

Since the release of the Highway Traffic Noise: Analysis and Abatement Guidance document in July 2010 in conjunction with the Federal Register publication of the 23 CFR 772 final rulemaking, the FHWA has had several conversations with various internal and external stakeholders. It was clear from these conversations that the FHWA needed to provide additional guidance and clarification on several topics presented in the guidance document. Below is a listing of all areas where additional guidance was added, except for some minor editorial corrections. Page numbers provided correspond to the pdf version of the guidance document.

***Page 6: Noise Compatible Planning***

Additional guidance added: “State or local governments may not use this type of legislation to override construction of a noise barrier deemed feasible and reasonable. It is FHWA’s position that per 772.13 (d)(2)(i) only the residents and property owners at benefiting receptors can make a determination on desirability of feasible and reasonable noise abatement on public right-of-way.”

***Page 8: Highway Traffic Noise Abatement***

Additional guidance added: Local zoning and design requirements, such as height limits on fencing and walls are not acceptable limitations on the configuration or design of noise abatement.

***Page 14: Noise Reduction Design Goal***

Additional guidance added: The highway agency will choose a single value within the range of 7-10 d(BA) for use on all projects and will determine a number of receptors that must achieve the design goal for the abatement measure to achieve this reasonableness criterion. If an abatement measure does not meet the reasonable design goal, the measure is not reasonable for inclusion in the project’s plans, specifications and estimates and is not eligible for federal funding.

***Page 14: Type I Projects***

Additional guidance added: Highway agencies should take a broad approach to defining turn lanes when considering projects with auxiliary lanes. Generally, consideration for auxiliary lanes on local roads should be limited to those that could be used as a through lane (including bus or truck lanes) rather than lanes used for parking, speed change, turning or storage for turning weaving. For interstates, limit consideration to auxiliary lanes between two closely spaced interchanges to accommodate weaving traffic and auxiliary lanes carried through one or more interchanges.

The addition of bus or truck climbing lanes to existing highways can create significant changes in alignment and/or add through-traffic lanes, and is therefore classified as a Type I project.

***Page 19: Type III Projects***

Additional guidance added:

771.117(c)(12) Improvements to existing rest areas and truck weigh stations.

Improvements to existing rest areas and truck weigh stations that involve increased capacity for overnight parking, relocation of parking facilities closer to noise sensitive land uses or other changes in the configuration of the facility that would meet the description of a Type I project.

771.117(c)(13) Ridesharing activities

Construction or expansion of an existing ride-share lot and access roads to a ride-share lot are a Type I project.

771.117 (d)(1) Modernization of a highway by resurfacing, restoration, rehabilitation, reconstruction,

adding shoulders, or adding auxiliary lanes (e.g., parking, weaving, turning, climbing). Construction of auxiliary lanes other than turn lanes are a Type I project per the definition of a Type I project provided in 772.5.

771.117 (d)(3) Bridge rehabilitation, reconstruction or replacement or the construction of grade separation to replace existing at-grade railroad crossings.

Construction of a grade separation to replace existing at-grade railroad crossings is a Type I project because it results in either a new highway on new alignment or a significant change in the vertical alignment of an existing highway. In some cases, the grade separation project results in an overall benefit to the noise environment due to reduced requirements to sound train horns at grade separated crossings. Highway agencies may consider this benefit in the noise analysis. Bridge replacements may result in a Type I project if the bridge is realigned or is substantially different from the existing bridge.

771.117 (d)(5) Construction of new truck weigh stations or rest areas.

Construction of new truck weigh stations or rest areas is a Type I project per the definition of a Type I project provided in 772.5.

**Page 22: Traffic Characteristics**

Additional guidance added: Estimation of the worst hourly traffic noise provides flexibility to highway agencies to consider the effects of seasonal traffic or limit consideration to the typical worst noise hour experienced within the project area.

**Page 24 Determining Existing Noise Levels**

New guidance added: Noise measurements taken in the project study area determine existing noise levels for projects on new alignment. There are times when a combination of measurement and modeling are appropriate, such as in areas that are already heavily developed. Existing noise levels for projects on existing alignment are usually determined through modeling per 772.11(a)(2). Analysts may combine modeling with noise measurements to help determine existing noise levels and establish the loudest noise hour. Please note that use of the term predict within the regulation references modeling.

**Page 25: Impact Determination**

Additional guidance added: These sound levels are to determine impacts. These are the absolute levels requiring consideration for abatement for all Activity Categories except Category F. Design highway traffic noise abatement to meet or exceed the highway agency’s reasonable design goal - not to attain the noise abatement criteria.

