# RP2J Project OOHW application form

| Out of hours work approval request form | | | |
|---|---|---|---|
| **No:** | **Notification date:** | **Approval date:** | **Project:** |
| **024** | **08/09/2021** | | **RP2J – Southern Utilities** |
| **A. Contact details** | **Name** | **Mobile number** | **Email** |
| Contractor Environmental Site Representative | Richard Lipar | [redacted] | [redacted] |
| Contractor Project Manager | Mike Billington | [redacted] | [redacted] |
| Contractor Foreman | Daniel Tregeagle | [redacted] | [redacted] |
| Contractor Project Engineer | Ian Harris | [redacted] | [redacted] |

| **B. Details of work:**<br>Include a map showing location of work extent and nearest sensitive receivers | |
|---|---|
| Location / chainages: | Lookout Rd - NB Carriageway CH7740 to 7860<br>McCaffrey Drive - Eastbound Shoulder CH60 to CH280<br>Refer Map Below:<br>  |
| NCA/s: | NCA-13 |
| Description of works – also include a brief description of the sequence of activities: | Works involve some minor tree clearing along the alignment of new powerlines on McCaffrey Drive, drilling and installing new power poles on Lookout Road and McCaffrey Drive, dressing poles and stringing conductors between new poles. Refer to **Appendix A** for more detailed summary of planned shifts, location, activities and plant. |
| Machinery/ plant to be used | Refer to **Appendix A** for detailed summary of machinery / plant that will be used and corresponding shifts. |
| Traffic control measures required: | Lookout Road Northbound Lane Closures<br>McCaffrey Drive Eastbound Lane Closures |

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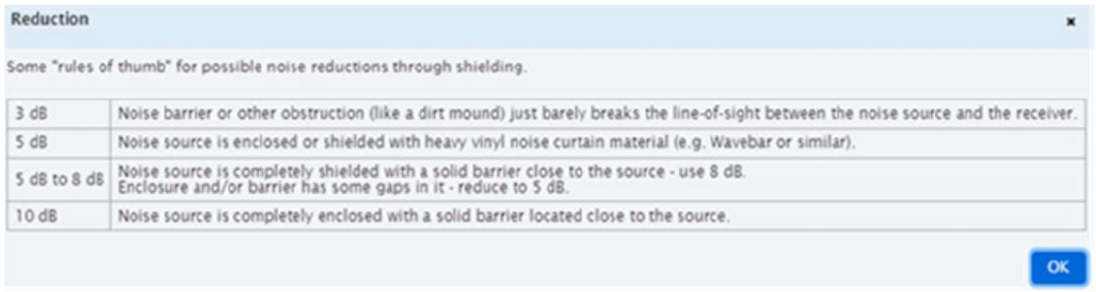
|---|---|
| Lighting required: | Lighting towers will be provided to highlight road works zone for motorists, and battery operated task lighting will be provided at specific locations. |
| Proposed dates: | 27/9/21 - 28/9/21 (2 Nights on Lookout Road and McCaffrey Drive)<br>29/9/21 – 30/9/21 (2 Nights on McCaffrey Drive)<br>05/10/21 – 07/10/21 (3 Nights on McCaffrey Drive) |
| Proposed times: | Start 1900 – Finish 0500 on each shift |
| Justification – why does work need to occur outside of standard construction hours?:<br>(attach support information as required) | Work needs to be carried out under lane closure of McCaffrey Drive for the safety of workers and public. This cannot happen during the day as City of Newcastle Council will not issue a Road Occupancy Licence (ROL) for daytime lane closures on McCaffrey Drive. |
| **C. Risk assessment** | |
| **NML (refer Table 3-2 of OOHW protocol)** | Evening: 54 dB(A). Night: 38 dB(A) |
| **Is the work highly noise intensive? (above 75dB(A) $L_{Aeq\ (15\ minute)}$)** | No |
| **Risk factor category (refer section 4.3 of OOHW protocol):** | Low Risk.<br>Maximum worst case cumulative predicted noise level ($L_{Aeq\ 15\ min.}$) = 43-50dB(A) for twelve residents during two of the proposed eight shifts. This is <25dB(A) above RBL (33dB(A)). |

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

Detailed noise assessments were completed using noise modelling program named *KNOWnoise: Minor Works* which is developed and owned by Hutchison Weller. This program, and it's more advanced version *KNOWnoise,* are used on many large-scale infrastructure projects to determine and model likely noise impacts on sensitive receivers.

As works are predicted to carry over the Evening and Night OOHW Periods, a detailed noise assessment was completed to determine predicted noise impacts for the Night Period only, as this is the worst case for the RBL (refer Appendix B). Detailed noise assessment reports are attached to this OOHW Application. Report includes a map of predicted impacts on sensitive receivers, and predicted noise levels at each receiver's address.

McCaffrey Drive and Lookout Road areas were treated separately in order to model the different mitigation measures proposed for the sensitive receivers e.g. noise blankets. Where noise reductions such as noise blankets are applied to the noise assessments it is detailed in the table in **Appendix B** of the noise assessments. The reductions applied are in line with the following:



Reduction

Some "rules of thumb" for possible noise reductions through shielding.

| | |
|---|---|
| 3 dB | Noise barrier or other obstruction (like a dirt mound) just barely breaks the line-of-sight between the noise source and the receiver. |
| 5 dB | Noise source is enclosed or shielded with heavy vinyl noise curtain material (e.g. Wavebar or similar). |
| 5 dB to 8 dB | Noise source is completely shielded with a solid barrier close to the source - use 8 dB.<br>Enclosure and/or barrier has some gaps in it - reduce to 5 dB. |
| 10 dB | Noise source is completely enclosed with a solid barrier located close to the source. |

OK

All applicable data was added to the model, including but not limited to, specific information on the proposed activity, project adopted RBLs and NMLs, extent of works, plant and equipment to be used, proposed mitigation measures etc. Using this data, and data within the program, detailed noise assessment reports were produced

giving accurate predicted noise impacts for the period assessed. Specific assessment methodology is described on Page 3 of each report.

**Predicted impacts:**

The noise assessment considers 3 separate activites/location of work, impacts are summarised as follows:

**McCaffrey Drive/Lookout Road Power Pole Installation (27/09/21 & 28/09/21)**

The predicted maximum worst case cumulative noise level (LAeq, 15 min) is 50dB(A).

There are 4 receivers for which the works will be Clearly Audible (6-15 dB(A) above NML).

**McCaffrey Drive Tree Clearing (27/09/21 & 28/09/21)**

The predicted maximum worst case cumulative noise level (LAeq, 15 min) is 44dB(A).

There are 8 receivers for which the works will be Clearly Audible (6-15 dB(A) above NML).

**McCaffrey Drive Power Pole Installation (29/09/21, 30/10/21, 5/10/21, 6/10/21, 7/10/21,)**

The predicted maximum worst case cumulative noise level (LAeq, 15 min) is 40dB(A).

There are 10 receivers for which the works will be noticeable (1- 5 dB(A) above NML).

Refer to the following detailed Noise Assessments in **Appendix B**:

**Predicted Vibration Impacts:**

No vibration impacts are predicted as a result of these works. No plant or equipment will encroach within the minimum safe working distance (18m).

The activity is not considered to encroach into either “human comfort” or “structural damage” vibration criteria, based on distance, and equipment and methodology used (rubber tyred plant completing non-vibratory activities).

**E. Proposed mitigation measures, including respite**

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The following mitigation measures were proposed based on those identified in the *OOHW Protocol – Section 5.1* and *Table 5-1: Hierarchy for application of additional mitigation for airborne noise.*

***Standard Mitigation Measures (OOHW Protocol):***

- Modifying behavioural practices on site
- Equipment selection / maintaining and monitoring plant
- Use and siting of plant and hoardings
- Site inductions
- Use of non-tonal reversing alarms
- Stakeholder notification
- Planning noisier work to be carried out earlier in the period.

**NVMP Mitigation measures:**

- Noise blankets to be utilised for the Lookout Rd properties during the Power Pole Installation Works on 27/9/21 and 28/9/21.
- Reduction of machinery usage outside these properties during the night period is also noted.
- Where practical, operating machines at low speed / power and switching them off when not in use rather than leaving them idling for prolonged periods;
- Minimising the reversing of machines;
- All employees, contractors and subcontractors are to receive an environmental induction.
- No swearing or unnecessary shouting or loud stereos/radios on site.
- Limit compression braking at night in residential areas.
- No dropping of materials from height, throwing of metal items and slamming of doors.

**Additional Mitigation Measures (OOHW Protocol):**

For Residents 5-15 dB(A) above NML

- Notification
- Verification
- Duration Respite

## F. Community consultation

*Outline consultation undertaken for the proposed OOHW:*

The properties identified in **Appendix E** will be provided a written notification describing the upcoming OOH works and likely impacts. Refer to **Appendix D** for draft notification letters to be delivered no more than 5 days prior to undertaking the works.

*Has respite periods for OOHW been identified with the affected community on a monthly basis and a three-month schedule of likely OOHW provided (refer CoA E29)?*

Yes, likely OOHW identified in 3 monthly look-ahead notification which covers likely OOHW. September notification was delivered to community on 9 September 2021. Refer to **Appendix C** for three month Lookahead.

Respite has been taken into account as works have been planned to start 1 week after previous OOHW on 21/09/21.

## Out of hours work approval request form

*Has the outcome of community consultation, the identified respite periods and scheduling of likely OOHW been provided to the ER, EPA and Planning Secretary?*

The schedule of OOHW is provided to the ER, EPA and the Planning Secretary on a monthly basis. Transport for NSW also provides further detail on the community consultation and respite to the ER and Planning Secretary through the OOHW application process when relevant to OOHW, and when approval is sought. The EPA will be provided with relevant information through the six-monthly compliance reporting process by Transport.

### G. Respite framework

*Outline any previous respite within the last month and the status of community agreements (where relevant)?*

Previous OOHW scheduled on 20th/21st September providing 1 week respite before this activity.

