Construction work is to be carried out in accordance with section 4 of AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites and equipment used must be the quietest reasonably available. Under these conditions and during set times, construction work is exempt from meeting the noise levels described in the Environmental Protection (Noise) Regulations 1997 (the Regulations).

A noise management plan (NMP) may be required where construction work is conducted:
- outside of 0700 hours and 1900 hours Monday to Saturday;
- on a public holiday; or
- at the request of the Chief Executive Officer.

The purpose of a NMP is to outline the management strategies that will be employed to minimise the disruption to nearby properties resulting from construction work.

**Requirements of a Noise Management Plan**

All Noise Management Plans submitted to the City must include the following information:

1. The construction work was carried out in accordance with control of environmental noise practices set out in section 4 of AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites;
2. Justification, where works are to be conducted out of usual hours;
3. Equipment used on the premises was the quietest reasonably available;
4. Names and contact details;
5. Location of the works;
6. Details and duration of all activities on the construction site likely to result in noise emissions that fail to comply with the standard prescribed under regulation 7 of the Environmental Protection (Noise) Regulations 1997;
7. Predictions of noise emissions on the site;
8. Details of noise and vibration control measures to be implemented;
9. Methods of noise and vibration monitoring during the works;

Only those works described in an NMP are exempt from the Noise Regulations.

The level of detail expected in addressing the above criteria will depend on the scale, duration, hours and type of work employed.
1. **Australian Standard AS 2436-2010 Guide to noise and vibration control on construction, maintenance and demolition sites**

Gives practical guidance on noise control measures for construction sites works. A copy of this document is available for purchase from [www.saiglobal.com](http://www.saiglobal.com)

2. **Justification for out of hours works**

Justification for works being conducted out of hours is to be based on more than a matter of convenience. Sufficient information must be provided which details the significant impediments that would arise should the construction work be conducted during normal hours and how conducting works out of these times will resolve these issues.

3. **Equipment**

Demonstration that the equipment used for construction work is the quietest reasonably available requires knowledge of industry best practice with regard to noise control. Examples of this would include:

- Sourcing/ hiring quieter equipment
- Keeping records documenting purchasing decisions
- Modification of existing equipment to make it quieter
- Inspection and maintenance regimes
- Regular reviews may be conducted to ensure that improvements to the manner in which works are conducted is regularly updated to reflect current industry noise attenuation practice

4. **Names and contact details**

It is important that all the necessary people involved in decision making and those conducting the work are identified (name and position title) and their contact information (mobile phone number and email address) are provided. This may include the site manager, developer, supervisor, engineer and contractors.

5. **Location of the works**

The location of where the works are to be undertaken must be clearly defined. It is recommended to include a map or list specific address(es) of the area where construction activities will be undertaken.

6. **Details and duration of construction activities**

It is necessary to identify all works likely to emit noise that won’t comply with the Noise Regulations. Examples of this would include:

- Listing the activities or equipment to be used that may result in noise emissions
- Work schedule including dates, times and duration of specific activities
- Type and number of each piece of equipment
- How that equipment will be used
- Duration of use of the equipment and/or period of works
7. Predictions of Noise Emissions

AS 2436 provides a technical framework to estimate noise from construction sites. Equipment manufacturers may also provide this information. In some circumstances this may require the services of an acoustic consultant for an accurate estimate of the noise emissions.

In addition to the sound level it is also important to consider vibration and the characteristics of the noise i.e. tonal, impulsive, low frequency that will result from the works.

8. Noise Control Measures

This should be the most detailed section of a NMP and contain the essential measures that are being undertaken to minimise noise. Examples of this include:

- **Site Planning, barriers and layout**
  - On larger sites layout arrangement to avoid need for truck reversing
  - Location of vehicle entrances away from sensitive areas
  - Larger projects may require truck routes that minimise noise impacts and definition of arrival times, vehicle movements, idling reduction, general conduct, deliveries
  - Limiting vehicles on side streets, diverting vehicles to major roads
  - Relocating the noise source away from receivers or behind existing structures that can act as a barrier
  - Changing the orientation of equipment away from receivers
  - Enclosures around the noise source

- **Equipment**
  - Using broadband or low impact reversing alarms
  - Turning equipment off when not in use
  - Regular servicing of equipment with attention paid to muffler maintenance and enclosure of noise equipment and where practicable installation of silencers.
  - Using alternatives to sheet and impact piling
  - Using high pressure hydraulic rock crushers to spilt rock instead or hydraulic or pneumatic hammers
  - Equipment with efficient muffler systems
  - Insulation to line metal trays, hoppers or bins on equipment
  - Vibration isolation by rubber mats or springs between noisy equipment and rigid floor or walls
  - Use electrical equipment in place of diesel of petrol engines
  - Investigate high quality mufflers, enclosures, low noise tools bits/blades, silencers for pneumatic equipment
  - Replace pneumatic equipment with hydraulic or electrical equipment
  - Reduce throttle settings where possible

- **Work practices**
  - Scheduling works such that the most sensitive locations are undertaken at the least sensitive times
- Limit the times of operation of noisy equipment, vehicles and operations
- Educating staff and contractors about noise and quiet work practices
  - Minimise metal-on-metal contact
  - Avoid dropping items from height
  - Turning off equipment when not in use,
  - Encourage appropriate conduct by staff i.e. avoid loud radios, shouting, loud talking, slamming vehicle doors

9. Monitoring

Monitoring of the noise emissions of the site, specific equipment and local area allows noise problems to be actively managed as they arise.

Monitoring activities should sufficiently describe:
- Who will conduct the monitoring activities
- Where will monitoring activities be e.g. position and location
- Frequency and duration of monitoring activities, (representative of the particular works)
- How monitoring activities will be undertaken e.g. measurement equipment

Depending upon the type of work, certain projects will require regular noise monitoring by a competent person e.g. noise meter and acoustic consultant.

10. Complaint Response Procedure

An NMP must be sufficiently flexible to accommodate operational changes that may be required following a complaint. A complaint response procedure must detail the steps that will be taken upon receipt of a complaint. This should include:
- Investigation/Resolution process
- Who is responsible for managing incoming complaints;
- How a complaint can be made;
- How the complainant will be kept informed;
- Record keeping procedures; and

Additionally in the majority of circumstances notification will be required to inform those likely to be impacted by the noise. The NMP is to identify
- How that information is to be provided
- To whom notification will be provided
- Content and Example of a notification leaflets, to include
  - Brief description of works
  - Where and when works are to occur
  - How to lodge a complaint

For more information contact the City’s Environmental Health Services on 9273 3500 or council@nedlands.wa.gov.au