



Dulles Toll Road Highway Noise Policy Public Workshop

Response to Comments

Frequently Asked Questions and Answers

September 2010

The Metropolitan Washington Airports Authority (Airports Authority) has developed a Draft Highway Noise Policy for the Dulles Toll Road and, in conjunction with the development of this policy, conducted a public workshop at Langston Hughes Middle School on June 10, 2010, from 5:30 to 8:30 p.m., to seek input from the public. Approximately ninety comments were received during the public comment period (June 1 to June 30). After a detailed review of public comments, the Airports Authority increased its initial noise measurement and modeling scope to include those residential areas having existing noise mitigation structures. This was necessary to address public comments and input received, related to the effectiveness of noise barriers in the current and future noise environment.

In developing this draft policy, the Airports Authority considered, among other sources, the federal guidelines for traffic noise evaluation and abatement: U.S. Code of Federal Regulations, Title 23: Federal Highway Administration (FHWA), Part 77 – “Procedures for Abatement of Highway Traffic Noise and Construction Noise”; (23 CFR 772). Shortly after the official comment period ended, and independent of the Airports Authority’s related efforts concerning its highway noise policy, the U.S. Department of Transportation (USDOT) published a final rule updating 23 CFR 772. To view this document, please visit the FHWA website at http://www.fhwa.dot.gov/environment/noise/regulations_and_guidance/.

The Airports Authority remains committed to conforming to 23 CFR 772, including its revisions; and, Airports Authority staff is currently reviewing the updated 23 CFR 772 to determine how the revised Federal policy may affect the details of the Airports Authority’s draft policy.

The new 23 CFR 772 requires each state or independent agency to revise its noise policy to align with this regulation in order to be eligible to receive Federal highway grants. The FHWA will review the Airports Authority's new noise policy for conformance to the final rule to assure uniformity and consistency nationwide. In addition to reviewing the draft *Dulles Toll Road Highway Noise Policy* against the new Federal regulations, Airports Authority staff is coordinating with the Virginia Department of Transportation (VDOT) staff to ensure the Airports Authority's new policy considers any revisions that may be undertaken by the Commonwealth as it responds to 23 CFR 772.

As a result of the issuance of the new 23 CFR 772 and the need to review and address a number of complex issues presented by the public comments, the Airports Authority does not intend on recommending a final Dulles Toll Road Highway Noise Policy until later this year.

The public comments received have been grouped into six categories of frequently asked questions: Policy, Analysis, Schedule, Rail, Funding, and Miscellaneous; and responses have been prepared for each frequently asked question.

An index of key terms can be found in the first attachment. Definitions for key terms can be found in the second attachment.

Policy

P1. Why is the Airports Authority creating a new noise policy?

- The Airports Authority is an independent governmental body, and as the landlord and operator of the Dulles Toll Road, the Airports Authority has the responsibility to develop its own policy to guide investment in addressing concerns in the corridor regarding highway traffic noise.

P2. Why is the Airports Authority not using Virginia Department of Transportation's highway noise policy?

- The Airports Authority is seeking an opportunity to reconsider highway noise protection on the existing Dulles Toll Road facility. The Virginia Department of Transportation highway noise policy only considers traffic noise abatement when there is a new highway constructed or a significant change is made to an existing highway, such as the addition of lanes, widening of the roadway, or a large increase of truck traffic. None of these significant changes are expected for the Dulles Toll Road; so, under Virginia policy, present conditions could not be re-evaluated.

P3. Why is the Airports Authority not using Fairfax County’s noise policy and proposing different noise criteria than the Fairfax County Noise Ordinance?

- The Fairfax County Noise Ordinance (Fairfax County Code Chapter 108.1) is not a highway noise policy. The Fairfax County Noise Ordinance addresses a range of point-source noise generators (e.g., animals, parties, lawnmowers, etc.) and does not apply to collective highway noise. The Airports Authority's Highway Noise Policy will address highway noise specifically, and will meet or exceed Federal Highway Administration and Virginia Department of Transportation highway noise criteria.
- In terms of the noise criteria, the measurement systems are not directly comparable. The Fairfax County criteria are based on instantaneous values measured in dBA, whereas highway noise criteria are based on a time averaged composite of Leq dBA.

