Noise Monitor Installation
and Job Preparation Manual

Revision: 00

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Revision	Notes	Approved
00	Initial draft – prepared by Jon South	S.Clough 27/7/2017

1. **Contents**

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2. **Introduction**

This manual is designed to provide both employees, contractors and customers with a set of guidelines for the preparation, planning, installation, set-up and removal of NoiseNet smart noise monitors.

It will be accompanied with a series of videos to better explain the process which will be released progressively throughout 2018.

It should be noted that a progressive process of upgrading the technology associated with the noise monitors will be undertaken. As such this document and other supporting documentation will be updated. To access the most recent updates please go to www.noisenet.com.au/training

3. Site Review

1. Google Maps/streetview/satellite view is your friend. You should have a pretty good idea about install locations before you ever get to the site. Remember

    - Why are we monitoring?

    - What do we need to measure?

    - Where will be the best place to measure the required noise?

2. The install location need not be on the client property. It could be a friendly neighbour if that location looks better.

3. Have 2 or 3 potential install locations in mind. If something prevents placement for any reason, it can be very stressful finding a new one on the fly, especially if you are running low on time.

4. Call relevant parties to confirm a site visit/installation permission.

4. Job Confirmation

1. Client details entered into database

2. Job details entered in to database

3. Start thinking about monitor placement NOW

    - Why are we monitoring?

    - What do we need to measure?

    - Where will be the best place to measure the required noise?

4. Start gauging the clients feelings on installation location.

    - Power availability? Do they have an extension lead, will power need to enter a door or window? Are there security concerns associated with this?

    - Wifi?

    - Ok to attach to premises?

5. Offer to call back after site review to confirm installation day/time

5. **Before Leaving for Installation**

Make sure you have the following:

1. NoiseMonitor,
2. Associated fixings, cable ties, rope, screws, etc.
3. (If needed) Stake or ground pole for free standing locations.
4. Extension lead. Nominally, use the clients, but have a backup. Avoid purchasing materials on the day, it can be a big detour/waste of time.
5. (If needed) Solar peripherals.
6. Calibrator.
7. Basic tools (if you need to open the meter).
8. Camera/Mobile phone.
9. PPE, hat, sunscreen, closed in shoes, earplugs.
10. Business cards

6. **Onsite Installation**

1. Permission. Do you have permission to be on a property? Neighbours/noisemakers/bystanders etc can get hostile regarding monitoring. As long as you have permission to be somewhere, that's the first step in de-escalation. Failing that, have a good canned response in mind.
2. Monitor Host Agreement: Any monitoring job requires explicit approval from the monitor host. This is necessary from a legal perspective both to ensure that we have formal permission for the monitoring, but also permission to monitor on behalf of the host is important to ensure that data or evidence gathered is usable in later processes (including as evidence in court). Present and explain the agreement and get the resident to sign the agreement.
3. **Turn on your ears**. Start listening to the surrounding noise.
4. Find a suitable Installation position
   - Why are we monitoring?
   - What do we need to measure?
   - Where will be the best place to measure the required noise?
   - Remember to maximise Signal (what we want to measure) to Noise (unwanted noise), while still remaining representative.
   - Do we want to capture impact on a house? Ideally measure at the house. Do we want a measurement of a source? Ideally measure the source only.

- Watch out for AC units. If that's what we are measuring, great. If not, they have the ability to taint data, and often are hiding under houses, in windows where you don't notice them until it's too late.

- Are there any acoustic barriers or screening elements effecting what we measure? Again, **maximise signal to noise** while remaining relevant.

- Do we need to remain hidden? From the street, neighbours etc. Take this in to account.

- Nominally, the height of the monitor is "receiver height", **1.2-1.5m above ground** (or floor) level.

- Ideally, the monitor is **>3.5m from a reflective surface**, such as a building façade, fence, water tank etc. Practically this is often hard/impossible to achieve, just take note if there is or is not a reflective surface nearby.

