



Noise Monitoring Report

Bulk and Kerbside Glass Collection Rounds

WASTE AND RECYCLING – JUNE 2024

Antony Whittle
NEW FOREST DISTRICT COUNCIL

Kerbside Glass Collection

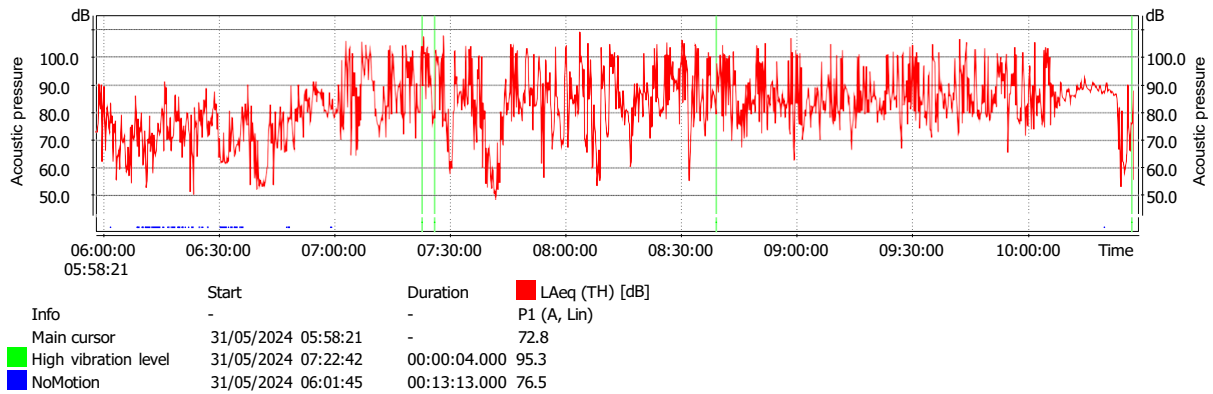
Measurement Report

DATE: 7/12/2024 11:34:14 AM

Instrument configuration

Device function	Dose meter
Measurement start	31/05/2024 05:58:08
Measurement stop	31/05/2024 10:27:03
Measurement elapsed time [HH:MM:SS]	04:28:55
Unit type	SV 104
Unit S/N	132438

Logger results



Noise Dose/TWA

Standard:	ACGIH				
Exchange rate:	3				
Criterion level:	85.0				
Threshold level:	80.0				
	Measurement time	LAV	DOSE	Exposure time	Dose contribution
Task	hh:mm:ss	dB	%	hh:mm	%
Kerbside Glass	04:28:55	94.1	456.6	04:28	456.6
				Total exposure time	Total Dose
				hh:mm	%
				04:28	456.6
				Standard day	8 hr Dose
				hh:mm	%
				08:00	814.9
				Projected day	Projected Dose
				hh:mm	%
				12:00	1222.4
					Projected TWA
					dB
					95.9

Bulk Glass Collection

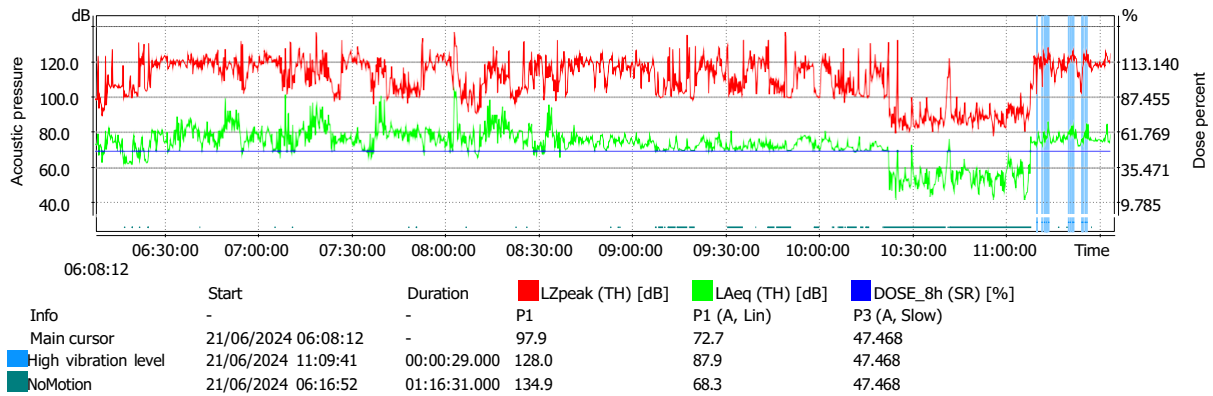
Measurement Report

DATE: 7/12/2024 11:34:14 AM

Instrument configuration

Device function	Dose meter
Measurement start	21/06/2024 06:07:56
Measurement stop	21/06/2024 11:37:53
Measurement elapsed time [HH:MM:SS]	05:29:57
Unit type	SV 104
Unit S/N	132438