P4. How did the Airports Authority arrive at the 66 decibel impact criteria?

- The Airports Authority is following the Federal Highway Administration (FHWA) noise abatement criteria as set forth in the Code of Federal Regulations in order to determine what decibel levels should be used as a threshold for identifying properties impacted by highway noise. The Federal regulations state that any receiver/receptor or property that has a worst-case Leq approaching (i.e., within 1 decibel) or exceeding the noise abatement criteria for the corresponding land use category will be considered impacted. For residences, the noise abatement impact threshold is 67 decibels. Therefore, 66 dBA (i.e., 1 decibel within the threshold) is the impact criteria level for residences. The Virginia Department of Transportation policy abides by the same criteria.

P5. What does it mean in the draft highway noise policy where it states that if an existing noise barrier is found structurally insufficient, it will be replaced in kind?

- In the original draft highway noise policy, the in kind statement meant that a wall of the same height and length would be built as a replacement in accordance with the Airports Authority design standard. However, the notion of replacing the sound wall at its existing height and length as in kind replacement is being reviewed based on public comment that has been received.

P6. Will the same criteria apply to areas without existing noise barriers as to those with existing noise barriers?

- The draft highway noise policy indicates that existing sound walls would be replaced in kind suggesting different criteria than those used for new sound walls. Based on comments received, that aspect of the Airports Authority's draft policy is being reviewed. The Airports Authority is aiming for a consistent approach and effectiveness of the sound walls.
- In response to comments received, the Airports Authority has broadened the scope of the current noise analysis to include areas behind existing sound walls in its noise monitoring and traffic noise model.

P7. Will the Airports Authority consider residences and hospitals to be included in either Category A, or would the Airports Authority create a Category "B+"?

- The Airports Authority will conform to the Federal Highway Administration regulations in order to be eligible for Federal funding. Based upon the July 13, 2010 update to the Code of Federal Regulations, residences remain grouped in Category B. Hospitals have been redefined and regrouped in a different category.

P8. Will the Airports Authority increase the cost per benefitted property limit for noise mitigation used by the FHWA?

- The Airports Authority is currently reconsidering the cost per benefitted property limit value for inclusion in the final highway noise policy. The value in the Airports Authority policy will be consistent with the range established by Federal Highway Administration regulations for noise abatement.

P9. Will landscaping and earth berms be considered as optional noise abatement measures?

- The Federal Highway Administration does not consider the planting of vegetation to be a noise abatement measure because vegetation alone cannot provide a substantial noise reduction for an extended period of time. Although not considered for noise mitigation, landscaping is an important aspect of the Airports Authority vision for enhancing the Dulles Toll Road. A landscaping plan is currently in development.

- Earth berms, though effective, are also often not feasible along highways. However, where practicable, earth berms may be considered as a viable noise abatement alternative if sufficient right of way is available.

P10. Will the Airports Authority highway noise policy address the visual impact of seeing the highway?

- No, not as part of the highway traffic noise policy; as part of its planned improvements along the Dulles Toll Road, the Airports Authority does intend on implementing a landscaping plan.

P11. In January 2006, the Airports Authority proposed to improve/repair/replace a specific quantity of traffic noise barriers in the corridor. Will the Airports Authority move forward to do this work?

- Once the highway noise study is completed and there are established criteria and eligibility requirements for noise mitigation, the Airports Authority will know which areas meet the criteria for noise mitigation and which existing sound walls require repairs/rebuild. The Airports Authority will at that time develop a plan for construction and repair, as part of our annual budget process for Dulles Toll Road improvements.

P12. Does the Dulles Toll Road highway noise policy apply to both the Dulles Toll Road and to the Dulles Airport Access Highway?

