Continual unprotected exposure to noise louder than 85 decibels (dB) on the A scale (dBA) for 8 hours may result in hearing impairment or loss. Including employees exposed to loud noise at work in a hearing conservation program will prevent hearing impairment or loss, or further deterioration.

Noise exposure is addressed separately in OSHA General & Construction Industry Standards. Requirements under the General Industry Standard (29 CFR 1910.95) are more stringent and offer greater protection. Based on Department operations, the majority, if not all, employees exposed to high noise levels fall under General Industry.

Noise standards are based on a time weighted average (TWA) calculated as the average sound over an eight hour period. OSHA uses the A weighted sound scale for measuring occupational noise exposure, which weighs noise in the high frequency range and is most damaging to the human ear. Measurement of noise exposure is expressed as “dBA” or decibels on the A weighted scale.

POLICY

This Safety Bulletin outlines OSHA requirements; criteria for participation; and Department intention and efforts to become fully compliant.

Employees exposed to noise in excess of 85dBA over 8 hours shall be placed in a Hearing Conservation Program (HCP). Determination to include employees is based upon representative noise monitoring and reasonably anticipated job duties. Visitors and employees occasionally exposed to noise for limited durations are not required to be included in a hearing conservation program, but should wear hearing protection and exercise reasonable judgement.
Effective April 1, 2002, all NYSDOT employees identified at risk for hearing loss shall be included in a hearing conservation program. Program managers should consult Employee Safety & Health regarding determination for their respective program. Any employee who feels that he or she is exposed to any undesirable level of noise may request, and shall be provided, reasonable hearing protection.

Employees with an occupational hearing loss shall wear hearing protection for any task causing noise greater than 85 dBA TWA. Though generally the OSHA action level (85 dBA) only requires the employer to supply hearing protection, but does not mandate its use, where hearing loss has been identified, hearing protection is mandatory at the 85 dBA level of exposure. Rationale for the more stringent requirement is that those with noise-induced hearing loss are more susceptible to continued hearing deterioration.

REGULATIONS

Employees exposed to noise in excess of the following levels/durations shall be included in a hearing conservation program and hearing protection shall be mandatory. For employees exposed to noise in excess of the values shown in the chart below, the Department shall reduce their exposure by engineering controls, when feasible; administrative controls (reducing exposure by modifying work procedures); and/or personal protective equipment (ear muffs and ear plugs). Employees still overexposed after engineering and administrative controls have been implemented shall wear hearing protection, and be included in a hearing conservation program.

<table>
<thead>
<tr>
<th>Hours Per Day</th>
<th>Exposure Limit Decibels (dBA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>85</td>
</tr>
<tr>
<td>4</td>
<td>90</td>
</tr>
<tr>
<td>2</td>
<td>95</td>
</tr>
<tr>
<td>1</td>
<td>100</td>
</tr>
<tr>
<td>1/2</td>
<td>105</td>
</tr>
</tbody>
</table>

HEARING CONSERVATION PROGRAM (HCP)

Hearing Conservation Programs shall contain the following components:

- **Hearing Protection** - Employees exposed to noise levels greater than 90 dBA (TWA) shall be supplied with hearing protection and shall wear it. Hearing protection shall be made available to employees with exposure greater than 85 dBA (TWA), but less than 90. Both ear muffs and plugs shall be provided. Within this range, the decision to wear hearing protection lies with the employee, except when a noise induced hearing loss exists.

- **Training** - All employees in the HCP shall be trained annually on the following:
HEARING CONSERVATION

- Effects of noise on hearing
- Purpose of wearing hearing protection
- Selection and proper use of hearing protection
- Avoiding overexposure to noise away from work
- Value of audiometric testing

- **Audiometric Testing** - Employees exposed to an 8 hour time-weighted average of 85 decibels or greater shall be offered baseline and annual audiometric examinations. Employees who refuse shall be asked to sign a declination. Results of subsequent annual exams shall be compared to baseline data to determine if the audiogram is valid and if there is a change in the employee’s hearing (Standard Threshold Shift or STS). Examinations shall be performed by an audiologist, otolaryngologist, qualified physician, or technician supervised by one of the first three. Employee exposure to noise shall be minimized for fourteen hours prior to examination. Hearing protection can be used to minimize exposure.

**ENGINEERING CONTROLS**

Noise may be reduced by introducing changes in equipment design and/or application. This is the most desirable approach to controlling excessive noise. Engineering controls are most successful where loud equipment is in one location. Isolating the process (with partitions, for e.g.); equipment modification (reducing vibration and eliminating metal to metal impact); and equipment replacement are typical practices. Identifying another means of accomplishing the work is another option.

**ADMINISTRATIVE CONTROLS**

Noise may be reduced by changing work procedures in some occupational situations. Discontinuing loud operations in highly populated locations; limiting duration of exposure; and varying task assignments are typical practices. Limiting the number of employees who perform a task and rotating assignments are others. These actions reduce the number of employees required to be in a hearing conservation program.

**SELECTION OF HEARING PROTECTION**

A successful HCP requires selection of proper hearing protection for each employee. No one style or manufacturer line is acceptable for all employees and all tasks. Management, in consultation with Employee Safety & Health, shall evaluate tasks for:

- Need to communicate among employees
- Level of protection required
- Maintaining sanitary conditions (inserts)
- Compatibility of ear muffs with other personal protective equipment
When the appropriate type of hearing protection has been identified, the Department shall allow employees to reasonably select from different styles. Employees shall be instructed in proper wearing of selected protectors.

Ear muffs and ear plugs are available in different sizes. Ear muffs shall have adjustable head bands, hold the ear pieces tightly to the sides of the head, and make a tight seal. Most ear plugs are designed to fit the “average” male ear canal, and thus are too large for some men and most women. Improperly sized plugs will cause discomfort due to constant pressure against the ear canal. Smaller ear plugs should be available.

**AUDIOMETRIC TESTING**

Employees in a HCP shall receive an annual audiometric (hearing) test to evaluate effectiveness of the program. An audiometric test shall be performed for all employees newly assigned to tasks which expose them to noise levels greater than 85 dBA TWA. The test should be performed within the first 30 days of such assignment. Employees who transfer from another program in which they were participating in a hearing conservation program need not be retested.

Audiometric testing indicates ability to hear a series of frequencies or tones. By convention, zero (0) decibels is used as the level which an average person with good hearing will first hear each tone. If a person needs the loudness increased, it indicates a hearing loss. Generally, equal loss of hearing at each tone is associated with disease or physical injury. Loss of hearing in the high pitch tones (frequencies) is associated with exposure to noise.

Employees shall be notified if a comparison of the annual audiometric examination to the baseline audiogram indicates an STS. If the STS is determined by a physician to be work related, the employee shall be fitted or refitted with adequate hearing protectors, trained in their use and care, and required to use them. In these cases, the injury reporting procedure shall be followed. Employees shall be referred for further testing if a professional determines that test results are questionable, or if employees have a medical condition caused or aggravated by wearing hearing protectors. If the suspected medical problem is not related to wearing protectors, the employee shall be informed of the further need to see a physician.

**RECORD KEEPING**

Noise exposure measurement records shall be kept for two years. Records of audiometric exam results shall be maintained for the duration of the affected employee’s employment, and shall include employee name and title, exam date, examiner's name, date of acoustic or exhaustive calibration, measurements of the background sound pressure levels in exam room, and the employee’s most recent noise exposure measurement. All records shall be made available to employees upon request.