Logger results



Noise Dose/TWA

Standard:	ACGIH					
Exchange rate:	3					
Criterion level:	85.0					
Threshold level:	80.0					
	Measurement time	LAV	DOSE	Exposure time	Dose contribution	
Task	hh:mm:ss	dB	%	hh:mm	%	
Bulk Glass	05:29:57	81.8	32.5	05:29	32.5	
				Total exposure time	Total Dose	Total TWA
				hh:mm	%	dB
				05:29	32.5	80.1
				Standard day	8 hr Dose	8 hr TWA
				hh:mm	%	dB
				08:00	47.3	81.7
				Projected day	Projected Dose	Projected TWA
				hh:mm	%	dB
					71.0	83.5

Noise Monitoring Report – Glass Collection (Kerbside and Bulk)

Current Situation:

- Last noise monitoring date for glass collection rounds surveyed in 2019
- Operatives attending hearing related health surveillance appointments on an annual basis
- Top of the range electronic hearing protection supplied to all operatives on glass collection rounds providing protection when required and allows operatives to hear low frequency sounds such as speech and traffic noise (Peltor ProTac)
- No ongoing concerns or issues raised regarding noise levels on glass collection rounds by Management, Supervisors or Operatives in last 5 years

Noise monitoring data and associated exposure levels:

2019 Data

ROUND	DEPOT	COLLECTION TYPE	OPERATIVE	DAILY EXPOSURE	WEEKLY EXPOSURE (5 days)
??	Claymeadow	Kerbside	John Cooper	95dB	96dB
??	Marsh Lane	Bulk	Martin Norris	83.7dB	84dB

2024 Data

ROUND	DEPOT	COLLECTION TYPE	OPERATIVE	DAILY EXPOSURE	WEEKLY EXPOSURE (5 days)
??	Claymeadow	Kerbside	D. Colmer	94.1dB	94dB
??	Marsh Lane	Bulk	M. Norris	81.7dB	82dB



Kerbside Glass Collection

Kerbside glass collection is undertaken by Waste Operatives who collect glass receptacles from residential properties and empty them in to a 240 litre service bin. Once the service bin is full it is attached to a bin lift at the rear of the refuse truck and tipped in to the hopper.

On some occasions the glass receptacles are tipped directly in to side collection points on the waste vehicle.

Operatives are in close proximity when tipping glass from the receptacles in to the service bin and also when tipping in to the side of the refuse vehicle.

Daily average exposure is 94.1dB which is above the upper exposure limit of 85db, at this level the employer is required to take reasonably practicable measures to reduce the noise exposure and hearing protection becomes mandatory if the noise cannot be controlled by these measures.

The exposure would be averaged at 94dB if operatives carry out the same amount of glass collection over a 5-day period.

Bulk Glass Collection

Bulk glass is collected from bring sites containing 1100 litre bins that are filled by residents who bring their empty glass bottles and containers and place them into the bins.

The 1100 litre bins are wheeled to the refuse vehicle and tipped using a bin lift either at the side or the rear of the vehicle.

Operatives are able to stand a good distance away from the refuse vehicle when tipping.

Daily average is 81.7dB which is below the upper exposure limit of 85dB but is above the lower exposure action value of 80dB at which point the employer must provide information and training to operatives and make hearing protection available.

The exposure would increase to an average of 82dB if operatives were to carry out the same amount of glass collection over a 5-day period (working week).