**Page 26: Table 5: 23 CFR, Part 772, Table 1 Noise Abatement Criteria (NAC)**

Activity Category	Activity Criteria\2\		Evaluation Location	Activity Description
	Leq(h)	L10(h)		
B\3\	67	70	Exterior	Residential

**Page 27: Activity Category A**

Additional guidance added: The FHWA must approve a land use as Activity Category A before a noise analysis on an Activity Category A is initiated.

Activity Category A land uses are analyzed at this stricter standard even if the land use is identified within an activity category with a higher NAC.

***Page 27: Activity Category B***

Additional guidance added: When analyzing areas with multi-family dwelling units, the analyst must identify all dwelling units predicted to experience highway traffic noise impacts. This may include units above the ground level. Consider abatement for all identified highway traffic noise impacts and implement abatement that is feasible and reasonable. Multi-family dwelling units often have associated common areas for recreational or other use. The highway agency should develop a method to evaluate the number of receptors used to represent these locations considering the use, potential use and capacity limits of the activity area. These common areas are typically available for use by residents of the entire multi-family facility rather than limited to those units near the highway. The number of receptors for common areas includes all users or potential users of the impacted common area(s).

***Page 28: Activity Category C***

Additional guidance added: It is not acceptable to the FHWA to apply a fixed number of equivalent residences (e.g. 1, 5 or 10) to all non-residential land uses or any particular non-residential land use. The equivalent number of residences needs to be based on the context and intensity of each non-residential land use within the project area.

Section 4(f) properties must be analyzed as Activity Category C even if the land use without Section 4(f) designation would be exempt from analysis. Section 4(f) properties are analyzed at this stricter standard even if the Section 4(f) is identified within an activity category with a higher NAC. Analyze Section 4(f) land use designated by FHWA as a Category A land use using the stricter Category A standard.

***Page 28: Activity Category D***

Additional guidance added: Activity Category D overlaps with some land uses in Activity Category C. Only consider the interior levels at these land uses after fully completing an analysis of any outdoor activity areas or determining that exterior abatement measures are not feasible or reasonable.

***Page 29: Activity Category E***

Additional guidance added: Activity Category E is the exterior criteria for, motels, hotels, offices and other developed lands not included in A-D or F. When determining the number or receivers for Activity Category E land uses, the highway agency should make this determination in the same manner that the number or receivers were determined for multi-family residences. Example: If the number of receptors for an apartment complex was determined by taking the total number of units in the building or if the determination involved the capacity limit for the pool or outdoor use area, then this philosophy should be applied to Activity Category E land uses as well.

***Page 30: Exterior Areas of Frequent Human Use***

Additional guidance added: “Exterior areas of frequent human use” are normally located on the ground level, but may include balconies of multi-story residences. When analyzing areas with multi-family dwelling units (e.g., apartments, condominiums, etc.), the analyst should choose an exterior area, such as a patio, playground, or picnic area between the highway and the actual building, if one exists. If there are no ground level exterior areas, the analyst may choose a balcony/deck location for analysis. A highway agency needs to evaluate the context and intensity of the land use when determining frequent human use.

For Category D, if there are no “exterior areas of frequent human use,” the analyst should complete the analysis using interior noise abatement criteria.

***Page 31: Model Validation***

Additional guidance added: 23 CFR 772.11(d)(2) requires validation to verify the accuracy of noise model runs used to predict existing or future noise levels for the project (This has nothing to do with validation of the FHWA TNM model, which accomplished in the TNM Validation Study). The model is validated if existing highway traffic noise levels and predicted highway traffic noise levels for the existing condition are within +/-3 dB(A).

***Page 38: Determining Feasible and Reasonable Highway Traffic Noise Abatement***

Additional guidance added: Reasonableness is based on three required criteria, but may be influenced by consideration of optional criteria. The criteria used for determining reasonableness indicates a broad consideration of conditions that apply in a given location.

***Page 38: Acoustic Feasibility***

Additional guidance added: A noise abatement measure is **NOT FEASIBLE** unless the measure achieves a noise reduction of at least 5 dB(A) for the number of impacted receptors the highway agency identified in their noise policy. Blocking the line of site between the source and receptor usually provides a 5 dB(A) noise reduction.

***Page 38: Allowable Cost of Highway Traffic Noise Abatement***

Additional guidance added: Cost of an abatement measure is an important consideration but only one of three reasonableness factors that must be considered. Each highway agency is required to incorporate a cost index in their highway traffic noise policy. Most highway agencies typically determine reasonable cost by using either a cost/receiver or cost/receiver/dB(A) reduction index. Recently, some States started using a maximum square footage per benefitted residence.

