

## Attachment 1 - OOHW approval request form

Out of hours work approval request form			
No:	Notification date:	Approval date:	Project:
01	4/11/2019		MR82 Shared Path Bridge over Newcastle Road, Jesmond
A. Contact details			
Name	Mobile number	Email	
Contractor Environmental Site Representative	██████████	████████████████████████████████████████	
Contractor Construction Manager	██████████	████████████████████████████████████████	
Contractor Foreman	██████████	████████████████████████████████████████	
Contractor Project Engineer	██████████	████████████████████████████████████████	
B. Details of work:			
Include a map showing location of work extent and nearest sensitive receivers	Location (Chainage):		MKNR Ch 70 – 220
	NCA/s:		Works Location – <i>Refer Figure 1</i> <ul style="list-style-type: none"> <li>• NCA 5</li> </ul>
	Description of works:		Placing concrete barriers on Newcastle Rd east bound. Barriers are being placed 0.5m from edge line within existing shoulder.
	Machinery/ plant to be used		<ul style="list-style-type: none"> <li>• 1 x Excavator (15T Rubber Tracked)</li> <li>• 1 x Semi Trailer</li> <li>• 1 x Light tower</li> <li>• 3 x Light Vehicle</li> </ul>
	Traffic control measures required:		3 person crew required working under TCP-SPB-NR-002.
	Lighting required:		1 x Mobile lighting towers
	Proposed dates:		02/12/2019
	Proposed timings:		Start: 7.30pm Completion: 5.00am
	Justification - why does work need to occur outside of standard construction hours?: (attach support information as required)		To place barriers in the east bound shoulder of Newcastle Road we will require the occupation of the east bound left hand (slow) lane for delivery trucks and machinery to place. We do not have a ROL approved for day time lane closures. We do have a ROL approved for night time lane closures (ROL 1280316). Therefore, to complete these works they need to occur OOHs as per our ROL conditions.

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<b>C. Risk assessment</b>	<p><b>Noise;</b> A risk assessment has been undertaken using a noise modelling tool to predict the expected noise impact at individual receivers for this OOHW activity. The input data for noise modelling included, the location of work activity, the type and quantity of plant and equipment, and the duration of operation.</p> <p>The noise modelling data was assessed against the relevant NML's and sleep disturbance criteria to determine the risk factor in accordance with the OOHW protocol.</p> <p><b>Vibration;</b> Plant required to undertake this OOHW activity will not encroach upon the minimum safe working distances. Predicted vibration levels are expected to be consistent with levels generated by existing traffic.</p>
<b>NML (refer Table 3-2 of OOHW protocol)</b>	<p><b>NCA 5:</b></p> <ul style="list-style-type: none"> <li>• Evening - 56</li> <li>• Night - 46</li> </ul>
<b>Is the work highly noise intensive? (above 75dB(A) LAeq (15 minute))</b>	<p>The noise modelling has determined that this activity will not generate high noise levels (&gt;75dB)</p>
<b>Risk factor category (low or high):</b>	<p style="text-align: center;">Low <input checked="" type="checkbox"/> <span style="margin-left: 200px;">High <input type="checkbox"/></span></p> <p>Comments</p> <p>In accordance with the risk factors nominated within OOHW protocol, this work activity is considered to be low risk due to the following;</p> <ul style="list-style-type: none"> <li>• No sleep disturbance impacts generated</li> <li>• Less than 5dBA<sub>Leq(15minutes)</sub> above the Rating Background Level (RBL)</li> <li>• Activity duration is one night</li> <li>• No impulsive or tonal noise vibration</li> </ul>

**D. Details of noise or vibration assessment completed:**

Comments:

**Noise Modelling;**

The noise modelling has been completed initially, by utilising the 'Noise Mitigation Tool' created by RCA (RCA Australia,) to predict sound levels at individual receivers and to allow the noise mitigation requirements to be determined in bulk. Upon further assessment of the predicted Noise levels generated by the RCA noise tool, a distance-based calculation has been applied to determine the distance to individual receivers.

Noise modelling has been completed for OOHW period 1 and 2, then the distance-based calculation applied to provide a visual representation of the noise impact, and to assist with the distribution of notifications.