Comparison of Data 2019 – 2024

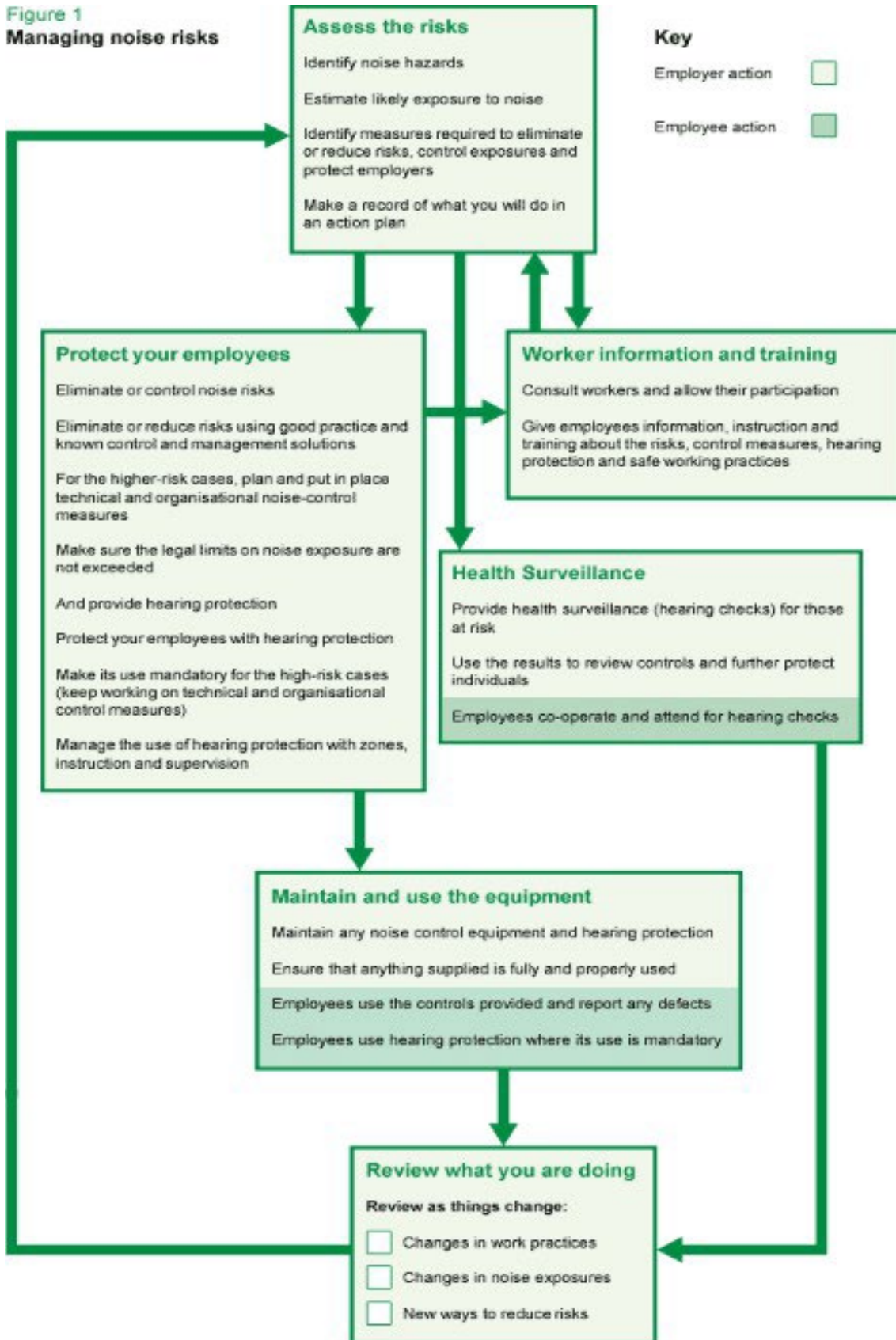
Comparing the noise monitoring data received in 2024 to that received in 2019 that is very little difference to the exposure of the operatives when collecting both kerbside glass and bulk glass.

This is a good indicator that working equipment and working practices have remained consistent over the period 2019 to 2024.



HSE Flowchart Managing Noise Risks

Figure 1
Managing noise risks



Noise Exposure

Prolonged and excessive exposure to noise is a serious health hazard. It accelerates the normal hearing loss we get as we grow older and can cause a permanent sensation of ringing in the ears, known as tinnitus. Less obvious side effects can include increased pulse rate, blood pressure and breathing rate which could indicate that noise causes stress.

Noise is measure in decibels (dB). An increase in 3 dB doubles the noise, so what might seem a small difference in noise level may be a large difference in exposure. If the noise is so loud that you must raise you voice to speak to someone 2 metres away, then it may be loud enough to damage hearing.

