and that noise from a motor racing event is not normally dealt with by SafeWork NSW, however we were still providing advice and assistance in relation to mitigation strategies to manage noise exposure. 6. [REDACTED] and I to the rooftop of the building where he advised me that [REDACTED] for the Newcastle 500 event. <p>Documents Reviewed And Left On-Site: Not applicable.</p> <p>Inspector Recommendations:</p> <p>As the complainant was satisfied with the advice provided during my visit, I recommend no further action.</p>	No Further Action
1-378639	04/09/2017	Safety Concerns / WHS Complaints	<p>[REDACTED] at the moment and yet again, a huge, noisy, fume spewing generator has been plonked outside our bedrooms, interrupting ability to study and to sleep.</p> <p>Why? This residential racetrack is already a dangerous, difficult, invasive, dirty, situation for families living trackside, so why make it more stressful and toxic? I am feeling very targeted since the incident at our front door and it is making us feel unsafe, threatened and vulnerable.</p> <p>Please. Please. Have the generator taken away. As we have discussed before, there are many other quiet options for lighting that should not interrupt our right to be comfortable and safe in our own homes.</p> <p>Issues and Actions taken:</p> <p>Issue 1: The requestor stated "a huge, noisy, fume spewing generator has been plonked outside our bedrooms, interrupting ability to study and to sleep."</p> <p>Action Taken: On 5 September 2017 I attended site and met with [REDACTED] I believe the generator the requestor was talking about was the one running the light tower outside [REDACTED].</p> <p>I inspected the plant and found that the</p> <ul style="list-style-type: none"> • The light tower was manufactured in 2016 • It has had its regular maintenance services plus pre-hire checks each time it has been hired - according to manufacturer's specifications • Its specifications indicate that it emits 65 dB <p>No further action was taken</p> <p>Inspector Recommendations:</p> <p>I recommend no further action due to :</p> <ul style="list-style-type: none"> • The light tower generator appears to be operating within manufacturer's guidelines and the placement of the light tower is not a SafeWork issue. 	No Further Action

1-377973	15/08/2017	Safety Concerns / WHS Complaints	<p>Complainant advised there is a hazard with the digging up of the road near the Watt Street and Hunter Street corner. The complainant raised a number of concerns, starting with the hammer drill that is being used. The complainant is concerned that the hammer drill is throwing up rocks and debris which could injure someone walking passed trying to access the footpaths. The complainant [REDACTED] wanted to, in addition, report excessive noise, the dust and rocks, that there was no signage and no barriers. The complainant said the concern was very urgent and required immediate action. Inspector Recommendations:</p> <p>Due to the fact that there was no hammering occurring at the time of my visit, I was unable to assess the allegations in relation to this activity. However, the PCBU has indicated that they are doing what is reasonably practicably to address the risks and I therefore recommend no further actions.</p>	No Further Action
1-376749	12/07/2017	Safety Concerns / WHS Complaints	<p>10 separate letters received in the Newcastle Office</p> <p>These letters in relation to noise levels have been handed to Assistant Inspector Leisa Tate. Inspector Recommendations:</p> <p>Due to the fact that this is an ongoing issue that is being dealt with over a period of time, and Supercars are meeting their WHS obligations at this stage, I recommend no further action. Action Taken:</p> <p>SWNSW is continually meeting with and working with Supercars Australai and Desitnation NSW as well as other government agencies to address these issues. SWNSW is awaiting response from Supercars regarding their own noise assessments and their Noise Management Strategy and are aware of the ongoing concerns of residents.</p> <p>[REDACTED] which he conducted for the residents. SI Robins and I met [REDACTED] on 12 May 2017 to discuss [REDACTED]. He was advised at the time and SI Robins has again advised that we are continuing to work with Supercars on this issue.</p> <p>Therefore, a letter has been sent to each of the people listed with our response outlining this. Furthermore, Supercars are meeting their WHS obligations at this stage by assessing the risk, and developing a plan to mange it.</p> <p>Inspector Recommendations:</p> <p>Due to the fact that this is an ongoing issue that is being dealt with over a period of time, and Supercars are meeting their WHS obligations at this stage, I recommend no further action.</p>	No Further Action
1-376390	03/07/2017	Safety Concerns / WHS Complaints	<p>Letter addressed to Assistant State Inspector Leisa Tate received on Friday 30th June 2017 in relation to Supercars race Newcastle on behalf of a group of health service professionals.</p> <p>Attached - Statement of Acoustic Impact - Newcastle 500 Supercars Event. ssues and Actions taken:</p> <p>On 30 June 2017 [REDACTED] sent a letter regarding the concerns she has about noise exposire during the Newcastle 500 Supercar race. Accompanying the letter was an extract from a letter sent to Supercars and a list of about 75 medical professionals she has stated support her position and a copy of the "Statement of Acoustic Impact - Newcastle 500 Supercars Event".</p> <p>The "Statement of Acoustic Impact - Newcastle 500 Supercars Event" has been previously provided to SafeWork NSW by its author.</p> <p>Due to the fact that [REDACTED] has not provided any other contact details but her postal address a letter was sent to her that outlined the current SafeWork position that SWNSW works proactively and collaboratively with PCBUs to providing advice and practical guidance to improve safety outcomes at workplaces. Further we were aware of the concerns relating to noise and were working with Supercars Australia and Destination NSW as well as other agencies to provide practical advice to Supercars Australia.</p> <p>It should be noted that SWNSW is continuing to meet with Supercars, Desitnation NSW and other agencies to address these issues. SWNSW is expecting information from Supercars regarding noise managment within the next month, noting that SWNSW is not the primary agency for manging noise pollution and are acting in an advisory capacity.</p> <p>Recommendation</p> <p>I recommend no further action as a response has been sent to the requestor and the issue is part of ongoing work being conducted by SWNSW.</p>	No Further Action