**Attenuation Applied to Modelling;**

As the noise tool provides predicted levels assuming a direct line of sight to receivers, and therefore does not consider the effects of topography or attenuation provided by physical structures (retaining wall or residential properties), noise modelling was completed again with the inclusion of attenuation measures. This was undertaken to provide a more accurate representation of the impacts to receivers and predicted sound levels, and also to reduce the required number of notifications and/or mitigations measures.

The attenuation measures applied within the supplementary noise modelling included;

- Barrier height of 4m – average height of residential property.
- Barrier height of 2 - 3m – existing retaining wall and embankment located on Newcastle Road
- Distance of barrier (m) – distance between the property closest to the noise source (at a selected location relevant to the specific work activity) and the adjacent property. This distance ranged from 30m – 40m.

The application of the above attenuation measures resulted in an average reduction of 7-10dB(A), by way of shielding from one residential property (acting as the barrier) to the next property.

**Noise Modelling Results;**

- Noise modelling has determined that this OOHW activity will not generate 'high noise' levels, that being, noise levels above (>75dB(A)).
- Predicted sound levels (dB(A)) have determined that no receivers will be impacted by noise levels in excess of 5dB above the RBL.
- The highest level of impact for the works is located at 2 Coles St (44dB) and 2B Coles Street (44dB), which does not exceed the allowable NML for NCA 5 (46dB).
- The following NCA will receive noise levels above the RBL during OOHW period 2 (Night – assuming attenuation from existing property/retaining wall); NCA 5.

**OOHW Evening Period – Assumes no Attenuation; Refer Figure 2**

- Noise Perception Level is 'Noticeable' (5-10dB(A)) to a distance of 152m
- Properties potentially Impacted - 61

**OOHW Night Period – Assumes no Attenuation; Refer Figure 3**

- Noise Perception Level is 'Noticeable' (5-10dB(A)) to a distance of 329m
- Noise Perception Level is 'Audible' (10-20dB(A)) to a distance of 188m
- Properties potentially impacted – 184

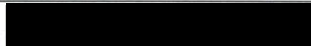


**OOHW Night Period – Attenuation Applied; Refer Figure 4**

- Noise levels will not exceed the allowable NML of 46db for NCA 5
- Properties Potentially impacted – 17

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<b>E. Proposed Mitigation Measures</b>	<p><b>Operational Mitigation Measures;</b></p> <ul style="list-style-type: none"> <li>• Administrative controls, induction / tool box consultation</li> <li>• Schedule noisier work to be carried out earlier in the period</li> <li>• All plant and equipment will be turned off when not in use</li> <li>• All plant and equipment will be serviced regularly and operated in accordance with the manufacture's specifications</li> <li>• Use of non-tonal reversing alarms (squawkers) are used instead of reversing beepers</li> <li>• Radios used for communication to prevent the need for yelling</li> <li>• Provide supporting noise modelling to identify impacts to receivers and relevant mitigations in accordance to QA Specification G36.</li> <li>• Designated vehicle parking away from sensitive receivers</li> </ul> <p><b>Additional Mitigation Measures - Notification;</b></p> <p>Advanced warning of works and potential disruptions can assist in reducing the impact on the community. The notification may consist of a letterbox drop (or equivalent) detailing work activities, time periods over which these will occur, impacts and mitigation measures. Notification should be a minimum of 5 working days prior to the start of works.</p>
<b>F. Community Consultation carried out including details of community feedback and how this has been addressed</b>	<p>Daracon's community liaison representative has commenced 'door knocking' potentially impacted receivers, Residents have been provided a notification of start of work which includes advance warning of night time barrier installation and a schedule of upcoming night works activities.</p> <p>There has been no major concerns raised by potentially impacted receivers, to date, during the consultation process.</p> <p>Targeted notifications to receivers identified within the risk assessment and predicted noise modelling, will occur 5 days prior to the commencement of the OOHW activity.</p>
<b>G. Respite framework – dates of previous respite periods, OOHW period 1 or 2, community agreements etc</b>	<p>No respite period will be offered, as the duration of the activity is – One Night.</p>
<b>H. Details of non-residential receivers (if any) and corresponding NMLs</b>	<p>No non-residential receivers will be impacted by this OOHW activity.</p>
<b>I. Are there any properties at risk of exceeding the screening criteria for cosmetic damage?</b>	<p>Plant required to undertake this OOHW activity will not encroach upon the minimum safe working distances, therefore there is no risk of exceeding the criteria for cosmetic damage.</p>
<b>E. Review/ Endorsements</b>	
	<p>Community notified</p> <p>Date:</p>