Considerations

Measures to eliminate or reduce risks

The Noise at Work Regulations 2005 require you to eliminate noise risks or reduce noise risks and noise exposures to as low a level as reasonably practicable.

Below are control measures to be considered and, if possible, implemented as far as is reasonably practicable.

Alternative working methods

Consider alternative working methods and collection strategies which eliminate or reduce the risks from noise. It is important to remember that changing glass collection systems may have implications other than on the health and safety of employees.

Methods of collecting glass that do not require the glass to be manually tipped or sorted at the kerbside will remove a significant source of noise exposure, and you should consider these when you are developing recyclable collection strategies.

The upcoming Waste Strategy move in 2025 to a mixed recycling collection could see both glass and other recyclables tipped into the same refuse vehicles. This is highly likely to reduce the level of noise that operatives are exposed to although it is unlikely to be below the upper action level of 85dB.

Choice of work equipment

Where possible, choose equipment that produces the least amount of noise. Discuss noise with your plant/machinery suppliers and take account of the likely noise levels produced under conditions of intended use. Suppliers have a legal duty to design their machinery for lowest noise emissions, and to provide information on the noise emitted.



Duties of machine manufacturers on noise

Under the Health and Safety at Work etc Act 1974 and the Supply of Machinery (Safety) Regulations 2008 a supplier of machinery must:

- provide machinery that is safe and without risk to health, with the necessary information and instructions to ensure those aims can be met during installation, use and maintenance;
- design and construct machinery so that the noise produced is as low as possible;
- provide information about the noise the machinery produces, including descriptions of the operating conditions under which the noise was measured.

Some recycling vehicles may be marked with sound power levels as required by legislation relating to environmental noise emissions. These noise values cannot be used to assess occupational noise exposure from vehicles in roadside glass collection. Suppliers should provide useful, representative noise information for users, based on a suitable noise test method.

Work rotation

Reducing the number of glass collection operations carried out by an employee can also lower his or her exposure to noise. This method is not likely to produce significant benefits on its own but may be a useful additional option. Reducing the number of operations carried out by 30% would lower noise exposure by approximately 2dB. A 50% reduction would lower exposure by 3dB.

Working methods

The working method adopted by employees can affect noise exposure. 'Fast' working (i.e. depositing glass to the collection receptacle in a rapid/forceful manner) produces generally higher noise levels than more controlled ('slow') depositing, particularly as the collection receptacle becomes fuller.

Employees should be instructed to avoid 'fast' depositing methods and Supervisors should ensure, through supervision, that they use recommended working methods for reduced noise exposure.

Personal hearing protection

Where employees' noise exposure is between the lower and upper exposure action values they must be provided with hearing protectors, if they ask for them.

Where employees' daily personal noise exposure exceeds 85dB, they must be supplied with personal hearing protection, which must be worn fully and properly. Such exposures have, so far, only been identified for kerbside collection of glass.

The law does not allow hearing protection to be used as an alternative to control noise exposure by other means (such as those controls described in the previous section). It should be used to protect employees' hearing while noise control measures are being developed, and it may be still be necessary to rely on hearing protection after noise exposures have been reduced to as low as reasonably practicable through other means.



The working environment during kerbside collection presents several risks to safety, including working around moving vehicles and working on the public highway. The use of personal hearing protection can potentially increase these risks by masking important sounds, and by inducing a sense of isolation from the general working environment. Therefore, you need to consider these issues, both when selecting personal hearing protection and formulating safe systems of work.

The following should be considered:

- Choose hearing protection that reduces daily personal noise exposures to at least below 85dB, ideally below 80dB – the level of protection required depends on actual noise exposure and care should be taken not to ‘over protect’
- Develop and implement safe systems of work to make sure hearing protection is only worn during noisy activities and is not worn when it is not needed
- Assess the risk of introducing broken glass into the ear, and minimise it by selecting an appropriate type of protector and through systems of work, instructions and training

Where it is not possible to avoid crossing designated roads, additional risks from the use of personal hearing protection can be minimised by considering and implementing, as appropriate, the following options:

- Develop and implement a safe system of work that includes a requirement to remove hearing protection before trying to cross a road
- Provide hearing protectors that are simple to remove and replace as required, for example canal caps or earmuffs
- Provide ‘level-dependent’ (sometimes called ‘amplitude-sensitive’) hearing protectors which are designed to protect against louder noises, while permitting quieter sounds to be relayed to the wearer when noise levels are not high
- Provide ‘flat frequency response’ hearing protectors which can, in some situations, improve wearers’ ability to hear certain sounds such as speech, warning signals and other informative sounds

In all cases, employees using personal hearing protection must be given information, instruction and training that should cover how to obtain personal hearing protection from you, its correct use and requirements for maintenance.