1-374242	07/05/2017	Safety Concerns / WHS Complaints	<p>Issue 1: NERG believes the residents will be living in a workplace because of the construction</p> <p>Action Taken: On 8 May 2017 I received the RFS. As the complaint is anonymous I was unable to discuss the issues with the requestor.</p> <p>The wording of the letter and the PowerPoint slides has previously been supplied to SafeWork NSW by [REDACTED] who stated [REDACTED] NERG.</p> <p>[REDACTED] has had contact with SI Steve Robins, as well as me in my role as Acting Manager Newcastle to advise him of how the WHS legislation addresses these matters and how we are managing the issues. We have advised NERG [REDACTED] that the residents will not be living in a construction site nor a 'workplace' as defined by the WHS Legislation but rather they will be living next to a workplace. He was advised that we would see these works as any other civil works being done such as council, RMS or other utilities. We expect them to manage the WHS risks as would any other PCBU doing similar civil works.</p> <p>SafeWork are members of the working party for the "Build" which is chaired by Destination NSW and are actively engaging with the [REDACTED] EDM and the principle contractors to ensure compliance with the WHS Legislation.</p> <p>This position still applies. On 9/5/2017 I telephoned [REDACTED] - Events at Supercars Australia who advised that Supercars has engaged a noise expert and medical practitioner to review the noise issues in relation to the race and develop advice for Supercars. He has requested this information urgently and will provide it to SafeWork NSW as soon as its available.</p> <p>Issue 2: NERG is concerned about noise, air pollutants, interaction with heavy machinery during construction</p> <p>Action Taken: These issues are to be addressed as they arise and will be dealt with on their merits as they relate to compliance with the WHS legislation. SafeWork are discussing these issues with the contractors and Destination NSW.</p> <p>Issue 3: NERG asks that SafeWork intervene to get Supercars to consult with the community as per the WHS legislation to share safety plans, consult about turning the suburb into a workplace and how they will monitor others at the workplace.</p> <p>Action Taken: SafeWork has no jurisdiction to direct Supercars to consult with the community; however, Supercars and Destination NSW have regular meetings with the residents to discuss issues as they arise. Furthermore, SafeWork has advised Supercars and Destination NSW that we are available to provide WAVs to all PCBUs including those in the race area who will be affected, to assist in helping them to manage any of their WHS issues that may arise from the race.</p> <p>Issue 4: Meet with SafeWork to discuss</p> <p>Action Taken: We are unable to meet with this requestor as they are anonymous; however, it has not been necessary to meet with [REDACTED] at this stage as we have been able to manage the matters via telephone. We are more than happy to meet with all parties as necessary.</p> <p>Inspector Recommendations:</p> <p>I recommend no further action due to :</p> <ul style="list-style-type: none"> • The fact that the PCBU has not breached any legislation at this stage • The PCBU is currently undertaking research into the issues, consulting with the community and other PCBUs and developing a plan to manage noise • The PCBU is complying with WHS Legislation at this point in time. 	No Further Action
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1-372837	29/03/2017	Safety Concerns / WHS Complaints	<p>Email received with attachment letter - TRIM D17/102260</p> <p>Safety concerns:</p> <ul style="list-style-type: none"> - construction of track will cause unsafe noise, pollution and hazards to public and local businesses - asking for SW NSW consultation <p>Issues Identified In Complaint:</p> <p>Issue 1: Numerous issued identified in letter from complainant (refer to TRIM document number D17/102260).</p> <p>Action Taken (including Notices Issued):</p> <p>1. On the 05.04.17 I had a telephone discussion with [REDACTED] and advised him of the following in relation to his documented complaint:</p> <ul style="list-style-type: none"> • SafeWork NSW is a member of the Destination NSW chaired working groups for the Newcastle 500. • As of the 04.04.17 a Principal Contractor had not selected for the Newcastle 500 and SafeWork NSW was not aware of proposed operating times for associated civil construction. • Hours of work do not fall within SafeWork NSW jurisdiction unless related to worker fatigue. • SafeWork NSW does not consider a private residence adjacent to a workplace to be part of that workplace as defined by Section 8 of the Work Health and Act 2011. • Noise and managing risk of airborne contaminants outside of the workplace is regulated through the Protection of the Environment Operations Act 1997 and administered by the NSW Environment Protection Authority (EPA) with shared responsibility with local government. I recommended [REDACTED] visit the EPA Internet site for further information. • SafeWork NSW cannot require V8 Supercars Australia Pty Ltd to 'share their safety plan with the community', 'consult with the community' or 'detail how they will be monitoring and reporting to the community on noise, air pollutants, machinery hazards and risks associated with changed traffic conditions in Newcastle East'. <p>Documents Reviewed And Left On-Site: Not applicable.</p> <p>Publications Supplied: Not applicable.</p> <p>Inspectors Assisting?: Not applicable.</p> <p>Other Staff Assisting?: Not applicable.</p> <p>Inspector Recommendations:</p> <p>I recommend no further action.</p>	No Further Action
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