

Noise Walls

Warranted, Reasonable and Feasible

- Noise levels must approach or exceed FHWA Noise Abatement Criteria
- 10 decibel increase above existing

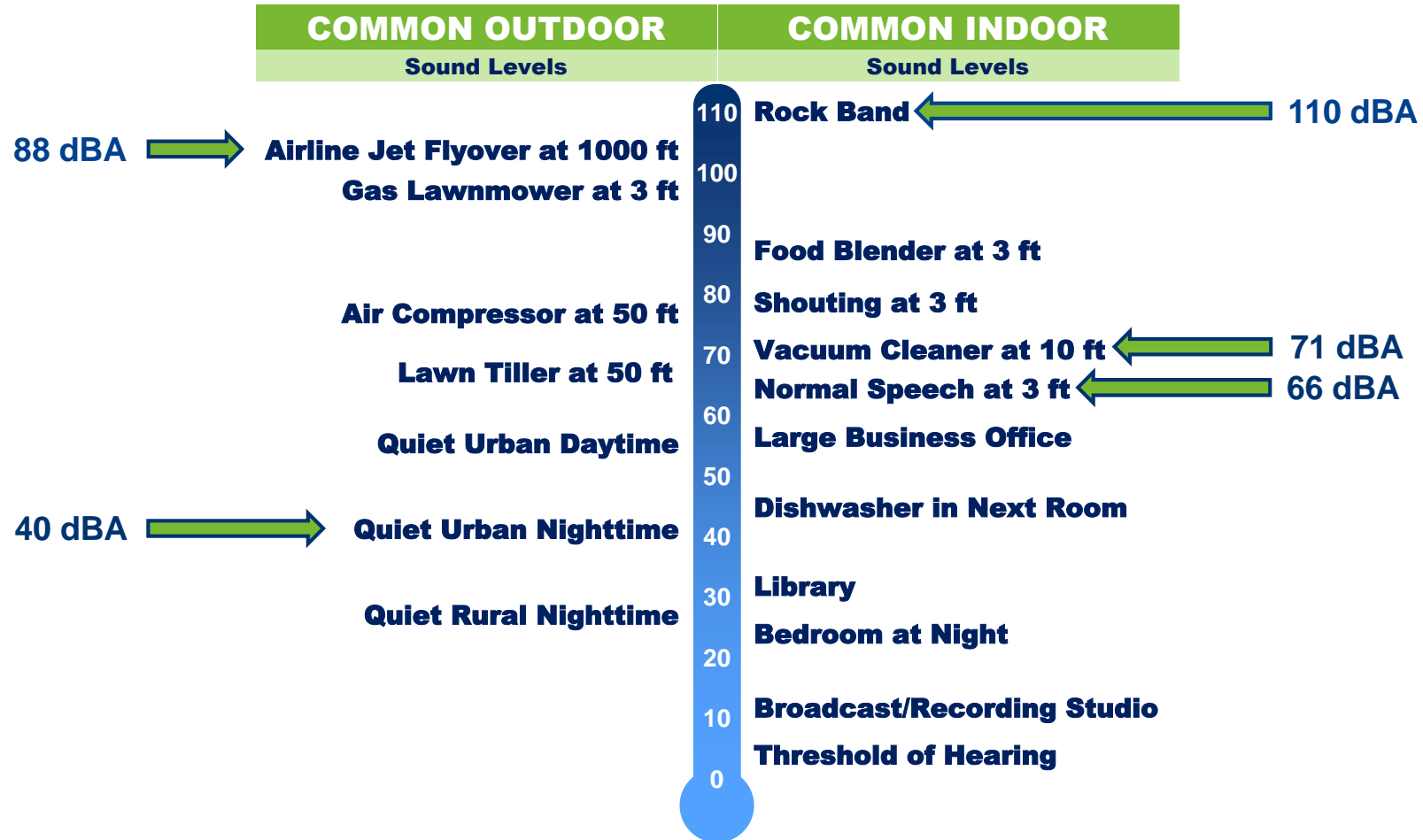
Activity Category	Activity Leq (h)	Evaluation Location	Description of Activity Category
A	57	Exterior	Lands on which serenity and quiet are of extraordinary significance and serve an important public need and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose.
B*	67	Exterior	Residential
C*	67	Exterior	Active sport areas, amphitheaters, auditoriums, campgrounds, cemeteries, day care centers, hospitals, libraries, medical facilities, parks, picnic areas, places of worship, playgrounds, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, recreation areas, Section 4(f) sites, schools, television studios, trails, and trail crossings.
D	52	Interior	Auditoriums, day care centers, hospitals, libraries, medical facilities, places of worship, public meeting rooms, public or nonprofit institutional structures, radio studios, recording studios, schools, and television studios.
E*	72	Exterior	Hotels, motels, offices, restaurants/bars, and other developed lands, properties or activities not included in A-D or F.
F	---	Exterior	Agriculture, airports, bus yards, emergency services, industrial, logging, maintenance facilities, manufacturing, mining, rail yards, retail facilities, ship-yards, utilities (water resources, water treatment, electrical) and warehousing
G	---	---	Undeveloped lands that are not permitted