- Yes. The Dulles Toll Road highway noise policy applies to the entire Dulles Toll Road and the Dulles Airport Access Highway, between Route 28 and I-495.
- The highway noise policy does not apply to the Dulles Connector Road, which is east of I-495 and is operated and maintained by the Virginia Department of Transportation.

P13. Will the final highway noise policy take into consideration the latest Federal Highway Administration regulations and the Virginia Department of Transportation highway noise policy?

- Yes. The Airports Authority is reviewing the update to the Code of Federal Regulations and the draft of the revised Virginia Department of Transportation highway noise policy.

P14. Will the Airports Authority highway noise policy be consistent with the Fairfax County Noise Ordinance regarding construction noise?

- The highway noise policy does not address construction noise. Although the Airports Authority is not subject to the Fairfax County noise ordinance for construction noise, the intent of the Fairfax County noise ordinance will be honored during Dulles Toll Road construction activity.

P15. What are the specifics on the ranking system to be used to determine what noise barriers will be constructed first?

- The Airports Authority is currently developing a ranking and prioritization system. The draft policy details factors including total cost of noise abatement, cost-effectiveness and sound levels in the noise study area. Further specifics are not yet defined.

P16. Will an absorptive/quiet pavement be used on the Dulles Toll Road?

- Noise absorptive pavement treatments are not included in the policy as a potential abatement measure at this time. This pavement type is not typically used in northern regions of the country. The Airports Authority will remain abreast of quiet pavement research for potential use in the future.

Analysis

A1. Will communities with existing noise barriers be included in the Airports Authority's highway noise study?

- Yes, as a result of public comments, the Airports Authority has expanded the scope of study and will conduct a highway noise study along the Dulles Toll Road for both communities with and without existing noise barriers. Noise sensitive areas, as defined by the Federal Highway Administration, will be included in the study.

A2. Will existing noise barriers be analyzed to determine if they are providing sufficient noise protection?

- Yes, existing noise barriers will be analyzed during the Airports Authority's highway noise study to determine if the existing barriers are providing adequate protection to the community and are functioning as designed.

A3. If my existing noise barrier is found structurally insufficient, what will be done?

- Existing noise barriers that are found to be structurally unsound will be repaired or replaced. Please refer to questions P5 and P6 above for additional information related to repair and replacement of existing noise barriers.

A4. How will truck noise be represented in the traffic noise model?

- Trucks, classified by large and medium sizes, as well as cars, buses and motorcycles will be modeled according to measured percentages of those vehicle types, using the Federal Highway Administration's traffic noise model (traffic noise model Version 2.5). This model has prescribed noise profiles for each vehicle classification type.

A5. Why is the Airports Authority testing during the summer, when there are leaves on the trees and school is out?

- Traffic noise impacts are determined using the Federal Highway Administration's traffic noise model (Traffic Noise Model Version 2.5). The sound measurements are used to verify that the computer model is accurate. The model takes into account the existing terrain of the project area and how the noise will attenuate throughout. Features such as leaves will only be included in the model for the validation stage and will be removed later in the analysis to reflect the worst case scenario to determine highway noise impacts. A traffic analysis will be performed to determine the traffic volumes that correspond to the worst case traffic noise scenario, regardless of the season during which the traffic noise model validation occurs. These worst case traffic volumes will be input into the traffic noise model to determine the worst case traffic noise scenario.

A6. Will the houses near the bridge over Difficult Run be included in the highway noise study?

- Yes. All properties that fit within the applicable land use categories will be studied.

A7. Will reflective noise from existing or proposed sound walls and retaining walls be included in the model?

- Yes. All properties that fit within the applicable land use categories will be studied and reflective noise from existing structures will be included in the analysis.

A8. How will reflective noise be addressed for communities across the highway from a proposed noise barrier?

