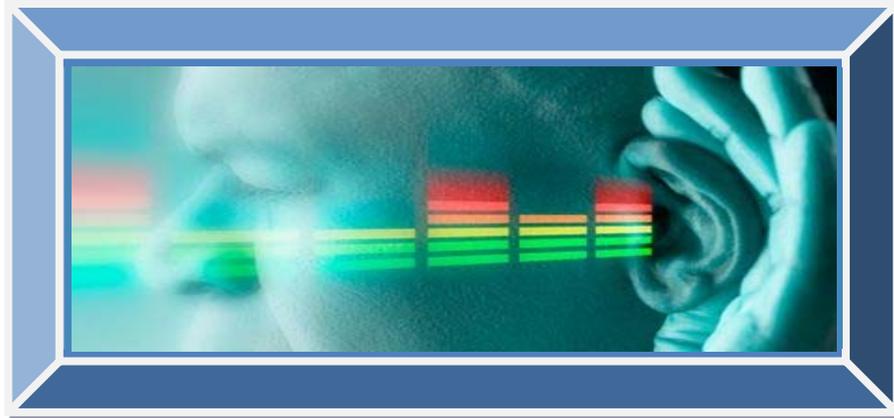




WATER & SEWER
RISK MANAGEMENT POOL



Hearing Loss Prevention Safety Program

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The following safety related program is for information purposes only. The SORT committee's intention is that each participating district will look at this program and discuss how it compares to the district's own practices. This program is NOT a complete safety program but intended as a guideline. There is no guarantee that following a given program will eliminate or substantially reduce the risk of claim or injuries. It is expected that member districts will consider this program and adapt or modify them to fit with the district's needs and circumstances.

HEARING LOSS PREVENTION SAFETY PROGRAM

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HEARING LOSS PREVENTION SAFETY PROGRAM

PURPOSE

The Hearing Loss Prevention Program is designed to prevent employee hearing loss by minimizing employee noise exposures, make sure employees exposed to noise are protected at (add district name here) and comply with the WISHA Hearing Loss Prevention Rule (Noise) WAC 296-817.

GENERAL REQUIREMENTS

Definitions

A-Weighted - An adjustment to sound level measurements that reflects the sensitivity of the human ear. Used for evaluating continuous or average noise levels.

Audiogram - A chart, graph, or table resulting from an audiometric test showing an individual's hearing threshold levels as a function of frequency.

Audiologist - A professional, specializing in the study and rehabilitation of hearing, who is certified by the American Speech, Hearing, and Language Association, or the American Academy of Audiology, and is licensed by the state board of examiners.

Baseline Audiogram - The audiogram against which future audiograms are compared. The baseline audiogram is collected when an employee is first assigned to work with noise exposure. The baseline audiogram may be revised if persistent standard threshold shift (STS) of improvement is found.

Continuous Noise - Noise with peaks spaced no more than one second apart. Continuous noise is measured using sound level meters and noise dosimeters with the slow response setting.

Criterion Sound Level - A sound level of ninety decibels. An eight-hour exposure to constant 90 dBA noise is a one hundred percent noise dose exposure.

C-Weighted - An adjustment to sound level measurements that evenly represents frequencies within the range of human hearing. Used for evaluating impact or impulse noise.

Decibel (dB) - Unit of measurement of sound level. A-weighting, adjusting for the sensitivity of the human ear, is indicated as "dBA." C-weighting, an even reading across the frequencies of human hearing, is indicated as "dBC."

Fast Response - A setting for a sound level meter that will allow the meter to respond to noise events of less than one second. Used for evaluating impulse and impact noise levels.

Hertz (Hz) - Unit of measurement of frequency, numerically equal to cycles per second.

Impulsive or Impact Noise - Noise levels which involve maxima at intervals greater than one second. Impulse and impact noise are measured using the fast response setting on a sound level meter.

Noise Dose - The total noise exposure received by an employee during their shift. It can be expressed as a percentage indicating the ratio of exposure received to the noise

exposure received in an eight-hour exposure to constant noise at 90 dBA. It may also be expressed as the sound level that would produce the equivalent exposure during an eight-hour period (TWA8).

Noise Dosimeter - An instrument that integrates a function of sound pressure over a period of time in such a manner that it directly indicates a noise dose.

Occupational Hearing Loss - A reduction in the ability of an individual to hear either caused or contributed to by exposure in the work environment.

Otolaryngologist - A physician specializing in diagnosis and treatment of disorders of the ear, nose, and throat.

Permanent Threshold Shift - A hearing level change that has become persistent and is not expected to improve.

Qualified Reviewer - An audiologist, otolaryngologist, or other qualified physician who has experience and training in evaluating occupational audiograms.

