

Noise Policy

October 2011

1. Introduction

The purpose of this document is to provide guidance on the assessment of development applications and equally to preserve and protect amenity under the Planning and Urban Management Act 2004 (PUM Act). This policy is to be implemented by the Planning and Urban Management Agency (the Agency).

This policy is applicable for setting conditions relating to noise emissions and is intended for planning purposes. An example includes the assessment of development consent applications and ensuring compliance and handling public noise complaints.

This policy is adopted as a policy guideline under Section 9 of the PUM Act.

2. Purpose and scope

The purpose of these standards as set out in this policy is to provide an acceptable living environment to all residents. This policy implements Section 63 of the PUM Act where the amenity of an area or place is in the opinion of the Agency compromised by “excessive noise.” The control of the emission of noise and the mitigation of the effects of noise is one of the Agency’s functions specified under the PUM Act. This policy defines maximum allowable noise levels for various activities.

3. Background

Complaints over noise are increasingly becoming frequent. The PUM Act requires the Agency to control the emission of noise and to mitigate any adverse effects of noise. Excessive noise is recognized as having detrimental public health impact and also affects amenity values of communities. The aim of this policy is to provide guidance on how the Samoan *planning system* can be used to minimize the adverse impact of noise without placing unreasonable restrictions on development or adding unduly to the costs and administrative burdens of businesses. This policy document shall apply to all areas within Samoa.

The impact of noise can be a material consideration in the determination of development consent applications. The Agency must ensure that existing and a proposed development does not cause an unacceptable degree of disturbance or is ‘excessive’. The noise policy sets out the measures which the Agency has adopted to manage noise and includes the setting of noise limits in conditions of development approvals.

What is excessive noise? Excessive noise is any noise that is under human control and of such a nature as to unreasonably interfere with the peace, comfort and convenience of any person. Noise standards are set to prevent cumulative increases in background noise levels and to ensure the protection of community health and amenity.

4. Objectives

The objectives of this policy are to:

- Provide minimum national standards applicable to development consent approvals to protect citizens against excessive noise in their communities and places of residence
- Protect residents from exposure to excessive noise and its effects through appropriate mitigation measures, consent conditions and responsive planning; and

- Create an environment where noise levels do not exceed a reasonable level.

The Agency requires that proponents and landowners give adequate consideration to noise exposures and sources of noise as an integral part of the environment when applying for consent or undertaking any other activity. Particular emphasis shall be placed on the importance of compatible land use planning in relation to airports and other sources of high noise.

5. Noise Standards

The following average and maximum noise levels measured at the stated times at the boundary of any land used shall not exceed the limits set below.

Noise limits for general activities:

"Noise Source" (Average dBA, L _{10mins})	"Receiving Property" (LAeq, 10 minutes)											
	Residential Use			Commercial Use			Religious use			Industrial Use		
	Day	Even ⁿ	Night	Day	Even ⁿ	Night	Day	Even ⁿ	Night	Day	Even ⁿ	Night
Residential use	55	50	45	60	55	50	60	55	50	60	55	50
Commercial use	60	55	50	60	55	50	60	55	50	65	60	55
Religious use	65	55	50	70	60	50	70	60	50	70	65	60
Industrial use	65	60	55	70	65	60	70	65	60	75	70	65
Construction Works	75	70	-	75	70	-	75	70	-	75	70	-

*Note: Day period is defined as 0700 to 1800, evening period is defined as 1800 to 2200 and night period is defined as 2200 to 0700. Construction activities conducted at times not specified in the table above will require special approval from relevant authorities. These may include the Night period, Sundays and all other times within Residential and Tertiary Educational compounds.

Construction works include building works, demolition, remediation, renewal, & maintenance. The Agency may impose more or less stringent construction hours and noise limits depending on the location or the sensitivity of the area where construction is occurring.

Noise Limits for Electric/Hydro/Diesel Power Generators

Noise generated from any Power Generator must not exceed an average of 75dB in the Day period, 50dB in both the Evening and Night periods.

