INTRODUCTION

Michael Lash
Federal Highway Administration

Surveys consistently show that, of all the impacts of highways, noise disturbs the public the most. Many government agencies, including highway agencies, are now trying to solve this problem. Based on a requirement in the Federal-Aid Highway Act of 1970, all federal-aid projects must be examined with respect to noise impacts. If levels are found to exceed a given standard, an effort must be made to reduce the noise to acceptable levels. As a result of federal highway legislation passed in 1973, highway agencies must be concerned with reducing noise not only from new highway construction but also from existing highways. We have been at this for only a few years, but we have learned that the job is a staggering one, that the tools available through highway planning and design to reduce noise are few and limited in their effectiveness, and that the problem of highway noise must be attacked from several different directions if significant progress is to be achieved.

Some important lessons have been learned during the past few years about the control of highway traffic noise. Although federal law directs highway agencies to consider the problem of noise during the development of highway projects, they are generally limited to measures that can be taken during the planning and design phases of a highway project, and those measures do not always solve the noise problem. Substantial reductions in noise will require coordinated efforts to reduce sound at the source (the
motor vehicle), to control the use of land in the vicinity of the highway, and to include noise abatement measures in the planning and design of highways.

Even though most highway agencies do not have legal authority to exercise noise source control or land use control, they should become thoroughly informed on those controls and use their knowledge and influence to stimulate progress in these areas. Unless improvements are made in source control and land use control, noise abatement efforts by highway agencies will produce meager results at great public cost.

This does not mean that highway planners and designers can abandon their noise abatement efforts in the development of highway projects. On many freeway projects, noise reductions can be obtained by shifting the horizontal alignment, depressing the roadway, or constructing noise barriers. On other types of roadways, noise abatement may be possible through "soundproofing" public buildings. Traffic operation controls on vehicle types and hours of operation on selected roads and streets may also be feasible.

There are constraints, however, on using these solutions. Many times horizontal alignment cannot be shifted, particularly on existing roads that are to be improved. In other cases, important natural or man-made features govern the vertical alignment and prevent depression of the roadway. Noise barriers cannot or should not always be constructed, for example, when a noise barrier conflicts with safety, aesthetics, or local community desires. In addition, noise barriers are expensive. Continuous barriers on both sides of a road could cost as much as $1 million per mile of roadway. Most significantly, noise barrier construction is physically possible only on freeways and expressways because 1,000 feet or more of uninterrupted length is required for significant abatement.

The highest payoff will likely come from source control. This is probably the only relief available to the multitude of people who occupy or use the noise-sensitive facilities adjacent to several hundred thousand miles of existing roads and streets.

The participants in the Workshop on Motor Vehicle Noise Control explored this proposition and evaluated what is being achieved and what can be achieved through source control techniques. The purposes of the workshop were to

1. Assist those concerned with highway traffic noise in developing a broader perspective on how the problem can be solved;
2. Specifically examine in some depth the present activities and state of progress on one direction of attack, namely, controlling noise at the source;
3. Appraise the extent of the overall traffic noise reduction that is possible and that can reasonably be expected to result from vehicle source control in the future; and
4. Identify and describe actions that can be taken by federal, state, and local governments and industry to control vehicle noise at the source.