



METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

**Attachment 1**

# **Dulles Corridor Advisory Committee Briefing**

## ***Dulles Toll Road Highway Noise Policy (draft)***

**April 2010**



## Purpose

To outline key elements of the draft *Dulles Toll Road Highway Noise Policy*.



## **Source Documents and Policies for Highway Noise Abatement**

- 23 CFR Part 772 – Procedures for Abatement of Highway Traffic Noise and Construction Noise
- FHWA – Highway Traffic Noise Analysis and Abatement Policy Guidelines
- Traffic Noise Model (TNM) Version 2.5
- Virginia Department of Transportation-State Noise Abatement Policy (January 1, 1997)



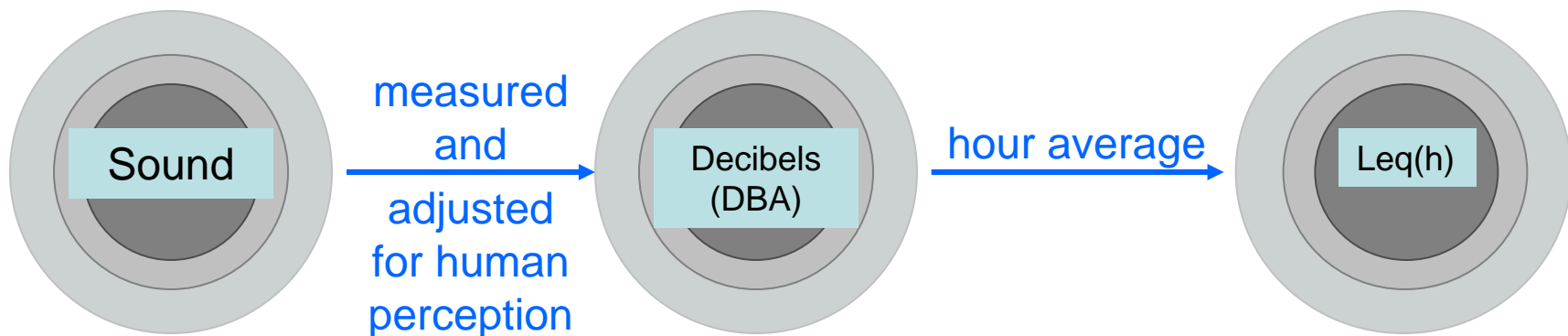
## Noise Policies Address

- Degree or thresholds of noise
- Type of land use and exterior noise levels
- Changes in noise levels to be achieved
- Pre-existing conditions and retrofitting
- Cost and feasibility of proposed mitigation



## Sound and Noise

- Sound, created when an object moves air, is comprised of a spectrum of frequencies
- Sound is quantified by a meter which measures units called decibels (DB)
- Humans are sensitive to certain frequencies and insensitive to others.
- Decibels adjusted (DBA) for an average person's hearing are called "A-weighted levels' DBA
- Leq(h) is the constant, average sound level, over a one hour period used in the U.S. as the preferred highway noise metric





## Relative Noise

### NOISE PERCEPTION

<u>SOUND LEVEL CHANGE</u>	<u>RELATIVE LOUDNESS CHANGE</u>
+30 dBA	8 TIMES AS LOUD
+20 dBA	4 TIMES AS LOUD
+10 dBA	TWICE AS LOUD
+5 dBA	READILY PERCEPTIBLE INCREASE
+3 dBA	BARELY PERCEPTIBLE INCREASE
<u>0 dBA</u>	<u>REFERENCE</u>
-3 dBA	BARELY PERCEPTIBLE DECREASE
-5 dBA	READILY PERCEPTIBLE DECREASE
-10 dBA	HALF AS LOUD
-20 dBA	1/4 AS LOUD
-30 dBA	1/8 AS LOUD



## Impacts and Types of Land Use

<b>Activity Category</b>	<b>Description of Activity Category</b>
<b>A (Exterior)</b>	<b>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>
<b>B (Exterior)</b>	<b>Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.</b>
<b>C (Exterior)</b>	<b>Developed lands, properties, or activities not included in Categories A or B above.</b>
<b>D (Exterior)</b>	<b>Undeveloped lands.</b>
<b>E (Interior)</b>	<b>Residences, motels, hotels, public meeting rooms, schools, churches libraries, hospitals, and auditoriums.</b>



# Noise Abatement Criteria

<b>Activity Category</b>	<b>Leq(h)</b>	<b>L10(h)</b>	<b>Description of Activity Category</b>
<b>A</b>	<b>57 (Exterior)</b>	<b>60 (Exterior)</b>	<b>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>
<b>B</b>	<b>67 (Exterior)</b>	<b>70 (Exterior)</b>	<b>Picnic areas, recreation areas, playgrounds, active sports areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals.</b>
<b>C</b>	<b>72 (Exterior)</b>	<b>75 (Exterior)</b>	<b>Developed lands, properties, or activities not included in Categories A or B above.</b>
<b>D</b>	<b>--</b>	<b>--</b>	<b>Undeveloped lands.</b>
<b>E</b>	<b>52 (Interior)</b>	<b>55 (Interior)</b>	<b>Residences, motels, hotels, public meeting rooms, schools, churches libraries, hospitals, and auditoriums.</b>



## Special Conditions

- **Pre-existing Conditions:** Only consider impact for properties with active land use categories that predate this policy
- **Retrofitting:** Repair or replace existing noise walls in kind.



## Special Conditions

### (continued)

- **Ranking:** Abatement projects are ranked by
  - Total cost
  - Effectiveness
  - Sound levels in area
- **Other Obligations and Agreements:** Policy recognizes prior, and special considerations.



## Cost Reasonableness and Feasibility

- Noise reduction of 5 decibels is achievable
- Noise reduction meets predicted Noise Abatement Criteria
- Total cost per benefited property-\$40,000
- ROW, if required, is donated to Airports Authority



## 2010 Policy Development

- April: Present draft noise policy to Airports Authority Board with recommendation to move forward
- May: Public input on draft noise policy
- June-July: Address public input and recommend final policy to committee
- July-August: Airports Authority Board approval of policy



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