*Have cumulative impacts from OOHW permitted by an EPL been considered during the development appropriate respite?*

N/A

### H. Details of non-residential receivers (if any) and corresponding NMLs

*Comments:*

Using the current noise assessment software it is noted that noise at the nearby sensitive receiver of John Hunter Hospital will not exceed the NML of 38db(A) during the planned works.

### I. Are there any properties at risk of exceeding the screening criteria for cosmetic damage?

*Comments:*

No – All properties are >18m from works.

### I. Review/ Endorsements

| | | | |
|---|---|---|---|
| **Contractor Community Liaison Representative** | | | Date: 08 Sept 2021 |
| | The affected sensitive receivers will be notified no later than 5 days prior to start of work via letter | | |
| | Have the works been reviewed and endorsed? | | Yes |
| | Name: | Signature: | Date: |
| | Nikki Taylor | [redacted] | 08/09/21 |
| | Comments: | | |
| **Transport for NSW Environmental Manager (or delegate)** | Agreed mitigation measures: | | |
| | Have the works been reviewed and endorsed?<br>Have the works been approved where neither low or high risk? | | Yes / ~~No~~<br>~~Yes~~ / No |
| | Name: | Signature: | Date: |
| | Andrew Grainger | [redacted] | 10/09/2021 |

| Out of hours work approval request form | | | |
|---|---|---|---|
| | Comments: | | |
| **Transport for NSW Project Manager** | Have the works been reviewed and endorsed? Yes / ~~No~~<br>Have the works been approved where neither low or high risk? ~~Yes~~ / No | | |
| | Name: | Signature: | Date: |
| | Brett Kendall | [redacted] | 10/09/2021 |
| | Comments: | | |
| **ER approval (low risk activities)** | Are the works approved? Yes / No | | |
| | Name: | Signature: | Date: |
| | Simon Williams | [redacted] | 14/09/2021 |
| | Comments: | | |
| **Planning Secretary approval (high risk activities)** | Are the works approved? Yes / No | | |
| | Name: | Signature: | Date: |
| | | | |
| | Comments: | | |

## Appendix A – Detailed Schedule of Activities

| SHIFT NO. | PLANNED DATE | LOCATION | ACTIVITIES & SEQUENCE | PLANT USED | REF. NOISE ASSESSMENTS |
|---|---|---|---|---|---|
| 1 | **Mon, 27 Sep 21** | Lookout Rd - NB Carriageways<br>CH7740 to 7860 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and close northbound lane<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Drill and Install Electrical Poles 37 & 54<br>0345 - 0415: Clean up and de-mobilise from roadway<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 2<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 003.1 - McCaffrey Drive/Lookout Road Power Pole Installation |
| | | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Remove trees for New Electrical Installations<br>0345 - 0415: Clean up de-mobilise from McCaffrey Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Chainsaw<br>Chipper (mulcher)<br>Lighting Tower<br>Excavator (6T)<br>Light Vehicle<br>Truck (10 Tonne) | Assessment ID 004 - McCaffrey Drive Tree Clearing |
| 2 | **Tue, 28 Sep 21** | Lookout Rd - NB Carriageways<br>CH7740 to 7860 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and close northbound lane<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Dress Poles 37 & 54 and string conductors<br>0345 - 0415: Clean up and de-mobilise from roadway<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 2<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 003.1 - McCaffrey Drive/Lookout Road Power Pole Installation |
| | | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Complete Tree removal for New Electrical Installations<br>0345 - 0415: Clean up de-mobilise from McCaffrey Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Chainsaw<br>Chipper (mulcher)<br>Lighting Tower<br>Excavator (6T)<br>Light Vehicle<br>Truck (10 Tonne) | Assessment ID 004 - McCaffrey Drive Tree Clearing |
| 3 | **Wed, 29 Sep 21** | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Drill New Electrical Poles 45, 47, & 49<br>0345 - 0415: Clean up de-mobilise from McCaffrey Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 1<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 002 - McCaffrey Drive Power Pole Installation |
| 4 | **Thu, 30 Sep 21** | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Drill New Electrical Poles 51 & 52<br>0345 - 0415: Clean up de-mobilise from McCaffrey Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 1<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 002 - McCaffrey Drive Power Pole Installation |
| ***RESPITE PERIOD*** | | | | | |
| 5 | **Tue, 5 Oct 21** | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Install Electrical Poles 45, 47 & 49<br>0345 - 0415: Clean up de-mobilise from McCaffery Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 1<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 002 - McCaffrey Drive Power Pole Installation |
| 6 | **Wed, 6 Oct 21** | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Install New Electrical Poles 51 & 52<br>0345 - 0415: Clean up de-mobilise from McCaffery Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 1<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 002 - McCaffrey Drive Power Pole Installation |
| 7 | **Thu, 7 Oct 21** | McCaffrey Drive - Eastbound Shoulder<br>CH60 to CH280 | 1900 - 1930: Complete pre-start briefing with project team at compound<br>1930 - 1945: Set up traffic control and implement Eastbound Lane Closure<br>2015 - 2030: Mobilise equipment to the work area<br>2030 - 0400: Dress Poles and String Conductors<br>0345 - 0415: Clean up de-mobilise from McCaffrey Drive<br>0415 – 0500: Remove traffic control and reopen lanes to traffic | Lighting Towers x 1<br>Light Vehicle<br>Truck (10Tonne)<br>Bucket Truck (EWP)<br>Crane Borer (Truck 12-15 tonne) | Assessment ID 002 - McCaffrey Drive Power Pole Installation |

**Appendix B - RP2J - Southern Utilities - Noise Impact Assessments**

# *Construction noise impact assessment*

| RP2J | | | |
|---|---|---|---|
| **Proposed works** | McCaffery Drive/Lookout Road Power Pole Installation | | |
| **Proponent** | Quickway | | |
| **Assessment Date** | 07/09/2021 | | |
| **Prepared by** | Quickway | **Assessment Id** | 003.1 |

## Introduction

This report has been prepared using the construction noise self-assessment platform KNOWnoise: *Minor Works* and presents an assessment of the likely noise impacts related to proposed works associated with the above project. Where possible, these works would be completed during standard construction hours; however, there may be a need to work outside these hours due to technical, community or access limitations. The location of the proposed works is illustrated in Appendix A.

## Planned works

A description of the proposed works is as follows.

Installation of Power Poles & OH assets

Proposed activities and equipment for the works are summarised in Appendix B.

Though subject to change, the works are expected to commence around 27/09/2021 and would be completed by 30/09/2021.

## Assessment criteria and mitigation requirements

The Interim Construction Noise Guideline (ICNG) (DECC 2009) describes noise more than the background level as potentially having an adverse impact on sensitive receivers and increasing the likelihood of complaint. During standard construction hours, where construction noise is within 10 dB(A) of the RBL, impacts would be acceptable.

Where construction noise is more than 10 dB(A) above the RBL during standard construction hours, a residential receiver is considered noise affected and the proponent should undertake all reasonable and feasible steps necessary to manage the impact and consult with the affected community.

Above a LAeq, 15 minute noise level of 75 dB(A), a receiver is highly affected, requiring consideration of additional mitigation measures including alternative accommodation in the night period.

Outside standard construction hours, construction noise at a residential receiver more than 5 dB(A) above the RBL is taken to be noise affected.

In addition, annoying noise such as rock hammers, impact piling, or other impulsive noise sources usually result in greater annoyance than continuous construction noise. A 5 dB(A) penalty is applicable to such activities prior to comparison with the NMLs.

Other sensitive land uses, such as schools and offices, typically find noise from construction disruptive when the properties are being used (such as during work and school times). Table 2 presents NMLs from the ICNG for sensitive land uses based on the principle that the characteristic activities for each of these land uses should not be unduly disturbed.

**Table 1 Non-residential sensitive land uses noise management levels**

| Land use | Noise assessment location | NML ($L_{Aeq,15min}$) |
|---|---|---|
| Classrooms at schools and other educational institutions | Internal | 45 |
| Places of worship | | |
| Active recreation areas (such as sporting activities and activities which generate their own noise or focus for participants) | External | 65 |
| Passive recreation areas (contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation) | External | 60 |
| Industrial premises | External | 75 |
| Office, retail outlets | External | 70 |

As part of planning for out of hours works, standard mitigation measures, as described in the ICNG and CNVG, would be implemented where reasonable and feasible. However, after these measures have been applied, noise and vibration levels may continue to exceed the NMLs.

In this case, additional mitigation measures outlined in the CNVG, which largely focus on engagement with affected sensitive receivers, should be implemented where reasonable and feasible, unless other agreements are in place with the impacted receiver.

Triggers and additional mitigation measures for airborne noise are summarised in Table 2. Further details of specific additional mitigation measures are described in the CNVG.

**Table 2 Triggers for additional mitigation measures – Airborne noise (Roads and Maritime 2016)**

| Predicted airborne LAeq(15min) noise level at receiver | | | |
|---|---|---|---|
| Perception | dB(A) above RBL | dB(A) above NML | Additional mitigation measures |
| All hours | | | |
| 75 dB(A) or greater | | | N, V, PC, RO |
| Standard hours: Mon - Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Hol (Nil) | | | |
| Noticeable | 5 to 10 | 0 | - |
| Clearly audible | 10 to 20 | < 10 | - |
| Moderately intrusive | 20 to 30 | 10 to 20 | N, V |
| Highly intrusive | > 30 | > 20 | N, V |
| OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 1pm – 10pm), Sun/Pub Hol (8am – 6pm) | | | |
| Noticeable | 5 to 10 | <5 | - |
| Clearly audible | 10 to 20 | 5 to 15 | N, R1, DR |
| Moderately intrusive | 20 to 30 | 15 to 25 | V, N, R1, DR |
| Highly intrusive | > 30 | >25 | V, IB, N, R1, DR, PC, SN |
| OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Pub Hol (6pm – 7am) | | | |
| Noticeable | 5 to 10 | <5 | N |
| Clearly audible | 10 to 20 | 5 to 15 | V, N, R2, DR |
| Moderately intrusive | 20 to 30 | 15 to 25 | V, IB, N, PC, SN, R2, DR |
| Highly intrusive | > 30 | >25 | AA, V, IB, N, PC, SN, R2, DR |

Notes:
PC = Phone calls
V = verification
IB = Individual briefings
N= Notification
AA = Alternative accommodation
SN = Specific notifications
RO = Respite offer
R1 = Respite period 1
R2 = Respite period 2
DR = Duration respite
Perception = relates to levels above RBL
NML = Noise management level
HA = Highly affected

## Existing environment and noise management levels

The proposed works would be undertaken in a predominantly Suburban/ Urban, characterised as:

Areas with low density transportation.

