



Noise Management Plan

Afterhours Road Works

Background

This document is to be read in conjunction with the "Application for Approval of a Noise Management Plan".

In accordance with the City's Capital Works Program the City of Swan proposes to undertake a number of road construction projects which due to their nature require work to be undertaken afterhours.

This Noise management plan addresses the requirements of Regulation 13 of the *Environmental Protection (Noise) Regulations 1997*, for construction work outside the hours of 7am to 7pm Monday to Saturday, and public holidays.

Intended works

The intended works are as outline in the list of projects in Appendix 1. Dates and times are indicative only and may be subject to change. Changes are typically due to unforeseen delays or other circumstances beyond the control of the City or our engaged contractors.

The list of projects themselves may also change due to unforeseen circumstances. This could be the result of an emergency situation, the need for urgent repairs as a result unexpected damage, projects either being delayed or brought forward or due to changes in financial position such as receiving additional grant funding. This may result in some projects not proceeding or new projects being included. The addition of a project not included in Appendix 1 for afterhours road works will only be undertaken where it meets the criteria in the following section 'Needs for the work to be done out of hours'.

An approved Traffic Management Plan (TMP) will be prepared for all projects involving after hours road works.

Need for the work to be done out of hours

It is the City's preference that road works be undertaken during normal daylight hours however this is not always possible due to a variety of factors. In deciding the appropriateness of undertaking the works afterhours instead of during the day the following criteria should be considered;

- The traffic volume – where any road is defined as a major or secondary road (more than 15 000 or 6 000 vehicles per day respectively) under the Regulations after hours work may be appropriate.
- Significant safety risk – where undertaken the works during normal daylight hours would pose a significant safety risk to City staff, contractors or the general public, after hours work may be appropriate.
- Response to emergency situation – after hours work is considered appropriate where there is the need to respond immediately to an emergency situation.
- Impact on general public – where the impact on the general public is considered to be significant and would likely result in lengthy traffic delays after hours work may be appropriate.
- Adverse effect on surrounding properties – where the impact on surrounding properties would be more detrimental if undertaken during the day eg roads surrounded by commercial or industrial properties where businesses may be negatively impacted if work was to occur during normal day light hours.

Projects meeting the above criteria will be considered as meeting the need for the work to be done out of hours to the satisfaction of the requirement of 13 (6) (a) of the Regulations.

Type of activity which could be noisy

The project involves road upgrade through a construction methodology known as Foam Bitumen Stabilisation. The steps involved are:

- Spread quicklime at a uniform 5kg/m², slake and mix to 250mm
- Reshape section (trim and compact) to final level less asphalt thickness and lightly compact
- Stabilise using 3.5% bitumen @ 14kg/m², compact and trim to level

- Output approx. 1500m²/night
- Surfacing (asphalt) once the road base is prepared. 2 days have been allowed for this.

Types of equipment to be used

The project involves profiling and compacting activities and as such includes the use of heavy equipment and earthmoving and/or road-working machinery.

In order to ensure the equipment used is the quietest reasonably available in accordance with the requirements of the Regulations and AS 2436 all equipment is serviced and maintained to manufacturers recommendations. This ensures equipment operates as intended by the manufacturer.

In addition when equipment is scheduled for replacement part of the assessment criteria and evaluation process includes the level of noise emissions. This helps ensure new equipment remains the quietest reasonable available as required by the Regulations.

While every effort shall be made to select equipment that minimises the generation of noise and that is in good repair, it is acknowledged that the equipment, machinery and plant to be used will generate noise.

The following key equipment, machinery and plant may be used during these works:

- Machine for wet mixing, lime stabilisation and foam stabilisation
- Spreader truck
- Grader
- Rubber Roller 25T
- Steel Roller 14T
- Vibe Roller 12T
- Loader
- Bobcat
- Delivery Trucks
- Lighting Towers
- Small electrical generators
- Light Vehicles

Prediction of noise levels

The level of noise being received by different properties will vary due to various factors relevant to each specific project, such as distance to receiver and effect of existing barriers. Therefore it is impossible to provide an exact noise level without undertaking an assessment for each specific project which would involve considerable cost. Instead this predicted level is based on a typical worst case scenario. Actual levels of noise being received from the associated projects may therefore be less than that predicted.

Worst case scenario is considered to be one where the receiving property and the area around it is zoned residential and the road to which the works is to occur is in close proximity without any additional sound barriers. As the distance between the intended works and the property receiving the noise increases or where noise walls or other sound barriers exist, the level of noise will be less than that predicted below.

The predicted noise levels below are obtained from Australia Standard 2436-2010 Table A1 - Typical Sound Levels of Construction Plant and Equipment. When selecting equipment, noise level output should be consistent with or lower than that given in the following table.

Plant	A-weighted sound pressure levels LpA (mid-point) dB at 10 m
Asphalt Paver	80
Compactor	85
Front end loader	85
Generator (diesel)	71
Grader	71
Roller (Vibratory)	80
Spreader	67
Truck (>20 tonne)	79
Truck (water cart)	79
Vehicle (light vehicles)	78

The total level of noise will be dependent on the actual number and type of equipment in operation at the same time. Therefore there will be a cumulative effect and noise levels are likely to be slightly higher than the figures above at 10m.

