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Barrier Performance Module

This module provides to the user a measure on the barrier's effectiveness on noise reduction. A list of the input/output variables and their definitions, as well as illustrations of different scenarios are provided.

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Calculator

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Descriptions of the Input/Output variables can be viewed by clicking [here](#).

Note: Tool tips, containing field specific information, have been added in this tool and may be accessed by hovering over the Input and Output variables with the mouse.

Road/Rail Site DNL:
66.6595

Note: Barrier height must block the line of sight

Input Data			
H	30	R ¹	110
S	6	D ¹	70
O	6	a	110
Calculate Output			

Output Data			
h	24	R	110
D	70	FS	4.2377

New Site DNL: **62.4218**

Refresh

Note: If you have separate Road and Rail DNL values, please enter the values below to calculate the new site DNL:

Road DNL: Rail DNL:
Combined New Site DNL:

Input/Output Variables

Input Variables

The following variables and definitions from the barrier being assessed are the input required for the web-based barrier performance module:

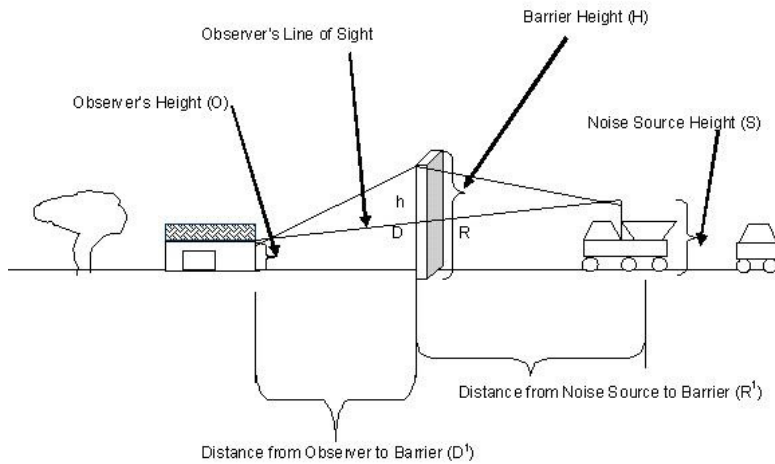
- H = Barrier Height
- S = Noise Source Height
- O = Observer Height (known as the receiver)
- R^1 = Distance from Noise Source to Barrier
- D^1 = Distance from the Observer to the Barrier
- a = Line of sight angle between the Observer and the Noise Source, subtended by the barrier at observer's location

Output Variables

Definitions of the output variables from the mitigation module of the Day/Night Noise Level Assessment Tools as part of the Assessment Tools for Environmental Compliance:

- h = The shortest distance from the barrier top to the line of sight from the Noise source to the Observer.
- R = Slant distance along the line of sight from the Barrier to the Noise Source
- D = Slant distance along the line of sight from the Barrier to the Observer

The "actual barrier performance for barriers of finite length" is noted on the worksheets(in the Guidebook) as

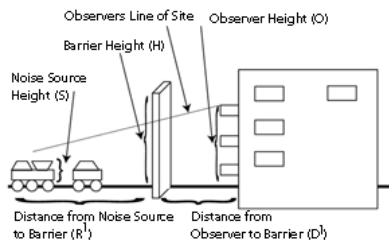


FS.

Barrier Implementation Scenarios

Locate the cursor on the following thumbnails to enlarge the respective scenario as implementation examples of the barrier performance module.

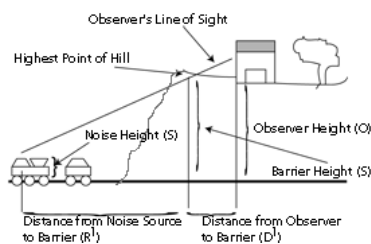
Scenario #1:



[view larger version of image](#)

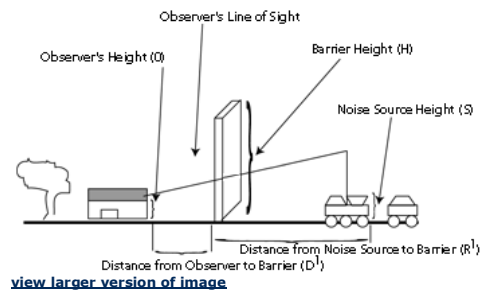
Noise receiver at a higher elevation than the noise source and a man-made noise barrier in between the receiver and the source.

Scenario #2:

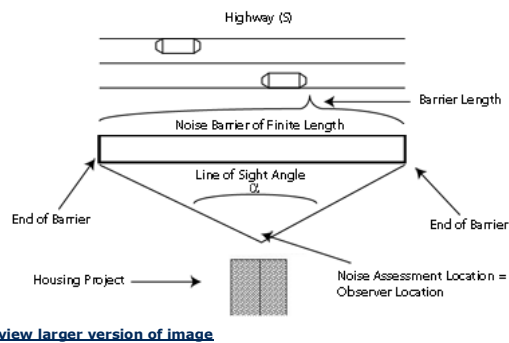


[view larger version of image](#)

Noise receiver at a higher elevation than the noise source and a natural barrier (hill) between the receiver and the source.

Scenario #3:

Noise receiver at almost the same elevation of the noise source and a man-made noise barrier between the receiver and the source.

Scenario #4:

A noise barrier of finite length between a noise source and a receiver. This top view illustrates the angle α , subtended by the barrier at the observer's location.