Employees should also receive training in any safe systems of work designed to facilitate the full and proper use of hearing protection in the working environment. This should be in addition to any other training about noise.

You should provide appropriate supervision to make sure employees are wearing hearing protection, and that systems of work are being followed.



Health Surveillance

All employees whose daily personal noise exposure frequently exceeds 85 dB, or whose hearing is at risk, should be provided with health surveillance for hearing damage.

This should include a baseline hearing check on starting a new 'noisy' position, annual checks for the first two years, and then regular checks at three-yearly intervals.

The hearing checks need to be carried out by someone who has the appropriate training. A suitable doctor, nurse or audiologist needs to review the results and ensure that employees with poor hearing or rapid hearing loss are referred for further medical advice.

You should receive results including information on an employee's fitness to continue working in noisy environments. However, you should only receive information on any hearing damage an individual employee has if that employee has given consent.

Where any hearing damage due to noise is identified you should prevent further harm to the employee, taking account of the medical advice you receive on fitness. On the basis of both individual and grouped information, you will need to consider what action you need to take; this should include reviewing your risk assessment, any control measures you have in place and your health surveillance procedures.

HSE Publication: *Noise at Work: Guidance for employers in the Control of Noise at Work regulations 2005*

Information, Instruction, Training and Supervision

All employees must be given enough information and training to carry out their duties safely and effectively (*Management of Health and Safety at Work Regulations 1999 - Regs 10 and 13*).

Any glass collection activities that could expose employees to high noise should not take place unless those employees involved have been fully inducted and trained in relevant safe systems of work and are clear about the processes to be followed. This should include the use of personal hearing protection.

It is particularly important to consider the training needs and supervision of:

- New employees
- Young people
- Employees that have changed roles or are taking on new responsibilities
- Employees for whom English is not their first language



Recommendations and Actions

Recommendation	Status High – Immediate Medium – within 6 months Low – within 12 months	Responsible Officer (Name)	Action by date
Carry out further monitoring of both kerbside and bulk glass collection rounds to ensure that noise exposure data captured is indicative of all rounds and to be able to make more accurate estimations of exposure levels	Medium	Corporate H&S Team	November 2024
Ensure hearing protection currently in use offers the correct level of protection required for the type of glass collection being carried out and does not 'over protect' at the ear	High	Dave Wheeler-Osman (Waste Service Senior Supervisor)	Ongoing
Confirm that the hearing protection currently in use reduces high level noise whilst amplifying low level noise to aid employees hearing traffic, speech and other warning sounds	High	Dave Wheeler-Osman (Waste Service Senior Supervisor)	Ongoing
Implement a system to ensure that all employees, particularly those moving from another role or taking on additional responsibilities that mean they will be exposed to high noise levels, are identified and appropriate health surveillance arranged	High	Colin Mee (Waste Service Operations Manager) and HR Team	September 2024



Consider appropriate amount of health surveillance received by employees carrying out glass collection activities, currently employees are receiving hearing tests annually, but this level of surveillance may not be necessary	Medium	Colin Mee (Waste Service Operations Manager) and Corporate H&S Team	January 2025
Ensure ongoing monitoring of the use of hearing protection takes place during routine Supervisor inspections and appropriate action taken if safe systems of work are not adhered to by operatives.	Low	Waste Service Supervisors	Ongoing
12. Continue to consider and, where possible, implement control measures identified in the considerations section of this report and not rely solely on the provision of hearing protection.	Low	Colin Mee (Waste Service Operations Manager) @ Dave Wheeler-Osman (Waste Senior Supervisor)	Ongoing
13. Stay up to date with current and new technology and initiatives being developed to reduce noise exposure during vehicle workshop operations.	Low	Colin Mee (Waste Service Operations Manager) @ Dave Wheeler-Osman (Waste Senior Supervisor)	Ongoing