5.1. Measurement of Sound

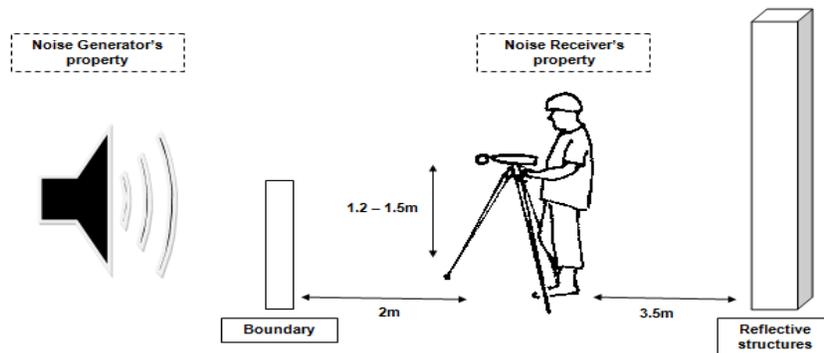
The Agency will measure noise impacting on a complainant at the point of impact. For example, should the noise be disturbing the complainant at the property boundary, this is where the measurement will be taken. However, noise must be measured at no more than 30 meters away from the noise receiver's home or dwelling.

The Sound Level Meter (SLM) must be calibrated before and after every noise monitoring survey. The SLM and calibrator must also be factory calibrated every 2 years.

The Background Sound Pressure Level reading of the area being assessed must also be taken. Obtaining a background sound pressure level is important as it may be one of a number of criteria used to consider whether a noise from a source is reasonable. The background sound must be measured during the absence of the sound being investigated. If measurements cannot be made at an affected place because of other dominant noise sources, measurements can be made instead at a similar location chosen carefully to ensure equivalent or similar background levels. The Background Sound Pressure level is measured using L_{A90, T} A-weighted sound pressure level. The background sound can be recorded before or after the Noise Survey.

The SLM must be located no less than 2 meters from the boundary of the noise generator. It shall be located 1.2 – 1.5 meters above the ground and no less than 3.5 meters from any reflective surfaces or structures. If the SLM is located less than 3.5 meters away from any reflective surfaces/structures, corrections need to be made manually to the readings. The results are corrected for reflections by subtracting 2.5dBA from the original noise results.

Figure 1: Measurement of Noise and reflective surfaces.



Typically, noise shall be measured for a continuous 10 minute period, to allow for peaks and troughs and ensure a fair assessment. Background noise must be at least 10 dB below the noise source. If this cannot be achieved, an adjustment must be made to take into account the effects of the background noise on the total noise.

Difference in dB Value	Subtract to the higher value
0	3
1	2.5
2	2
3	2
4	1.5
5	1
6	1
7	1
8	0.5
9	0.5
10	0.5
11 or more	0

A development will be deemed to be in non-compliance if the monitored noise level is more than 2 dB above the statutory noise limits specified in the Noise Policy or Development Consent conditions. Noise must not be measured during rainy conditions with winds exceeding a speed of 3m/s (10km/h).

Noise shall be measured with a sound level meter complying with the International Standard IEC 651 (2004): Sound Level Meters Class 1 and Class 2.

5.2. Compliance with Health Requirements

Compliance with any provision of these standards does not grant the right to create any nuisance as defined under the Health Ordinance 1959 or negate the duty to avoid unreasonable noise or to avoid, remedy or mitigate adverse effects on the environment as required by the PUM Act.

5.3. Impacts

Excessive or high levels of noise can have a detrimental impact on environmental quality. The PUM Act requires that environmental quality is to be maintained and enhanced. Therefore the control of noise sources is justifiable in order to prevent an increase in the overall background noise in the environment. The standards aim at the very least to maintain noise in the environment originating from human activity at current levels and where possible to actually improve background noise exposure.

5.4. Exemptions

The noise limits stated in this policy shall not apply in the following circumstances:

- i. noise generated by sirens and alarms used by emergency services;
- ii. noise generated by traffic on public roads;
- iii. noise generated from traditional activities such as funerals, bestowment of chiefly titles etc...;
- iv. Special National Activities proposed and approved by Cabinet.

In the case of special circumstances, development consent applications will be considered on the merit of the proposed activity for example noise generated from stadiums and sporting events.

