

Roadway Construction Noise Model - RCNM

A recently developed analysis tool is the FHWA Roadway Construction Noise Model (RCNM). The RCNM is a new, state-of-the-art computer program that enables the prediction of construction noise levels for a variety of construction operations based on a compilation of empirical data and the application of acoustical propagation formulas. The program enables the calculation of construction noise levels in more detail than manual methods while avoiding the need to collect extensive amounts of project-specific input data.

FHWA Roadway Construction Noise Model (FHWA RCNM) Version 1.1. To download the [FHWA RCNM Version 1.1](#), [click here](#). (7.5 MB zip)

This model is not required to be used on Federal-aid projects; however this model is a screening tool that can be used for the prediction of construction noise during the various stages of project development and construction. Several program activities will be initiated to provide guidance on the various ways the FHWA RCNM can be implemented into project development and construction activities. The attached memo provides additional information on the FHWA RCNM.

If the FHWA RCNM version 1.0 has already been installed, then it must be uninstalled before installing version 1.1.

The FHWA RCNM version 1.0 Distribution Memo - February 15, 2006. FHWA RCNM Version 1.0 User Guide ([HTML version](#)) or ([PDF version 1.24 MB](#)) is a great resource document that illustrates how to best utilize the FHWA RCNM Version 1.0

Additional Information Regarding the FHWA RCNM. The FHWA Roadway Construction Noise Model (FHWA RCNM) Version 1.0 is a Windows-based program that is available without cost or obligation for use in predicting noise for highway construction projects of varying complexity.

Construction noise must be considered as part of the development of any transportation facility. Roadway construction is often conducted in close proximity to residences and businesses and should be controlled and monitored in order to avoid excessive noise impacts. In addition to community issues, excessive noise can threaten a construction project's schedule. In general, a project's schedule can be maintained by balancing the type, time of day and duration of construction activities; adhering to local noise control requirements; and being proactive to community concerns. To aid in this process, the FHWA has developed a construction noise screening tool. The FHWA RCNM is a national model for the prediction of construction noise. This model is not required for use on Federal-aid projects; however, it can be used for the prediction of construction noise during the project development and construction phases.

The FHWA RCNM is based on the construction noise prediction spreadsheet developed for the Central Artery/Tunnel Project in Boston, Massachusetts (CA/T Project or "Big Dig") by Parsons Brinckerhoff Quade & Douglas, Inc. The CA/T Project is the largest urban construction project ever conducted in the United States and has the most comprehensive noise control specification ever developed in the United States. FHWA RCNM incorporates the CA/T Project's noise limit criteria and extensive construction equipment noise database, where these parameters can be modified according to each user's needs. Users can also activate and analyze multiple pieces of equipment simultaneously and define multiple receptor locations, including land-use type and baseline noise levels, where the FHWA RCNM will calculate sound level results for multiple metrics.

The intended use for the FHWA RCNM is as a construction noise screening tool. It is based on the CA/T prediction spreadsheet, not on the FHWA Traffic Noise Model® (FHWA TNM) or the FHWA Highway Construction Noise Computer Program (HICNOM, developed in 1982). The FHWA RCNM predicts noise from highway construction operations based on a compilation of empirical data and the application of acoustical propagation formulas. It enables the calculation of construction noise levels in more detail than manual methods while avoiding the need to collect extensive amounts of project-specific input data (as is required by HICNOM, a data-intensive and more comprehensive method for construction noise prediction).