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<b>Contractor Community Liaison Representative</b>	Additional consultation requirements: <i>Notification to be sent 5 days prior to work</i>		
	Have the works been reviewed and endorsed?		Yes / No
	Name:	Signature:	Date:
			
	Comments:		
<b>Roads and Maritime Environmental Manager (or delegate)</b>	Agreed mitigation measures:		
	Have the works been reviewed and endorsed?		Yes / No
	Name:	Signature:	Date:
	Comments:		
<b>Roads and Maritime Project Manager</b>	Have the works been reviewed and endorsed?		Yes / No
	Name:	Signature:	Date:
	Comments:		
<b>ER approval (low risk activities)</b>	Are the works approved?		Yes / No
	Name:	Signature:	Date:
	Comments:		
<b>Planning Secretary approval (high risk activities)</b>	Are the works approved?		Yes / No
	Name:	Signature:	Date:
	Comments:		

## Attachment 2 – Application of OOHW mitigation measures

OOHW period	dB(A)	Mitigation measures
<b>OOHW period 1</b> Monday–Friday: 6 pm – 10 pm Saturday: 7 am - 8 am and 5 pm – 10 pm Sunday and Public Hol.: 8 am – 6 pm	0-5 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Behavioural practices on site</li> <li>• Equipment selection / maintaining and monitoring plant</li> <li>• Use and siting of plant and hoardings</li> <li>• Site inductions</li> <li>• Use of non-tonal reversing alarms</li> <li>• Notification</li> <li>• Planning noisier work to be carried out earlier in the period</li> </ul>
	5-15 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Standard measures as above.</li> </ul> <b>Additional mitigation measures:</b> <ul style="list-style-type: none"> <li>• Notification</li> <li>• Respite offer period 1</li> <li>• Duration respite</li> </ul>
	15-25 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Standard measures as above</li> </ul> <b>Additional mitigation measures:</b> <ul style="list-style-type: none"> <li>• Notification</li> <li>• Verification</li> <li>• Respite offer period 1</li> <li>• Duration respite</li> </ul>
	>25 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Standard measures as above.</li> </ul> <b>Additional mitigation measures:</b> <ul style="list-style-type: none"> <li>• Notification</li> <li>• Verification</li> <li>• Individual briefing</li> <li>• Respite offer period 1</li> <li>• Duration respite</li> <li>• Phone calls</li> <li>• Specific notifications</li> </ul>

OOHW period	dB(A)	Mitigation measures
<b>OOHW period 2</b> Monday– Friday: 10 pm – 7 am Saturday: 10 pm - 8 am Sunday and Public Hol. 6 pm – 7 am	0-5 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Behavioural practices on site</li> <li>• Equipment selection / maintaining and monitoring plant</li> <li>• Use and siting of plant and hoardings</li> <li>• Site inductions</li> <li>• Use of non-tonal reversing alarms</li> <li>• Notification</li> <li>• Planning noisier work to be carried out earlier in the period</li> </ul>
	5-15 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Standard measures as above.</li> </ul> <b>Additional mitigation measures:</b> <ul style="list-style-type: none"> <li>• Notification</li> <li>• Verification</li> <li>• Respite offer period 2</li> <li>• Duration respite</li> </ul>
	15-25 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Standard measures as above</li> </ul> <b>Additional mitigation measures:</b> <ul style="list-style-type: none"> <li>• Notification</li> <li>• Verification</li> <li>• Individual briefing</li> <li>• Respite offer period 2</li> <li>• Duration respite</li> <li>• Phone calls</li> <li>• Specific notifications</li> </ul>
	>25 dB(A) above NML	<b>Standard mitigation measures:</b> <ul style="list-style-type: none"> <li>• Standard measures as above.</li> </ul> <b>Additional mitigation measures:</b> <ul style="list-style-type: none"> <li>• Notification</li> <li>• Verification</li> <li>• Individual briefing</li> <li>• Respite offer period 2</li> <li>• Duration respite</li> <li>• Phone calls</li> <li>• Specific notifications</li> <li>• Alternative accommodation</li> </ul>