Some highway agencies may choose to implement a tiered approach to cost reasonableness based on regional cost differences within the State. This approach conforms to the regulation. However, the ratio of the unit cost of abatement and the reasonable cost per residence must remain the same statewide.

***Page 39: Noise Reduction Design Goal***

Additional guidance added: The objective of noise abatement is not to reduce predicted noise levels to the noise abatement criteria. The goal of noise abatement is to provide a substantial reduction in noise level as defined by the design goal. A predicted noise level of 69 dB(A) for a Category B activity (see Table 5) should not be reduced to the noise abatement criterion of 67 dB(A). 23 CFR 772.13(d)(2)(iii) introduces the requirement for highway agencies to identify a design goal of at 7-10 dBA to encourage design and construction of effective noise abatement measures. The highway agency will establish the design goal within their noise policy. The noise abatement measure must meet or exceed the highway agency design goal to achieve this reasonableness criterion. Choosing a decibel reduction between 7 and 10 defines the design goal; however, actual noise reductions can exceed the design goal.

***Page 39: Optional Reasonableness Factors***

New guidance added:

In addition to the required reasonableness factors listed in §§772.13(d)(2)(i), (ii) and (iii), a highway agency has the option to also include the following reasonableness factors: date of development, length

of time receivers have been exposed to highway traffic noise impacts, exposure to higher absolute highway traffic noise levels, changes between existing and future build conditions, percentage of mixed zoning development, and use of noise compatible planning concepts by the local government. Since the viewpoints of affected residents and property owners, allowable cost of highway traffic noise abatement and noise reduction design goal are the required factors and no single optional reasonableness factor can be used to determine reasonableness, by default, any optional reasonableness factor can only be used to go above and beyond a highway agency's feasible and reasonable noise abatement. This typically would result in allowing a higher allowable cost based on the number of additional reasonableness factors that are satisfied. However, the use of more than one optional reasonableness factor can be used to determine if a noise abatement measure is reasonable or not.

***Page 40: Date of Development***

Additional guidance added: When considering date of development, some highway agencies categorize land uses into those that predate the existence of the highway and those developed after the highway and consider land uses that predate the highway more favorably than land uses postdating the highway.

Date of development can be an important part of the determination of reasonableness for highway agencies with an established record of providing noise compatible planning information to local officials and for highway agencies that establish an outreach program to provide noise compatible planning strategies in accordance with 772.17(b). After an outreach program is in place, highway agencies may include date of development as part of the reasonableness determination. Highway agencies may not use date of development as a single criterion to determine reasonableness per 772.13(d)(2)(v).

Highway agencies are encouraged to use caution when considering date of development as a reasonableness criterion. The requirement to inform local officials about noise compatible planning is a longstanding component of 23 CFR 772; however, implementation of that requirement by highway agencies was historically inconsistent. The noise policy needs to outline how the highway agency satisfies 772.17.

This discussion on the date of development applies to Type I projects only since date of development has specific meaning to Type II project per 772.15(b).

***Page 40: Length of Time Receives Have Been Exposed to Highway Traffic Noise Impacts***

*It is acceptable to give weight to receivers that have been exposed to traffic noise impacts for longer periods of time than other receivers.*

***Page 40: Changes Between Existing and Future Build Conditions***

It is acceptable to give weight in decision making to changes between the existing and future build condition.

***Page 41: Third Party Participation***

Additional guidance added: A highway agency may consider local participation for Type II projects if the noise abatement measure is feasible and reasonable without consideration for the local participation amount. For example, a state highway agency may require a local match of 20% of the cost of the Type II project. This amount may go toward paying for the project, but not to offset costs of abatement that exceed the cost reasonableness criterion in the state noise policy. The feasibility and reasonableness determination is performed independently of the local contribution.

***Page 44: Statewide Outreach Program***

Additional guidance added: Statewide outreach programs are at the discretion of the highway agency, but states must implement a program to use date of development as a reasonableness criterion or if the state chooses to implement a Type II program. The objective of the program is to provide information on noise compatible planning to local officials and avoid future noise impacts or to encourage local governments to enact requirements for developer provided noise abatement. States may apply the program by jurisdiction, but must develop a uniform and consistent approach for use statewide.

***Page 49: Feasibility and Reasonableness Determination and Worksheet***

Additional guidance added: Each highway agency should develop its own factors under both the feasibility and reasonableness criteria. Keeping in mind that the following are required factors:

1. Feasibility: At least a 5 dB(A) highway traffic noise reduction is achieved at the majority of the impacted receivers.
2. Reasonableness: Point of view of benefitting property owners and residents
3. Reasonableness: Allowable cost of highway traffic noise abatement
4. Reasonableness: Meets or exceeds the reasonable design goal