



Engineering a Quieter America

Exposure to excessive noise affects the quality of life for all Americans. New efforts to manage noise, design quieter buildings, products, and transportation vehicles, and enact noise-related legislation need to be made, according to a new report from the National Academy of Engineering.

and allow market forces to operate can play an important role.

Technology alone will not solve all noise problems, but problems that are amenable to technical solutions can be solved

The report assesses major sources of noise (transportation, machinery and equipment, consumer products, etc.), how they are characterized, efforts to reduce noise emissions, and efforts to reduce noise in workplaces, schools, recreational environments, and residences. The report reviews regulations that govern noise levels and the roles of federal, state, and local agencies in noise regulation. It also examines cost-benefit trade-offs between different approaches to noise abatement, the availability of public information on noise mitigation, and noise-control education in U.S. schools of engineering.

The findings focused on several critical areas: *Hazardous noise*—Occupational noise exposure limits should be reduced and engineering controls should be the primary focus of controlling workplace noise.

“Buy-quiet” programs that promote the procurement of low noise equipment

by engineers with appropriate support from economists, psychologists, medical specialists, educators, and the government.

Standards and Regulation—European manufacturers have gained an advantage over their U.S. counterparts in meeting demands for low-noise machinery and other products worldwide, in part due to stricter EU regulations. Innovation by American manufacturers can

reduce this advantage.

Cost-benefit analysis—The Federal Aviation Administration has been proactive in cost-benefit analysis of noise reduction at airports; these studies, along with similar research from Europe, could lead to highway noise reduction.

Metrics—Advances in the ability to collect, store, and analyze noise data challenge us to reexamine metrics that were developed in the 1970s.

For more information on the report, contact the project’s study director, Proctor Reid, at preid@nae.edu. The report can be found online at <http://bit.ly/NAENoise>.

Noise Notes

Consumers rank “noise” as one of the top five characteristics when comparing product performance.

At highway speeds, tire-road interaction noise is louder than noise from vehicles themselves.

“Buy Quiet” programs foster identification and procurement of low-noise products for the workplace and public spaces.

Selected Recommendations

- The U.S. Department of Labor should review and lower limits on occupational noise exposure.
- Congress should designate, and adequately fund the U.S. Environmental Protection Agency as the lead agency in development of a public-private cooperative effort on noise measurement, abatement and control.
- The government should perform cost-benefit analyses to compare noise-reducing pavement technology with the installation of noise barriers
- The U.S. Environmental Protection Agency should fund the development of a uniform system of labeling product noise through international agreements.