**Table of hours (standard, OOH, Highly affected noise hours, respite periods)**

Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
1 AM	1 AM	1 AM	1 AM	1 AM	1 AM	1 AM
2 AM	2 AM	2 AM	2 AM	2 AM	2 AM	2 AM
3 AM	3 AM	3 AM	3 AM	3 AM	3 AM	3 AM
4 AM	4 AM	4 AM	4 AM	4 AM	4 AM	4 AM
5 AM	5 AM	5 AM	5 AM	5 AM	5 AM	5 AM
6 AM	6 AM	6 AM	6 AM	6 AM	6 AM	6 AM
7 AM	7 AM	7 AM	7 AM	7 AM	7 AM	7 AM
8 AM	8 AM	8 AM	8 AM	8 AM	8 AM	8 AM
9 AM	9 AM	9 AM	9 AM	9 AM	9 AM	9 AM
10 AM	10 AM	10 AM	10 AM	10 AM	10 AM	10 AM
11 AM	11 AM	11 AM	11 AM	11 AM	11 AM	11 AM
12 PM	12 PM	12 PM	12 PM	12 PM	12 PM	12 PM
1 PM	1 PM	1 PM	1 PM	1 PM	1 PM	1 PM
2 PM	2 PM	2 PM	2 PM	2 PM	2 PM	2 PM
3 PM	3 PM	3 PM	3 PM	3 PM	3 PM	3 PM
4 PM	4 PM	4 PM	4 PM	4 PM	4 PM	4 PM
5 PM	5 PM	5 PM	5 PM	5 PM	5 PM	5 PM
6 PM	6 PM	6 PM	6 PM	6 PM	6 PM	6 PM
7 PM	7 PM	7 PM	7 PM	7 PM	7 PM	7 PM
8 PM	8 PM	8 PM	8 PM	8 PM	8 PM	8 PM
9 PM	9 PM	9 PM	9 PM	9 PM	9 PM	9 PM
10 PM	10 PM	10 PM	10 PM	10 PM	10 PM	10 PM
11 PM	11 PM	11 PM	11 PM	11 PM	11 PM	11 PM
12 AM	12 AM	12 AM	12 AM	12 AM	12 AM	12 AM

**Legend**

<b>Standard hours (CoA E26)</b>	
Monday to Friday	7 am to 6 pm
Saturday	8 am to 5 pm
<b>Highly affected noise hours (CoA E30)</b>	
Monday to Friday	8 am to 6 pm
Saturday	8 am to 1 pm
<b>OOHW Day</b>	
Saturday	7 am to 8 am and 5 pm to 6 pm
Sundays and public holidays	8 am to 6 pm
<b>OOHW Evening</b>	
Monday to Sunday and public holidays	6 pm to 10 pm
<b>OOHW Night</b>	
Monday to Saturday	10 pm to 7 am
Sundays and public holidays	10 pm to 8 am
<b>Respite Periods</b>	
<b>OOHW period 1</b>	
Monday to Friday	6 pm – 10 pm
Saturday	7 am - 8 am and 5 pm – 10 pm
Sunday and public holidays	8 am – 6 pm
<b>OOHW period 2</b>	



Monday to Friday	10 pm – 7 am
Saturday	10 pm (Sat) - 8 am (Sun)
Sunday and public holidays	6 pm (Sun) – 7 am (Mon)