Source: 23 CFR Part 772

* Includes undeveloped lands permitted for this activity category

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Decibel Level Examples



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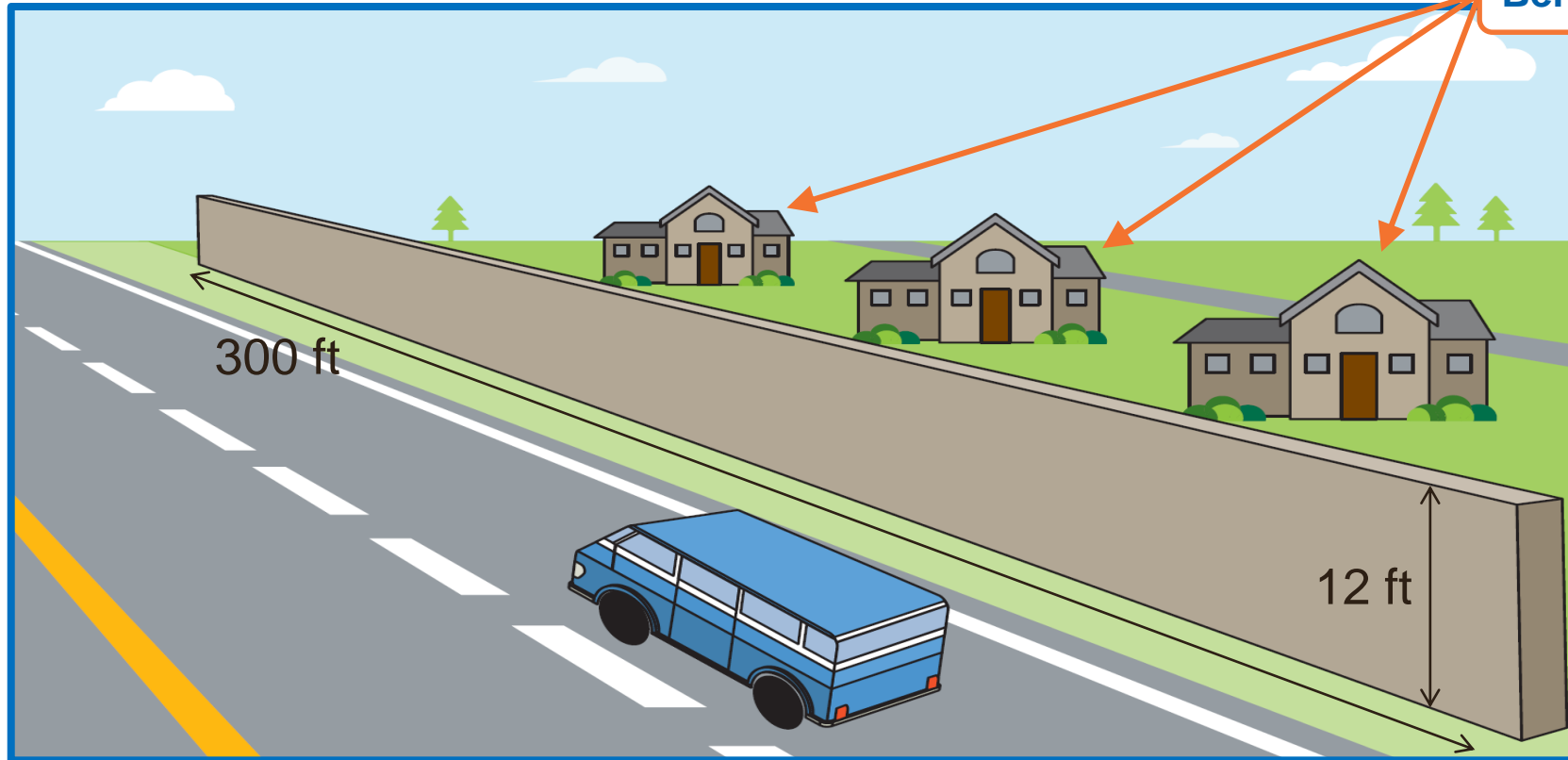


Reasonable

- **Cost-effectiveness:** Maximum 1,600 square feet of noise barrier or less per benefited residence
- **Design goal:** 7 decibels of noise reduction at 1 impacted receptor
- **Viewpoints of the benefited receptors:**
 - Democratic vote of the benefited receptors
 - 50% of the benefited respondents must favor construction
 - Partial mitigation may occur as a result of the vote