Typically local traffic, light vehicles, intermittent traffic flow

Background noise levels adopted for the project area and associated noise management levels (NMLs) are summarised in Table 3. NMLs have been established in line with the ICNG.

**Table 3 Construction NMLs**

| Land use | **Suburban/ Urban** | | Using custom background noise data? | | **Yes** |
|---|---|---|---|---|---|
| Criterion | Day | Weekend Day | Evening | Night | Sleep |
| **RBL** | 56 | 56 | 49 | 33 | |
| **NML** | 66 | 61 | 54 | 38 | 48 |

**Sleep disturbance**

The ICNG recommends where construction works are planned to extend over more than two consecutive nights, the maximum noise level should be considered for the purposes of establishing the likelihood of sleep disturbance. The Road Noise Policy suggests that maximum internal noise levels below 50-55 dB(A) are unlikely to awaken people from sleep and one or two noise events per night, with maximum internal noise levels of 65-70 dB(A) are not likely to affect health and wellbeing significantly.

Based on this, a sleep awakening criterion of 55 dB(A) (internal) is typically adopted for works. Given that noise attenuation of 10 dB(A) is typically provided by an open window, a sleep awakening criterion of LAmax 65 dB(A) (external) has been applied to residential bedroom façades. This is consistent with the sleep disturbance threshold described in Appendix E of the CNVG.

## Assessment methodology

Based on the nominated works area (illustrated in Appendix A), proposed equipment and the minimum distance from the works to each sensitive receiver, noise levels were calculated based on CONCAWE (1981) P*ropagation of noise from petroleum and petrochemical complexes to neighboring communities.*

This method considers geometric spreading, atmospheric absorption, ground effects and is valid for meteorological conditions of a gentle breeze from source to receiver and stable atmosphere (temperature inversion).

KNOWnoise: Minor works is a 2-Dimensional assessment platform and does not consider terrain effects (e.g. hills, valleys) or the presence of solid structures such as homes or noise barriers. This will result in a conservative prediction, suitable for the project being assessed.

Considering the nature of the works and the type of surrounding land uses, sensitive receivers up to a radius of 600 metres from the works have been included in the assessment.

Sound power levels and predicted noise levels depend on the number of plant items operating at any one time and their precise location relative to a sensitive receiver. Equipment was assumed to be working at the worst-case location relative to each receiver and represents a worst-case assessment. Where the activity is further away from receivers or less equipment is used the predicted levels will decrease.

Sound power levels for plant and equipment expected to be used for each activity has been estimated based on guidance in the following standards and guidelines as well as typical measured noise levels for specific equipment.

- Australian Standard AS2436-2010: Guide to noise and vibration control on construction, demolition and maintenance sites
- Construction Noise and Vibration Strategy 7TP-ST-157/2.0 (CNVS), (TfNSW, 2018)
- Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime Services, 2016)
- British Standard 5228-1:2009 Code of practice for noise and vibration control on construction and open sites

- United Kingdom Department for Environment, Food and Rural Affairs (DEFRA) Noise database for prediction of noise on construction and open sites

Construction noise sources and associated sound power levels are listed in Appendix B. The maximum predicted LAeq noise level within the work area was identified for each receiver.

## Predicted noise levels

Detailed predicted noise levels for each potentially affected receiver are presented Appendix C.

A summary of predicted noise levels in comparison with ICNG assessment criteria for the Night period is presented in Table 4.

**Table 4 Summary of predicted noise levels with comparison against ICNG criteria for the Night period.**

| Criterion | Predicted number of receivers |
|---|---|
| Maximum cumulative predicted $L_{Aeq,\ 15\ minute}$ noise level | 50 dB(A) |
| Number of highly noise affected receivers (>75 dB) | 0 |
| 1 – 10 dB above NML | 2 |
| 10 – 20 dB above NML | 2 |
| 20+ dB above NML | 0 |

For works outside standard hours, up to 0 receivers are predicted to be classified as Highly Impacted during the Night period. A summary of the number of receivers in each class is presented in Table 5.

**Table 5 Summary of predicted noise levels with comparison against CNVG criteria**

| Impact class | Predicted noise level | Predicted number of receivers |
|---|---|---|
| Noticeable | 1 – 5 dB above NML | 1 |
| Clearly audible | 5 – 15 dB above NML | 4 |
| Moderately impacted | 15 – 25 dB above NML | 0 |
| Highly Impacted | > 25 dB above NML | 0 |

Predicted impact classes for the Night period are illustrated graphically in Appendix C. Each identified receiver in the study area has been coloured to highlight the predicted level of impact.

**Sleep disturbance**

In the event works are planned for more than two consecutive nights, up to 0 are expected to exceed the sleep awakening criteria. Where any exceedances if the awakening criteria are predicted, additional care should be taken and mitigation measures implemented in the with the CNVG.

## Proposed noise mitigation measures

The safeguards and controls listed in Table 6 will be implemented where reasonable and feasible with the intention of achieving the project noise criteria and to maintain noise impacts at a practical minimum.

**Table 6 Safeguards and controls**

| Action | Description |
|---|---|
| Community consultation or notification | Notify the affected community.<br>The notification will detail work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night time period, any operational noise benefits from the works (where applicable) and contact telephone number.<br>Notification should be a minimum of 7 calendar days prior to the start of works. For projects other than maintenance works more advanced consultation or notification may be required. |
| Site inductions | All employees, contractors and subcontractors are to receive an environmental induction. The induction would at least include:<br>• all project specific and relevant standard noise and vibration mitigation measures<br>• relevant licence and approval conditions<br>• permissible hours of work<br>• any limitations on high noise generating activities<br>• location of nearest sensitive receivers<br>• construction employee parking areas<br>• designated loading/unloading areas and procedures<br>site opening/closing times (including deliveries) environmental incident procedures |
| Behaviour | No swearing or unnecessary shouting or loud stereos/radios on site.<br>Limit compression braking at night in residential areas.<br>No dropping of materials from height, throwing of metal items and slamming of doors. |
| Verification | Where indicated in Appendix C, a noise verification program would be undertaken for the duration of the works. |
| Construction hours | Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods. |
| Respite for out-of-hours works | Respite would be scheduled as indicated in Appendix C and described in the CNVG. |
| Equipment selection | Use quieter construction methods where feasible and reasonable.<br>Ensure plant including the silencer is well maintained.<br>Plant noise levels will have an operating noise emission level compliant with Appendix F of the CNVG |
| Use and siting of plant | The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.<br>Plant used intermittently to be throttled down or shut down.<br>Noise-emitting plant to be directed away from sensitive receivers. |

| Action | Description |
|---|---|
| Plan worksites and activities to minimise noise and vibration. | Locate compounds away from sensitive receivers and discourage access from local roads.<br><br>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.<br><br>Where additional activities or plant may only result in a marginal noise increase and speed up works, consider limiting duration of impact by concentrating noisy activities at one location and move to another as quickly as possible.<br><br>Very noise activities should be scheduled for normal working hours. If the work can not be undertaken during the day, it should be completed before 11:00pm.<br><br>Where practicable, work should be scheduled to avoid major student examination periods when students are studying for examinations such as before or during Higher School Certificate and at the end of higher education semesters. |
| Non-tonal reverse alarms | Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work. |
| Shield stationary noise sources such as pumps, generators, and compressors | These should be enclosed or shielded where reasonable and feasible. |
| Implement any project specific mitigation measures | |
| 1 | Sound Blankets where required. |
| 2 | Trucks are not to be left idling infront of residential properties |

# Appendix A Project location and predicted level of impact

# Appendix B Proposed activities and equipment

## Power Pole installation - Lookout Road

| Equipment | Quantity | Usage | Reduction | SWL |
|---|---|---|---|---|
| Daymakers / Lighting plant | 1 | 100 % | 5 | 88 |
| Elevated Working Platform | 1 | 30 % | 5 | 79 |
| Light vehicle | 1 | 20 % | 5 | 73 |
| Truck (10 tonne) | 1 | 30 % | 5 | 90 |
| Truck (12-15 tonne) | 1 | 20 % | 5 | 94 |

**Activity Sound Power Level:** 96

# Appendix C Detailed noise predicted for each receiver and activity

| Assessment: McCaffery Drive/Lookout Road Power Pole Installation | | | | Night | Results summary | | |
|---|---|---|---|---|---|---|---|
| NCA | ID | Address | Land use | NML | Cumulative Predicted LAeq, 15 minute noise level | Exceedance of NML, dB | Impact classification |
| | 524224 | 79B LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 39 | 1 | **Noticable** |
| | 524222 | 85 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 43 | 5 | **Clearly Audible** |
| | 524217 | 79 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 47 | 9 | **Clearly Audible** |
| | 524212 | 81 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 49 | 11 | **Clearly Audible** |
| | 524182 | 83 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 50 | 12 | **Clearly Audible** |

# *Construction noise impact assessment*

| RP2J | | | |
|---|---|---|---|
| **Proposed works** | McCaffery Drive Tree Clearing | | |
| **Proponent** | Quickway | | |
| **Assessment Date** | 06/09/2021 | | |
| **Prepared by** | Quickway | **Assessment Id** | 004 |

## Introduction

This report has been prepared using the construction noise self-assessment platform KNOWnoise: *Minor Works* and presents an assessment of the likely noise impacts related to proposed works associated with the above project. Where possible, these works would be completed during standard construction hours; however, there may be a need to work outside these hours due to technical, community or access limitations. The location of the proposed works is illustrated in Appendix A.

## Planned works

A description of the proposed works is as follows.