- If monitor is to capture noise intrusions through an open window/door, monitor should be in the plane of the window/door, at the centre, with the window/door fully open

- If the monitor is to capture noise in a room, monitor should be 1.5m from windows and 1m from walls/reflective surfaces. Again, often impractical, just take detailed notes.

- NOTE: many of the above criterion cannot be achieved in any given placement. What is most critical is to find the right compromise, and to document in the site report form any areas where these standards cannot be met.

5. Install the monitor

   - Our microphone is classified as "omni-directional", but the housing and mounting of the microphone does mean it will be somewhat directional. Try and **face the monitor towards the source** where possible.

   - Fix firmly to façade/tree/fence/stake etc. Do not allow rattling in the wind. Move or trim any branches or leaves which may add noise to the measurement.

   - Manage cables and connection plugs neatly, safely and in a weatherproof manner.

6. **Calibrate** the monitor, and take note of the level and time.

7. Take **photos** and **details** as below

8. If required, perform a detailed site survey.

9. Check with monitor host whether explicit permission is needed to pick up the monitor, or whether you are ok to just grab it when required. If host is required for access, make sure you get direct contact details.

10. Enter details of monitor for asset tracking into database and notify noisenet at info@noisenet.com.au that the installation is in operation.

7. **Field report form - OneNote**

The following 2 pages contain a typical field report form. This can be completed in the field with pen and paper, or data can be captured electronically.

We will also establish a OneNote workbook link that will allow the field installer to directly capture their field observations straight into OneNote. This will allow photographs to be taken, text to be typed, or paper forms to be photographed (please ensure lighting and focus is legible).

The OneNote page will then automatically synchronise with NoiseNet allowing us to access relevant field information and photographs without need for email or sending of documentation.

If you have not received a link to the OneNote workbook, or need additional personnel to gain access (or have access removed), please contact us at info@noisenet.com.au with details of your request.

Item	FIELD REPORT NOTES
Job ID	
Monitor Tracking Details (Monitor SN/ID)	
Host Address (Address where monitor is installed)	
Surrounding Properties Description (How would you describe the surrounding area, residential, industrial, commercial etc.)	
Affected Properties Description (Who is affected by the noise you are measuring, just this house, all surrounding houses etc.)	
Noise Source Description (is it dogs? How many, what breed, where are they located. AC? Whats the make/model? Get photos if possible.)	
Host Location Description (Where is the host property in relation to the noise being measured. Next door, two houses away, across the road?)	
Monitor Location (Ideally, Lat/Long, or exact marking on overhead map.)	
Monitor Position Description (Where is the monitor installed on the host property. Front façade, dividing fence, on a tree etc.)	

Monitor Height (Height of the monitor above ground level in meters)	
Monitor distance to Target (Distance in meters, approx. ok if undefinded, from monitor to primary noise source)	
Monitor Line of Sight Description (What is in between the monitor and primary source of noise? Fences, trees, buildings, topography etc.)	
Other Noises (What other noises can you hear, and what are their sources. How do they compare to the noise you came to measure.)	
Monitor Start Time (What time is suitable for measurements. Often post calibration and install. Should be finished handling.	
Monitor Finish Time (What time is suitable for end of measurements. Often pre final calibration and removal. Should not include and handling noise.	
In Situ Photos (Photo of the monitor in situ Picture of the monitor should be taken after placement. Ideally one image should capture the monitor, immediate surroundings, and the general area where dog barks come from.	
Other Photos Any other photos as necessary to describe the location, surrounding area, noise source etc.	

8. Monitor Removal

1. Contact host/client if required to let them know you are picking up the monitor.

2. **Turn on your Ears**. Note any sounds/noise of interest, anything out of the ordinary.

3. Take note of any **extra information forgotten last time** or needed for the report.

4. Note the removal time

5. Perform field **calibration**, and note level and time.

6. Remove all assets and leave site tidy and as you found it.

9. Post Monitor Removal

1. Ensure all assets make it back to warehouse, and are tracked as needed.

2. Upload relevant photos, notes to the job database.

3. Provide notification to NoiseNet that a job has been completed.