



NOISE BARRIERWALL FACT SHEET

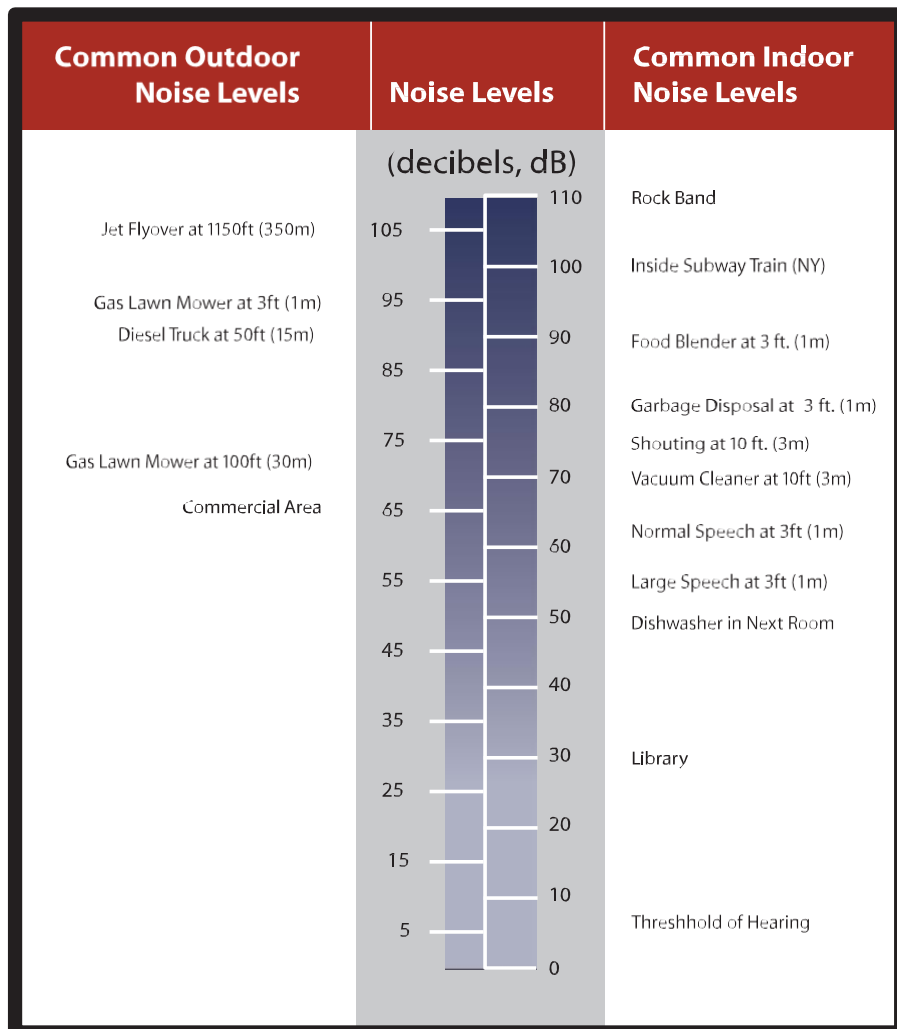
What is noise? How is it measured?

Noise is defined as unwanted sound and can come from both man-made and natural sources. Sound levels are measured in decibels (dB) and typically range from 40 to 100 dB. As a rough guide:

- A 3 dB increase can barely be detected
- A 5 dB increase is clearly detectable
- A 10 dB increase is twice as loud as the starting noise level

Because human hearing is limited in its detection of very high and low frequencies, “A-weighting” is commonly applied to sound levels to better characterize its effects on humans. A-weighted sound levels are expressed as dB(A). The chart on this page shows typical noise levels for some common sources.