5.5. Discretionary

In the instance where the Agency does not have an operational Sound Level Meter the Agency has the discretion to provide practical measures to mitigate the noise emission from source. This discretion is to be used in cases when a noise complaint is lodged to the Agency and where the noise level is determined by the Agency to be unacceptable or 'excessive'. For example, the Agency may issue a written direction or Order to reduce the noise level. However if the noise continues or reoccurs and the written direction or Order has been breached then it is an offence and the person(s) is liable under Section 84 of the PUM Act.

5.6. General Principles for Compliance

The noise provisions outlined in this policy are intended to provide an alternative remedy to problems of disturbance caused by noise from land use activities. The offence is based on exceeding an objective measured sound level value ('the permitted level') further to investigation of a complaint, and a formal warning having been given. It has the advantage of not being subject to the subjective judgments of nuisance which make court proceedings for statutory nuisance uncertain. A penalty is also available should the Agency decide to issue a person committing the offence.

There is no need to measure the level of noise before issuing a warning notice or Order. A warning notice or Order is sufficient to persuade the noise maker to keep the noise to a reasonable level. The noise only needs to be measured if the warning notice is contravened and the Agency wishes to ensure that the noise offender complies.

6. Appendices

The Level of Common Sounds: Indicative Noise Levels in Typical Situations

Thresholds Noise Sources	Sound Level (dBA)	Subjective Evaluations	Possible Effects on Humans
Shotgun	170	Deafening	Continuous exposure to levels above 70 can cause hearing loss in majority of population
Human threshold of pain	140		
Siren at 30m Loud rock band	130		
Jet takeoff at 60m Car horn at 1.5m	120		
Chainsaw Disco / nightclub	110		
Lawn mower at 1.5m Factory machine	100	Very Loud	Speech Interference
Heavy truck, maximum at 15m Shouting conversation	90		
Busy urban street, daytime Noisy restaurant	80	Loud	
Normal car at 50mph Vacuum cleaner at 1.5m	70		
Normal conversation at 1.5m	60	Moderate	
Quiet Residential area Light auto traffic at 30m Rainfall Quiet Office	50		Sleep Inference
Library / Quiet Home	40		Faint
Soft whispering	30		
Rustling of leaves	20	Very Faint	
Broadcasting Studio Normal breathing	10		
Threshold of Human Hearing	0		

Source: Adapted from US EPA and Others

7. Glossary

“A” weighing:	It is a setting on the sound level meter used for assessing noise under normal conditions.
Average dBA:	The average decibel reading under “A” weighing setting for a set period of time.
Background Sound level:	The underlying level of noise present in the ambient noise, excluding the noise source under investigation and extraneous noise. The descriptor is $L_{A90, T}$ where T is the measurement period which is normally 10 minutes.
Commercial use	A development where its nature of use covers shops, supermarkets, mechanics workshops, schools and the likes.
dBA:	Abbreviation for ‘A’ frequency weighted sound pressure level in decibels. (Refer to ‘A’ weighing).
Decibels:	A scale used in acoustics to give an indication of the magnitude of sound. 20 decibels is described as quiet and 100 decibels is described as loud.
Development Consent:	A legal document giving approval to a developer to carry out a development under certain conditions.
Excessive noise:	Any noise that is under human control and of such a nature as to unreasonably interfere with the peace, comfort and convenience of any person.
Industrial use:	Used to define developmental activities with a primary goal of producing certain products.
Km/h:	Kilometers per hour; It is a unit used to measure speed. “Km” is kilometer and “h” is hour.
L_{10min} :	Used to indicate the time limit or time duration for the measurement of sound.
LAeq, Time	Symbol for the sound energy average of time period ‘T’.
m/s:	meters per second; A unit used to measure speed. “m” stands for meters and “s” stands for second.
PUMA:	Planning and Urban Management Agency.
PUM Act:	The Planning and Urban Management Act of 2004.
Reflective Surfaces/Structures:	A structure or surface that is capable of reflecting sound e.g. brick wall.
Sound Level Meter (SLM):	An instrument used for the measurement of sound.