



FDM 23-1-1 Introduction

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1.1 Originator

The WisDOT Noise and Air Quality Engineer is the originator of this chapter. Questions and comments on the contents of this chapter should be directed to Jay Waldschmidt, (608) 267-9806, jay.waldschmidt@dot.wi.gov.

1.2 Objective

The objective of this chapter is to help project managers develop their projects in compliance with federal and state laws regarding noise impact determination and mitigation. The chapter will explain the user how to:

- Determine if a noise analysis is required
- Conduct an analysis if required
- Determine whether or not a noise impact occurs
- If an impact occurs, conduct an analysis of abatement measures to determine whether or not they are feasible, reasonable, and likely to be incorporated
- Involve the public in abatement incorporation decision making
- Properly document the results of the noise impact determination and mitigation process

1.3 Background

The procedures incorporated in this chapter are applicable to operations on all highways and incorporate the pertinent policies and procedures of the Federal Highway Administration (FHWA). Consequently, any highway improvement project developed by any unit of government consistent with this procedure should qualify for federal funding on the basis of meeting applicable noise considerations.

There are two aspects to noise investigation: traffic noise and construction noise. How to evaluate the more complex and prolonged potential impact of traffic noise is explained in Chapter 23, Sections 15, 20, 25, 30 and 35. The more temporary potential impact of construction noise is addressed in Section 40.

Highway noise, similar to other noise transmissions, requires the presence of three elements--a source, a path, and a receiver. The transportation agency can have the most influence upon the second of these, the noise path. Specifically, it can do a number of things in highway location and design to lengthen and/or interrupt that path and thereby lessen the noise levels affecting the receptor. There are, however, few means by which it can change the characteristics of the receiver. Potential options would appear to be limited to removing or preventing the existence of receptors (human activity).

The source does present some very limited opportunities for noise reduction. Noise at the source is created by the motor vehicle, and the interaction between the vehicle and the pavement. Consequently, some of the vehicle noise influencing factors such as grades, stop-and-go situations, and speed can be effectively manipulated. Generally, however, these have only minimal effect on overall noise levels.

An overview of the procedures used in preparing a highway noise analysis is included in [Attachment 1.1](#).

A glossary of abbreviations, acronyms and definitions is included in [Attachment 1.2](#).

LIST OF ATTACHMENTS

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| Attachment 1.1 | Procedures for Preparing a Highway Noise Analysis |
| Attachment 1.2 | Glossary |