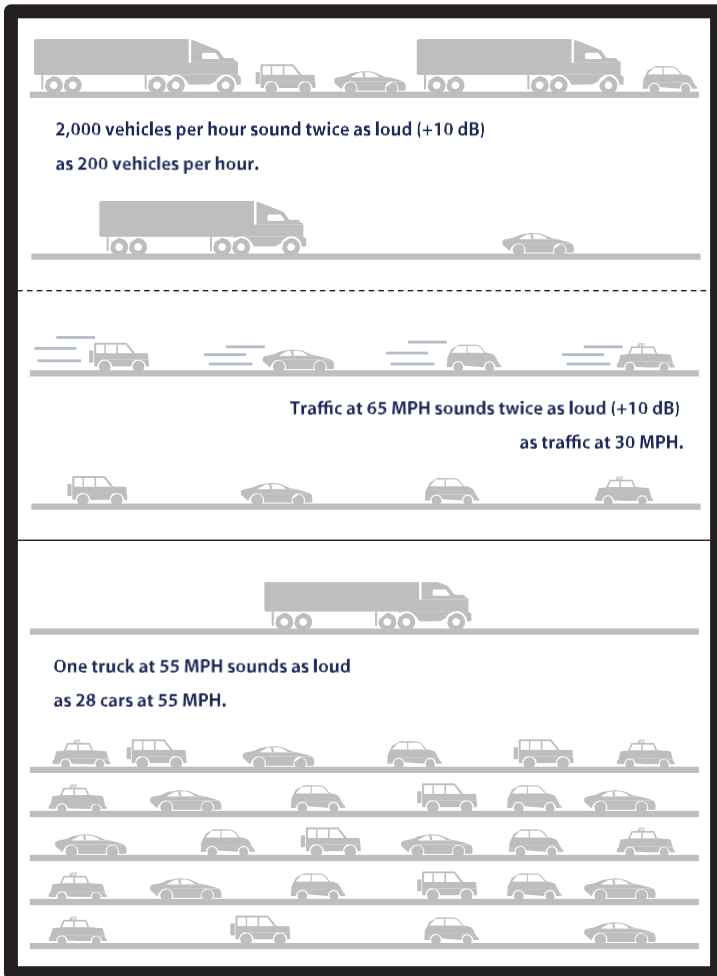
Because noise in our daily environment varies over time, and sustained noise levels (such as a nearby highway) interfere with our daily activities to a greater extent than short, louder noises (such as a single car horn), traffic noise analyses typically consider average noise levels over a one- hour period.



Who regulates highway noise? How do you determine a noise “impact”?

The Federal Highway Administration (FHWA) has developed regulations (23 CFR 772) that specify the requirements that highway agencies must meet on federally funded highway projects, and the Connecticut Dept. of Transportation (CTDOT) has outlined its implementation guidance in its highway traffic noise abatement policy. The policy establishes two criteria for identifying traffic noise resulting from a highway project. The first is where future predicted noise levels would “approach or exceed” a set of Noise Abatement Criteria (NAC) established by FHWA regulations. For outdoor uses in residential areas, the NAC is 67 dB(A); CTDOT defines approaching as within 1 dB (i.e. 66 dB(A) for residential areas). Therefore, locations where future noise levels are predicted to be 66 decibels or higher are considered “impacted.”

The second criteria for identifying an “impact” involves locations where noise levels are expected to increase by 15 decibels or more over existing levels.



What causes traffic noise?

The level of highway traffic noise depends on three things:

- The volume of traffic
- The speed of traffic
- The number of trucks in the flow of traffic.

As any of these factors increase, noise levels increase. Traffic noise can also be increased by defective mufflers and steep hills that require truck engines to labor. Traffic noise can be decreased by distance, terrain, or man-made obstacles.

How are future noise levels predicted?

When planning a highway project, the FHWA Traffic Noise Model uses the inputs described above as well as the number of buses and motorcycles to predict noise levels during the noisiest hour of the day. Based on the noise levels predicted, the model identifies where impacts will occur and a noise barrier wall should be considered as part of the project.

How can noise impacts be mitigated?

Traffic noise impacts can be potentially reduced by modifying either the source of the noise (speed, volume or type of vehicles on the highway), the location of the receiver (the person who hears the noise), or the path by which the noise reaches the receiver. Because it is impractical to reduce the speed, volume or type of vehicles on a highway, or to relocate residences solely due to noise impacts, the most common approach to mitigating noise is the construction of noise barrier walls.

How does CTDOT determine if noise barrier walls should be constructed?

A noise barrier wall is proposed when a noise impact will occur as a result of a project and the noise barrier wall is found to be feasible and reasonable. CTDOT considers engineering factors, acoustic feasibility, meeting a 7-dB(A) reduction design goal, public opinion, and final cost in determining if a noise barrier wall is reasonable and feasible.

What if I don't want a noise barrier wall?

While residential property owners and/or residents generally support the construction of noise barrier walls, some commercial property owners and/or residents may prefer to not have a noise barrier wall constructed adjacent to their property. For example, a business that relies on visibility from the highway to attract customers may prefer a noise barrier wall not be built, despite its reduction of noise on their property. Some residents have negative reactions to noise barrier walls because they restrict their views, cause a feeling of confinement, loss of sunlight or are unsightly.

Prior to approving construction of noise barrier walls, CTDOT surveys affected property owners and/or residents to gauge their interest, and two-thirds of the solicited viewpoints must be in favor of the noise barrier wall for it to be considered.

What do noise barrier walls look like?

Noise barrier walls typically consist of panels made from various material placed between supports. The height and location of the noise barrier wall is determined by the Traffic Noise Model analysis.

Where will the noise barrier walls be located? Who will maintain them?

CTDOT constructs noise barrier walls only on CTDOT owned property and is responsible for maintaining them.