McCaffery Drive Tree Clearing

Proposed activities and equipment for the works are summarised in Appendix B.

Though subject to change, the works are expected to commence around 27/09/2021 and would be completed by 30/09/2021.

## Assessment criteria and mitigation requirements

The Interim Construction Noise Guideline (ICNG) (DECC 2009) describes noise more than the background level as potentially having an adverse impact on sensitive receivers and increasing the likelihood of complaint. During standard construction hours, where construction noise is within 10 dB(A) of the RBL, impacts would be acceptable.

Where construction noise is more than 10 dB(A) above the RBL during standard construction hours, a residential receiver is considered noise affected and the proponent should undertake all reasonable and feasible steps necessary to manage the impact and consult with the affected community.

Above a LAeq, 15 minute noise level of 75 dB(A), a receiver is highly affected, requiring consideration of additional mitigation measures including alternative accommodation in the night period.

Outside standard construction hours, construction noise at a residential receiver more than 5 dB(A) above the RBL is taken to be noise affected.

In addition, annoying noise such as rock hammers, impact piling, or other impulsive noise sources usually result in greater annoyance than continuous construction noise. A 5 dB(A) penalty is applicable to such activities prior to comparison with the NMLs.

Other sensitive land uses, such as schools and offices, typically find noise from construction disruptive when the properties are being used (such as during work and school times). Table 2 presents NMLs from the ICNG for sensitive land uses based on the principle that the characteristic activities for each of these land uses should not be unduly disturbed.

**Table 1 Non-residential sensitive land uses noise management levels**

| Land use | Noise assessment location | NML ($L_{Aeq,15min}$) |
|---|---|---|
| Classrooms at schools and other educational institutions | Internal | 45 |
| Places of worship | | |
| Active recreation areas (such as sporting activities and activities which generate their own noise or focus for participants) | External | 65 |
| Passive recreation areas (contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation) | External | 60 |
| Industrial premises | External | 75 |
| Office, retail outlets | External | 70 |

As part of planning for out of hours works, standard mitigation measures, as described in the ICNG and CNVG, would be implemented where reasonable and feasible. However, after these measures have been applied, noise and vibration levels may continue to exceed the NMLs.

In this case, additional mitigation measures outlined in the CNVG, which largely focus on engagement with affected sensitive receivers, should be implemented where reasonable and feasible, unless other agreements are in place with the impacted receiver.

Triggers and additional mitigation measures for airborne noise are summarised in Table 2. Further details of specific additional mitigation measures are described in the CNVG.

**Table 2 Triggers for additional mitigation measures – Airborne noise (Roads and Maritime 2016)**

| Predicted airborne LAeq(15min) noise level at receiver | | | |
|---|---|---|---|
| Perception | dB(A) above RBL | dB(A) above NML | Additional mitigation measures |
| All hours | | | |
| 75 dB(A) or greater | | | N, V, PC, RO |
| Standard hours: Mon - Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Hol (Nil) | | | |
| Noticeable | 5 to 10 | 0 | - |
| Clearly audible | 10 to 20 | < 10 | - |
| Moderately intrusive | 20 to 30 | 10 to 20 | N, V |
| Highly intrusive | > 30 | > 20 | N, V |
| OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 1pm – 10pm), Sun/Pub Hol (8am – 6pm) | | | |
| Noticeable | 5 to 10 | <5 | - |
| Clearly audible | 10 to 20 | 5 to 15 | N, R1, DR |
| Moderately intrusive | 20 to 30 | 15 to 25 | V, N, R1, DR |
| Highly intrusive | > 30 | >25 | V, IB, N, R1, DR, PC, SN |
| OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Pub Hol (6pm – 7am) | | | |
| Noticeable | 5 to 10 | <5 | N |
| Clearly audible | 10 to 20 | 5 to 15 | V, N, R2, DR |
| Moderately intrusive | 20 to 30 | 15 to 25 | V, IB, N, PC, SN, R2, DR |
| Highly intrusive | > 30 | >25 | AA, V, IB, N, PC, SN, R2, DR |

Notes:
PC = Phone calls
V = verification
IB = Individual briefings
N= Notification
AA = Alternative accommodation
SN = Specific notifications
RO = Respite offer
R1 = Respite period 1
R2 = Respite period 2
DR = Duration respite
Perception = relates to levels above RBL
NML = Noise management level
HA = Highly affected

## Existing environment and noise management levels

The proposed works would be undertaken in a predominantly Suburban/ Urban, characterised as:

Areas with low density transportation.

Typically local traffic, light vehicles, intermittent traffic flow

Background noise levels adopted for the project area and associated noise management levels (NMLs) are summarised in Table 3. NMLs have been established in line with the ICNG.

**Table 3 Construction NMLs**

| Land use | **Suburban/ Urban** | | Using custom background noise data? | | **Yes** |
|---|---|---|---|---|---|
| Criterion | Day | Weekend Day | Evening | Night | Sleep |
| **RBL** | 56 | 56 | 49 | 33 | |
| **NML** | 66 | 61 | 54 | 38 | 48 |

**Sleep disturbance**

The ICNG recommends where construction works are planned to extend over more than two consecutive nights, the maximum noise level should be considered for the purposes of establishing the likelihood of sleep disturbance. The Road Noise Policy suggests that maximum internal noise levels below 50-55 dB(A) are unlikely to awaken people from sleep and one or two noise events per night, with maximum internal noise levels of 65-70 dB(A) are not likely to affect health and wellbeing significantly.

Based on this, a sleep awakening criterion of 55 dB(A) (internal) is typically adopted for works. Given that noise attenuation of 10 dB(A) is typically provided by an open window, a sleep awakening criterion of LAmax 65 dB(A) (external) has been applied to residential bedroom façades. This is consistent with the sleep disturbance threshold described in Appendix E of the CNVG.

## Assessment methodology

Based on the nominated works area (illustrated in Appendix A), proposed equipment and the minimum distance from the works to each sensitive receiver, noise levels were calculated based on CONCAWE (1981) P*ropagation of noise from petroleum and petrochemical complexes to neighboring communities.*

This method considers geometric spreading, atmospheric absorption, ground effects and is valid for meteorological conditions of a gentle breeze from source to receiver and stable atmosphere (temperature inversion).

KNOWnoise: Minor works is a 2-Dimensional assessment platform and does not consider terrain effects (e.g. hills, valleys) or the presence of solid structures such as homes or noise barriers. This will result in a conservative prediction, suitable for the project being assessed.

Considering the nature of the works and the type of surrounding land uses, sensitive receivers up to a radius of 600 metres from the works have been included in the assessment.

Sound power levels and predicted noise levels depend on the number of plant items operating at any one time and their precise location relative to a sensitive receiver. Equipment was assumed to be working at the worst-case location relative to each receiver and represents a worst-case assessment. Where the activity is further away from receivers or less equipment is used the predicted levels will decrease.

Sound power levels for plant and equipment expected to be used for each activity has been estimated based on guidance in the following standards and guidelines as well as typical measured noise levels for specific equipment.

- Australian Standard AS2436-2010: Guide to noise and vibration control on construction, demolition and maintenance sites
- Construction Noise and Vibration Strategy 7TP-ST-157/2.0 (CNVS), (TfNSW, 2018)
- Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime Services, 2016)
- British Standard 5228-1:2009 Code of practice for noise and vibration control on construction and open sites

- United Kingdom Department for Environment, Food and Rural Affairs (DEFRA) Noise database for prediction of noise on construction and open sites

Construction noise sources and associated sound power levels are listed in Appendix B. The maximum predicted LAeq noise level within the work area was identified for each receiver.

## Predicted noise levels

Detailed predicted noise levels for each potentially affected receiver are presented Appendix C.

A summary of predicted noise levels in comparison with ICNG assessment criteria for the Night period is presented in Table 4.

**Table 4 Summary of predicted noise levels with comparison against ICNG criteria for the Night period.**

| Criterion | Predicted number of receivers |
|---|---|
| Maximum cumulative predicted $L_{Aeq,\ 15\ minute}$ noise level | 44 dB(A) |
| Number of highly noise affected receivers (>75 dB) | 0 |
| 1 – 10 dB above NML | 42 |
| 10 – 20 dB above NML | 0 |
| 20+ dB above NML | 0 |

For works outside standard hours, up to 0 receivers are predicted to be classified as Highly Impacted during the Night period. A summary of the number of receivers in each class is presented in Table 5.

**Table 5 Summary of predicted noise levels with comparison against CNVG criteria**

| Impact class | Predicted noise level | Predicted number of receivers |
|---|---|---|
| Noticeable | 1 – 5 dB above NML | 46 |
| Clearly audible | 5 – 15 dB above NML | 8 |
| Moderately impacted | 15 – 25 dB above NML | 0 |
| Highly Impacted | > 25 dB above NML | 0 |

Predicted impact classes for the Night period are illustrated graphically in Appendix C. Each identified receiver in the study area has been coloured to highlight the predicted level of impact.

**Sleep disturbance**

In the event works are planned for more than two consecutive nights, up to 0 are expected to exceed the sleep awakening criteria. Where any exceedances if the awakening criteria are predicted, additional care should be taken and mitigation measures implemented in the with the CNVG.