- During the barrier design stage, a Parallel Barrier Analysis will be performed to determine if reflections are diminishing the effectiveness of the noise barrier or increasing noise levels in communities across from barriers. If it is concluded that reflections are a problem, then absorptive treatment may be considered to adequately abate the combined effect.

A9. Where will the test locations be?

- The locations where the sound measurements will occur are representative locations along the Dulles Toll Road corridor, at communities where existing noise barriers do and do not exist. These representative locations are determined by standard noise measurement methods and engineering judgment. Property owners affected by the sound measuring field work have been notified directly.

A10. Will the Airports Authority include Wolf Trap National Park as part of the highway traffic noise study?

- Yes, the Airports Authority will include Wolf Trap National Park in the highway noise study. The Park will be covered jointly by both the Airports Authority highway noise policy and all specific Federal laws related to noise levels at the Park.

A11. Will the Airports Authority include the Washington Old Dominion Railroad Trail as part of the highway noise study?

- Yes, for the purpose of this study the Airports Authority will include the Washington Old Dominion Railroad Trail in the traffic noise model.

Schedule

S1. When will the noise testing begin?

- The Airports Authority began the noise monitoring in August 2010.

S2. When will the Airports Authority build new noise barriers and repair or replace the existing noise barriers?

- The structural assessment and highway noise analysis are both scheduled for completion by the end of 2010. Construction of new or replacement barriers is currently scheduled to begin in 2011. The Airports Authority's construction and repair process will be dictated by the budgeting process that will follow the highway noise analysis and a ranking system, yet to be developed, that will determine which noise barriers will be constructed first.

Rail

R1. Why are there two separate processes for evaluating and mitigating highway noise and rail noise?

- The standards for studying highway noise and rail noise are different because the types of noise generated by highway facilities and transit facilities are different. Highway noise and rail noise are evaluated according to two different metrics established by two separate Federal administrations and governed by two distinct policies.
- The projected noise impact due to the rail project was previously studied using the Federal Transit Administration standards for rail noise analysis applied according to the Washington Metropolitan Area Transit Administration (WMATA) policy. The rail noise analysis reflects the combined peak noise level impact of rail and highway noise. A copy of the rail noise analysis can be found as part of the Final Environmental Impact Study (FEIS), which was conducted during the planning stages of the Dulles Rail Project. A link to the report can be found at http://ww.dullesmetro.com/about/resources_links.cfm.
- Just as highway noise was incorporated in the Metrorail noise evaluation, so too will rail noise be incorporated in the highway noise analyses. Although rail noise and highway noise are evaluated using two separate and different methodologies, the ultimate threshold by which impact of highway noise is determined will be derived from a blended calculation of the two metrics.

R2. When the Metrorail is complete, noise abatement and retaining wall structures will be in place. How will this be handled in the noise analysis?

- Reflective noise from proposed rail noise barrier structures will be included in the analysis. During the Dulles Toll Road barrier design stage, a Parallel Barrier Analysis will be performed to determine if reflections are diminishing the effectiveness of the noise barrier or increasing noise levels in communities across from rail barriers, parapets, retaining walls, etc.

R3. If noise levels are being measured over an hour, but trains only run intermittently during the hour, is not the noise from the trains effectively evened out?

- The accepted metric for highway noise is Leq(h), which is the hourly average noise level. Intermittent events due to rail noise are for a short duration and will have a negligible effect on the Leq(h). The projected noise impact due to the rail project was previously studied using the Federal Transit Administration standards for rail noise analysis. However, rail noise will be incorporated into the ultimate determination of highway noise impact consistent with Federal Highway Administration regulations.

Funding

F1. Will the Airports Authority consider cost sharing by the homeowner association or other third party funding?

- While the Airports Authority's draft Highway Noise Policy allowed for third party funding, the latest Federal Highway Administration regulations do not allow third party contributions to be included in the calculation of cost per benefited property. Third party funding may still be considered for aesthetics.

Miscellaneous

M1. How does the Airports Authority address air pollution on the Dulles Toll Road?