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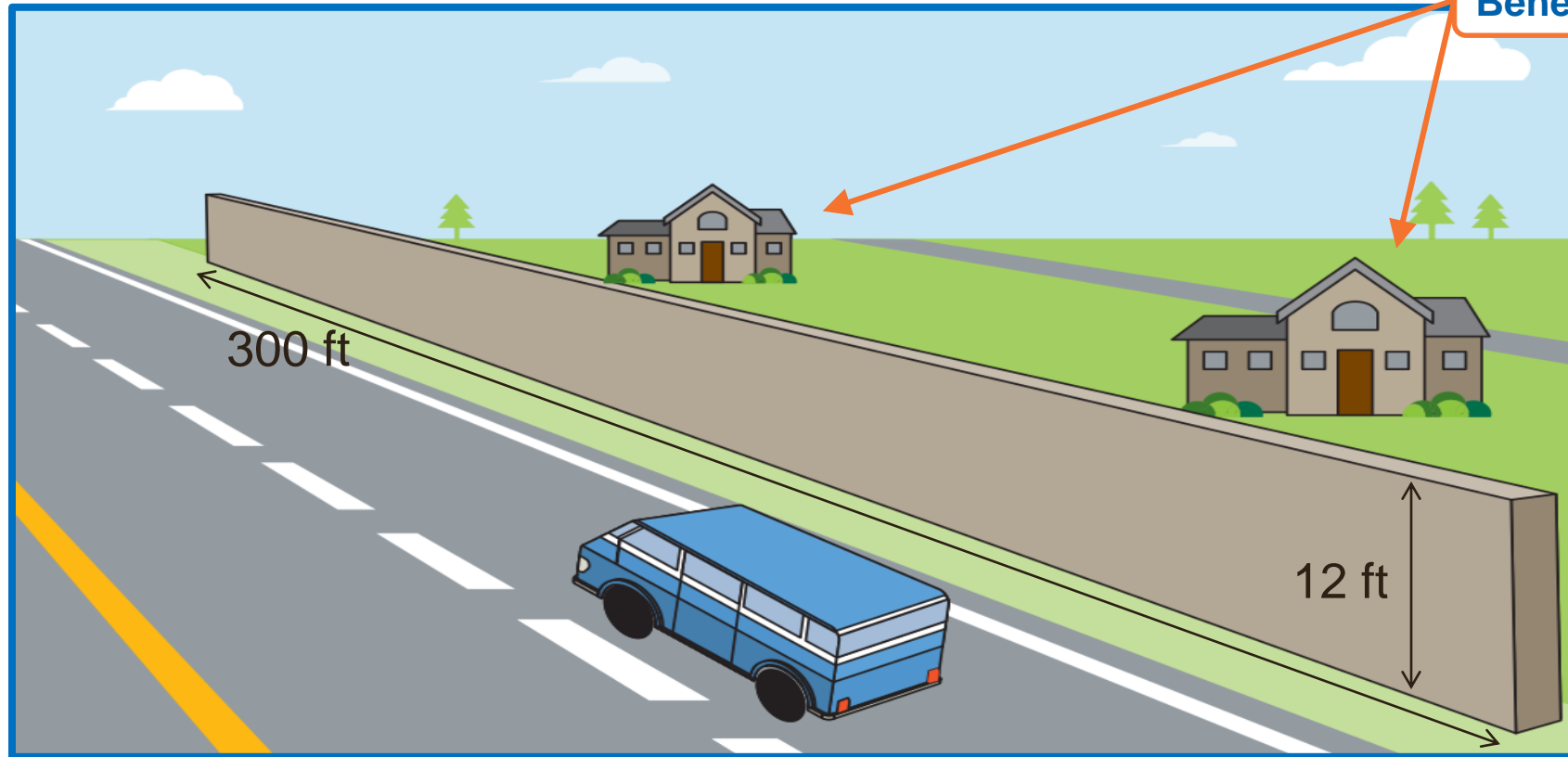


$$\text{Reasonableness} = \frac{300 \times 12}{3} = \frac{3,600}{3} = 1,200 \text{ SF/BR} < 1,600 \text{ SF/BR.}$$

Therefore, meets reasonableness cost-effective criteria.

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Reasonableness = $\frac{300 \times 12}{2} = \frac{3,600}{2} = 1,800 \text{ SF/BR} > 1,600 \text{ SF/BR}$.
Therefore, does not meet reasonableness cost-effective criteria.

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Feasibility

- **Does it work acoustically?**

VDOT requires that 50% or more of the impacted receptors experience 5 dB(A) or more of noise reduction to be feasible.

AND

- **Can it be constructed?**

Factors related to design and construction include; safety, barrier height, topography, drainage, utilities, and maintenance of the abatement measure, maintenance access to adjacent properties, and general access to adjacent properties.