## Proposed noise mitigation measures

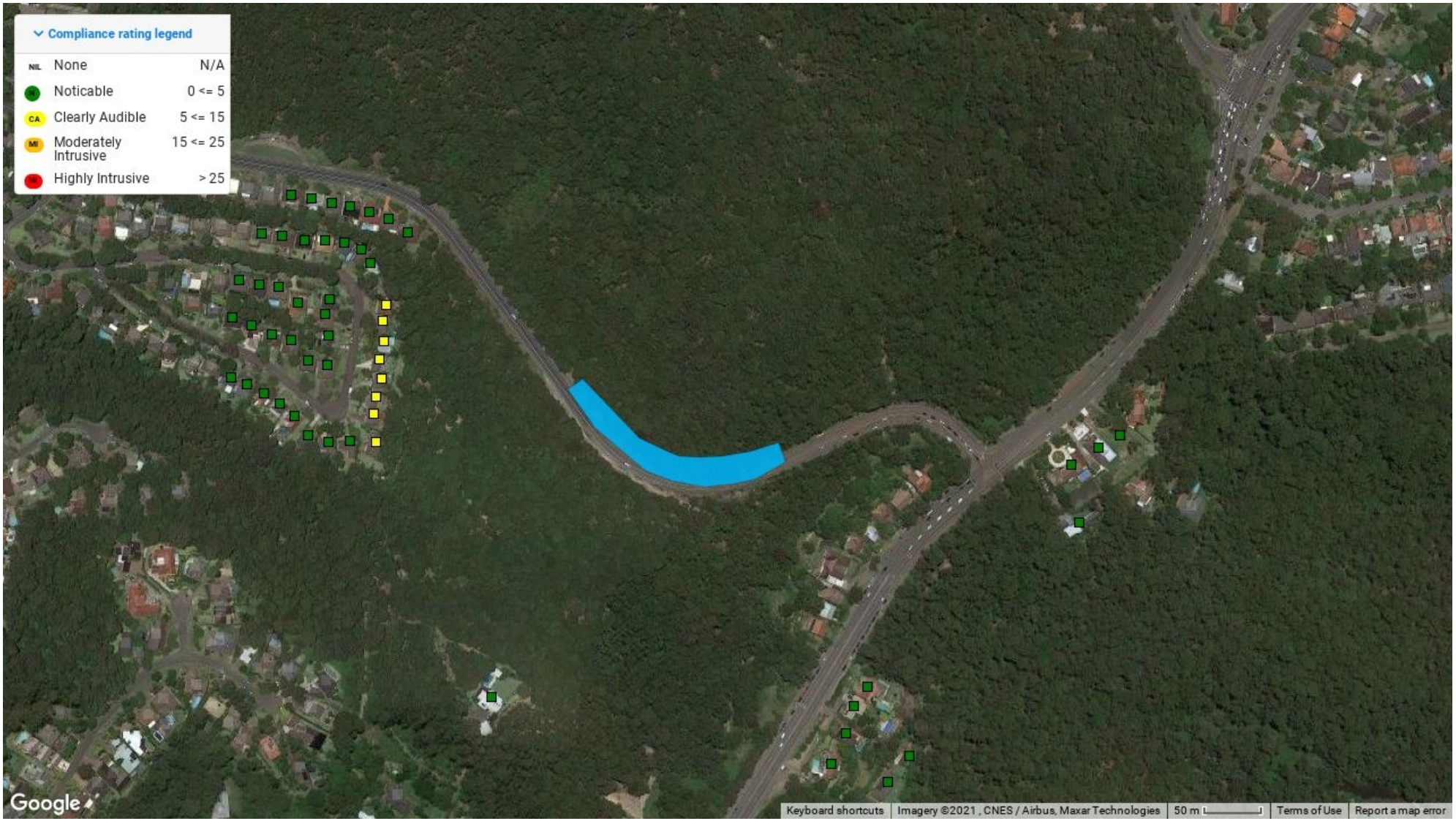
The safeguards and controls listed in Table 6 will be implemented where reasonable and feasible with the intention of achieving the project noise criteria and to maintain noise impacts at a practical minimum.

**Table 6 Safeguards and controls**

| Action | Description |
|---|---|
| Community consultation or notification | Notify the affected community.<br>The notification will detail work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night time period, any operational noise benefits from the works (where applicable) and contact telephone number.<br>Notification should be a minimum of 7 calendar days prior to the start of works. For projects other than maintenance works more advanced consultation or notification may be required. |
| Site inductions | All employees, contractors and subcontractors are to receive an environmental induction. The induction would at least include:<br>• all project specific and relevant standard noise and vibration mitigation measures<br>• relevant licence and approval conditions<br>• permissible hours of work<br>• any limitations on high noise generating activities<br>• location of nearest sensitive receivers<br>• construction employee parking areas<br>• designated loading/unloading areas and procedures<br>site opening/closing times (including deliveries) environmental incident procedures |
| Behaviour | No swearing or unnecessary shouting or loud stereos/radios on site.<br>Limit compression braking at night in residential areas.<br>No dropping of materials from height, throwing of metal items and slamming of doors. |
| Verification | Where indicated in Appendix C, a noise verification program would be undertaken for the duration of the works. |
| Construction hours | Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods. |
| Respite for out-of-hours works | Respite would be scheduled as indicated in Appendix C and described in the CNVG. |
| Equipment selection | Use quieter construction methods where feasible and reasonable.<br>Ensure plant including the silencer is well maintained.<br>Plant noise levels will have an operating noise emission level compliant with Appendix F of the CNVG |
| Use and siting of plant | The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.<br>Plant used intermittently to be throttled down or shut down.<br>Noise-emitting plant to be directed away from sensitive receivers. |

| Action | Description |
|---|---|
| Plan worksites and activities to minimise noise and vibration. | Locate compounds away from sensitive receivers and discourage access from local roads.<br><br>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.<br><br>Where additional activities or plant may only result in a marginal noise increase and speed up works, consider limiting duration of impact by concentrating noisy activities at one location and move to another as quickly as possible.<br><br>Very noise activities should be scheduled for normal working hours. If the work can not be undertaken during the day, it should be completed before 11:00pm.<br><br>Where practicable, work should be scheduled to avoid major student examination periods when students are studying for examinations such as before or during Higher School Certificate and at the end of higher education semesters. |
| Non-tonal reverse alarms | Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work. |
| Shield stationary noise sources such as pumps, generators, and compressors | These should be enclosed or shielded where reasonable and feasible. |
| Implement any project specific mitigation measures | |
| 1 | Sound blankets where required |
| 2 | Plant & Equipment are not to be left idling near residential properties |

# Appendix A Project location and predicted level of impact



# Appendix B Proposed activities and equipment

## Tree Removal

| Equipment | Quantity | Usage | Reduction | SWL |
|---|---|---|---|---|
| Chain saw | 1 | 20 % | 3 | 96 |
| Chipper (mulcher) | 1 | 40 % | 3 | 99 |
| Daymakers / Lighting plant | 1 | 100 % | 3 | 90 |
| Excavator (6 tonne) | 1 | 40 % | 3 | 89 |
| Light vehicle | 1 | 40 % | 3 | 78 |
| Truck (10 tonne) | 1 | 30 % | 3 | 92 |

**Activity Sound Power Level:** 102

# Appendix C Detailed noise predicted for each receiver and activity

| Assessment: McCaffery Drive Tree Clearing | | | | Night | Results summary | | |
|---|---|---|---|---|---|---|---|
| NCA | ID | Address | Land use | NML | Cumulative Predicted LAeq, 15 minute noise level | Exceedance of NML, dB | Impact classification |
| | 523947 | 121A LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 39 | 1 | **Noticable** |
| | 523946 | 117 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 42 | 4 | **Noticable** |
| | 523945 | 121C LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 40 | 2 | **Noticable** |
| | 523938 | 121A LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 39 | 1 | **Noticable** |
| | 523936 | 121B LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 40 | 2 | **Noticable** |
| | 523935 | 119 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 41 | 3 | **Noticable** |
| | 523900 | 3A MARSHALL STREET NEW LAMBTON HEIGHTS | RES | 38 | 40 | 2 | **Noticable** |
| | 523841 | 85 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 40 | 2 | **Noticable** |
| | 523838 | 81 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 39 | 1 | **Noticable** |
| | 523833 | 83 LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 40 | 2 | **Noticable** |
| | 523831 | 81A LOOKOUT ROAD NEW LAMBTON HEIGHTS | RES | 38 | 39 | 1 | **Noticable** |
| | 523825 | 43 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 44 | 6 | **Clearly Audible** |
| | 523822 | 329 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523820 | 57 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523818 | 47 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 44 | 6 | **Clearly Audible** |
| | 523815 | 23 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523814 | 37 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 43 | 5 | **Clearly Audible** |
| | 523813 | 10 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523812 | 33 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 42 | 4 | **Noticable** |
| | 523811 | 49 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 43 | 5 | **Clearly Audible** |
| | 523809 | 61 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523808 | 32 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 38 | 0 | **Noticable** |
| | 523807 | 30 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523805 | 24 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523804 | 28 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523799 | 59 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523796 | 12 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523795 | 41 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 44 | 6 | **Clearly Audible** |
| | 523793 | 27 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523792 | 39 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 43 | 5 | **Clearly Audible** |
| | 523790 | 331 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523789 | 22 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523788 | 327 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523787 | 51 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 43 | 5 | **Clearly Audible** |
| | 523786 | 45 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 44 | 6 | **Clearly Audible** |
| | 523785 | 323 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523784 | 29 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523783 | 21 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 38 | 0 | **Noticable** |

# Appendix C Detailed noise predicted for each receiver and activity

| Assessment: McCaffery Drive Tree Clearing | | | | Night | Results summary | | |
|---|---|---|---|---|---|---|---|
| NCA | ID | Address | Land use | NML | Cumulative Predicted LAeq, 15 minute noise level | Exceedance of NML, dB | Impact classification |
| | 523776 | 325 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523774 | 8 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 38 | 0 | **Noticable** |
| | 523768 | 335 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 42 | 4 | **Noticable** |
| | 523765 | 26 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523761 | 25 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523760 | 31 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523758 | 20 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523757 | 333 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523756 | 16 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523755 | 55 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523752 | 65 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523749 | 63 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523748 | 67 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 38 | 0 | **Noticable** |
| | 523747 | 18 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 41 | 3 | **Noticable** |
| | 523744 | 14 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523743 | 53 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 42 | 4 | **Noticable** |

# *Construction noise impact assessment*

| | | | |
|---|---|---|---|
| | RP2J | | |
| **Proposed works** | McCaffery Drive Power Pole Installation | | |
| **Proponent** | Quickway | | |
| **Assessment Date** | 06/09/2021 | | |
| **Prepared by** | Quickway | **Assessment Id** | 002 |

## Introduction

This report has been prepared using the construction noise self-assessment platform KNOWnoise: *Minor Works* and presents an assessment of the likely noise impacts related to proposed works associated with the above project. Where possible, these works would be completed during standard construction hours; however, there may be a need to work outside these hours due to technical, community or access limitations. The location of the proposed works is illustrated in Appendix A.

