

PD-33: Noise Abatement

1-5 points

Goal: Reduce traffic noise impacts to surrounding communities and environments.

Sustainability Linkage

The reduction of noise benefits both the human and natural environment. Therefore, this criterion supports the environmental and social principles of the triple bottom line.



Background and Scoring Requirements

Background

The objective of this criterion is to consider options for reducing traffic noise. Evaluating noise impacts is required per the Agency's governing Noise Study and Abatement Policy, however, there are elements of noise management that can provide opportunities for sustainable practices. Noise levels can be reduced by altering the source of the noise (engine and exhaust and tire/pavement interaction) or by protecting the receptors. The most common method of reducing noise, and the only method eligible for Federal-aid highway funding as a noise abatement measure, is compliance with 23 CFR 772 and the highway agency's noise policy/procedures. Compliance with 23 CFR 772 and the highway agency's noise policy/procedure typically results in the construction of a noise barrier, but can also include traffic management measures, alteration of horizontal and vertical alignments by suppressing or moving the roadway further away from the noise receptors, acquisition of real property or interests therein (predominantly unimproved property) to serve as a buffer zone to preempt development which would be adversely impacted by traffic noise, or noise insulation of Activity Category D land use facilities. Another methods to reduce noise levels is by altering pavement type or surface characteristics. While the pavement itself may be Federal-aid reimbursable, the pavement as a noise abatement measure is not Federal-aid reimbursable.

Scoring Requirements

Implement one or more of the methods listed below. **Points for different scoring requirements are cumulative; however, this criterion shall not exceed a total of five points.**

Requirement PD-33.1

2 points. Specialized Noise Barrier Construction

Construct one or more of the following specialized noise barriers on the project to provide noise abatement. Noise barriers must comply with the Agency's governing Noise Study and Abatement Policy.

- Construct a new noise barrier using recycled materials.
- Re-use an existing noise wall previously constructed within the project limits. Over 75% of the existing noise wall material needs to be re-used to be considered.
- Construct an earthen berm using over 80% of excavated soils generated from within the project limits and/or corridor.

Requirement PD-33.2

2 points. Incorporate Traffic System Management Techniques to Reduce Existing Noise Levels

On projects where noise sensitive receptors have been identified, reduce traffic noise by implementing one or more of the following traffic management options:

- Roadway geometry design or traffic control elements that develop free-flow traffic
- Speed limit reductions
- Signage for prohibiting air braking
- Coordinated signals
- Use of roundabouts

Requirement PD-33.3

2 points. Provide a Buffer Zone for Adjacent Noise Sensitive Receptors

Utilize one of the following approaches to provide a noise buffer zone:

- Selection of an alternative that is not within close proximity to noise sensitive receptors or compared to other alternatives has the least amount of noise impacts.
- Shift of the alignment within the right-of-way or adjustment of right-of-way to move the roadway away from noise sensitive receptors.
- Coordination with local officials to create or preserve compatible land uses adjacent to the roadway."

Requirement PD-33.4

1-3 points. Design Quiet Pavements

Design and specify the total new or reconstructed pavement surface area for regularly trafficked lanes of pavement with a pavement type or surface characteristics designed to reduce the noise from the tire/pavement interaction. The On-board Sound Intensity (OBSI) measurement for the pavement type or surface characteristic should not exceed the maximum noise levels listed in Table PD-41d.A for each posted speed limit range. Credit earned for each posted speed range varies based on the percentage of trafficked pavement area that is designed to meet the corresponding maximum noise level. When calculating the trafficked area, do not include shoulders, medians, sidewalks, maintenance and access roads, or other paved areas outside of the travelled way.

TABLE PD-33.4.A. TESTING SPEEDS AND MAXIMUM AVERAGE OBSI NOISE LEVELS

Posted Speed Limit	Maximum Noise Level	Minimum Percentage Trafficked Area		
		1 point	2 points	3 points
55 mph or more	98 dBA	20%	40%	60%
30 to 54 mph	90 dBA	40%	60%	80%

Pavement sections with posted speeds less than 30 mph do not qualify for this criterion.

Requirement PD-33.5

1 point. Provide Plantings or Sight Screen to Separate Receptors from Roadway

Construct a vegetative barrier a minimum of 100 feet thick, a minimum of 20 feet high with 100% density.

Resources

None referenced.

Scoring Sources

The project is considered to have met this criterion if the requirements above can be reasonably substantiated through the existence of one or more of the following documentation sources (or equal where not available):

1. Pavement design documentation showing pavement sections to be constructed or reconstructed and their associated surface material type, surface areas, demonstrating that the design was intended to be quiet in accordance with the requirements of this criterion.
2. A calculation to indicate the total percentage of trafficked lane pavement surface areas surfaced with quiet pavement.
3. Design documentation and construction documents showing implemented features.
4. Design studies, including Noise and/or Traffic; and alternatives analysis documentation.