Figure 1 – Works Location



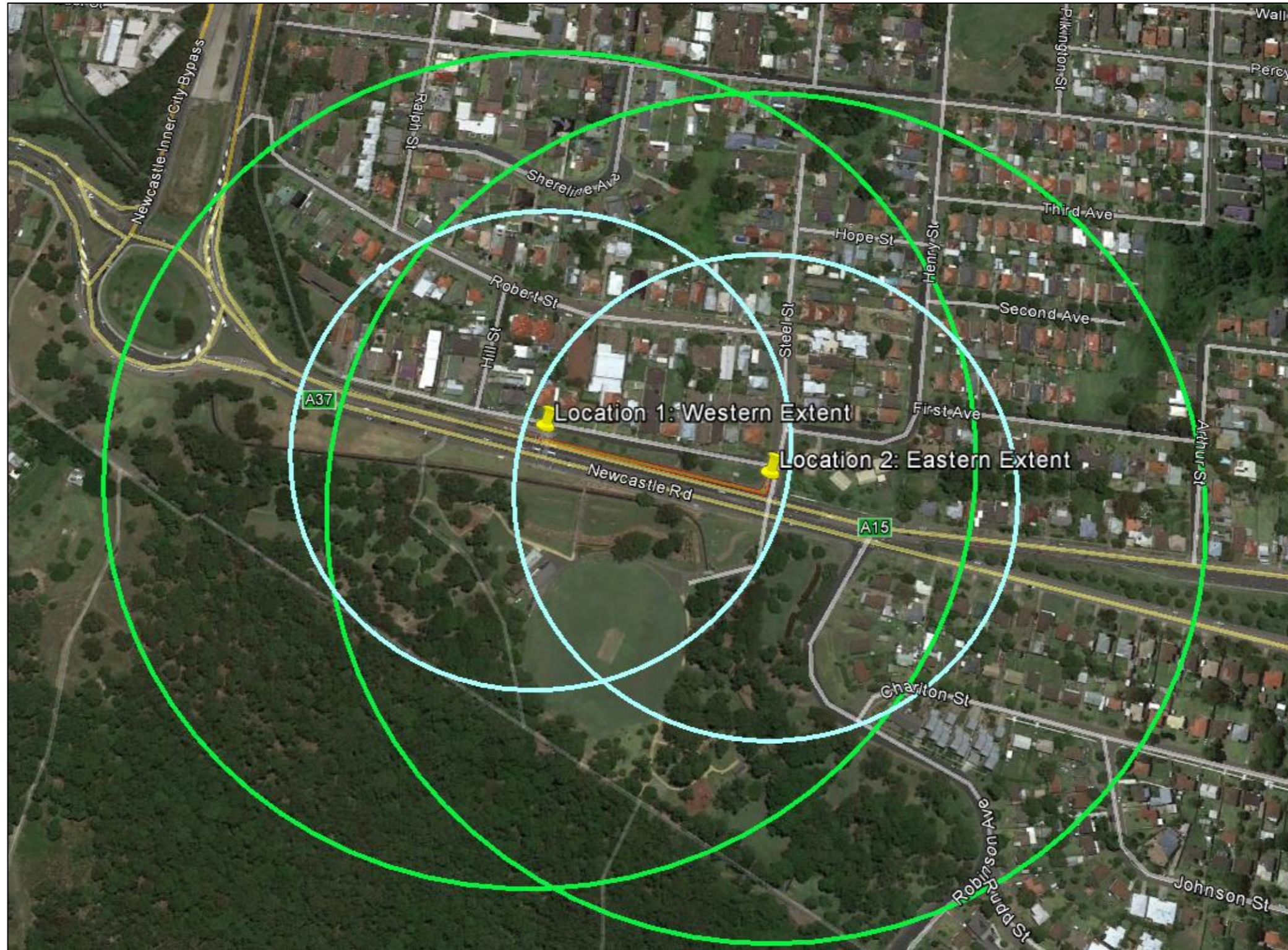
Figure 2 – OOHV Evening Period – No Attenuation Applied



*\* Noise Modelling - Assumes line of sight to receiver*

Perception Level	dB(A) Above RBL	Distance from Noise Source (m)	
Noticeable	5 -10	152	

Figure 3 – OOHW Night Period – No Attenuation Applied



\* Noise Modelling - Assumes line of sight to receiver

Perception Level	dB(A) Above RBL	Distance from Noise Source	
Noticeable	5 -10	329	
Clearly Audible	10 -20	188	

Figure 4 – OOHV Night Period – Attenuation Applied



*\* Noise Modelling - Assumes an average reduction of 7-10dB(A), from shielding of existing retaining wall and existing property*