## Planned works

A description of the proposed works is as follows.

Installation of Power Poles and OH on McCaffery Drive

Proposed activities and equipment for the works are summarised in Appendix B.

Though subject to change, the works are expected to commence around 27/09/2021 and would be completed by 07/10/2021.

## Assessment criteria and mitigation requirements

The Interim Construction Noise Guideline (ICNG) (DECC 2009) describes noise more than the background level as potentially having an adverse impact on sensitive receivers and increasing the likelihood of complaint. During standard construction hours, where construction noise is within 10 dB(A) of the RBL, impacts would be acceptable.

Where construction noise is more than 10 dB(A) above the RBL during standard construction hours, a residential receiver is considered noise affected and the proponent should undertake all reasonable and feasible steps necessary to manage the impact and consult with the affected community.

Above a LAeq, 15 minute noise level of 75 dB(A), a receiver is highly affected, requiring consideration of additional mitigation measures including alternative accommodation in the night period.

Outside standard construction hours, construction noise at a residential receiver more than 5 dB(A) above the RBL is taken to be noise affected.

In addition, annoying noise such as rock hammers, impact piling, or other impulsive noise sources usually result in greater annoyance than continuous construction noise. A 5 dB(A) penalty is applicable to such activities prior to comparison with the NMLs.

Other sensitive land uses, such as schools and offices, typically find noise from construction disruptive when the properties are being used (such as during work and school times). Table 2 presents NMLs from the ICNG for sensitive land uses based on the principle that the characteristic activities for each of these land uses should not be unduly disturbed.

**Table 1 Non-residential sensitive land uses noise management levels**

| Land use | Noise assessment location | NML ($L_{Aeq,15min}$) |
|---|---|---|
| Classrooms at schools and other educational institutions | Internal | 45 |
| Places of worship | | |
| Active recreation areas (such as sporting activities and activities which generate their own noise or focus for participants) | External | 65 |
| Passive recreation areas (contemplative activities that generate little noise and where benefits are compromised by external noise intrusion, for example, reading, meditation) | External | 60 |
| Industrial premises | External | 75 |
| Office, retail outlets | External | 70 |

As part of planning for out of hours works, standard mitigation measures, as described in the ICNG and CNVG, would be implemented where reasonable and feasible. However, after these measures have been applied, noise and vibration levels may continue to exceed the NMLs.

In this case, additional mitigation measures outlined in the CNVG, which largely focus on engagement with affected sensitive receivers, should be implemented where reasonable and feasible, unless other agreements are in place with the impacted receiver.

Triggers and additional mitigation measures for airborne noise are summarised in Table 2. Further details of specific additional mitigation measures are described in the CNVG.

**Table 2 Triggers for additional mitigation measures – Airborne noise (Roads and Maritime 2016)**

| Predicted airborne LAeq(15min) noise level at receiver | | | |
|---|---|---|---|
| Perception | dB(A) above RBL | dB(A) above NML | Additional mitigation measures |
| All hours | | | |
| 75 dB(A) or greater | | | N, V, PC, RO |
| Standard hours: Mon - Fri (7am – 6pm), Sat (8am – 1pm), Sun/Pub Hol (Nil) | | | |
| Noticeable | 5 to 10 | 0 | - |
| Clearly audible | 10 to 20 | < 10 | - |
| Moderately intrusive | 20 to 30 | 10 to 20 | N, V |
| Highly intrusive | > 30 | > 20 | N, V |
| OOHW Period 1: Mon – Fri (6pm – 10pm), Sat (7am – 8am & 1pm – 10pm), Sun/Pub Hol (8am – 6pm) | | | |
| Noticeable | 5 to 10 | <5 | - |
| Clearly audible | 10 to 20 | 5 to 15 | N, R1, DR |
| Moderately intrusive | 20 to 30 | 15 to 25 | V, N, R1, DR |
| Highly intrusive | > 30 | >25 | V, IB, N, R1, DR, PC, SN |
| OOHW Period 2: Mon – Fri (10pm – 7am), Sat (10pm – 8am), Sun/Pub Hol (6pm – 7am) | | | |
| Noticeable | 5 to 10 | <5 | N |
| Clearly audible | 10 to 20 | 5 to 15 | V, N, R2, DR |
| Moderately intrusive | 20 to 30 | 15 to 25 | V, IB, N, PC, SN, R2, DR |
| Highly intrusive | > 30 | >25 | AA, V, IB, N, PC, SN, R2, DR |

Notes:
PC = Phone calls
V = verification
IB = Individual briefings
N= Notification
AA = Alternative accommodation
SN = Specific notifications
RO = Respite offer
R1 = Respite period 1
R2 = Respite period 2
DR = Duration respite
Perception = relates to levels above RBL
NML = Noise management level
HA = Highly affected

## Existing environment and noise management levels

The proposed works would be undertaken in a predominantly Suburban/ Urban, characterised as:

Areas with low density transportation.

Typically local traffic, light vehicles, intermittent traffic flow

Background noise levels adopted for the project area and associated noise management levels (NMLs) are summarised in Table 3. NMLs have been established in line with the ICNG.

**Table 3 Construction NMLs**

| Land use | **Suburban/ Urban** | | Using custom background noise data? | | **Yes** |
|---|---|---|---|---|---|
| Criterion | Day | Weekend Day | Evening | Night | Sleep |
| **RBL** | 56 | 56 | 49 | 33 | |
| **NML** | 66 | 61 | 54 | 38 | 48 |

**Sleep disturbance**

The ICNG recommends where construction works are planned to extend over more than two consecutive nights, the maximum noise level should be considered for the purposes of establishing the likelihood of sleep disturbance. The Road Noise Policy suggests that maximum internal noise levels below 50-55 dB(A) are unlikely to awaken people from sleep and one or two noise events per night, with maximum internal noise levels of 65-70 dB(A) are not likely to affect health and wellbeing significantly.

Based on this, a sleep awakening criterion of 55 dB(A) (internal) is typically adopted for works. Given that noise attenuation of 10 dB(A) is typically provided by an open window, a sleep awakening criterion of LAmax 65 dB(A) (external) has been applied to residential bedroom façades. This is consistent with the sleep disturbance threshold described in Appendix E of the CNVG.

## Assessment methodology

Based on the nominated works area (illustrated in Appendix A), proposed equipment and the minimum distance from the works to each sensitive receiver, noise levels were calculated based on CONCAWE (1981) P*ropagation of noise from petroleum and petrochemical complexes to neighboring communities.*

This method considers geometric spreading, atmospheric absorption, ground effects and is valid for meteorological conditions of a gentle breeze from source to receiver and stable atmosphere (temperature inversion).

KNOWnoise: Minor works is a 2-Dimensional assessment platform and does not consider terrain effects (e.g. hills, valleys) or the presence of solid structures such as homes or noise barriers. This will result in a conservative prediction, suitable for the project being assessed.

Considering the nature of the works and the type of surrounding land uses, sensitive receivers up to a radius of 600 metres from the works have been included in the assessment.

Sound power levels and predicted noise levels depend on the number of plant items operating at any one time and their precise location relative to a sensitive receiver. Equipment was assumed to be working at the worst-case location relative to each receiver and represents a worst-case assessment. Where the activity is further away from receivers or less equipment is used the predicted levels will decrease.

Sound power levels for plant and equipment expected to be used for each activity has been estimated based on guidance in the following standards and guidelines as well as typical measured noise levels for specific equipment.

- Australian Standard AS2436-2010: Guide to noise and vibration control on construction, demolition and maintenance sites
- Construction Noise and Vibration Strategy 7TP-ST-157/2.0 (CNVS), (TfNSW, 2018)
- Construction Noise and Vibration Guideline (CNVG) (Roads and Maritime Services, 2016)
- British Standard 5228-1:2009 Code of practice for noise and vibration control on construction and open sites

- United Kingdom Department for Environment, Food and Rural Affairs (DEFRA) Noise database for prediction of noise on construction and open sites

Construction noise sources and associated sound power levels are listed in Appendix B. The maximum predicted LAeq noise level within the work area was identified for each receiver.

## Predicted noise levels

Detailed predicted noise levels for each potentially affected receiver are presented Appendix C.

A summary of predicted noise levels in comparison with ICNG assessment criteria for the Night period is presented in Table 4.

**Table 4 Summary of predicted noise levels with comparison against ICNG criteria for the Night period.**

| Criterion | Predicted number of receivers |
|---|---|
| Maximum cumulative predicted $L_{Aeq,\ 15\ minute}$ noise level | 40 dB(A) |
| Number of highly noise affected receivers (>75 dB) | 0 |
| 1 – 10 dB above NML | 6 |
| 10 – 20 dB above NML | 0 |
| 20+ dB above NML | 0 |

For works outside standard hours, up to 0 receivers are predicted to be classified as Highly Impacted during the Night period. A summary of the number of receivers in each class is presented in Table 5.

**Table 5 Summary of predicted noise levels with comparison against CNVG criteria**

| Impact class | Predicted noise level | Predicted number of receivers |
|---|---|---|
| Noticeable | 1 – 5 dB above NML | 10 |
| Clearly audible | 5 – 15 dB above NML | 0 |
| Moderately impacted | 15 – 25 dB above NML | 0 |
| Highly Impacted | > 25 dB above NML | 0 |

Predicted impact classes for the Night period are illustrated graphically in Appendix C. Each identified receiver in the study area has been coloured to highlight the predicted level of impact.

**Sleep disturbance**

In the event works are planned for more than two consecutive nights, up to 0 are expected to exceed the sleep awakening criteria. Where any exceedances if the awakening criteria are predicted, additional care should be taken and mitigation measures implemented in the with the CNVG.

## Proposed noise mitigation measures

The safeguards and controls listed in Table 6 will be implemented where reasonable and feasible with the intention of achieving the project noise criteria and to maintain noise impacts at a practical minimum.

