



Transit Noise and Vibration Impact Assessment Manual

Background

The Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of the National Environmental Policy Act of 1969 (NEPA) require that a federally-funded project be assessed for its impact on the human and natural environment prior to implementation. The Federal Transit Administration (FTA) is subject to regulations at 23 CFR part 771(3) to implement NEPA for transit projects. Effects to the human environment that may result from noise and vibration impacts are part of the NEPA environmental review that FTA must conduct. Noise and vibration are sometimes among the major concerns regarding the effects of a transit project on the surrounding community.

This report is the third edition of a guidance manual originally issued in 1995. This edition is being published to provide clarifications to existing policy and updates to outdated references where applicable, as Noise and Vibration Impact Assessment methodologies evolve.

Objectives

This objective of this manual is to provide technical guidance for conducting noise and vibration analyses for transit projects and incorporation into FTA's NEPA environmental review documents.

Findings and Conclusions

The manual presents procedures for predicting and assessing noise and vibration impacts of proposed transit projects for different stages of project development and different levels of analysis.

The goals of a transit noise and vibration impact assessment are to determine existing noise and vibration levels, assess project noise and vibration for potential impact, and evaluate the effect of mitigation options on impacts. The manual includes procedures for predicting and assessing noise and vibration impacts of proposed transit projects for different stages of project development and different levels of analysis. Additional topics included in this manual are descriptions of noise and vibration mitigation measures, construction noise and vibration, and how to present these analyses in the FTA's environmental documents.

The manual details the steps needed to conduct a noise and vibration impact assessment for transit projects, as follows:

- Step 1. Determine appropriate impact criteria.
- Step 2. Conduct screening and determine appropriate level of noise analysis, analyze project noise impacts, and evaluate mitigation options if appropriate.
- Step 3. Determine appropriate level of vibration analysis, analyze project vibration impacts, and evaluate mitigation options if appropriate.
- Step 4. Analyze construction noise and vibration impacts.
- Step 5. Document findings.

Benefits

This guidance was prepared for technical specialists who conduct the analyses, as well as project sponsor staff, federal agency reviewers, and members of the general public who may be affected by the projects.

Project Information

FTA Report No. CHARLIE6

The original 1995 version of this manual was developed by Harris Miller Miller & Hanson Inc. (HMMH) and peer-reviewed by specialists in acoustics and environmental planning and analysis. HMMH updated the original manual in 2006. Updates for this current version were provided by the John A. Volpe National Transportation Systems Center, Cross Spectrum Acoustics, FTA, and a panel of experts. For more information, contact FTA Project Manager Antoinette Quagliata at (202) 366-4265 or Antoinette.quagliata@dot.gov. All research reports can be found at <https://www.transit.dot.gov/about/research-innovation>.