Slow Response - A setting for sound level meters and dosimeters in which the meter does not register events of less than about one second. Used for evaluating continuous and average noise levels.

Sound Level - The intensity of noise as indicated by a sound level meter.

Sound Level Meter - An instrument that measures sound levels.

Standard Threshold Shift (STS) - A hearing level change, relative to the baseline audiogram, of an average of 10 dB or more at 2000, 3000, and 4000 Hz in either ear.

Temporary Threshold Shift - A hearing level change that improves. A temporary threshold shift may occur with exposure to noise and hearing will return to normal within a few days. Temporary threshold shifts can be indicators of exposures that lead to permanent hearing loss.

TWA8 - Equivalent eight-hour time-weighted average sound level. That sound level, which if constant over an eight-hour period, would result in the same noise dose measured in an environment where the noise level varies.

HAZARD ANALYSIS

Description

There are two types of hearing loss:

- **Noise Induced** - Noise induced hearing loss is a cumulative, permanent hearing loss due to continuous exposure to noise levels from 85 to 110 dBA, over an 8 hour shift, for time periods extending for months, or even years.
- **Acoustic Trauma** - Acoustic trauma is caused by exposure to a sudden, intense noise, such as an explosion or impulse/impact two or more different times during a shift.

If peaks or maximum level intervals are one second or more (Pile driver), or if the duration of the noise is less than one second (rifle shot), the noise is considered impact and/or impulse.

Health Effects of Hazardous Noise Levels

The following are just a few of the detrimental health effects of exposure to hazardous noise levels:

- Temporary or permanent hearing loss

- Headaches
- Fatigue
- Emotional changes (stress, irritability, depression)

TESTING AND TRAINING

Audiometric Testing

An audiometric test program allows the District to establish a baseline of audiometric data to identify those individuals who are most sensitive to noise induced hearing loss:

- Testing shall be conducted annually after obtaining the baseline audiogram.
- A new employee shall have a pre-employment audiogram or within 180 days of hire, to act as a baseline to which future annual audiograms will be compared.
- The District's audiometric program must be under the supervision of a licensed or certified audiologist, otolaryngologist, or qualified physician.

District employees must recognize the potential for noise related hearing loss and that an effective hearing conservation program will reduce that potential.

Annual training is required to reinforce employee understanding and respect for the hazards of exposure to noise, and how to use hearing protection.

Hearing conservation training shall be provided on an annual basis and to new employees before exposure to hazardous noise conditions. Additionally, when new hazardous noise conditions are discovered or changes to an existing assessment are made, additional training may be required.

All employees who are exposed to hazardous noise conditions shall be trained in the proper use of the hearing protection following manufacturer's instructions.

EQUIPMENT AND LOCATIONS

The following table lists typical equipment and locations that can have hazardous noise exposures. This is intended only as a starting point – your districts hazardous noise exposures need to be evaluated.

Hazards	dBA Reading	Job Classification	Protection Required
1. Pump Stations			
2. Well House			
3. Lift Stations			
4. Generators			
5. Back Hoes			
6. Dump Trucks			
7. Vacuum Truck			
8. Lawnmowers			
9. Weed Eaters			
10. Jack Hammer			
11. Compressor			
12. Compactor			
13. Construction Sites			
14. Maintenance Shops			
15. Office Equipment			
16. Chain Saw			
17. Asphalt Roller			
18. Cut-off Saw			
19. Ditch Pump			
20. Shop Vacuum			
21. Hole Hog			
22. Other			
23. Other			
24. Other			
25. Other			

SAFE OPERATING PRACTICES

Hazard Protection

Complete removal of a noise hazard is optimal. If this is not feasible, the following controls are to be employed in descending order of preference.

PERSONAL PROTECTIVE EQUIPMENT

The district provides foam type earplugs and ear muffs. If a recommendation by an Audiologist or other Licensed Health Care Provider indicates that a different type or style of hearing protection for a specific employee is required, this will be provided at no cost to the employee.

Selection of PPE should involve a cross section of end users to determine what the district will provide. This will help ensure that the greatest number of employees have input into the selection of PPE and will likely be more receptive to using the PPE.

EMPLOYEE TRAINING

EXEMPTIONS AND EXCLUSIONS

No employee is exempt or excluded from this program if they are exposed or potentially exposed to hazardous noise levels in the workplace.

REGULATORY

Chapter 296-817 WAC Hearing Loss Prevention Program
CFR 1910.95 Occupational Noise Exposures

PROGRAM REVIEW AND UPDATE

Revision No.	Revision Date	Approval Date	Change
1.0.0	5/10/18		Grammatical updates and converted to new SORT template