**Table 6 Safeguards and controls**

| Action | Description |
|---|---|
| Community consultation or notification | Notify the affected community.<br>The notification will detail work activities, dates and hours, impacts and mitigation measures, indication of work schedule over the night time period, any operational noise benefits from the works (where applicable) and contact telephone number.<br>Notification should be a minimum of 7 calendar days prior to the start of works. For projects other than maintenance works more advanced consultation or notification may be required. |
| Site inductions | All employees, contractors and subcontractors are to receive an environmental induction. The induction would at least include:<br>• all project specific and relevant standard noise and vibration mitigation measures<br>• relevant licence and approval conditions<br>• permissible hours of work<br>• any limitations on high noise generating activities<br>• location of nearest sensitive receivers<br>• construction employee parking areas<br>• designated loading/unloading areas and procedures<br>site opening/closing times (including deliveries) environmental incident procedures |
| Behaviour | No swearing or unnecessary shouting or loud stereos/radios on site.<br>Limit compression braking at night in residential areas.<br>No dropping of materials from height, throwing of metal items and slamming of doors. |
| Verification | Where indicated in Appendix C, a noise verification program would be undertaken for the duration of the works. |
| Construction hours | Where feasible and reasonable, construction should be carried out during the standard daytime working hours. Work generating high noise and/or vibration levels should be scheduled during less sensitive time periods. |
| Respite for out-of-hours works | Respite would be scheduled as indicated in Appendix C and described in the CNVG. |
| Equipment selection | Use quieter construction methods where feasible and reasonable.<br>Ensure plant including the silencer is well maintained.<br>Plant noise levels will have an operating noise emission level compliant with Appendix F of the CNVG |
| Use and siting of plant | The offset distance between noisy plant and adjacent sensitive receivers is to be maximised.<br>Plant used intermittently to be throttled down or shut down.<br>Noise-emitting plant to be directed away from sensitive receivers. |

| Action | Description |
|---|---|
| Plan worksites and activities to minimise noise and vibration. | Locate compounds away from sensitive receivers and discourage access from local roads.<br><br>Plan traffic flow, parking and loading/unloading areas to minimise reversing movements within the site.<br><br>Where additional activities or plant may only result in a marginal noise increase and speed up works, consider limiting duration of impact by concentrating noisy activities at one location and move to another as quickly as possible.<br><br>Very noise activities should be scheduled for normal working hours. If the work can not be undertaken during the day, it should be completed before 11:00pm.<br><br>Where practicable, work should be scheduled to avoid major student examination periods when students are studying for examinations such as before or during Higher School Certificate and at the end of higher education semesters. |
| Non-tonal reverse alarms | Non-tonal reversing beepers (or an equivalent mechanism) must be fitted and used on all construction vehicles and mobile plant regularly used on site and for any out of hours work. |
| Shield stationary noise sources such as pumps, generators, and compressors | These should be enclosed or shielded where reasonable and feasible. |
| Implement any project specific mitigation measures | |
| 1 | Sound blankets where required |
| 2 | Plant & vehicles not to be left idling near residential properties |

# Appendix A Project location and predicted level of impact

# Appendix B Proposed activities and equipment

## McCaffery Drive Power Pole Installation

| Equipment | Quantity | Usage | Reduction | SWL |
|---|---|---|---|---|
| Daymakers / Lighting plant | 1 | 80 % | 5 | 87 |
| Light vehicle | 1 | 10 % | 5 | 70 |
| Truck (10 tonne) | 1 | 30 % | 5 | 90 |
| Elevated Working Platform | 1 | 30 % | 5 | 79 |
| Truck (12-15 tonne) | 1 | 20 % | 5 | 94 |

**Activity Sound Power Level:** 96

# Appendix C Detailed noise predicted for each receiver and activity

| Assessment: McCaffery Drive Power Pole Installation | | | | Night | Results summary | | |
|---|---|---|---|---|---|---|---|
| NCA | ID | Address | Land use | NML | Cumulative Predicted LAeq, 15 minute noise level | Exceedance of NML, dB | Impact classification |
| | 523437 | 43 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523429 | 47 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523424 | 37 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523422 | 33 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 38 | 0 | **Noticable** |
| | 523421 | 49 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |
| | 523403 | 41 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523397 | 39 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523390 | 51 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 38 | 0 | **Noticable** |
| | 523389 | 45 KINGSWAY AVENUE RANKIN PARK | RES | 38 | 40 | 2 | **Noticable** |
| | 523369 | 335 MCCAFFREY DRIVE RANKIN PARK | RES | 38 | 39 | 1 | **Noticable** |

## Appendix C – 3 Month Look Ahead Notification Letter

September 2021

# Out of hours early work at New Lambton Heights from September to December 2021

## The NSW Government is funding early work for the Newcastle Inner City Bypass between Rankin Park and Jesmond.

Transport for NSW awarded a contract to Quickway to relocate major utilities at the southern end of the Rankin Park to Jesmond project to help prepare for the main construction of the bypass. This early work will be continuing in September.

We will be carrying out essential night work on Lookout Road and surrounding areas. Work is required outside normal project hours for the safety of workers and road users, and to minimise traffic delays.

Work hours will be **7pm** and **6am** between **Monday** and **Friday**, weather permitting. High impact noisy work will be carried out **before 11pm**. If wet weather prevents the work occurring as planned it will be rescheduled and you will be notified.

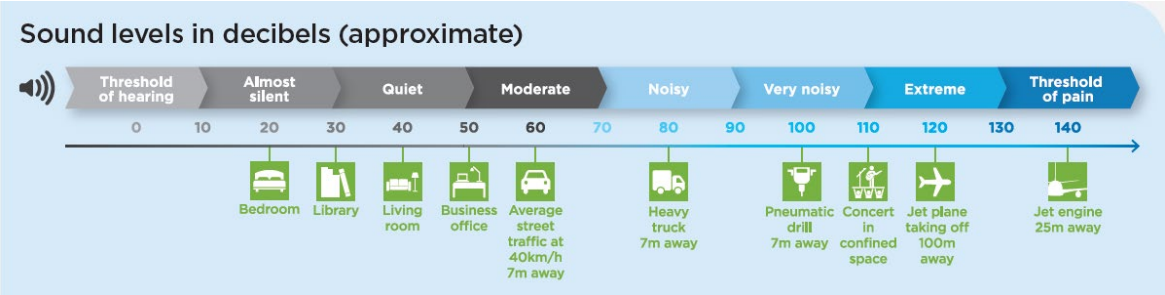
| Date | Work Activity | Equipment |
|---|---|---|
| September | Median island removal and pavement infill on Lookout Road<br>**Expected duration – six shifts over four weeks** | Traffic control, excavators, trucks, lighting towers, compaction rollers, road saw, asphalt profiler, asphalt paver, concrete agitator trucks. |
| Late September into early October | Overhead powerline works on Lookout Road and McCaffrey Drive<br>**Expected duration – seven shifts over two weeks** | Traffic control, trucks, excavator, elevated working platforms, lighting towers |
| October | Trenched Utility Crossings across Lookout Road and Grandview Road<br>**Expected duration – six shifts over two weeks** | Traffic control, excavators, trucks, lighting towers, compaction rollers, road saw, asphalt profiler, asphalt paver, concrete agitator trucks |
| November | Overhead powerline works on Lookout Road<br>**Expected duration – four shifts over two weeks** | Traffic control, trucks, excavator, elevated working platforms, lighting towers |
| December | Watermain installation on Lookout Road southbound<br>**Expected duration – four shifts over two weeks** | Traffic control, excavators, trucks, lighting towers, compaction rollers, road saw, |

## How will the work affect you?

The work will involve the use of machinery which generates noise, light and vibration. We will make every effort to minimise these impacts with our equipment selection, positioning of machines and noise blankets, turning off vehicles when not in use and using non-tonal reversing alarms.

Appropriate respite periods for the night work will be provided in consultation with the community at each affected location. This may include limiting the number of consecutive nights and extending the duration of night work, or increasing the number of consecutive nights and shortening the duration of night work.

Noise levels will vary between moderate to noisy, the below diagram provides a guide to the noise you can expect. Directly affected residents will be contacted and advised of the likely impact and what we are doing to minimise disruption during the work.




## Traffic changes

There will be some temporary traffic changes to ensure the work zone is safe including realignment of travel lanes, installation of safety barriers and a 60km/h speed limit between McCaffrey Drive and Grandview Road. A 40km/h speed limit will apply during temporary lane closures. Travel times will be affected.
Please keep to speed limits and follow the direction of traffic controllers and signs.

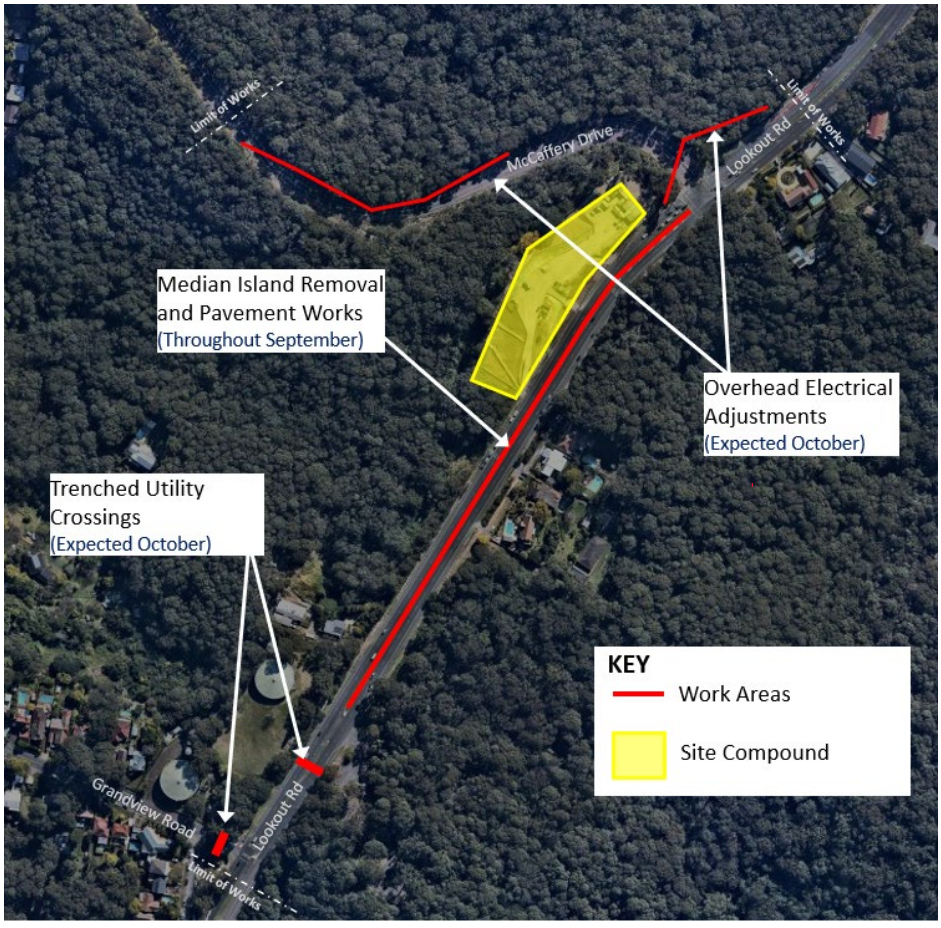
For the latest traffic updates, you can call 132 701, visit livetraffic.com or download the Live Traffic NSW App.