- The Airports Authority coordinates with VDOT and the Metropolitan Washington Council of Governments (MWCOG) in monitoring and managing air pollution on the Dulles Toll Road. The Dulles Toll Road is included in the MWCOG air quality model.

M2. What noise standards did the HOT Lanes use for their new noise barriers?

- The HOT Lanes project is managed by the VDOT Megaprojects Office. For more information, please visit the Megaprojects website at www.vamegaprojects.com.

M3. Will our community be able to have input on the aesthetics of the noise barrier design?

- The Airports Authority has developed a design standard for new sound walls for the Dulles Toll Road to provide effective noise abatement and minimize cost.

The design has been developed to minimize maintenance costs while being as effective as possible. A graphic depicting the design standard is posted to the Airports Authority website.

M4. Will the trees that were cut down in order to construct the storm water management facility for the Metrorail be replaced?

- The design of each storm water management facility for the Metrorail project is unique but there is a landscaping plan for each facility. The replacement landscaping may not be the same type or density due to the functional needs of the storm water management facility.

M5. Has the Airports Authority considered reducing the speed limit or, during certain times, lowering the speed limit for the Dulles Toll Road in order to lessen the noise?

- At present, the Airports Authority has no plan to adjust posted speed limits as a noise mitigation measure.

M6. Will the website be updated to give us information in regards to the schedule of testing and construction, findings, and plans for proposed traffic noise barriers?

- Yes. The Airports Authority will continue to update its website to keep the public informed of progress on our noise studies, design, and construction.

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Appendix 2:

Definition of Key Terms Found in the Frequently Asked Questions

Abatement: Measures used to mitigate or reduce traffic noise levels such as noise barriers. Examples of abatement can include traffic management measures, alteration of horizontal and vertical alignments, acquisition of property, construction of noise barriers, or noise insulation of public use or nonprofit institutional structures. Planting vegetation between the noise source and receptor(s) is not considered an abatement measure because it is rarely acoustically effective.

Approach, as used in 23 CFR 772.5(g): Noise levels $Leq(h)$ which are 1 decibel below the levels shown in the Noise Abatement Criteria (NAC; Table 1) of the guidelines in 23 CFR 772.

Barrier: A solid wall, earth berm, or combination earth berm and wall to provide traffic noise reduction for impacted properties. It is typically designed to break the line-of-sight between the receiver and the roadway noise sources.

Berm: Linear earthen mound constructed to provide a traffic noise reduction for impacted receptors.

Benefited: If a property is impacted by traffic noise, it is "benefited" if an abatement measure reduces the noise level at the receiver by at least 5 decibels. For multi-family, developed properties (such as apartments, condominiums, or manufactured home developments), each individual dwelling unit receiving at least a 5 decibel reduction will be considered a benefited customer.

CFR: Code of Federal Regulations.

Decibel (dB): A unit used to measure sound pressure levels.

FEIS: Final Environmental Impact Study

Impacted: Any receiver/receptor or property that has a worst-case Leq approaching (within 1 decibel) or exceeding the Noise Abatement Criteria for the corresponding land use category, or that has predicted future noise levels in the build conditions substantially exceed existing noise levels, even though the predicted future levels may not exceed the NAC.

Leq: The equivalent steady-state sound level which in a stated period of time contains the same acoustic energy as the time-varying sound level during the same time period.

Leq (h): The value of Leq for a one hour period.

Noise: Unwanted or excessive sound.

Sound: The sensation produced in the organs of hearing by certain pressure variations or vibrations in the air.

TNM: Traffic Noise Model. The computer model developed by the Federal Highway Administration that is used to predict highway traffic noise.

Traffic Noise Impacts: Impacts which occur when the predicted traffic noise levels approach or exceed the noise abatement criteria (Table 2), or when the predicted traffic noise levels substantially exceed the existing noise levels.

Worst Case Noise Levels: The traffic noise levels that result from traffic conditions that would create the theoretical loudest noise scenario.