The Regulations set different permitted levels based on the type of premises receiving the noise as well as consideration of the duration of the noise and other factors. As the noise level being emitted is of an ongoing nature for longer than 4 hours (representative assessment period) it is appropriate an L_{A10} noise criteria be used.

The relevant permitted L_{A10} noise level under the Regulations for a residential property is as follows;

- 35 dB + influencing factor - between 2200 hours any day and 0700 hours Monday to Saturday or 0900 hours Sunday and Public Holidays
- 40 dB + influencing factor – between 1900 hours and 2200 hours all days.

The lowest influencing factor would be where works are to be undertaken within a residential area on a secondary road (between 6000 and 15 000 vehicles per day) within 100m of the residence or on a major road (greater than 15 000 vehicles per day) located between 100m and 450m from the residence. This would give an influencing factor of 2. Therefore the permitted noise levels are 37 and 42 dB respectively.

As the noise being generated is from a mechanical source in relatively close proximity to the residence there is likely to exist the presence of tonality which is defined in the Regulations as a dominating noise characteristics and which would require a 5 dB penalty be added to the noise level.

Therefore even the operation of a single piece of equipment such as the compactor or front end load is likely to result in an exceedance of the permitted levels by 53 and 48 dB respectively, hence why a noise exemption is required.

Noise control measures to be implemented

In order to minimise the impact of excessive noise and level of disturbance to surrounding properties a number of actions are proposed. These are consistent with the practices as outlined in AS 2436-2010 and consist of, but not limited to, the following actions;

- At least 24 hours before the commencement of construction work written notice will be provided to all properties within 300m of the subject site (refer to Appendix 2 for example notification letter).
- Variable Message Boards advising the general public of the upcoming night works will also be installed two weeks prior to the commencement of the work.

- Works will be done progressively along the road and the duration of each task kept to a minimum to reduce overall noise.
- Where practical the need for reversing will be minimised and where possible arranging for one way traffic to reduce the amount of time reversing alarms are active.
- Where practical, machines will be operated at low speed or power and will be switched off when not being used rather than left idling for prolonged periods.
- Equipment shall be selected from plant available at the time and every effort will be made to select plant that both produces the minimum inherent output noise and is in good repair to avoid unnecessary excessive noise.
- All plant will have broadband reversing alarms or self-adjusting smart reversing alarms.
- Where practical, vehicular movements to and from the construction site should be undertaken during normal working hours. Noisier activities will also be undertaken before 11.00PM where practicable, by ways of scheduling different activities for different times in the same location or by undertaking the same activities in different areas. Where possible, the activities which generate less noise will be undertaken during the 11:00PM to 6:00AM period.
- All employees, contractors and subcontractors will be site inducted where they will be informed on all relevant project specific and standard noise practices. There will be designated construction employee parking areas and also designated loading/unloading areas, which will be located as far as practicable from the noise sensitive areas.
- All personnel will be asked to exercise appropriate behavioural practices such as not swearing or shouting unnecessarily on site.
- No music will be played between the hours of 7pm and 7am.

The control measures above will also be regularly monitored to ensure that they are being complied and adhered to.

Noise monitoring

Noise monitoring is not intended to be undertaken for these projects unless specifically required by the Local Authority as a condition of granting a noise exemption. This is because the work to be undertaken will be in accordance with this Noise Management Plan and the requirements of AS 2436-2010 using similar or quieter equipment to that outlined and that the predicted levels of noise are considered to be a worst case scenario with actual levels of noise likely to be significantly lower.

Method of providing public notification

Public notification of the intended works will be provided via the following methods;

- All properties within 300m will be provided a letter of notification at least 24 hours prior to commencement of works.
- Variable Message Boards advising the general public of the upcoming night works will also be installed two weeks prior to the commencement of the work.
- In addition information on specific projects may also be provided on the City's website or social media pages.

Complaint response procedure to be adopted

The notification letter provided to properties will include details of the Project Manager for concerned members of the community to contact should they wish. In addition customer complaints can be made to the City 24 hours a day by contacting 9267 9267. Details will be recorded and referred to the Project Manager for actioning following established Complaint Response procedures.

Appendix 1

List of selected roadworks projects to be inserted here.

Appendix 2

Our Ref: RDN08407
Enquiries: Joe Citizen mob: 9267 9267
E-mail: Joe.Citizen@swan.wa.gov.au

9 October 2014

Dear Resident/ Business

Notification of Road Works – Clayton Street (Cowie Close to Robinson Rd)

The City of Swan proposes to commence the road upgrade of Clayton Street, specifically the section between Cowie Close and Robinson Road.

The scope of works involves the profiling and removal of the existing asphalt seal and kerbing. This will then be followed with full pavement reconstruction, laying of new asphalt and kerbing as well as adjustment to the existing crossovers.

In order to complete the work in an efficient manner and to minimise disruptions to the general public, the works will be done at night with the work commencing at 6pm through to 6am. The work will be done in stages requiring some sections of Clayton Street to be completely closed, however a detour route will be put in place.

The works are anticipated to commence on Monday the 3rd of November 2014 and be substantially completed after 4 weeks of commencement.

During this period, every effort will be made to minimise any disruption to motorists and to the general public, however some inconveniences may occur and for that to the City request your patience and understanding.

Should you have any further queries, please contact Joe Citizen on 9267 9267.

Thank you for your time and attention.

Yours sincerely,

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