## Contact

If you would like to provide feedback, or have any questions about this work, please contact our project team on 1800 818 433 (24 hours – select option 2) or email southern.utilities.RP2J@quickway.com.au.

For more information about the Newcastle Inner City Bypass between Rankin Park and Jesmond, visit nswroads.work/rp2j. Thank you for your patience during this important work.

## Location of work



**Appendix D**

- **Draft Notification Letter for Residents on Lookout Road**
- **Draft Notification Letter for Residents in vicinity of McCaffery Drive Works**

September 2021

# Out of hours early work at New Lambton Heights from 27 September 2021

## The NSW Government is funding early work for the Newcastle Inner City Bypass between Rankin Park and Jesmond.

Transport for NSW has awarded a contract to Quickway to relocate major utilities at the southern end of the Rankin Park to Jesmond project to help prepare for the main construction of the bypass. This early work will be continuing in August and September.

We will be carrying out essential night work on Lookout Road near McCaffrey Drive. Work will include:

- Installation of new power poles

Work is required outside normal project hours for the safety of workers and road users, and to minimise traffic delays.

We will be working from **7pm** to **5am** on **Monday 27 September** and **Tuesday 28 September** weather permitting. No high impact noisy work will be involved. If wet weather prevents the work occurring as planned, it will be rescheduled and you will be notified.

## How will the work affect you?

The work will involve the use of machinery which generates noise, light and vibration. We will make every effort to minimise these impacts with our equipment selection, positioning of machines and noise blankets, turning off vehicles when not in use and using non-tonal reversing alarms.

## Traffic changes

There will be some temporary traffic changes to ensure the work zone is safe temporary lanes closures on Lookout Road and McCaffery Drive. A 40km/h speed limit will apply during temporary lane closures. Travel times will be affected. Please keep to speed limits and follow the direction of traffic controllers and signs. For the latest traffic updates, you can call 132 701, visit livetraffic.com or download the Live Traffic NSW App.

## Contact

If you would like to provide feedback, have any questions about this work or would like to provide your contact details for future notices, please contact or Community Relations Manager on 1800 818 433 (24 hours – select option 2) or email southern.utilities.RP2J@quickway.com.au.

For more information about the Newcastle Inner City Bypass between Rankin Park and Jesmond, visit nswroads.work/rp2j. Thank you for your patience during this important work.

September 2021

# Out of hours early work at New Lambton Heights from 27 September 2021

## The NSW Government is funding early work for the Newcastle Inner City Bypass between Rankin Park and Jesmond.

Transport for NSW has awarded a contract to Quickway to relocate major utilities at the southern end of the Rankin Park to Jesmond project to help prepare for the main construction of the bypass. This early work will be continuing in September and October.

We will be carrying out essential night work on McCaffrey Drive. Work will include:

- Tree Clearing for new powerlines
- Installation of new power poles

Work is required outside normal project hours for the safety of workers and road users, and to minimise traffic delays.

We will be completing works over seven nights from **7pm** to **5am** between **Monday 27 September** and **Friday 8 October** weather permitting. No high impact noisy work will be involved. If wet weather prevents the work occurring as planned, it will be rescheduled and you will be notified.

## How will the work affect you?

The work will involve the use of machinery which generates noise, light and vibration. We will make every effort to minimise these impacts with our equipment selection, positioning of machines and noise blankets, turning off vehicles when not in use and using non-tonal reversing alarms.

## Traffic changes

There will be some temporary traffic changes to ensure the work zone is safe temporary lanes closures on Lookout Road and McCaffery Drive. A 40km/h speed limit will apply during temporary lane closures. Travel times will be affected. Please keep to speed limits and follow the direction of traffic controllers and signs. For the latest traffic updates, you can call 132 701, visit livetraffic.com or download the Live Traffic NSW App.

## Contact

If you would like to provide feedback, have any questions about this work or would like to provide your contact details for future notices, please contact or Community Relations Manager on 1800 818 433 (24 hours – select option 2) or email southern.utilities.RP2J@quickway.com.au.

For more information about the Newcastle Inner City Bypass between Rankin Park and Jesmond, visit nswroads.work/rp2j. Thank you for your patience during this important work.

## Appendix E – Consultation Record

| Address | NCA | Land Use | Work Location | Work Period | NML (RBL +5 dB(A)) | Predicted Noise Level at reciever | Exceedance of NML | Exceedance of RBL | OOH Protocol Risk Rating (high/low) | Impact Classification | Mitigation Measures (PC, V, IB, N, AA, SN, RO, R1, R2, DR) | Date Notification completed / sent | Notification type (SMS / Email / Phone Call / Notification Letter / Door knock) | Written Agreement to all OoHW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 335 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | [redacted] |
| 33 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 38 | 0 | 5 | Low | Noticable | N, V | TBA | Notification Letter | |
| 37 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 39 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 41 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 43 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 45 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 47 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 49 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 51 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Power Pole Install | Night | 38 | 38 | 0 | 5 | Low | Noticable | N, V | TBA | Notification Letter | |
| | | | | | | | | | | | | | | |
| 85 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | Lookout Road Power Pole Install | Night | 38 | 43 | 5 | 10 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 83 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | Lookout Road Power Pole Install | Night | 38 | 50 | 12 | 17 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 81 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | Lookout Road Power Pole Install | Night | 38 | 49 | 11 | 16 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 79B LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | Lookout Road Power Pole Install | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 79 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | Lookout Road Power Pole Install | Night | 38 | 47 | 9 | 14 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| | | | | | | | | | | | | | | |
| 323 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 325 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 327 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 329 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 331 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 333 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 335 MCCAFFREY DRIVE NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 42 | 4 | 9 | Low | Noticable | N, V | TBA | Notification Letter | |
| 8 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 38 | 0 | 5 | Low | Noticable | N, V | TBA | Notification Letter | |
| 10 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 12 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |

| Address | NCA | Land Use | Work Location | Work Period | NML (RBL +5 dB(A)) | Predicted Noise Level at reciever | Exceedance of NML | Exceedance of RBL | OOH Protocol Risk Rating (high/low) | Impact Classification | Mitigation Measures (PC, V, IB, N, AA, SN, RO, R1, R2, DR) | Date Notification completed / sent | Notification type (SMS / Email / Phone Call / Notification Letter / Door knock) | Written Agreement to all OoHW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | [redacted] |
| 16 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 18 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 20 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 22 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 24 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 26 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 28 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 30 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 32 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 38 | 0 | 5 | Low | Noticable | N, V | TBA | Notification Letter | |
| 21 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 38 | 0 | 5 | Low | Noticable | N, V | TBA | Notification Letter | |
| 23 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 25 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 27 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 29 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 31 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 31 | -7 | -2 | Low | Noticable | N, V | TBA | Notification Letter | |
| 33 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 42 | 4 | 9 | Low | Noticable | N, V | TBA | Notification Letter | |
| 37 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 43 | 5 | 10 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 39 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 43 | 5 | 10 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 41 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 44 | 6 | 11 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 43 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 44 | 6 | 11 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 45 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 44 | 6 | 11 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 47 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 44 | 6 | 11 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 49 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 43 | 5 | 10 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 51 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 43 | 5 | 10 | Low | Clearly Audible | N, V | TBA | Notification Letter | |
| 53 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 42 | 4 | 9 | Low | Noticable | N, V | TBA | Notification Letter | |
| 55 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |

| Address | NCA | Land Use | Work Location | Work Period | NML (RBL +5 dB(A)) | Predicted Noise Level at reciever | Exceedance of NML | Exceedance of RBL | OOH Protocol Risk Rating (high/low) | Impact Classification | Mitigation Measures (PC, V, IB, N, AA, SN, RO, R1, R2, DR) | Date Notification completed / sent | Notification type (SMS / Email / Phone Call / Notification Letter / Door knock) | Written Agreement to all OoHW |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 57 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | [redacted] |
| 59 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 61 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 63 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 65 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 67 KINGSWAY AVENUE RAKIN PARK | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 38 | 0 | 5 | Low | Noticable | N, V | TBA | Notification Letter | |
| 3A MARSHALL STREET NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 121A LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 121B LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 121C LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 119 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 41 | 3 | 8 | Low | Noticable | N, V | TBA | Notification Letter | |
| 117 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 42 | 4 | 9 | Low | Noticable | N, V | TBA | Notification Letter | |
| 85 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 83 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 40 | 2 | 7 | Low | Noticable | N, V | TBA | Notification Letter | |
| 81 LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |
| 81A LOOKOUT ROAD NEW LAMBTON HEIGHTS | 13 | Residential | McCaffrey Drive Tree Clearing | Night | 38 | 39 | 1 | 6 | Low | Noticable | N, V | TBA | Notification Letter | |