

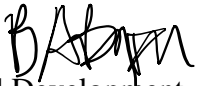


# County of Fairfax, Virginia

## MEMORANDUM

**DATE:** November 1, 2021

**TO:** Board of Supervisors  
Planning Commission

**FROM:** Barbara A. Byron, Director   
Department of Planning and Development

**SUBJECT:** Comprehensive Plan Amendment (2020-CW-3CP - Airport Noise Policy)  
Issues Paper

On July 28, 2020, the Board of Supervisors (Board) authorized the consideration of a Comprehensive Plan Amendment for the Policy Plan and Area Plan sections of the Plan that would allow for new residential uses between the Board-adopted 60 and 65 DNL airport noise contours, along with consideration of commitments to noise mitigation measures, notification requirements, and construction techniques for any such uses.

Attached please find an Issues Paper providing background information and identifying potential considerations and noise mitigations to be considered as part of the amendment. Staff intends to initiate community outreach beginning in November and will hold a Community Open House this winter, after which we will develop draft Plan language based on community feedback, and subsequently engage with the Planning Commission and the Board at their respective Land Use Policy Committees. Public hearings for the proposed Plan Amendment are anticipated to occur in the second quarter of 2022.

The Department of Planning and Development has created a website for this Plan Amendment at [Plan Amendment 2020-CW-3CP | Planning Development \(fairfaxcounty.gov\)](https://www.fairfaxcounty.gov/planning-development/plan-amendments/airport-noise-policy) or <https://www.fairfaxcounty.gov/planning-development/plan-amendments/airport-noise-policy>, and a project email address at [DPDAirportNoisePA@fairfaxcounty.gov](mailto:DPDAirportNoisePA@fairfaxcounty.gov). Please direct questions to Kelly Atkinson (Kelly.Atkinson@fairfaxcounty.gov) or Corinne Bebek (Corinne.Bebek@fairfaxcounty.gov).

Attachment: Issues Paper dated November 1, 2021

cc: Bryan J. Hill, County Executive  
Rachel M. Flynn, Deputy County Executive



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Integrity \* Teamwork \* Public Service

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## **Issues Paper**

### **Comprehensive Plan Amendment (PA) 2020-CW-3CP, Airport Noise Policy**

#### **November 1, 2021**

This issues paper was written in response to the Board of Supervisors' (Board) authorization on July 28, 2020, for the consideration of a Comprehensive Plan (Plan) amendment to allow new residential uses in the area between the 60 and 65 DNL airport noise contours. This paper is intended to provide background information and to identify potential considerations and noise mitigations that could be considered as part of a Plan amendment to allow new residential uses between the 60 and 65 DNL airport noise contours. Any revised Plan guidance resulting from the Plan amendment would apply county-wide.

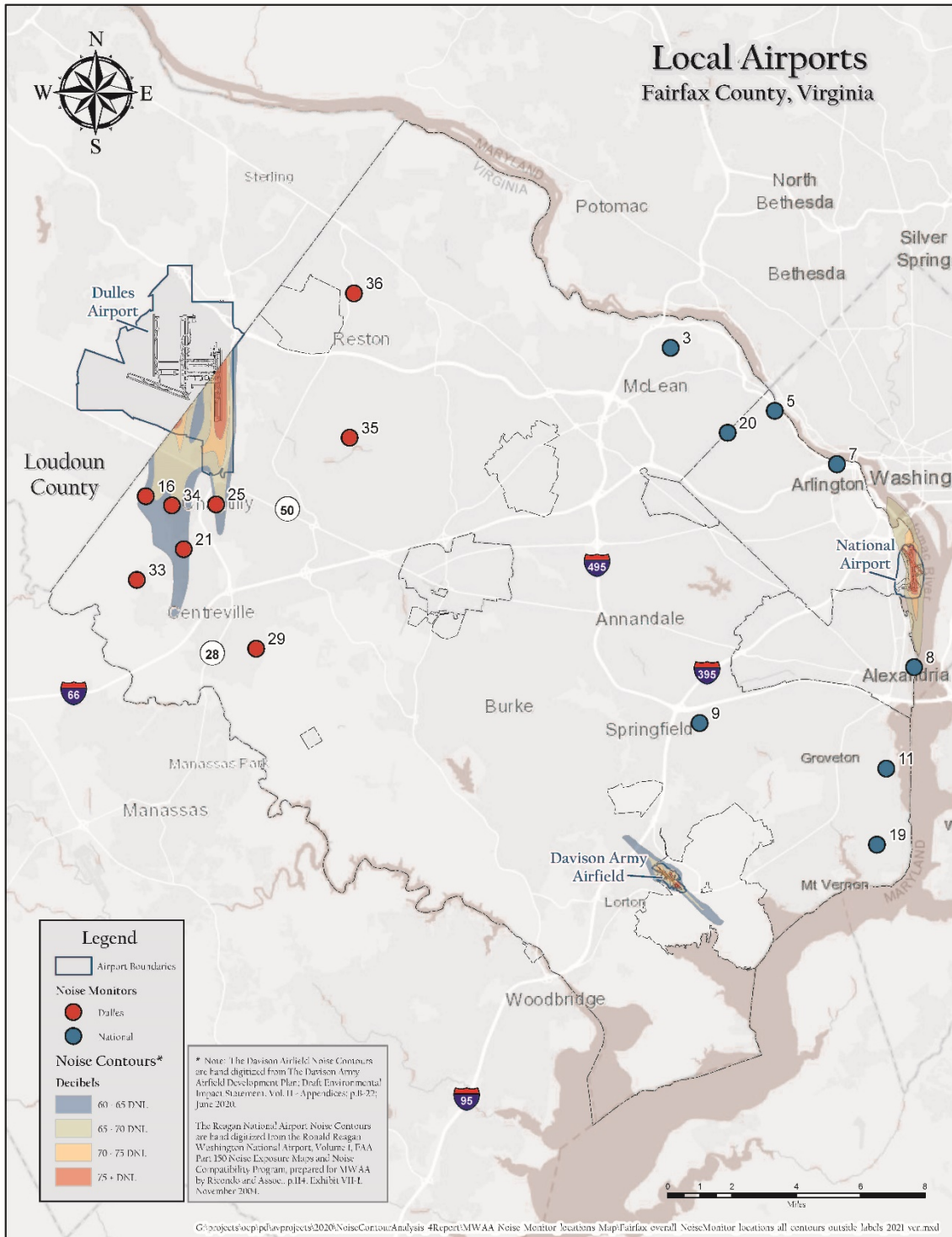
There are two airports located in the County - Washington Dulles International Airport (Dulles) and the Davison Army Airfield (Davison) associated with Fort Belvoir. The Board has adopted noise contours associated with Dulles; there are no Board adopted noise contours associated with Davison. The majority of the unadopted noise contours for Davison are restricted to Fort Belvoir, although a small area extends into portions of Fairfax County northwest of the airfield and outside of Fort Belvoir. The Washington Reagan (National) Airport is located outside of the County. While flights from National generate noise in Fairfax County (particularly in the areas near the Potomac River), no mapped noise contours associated with the airport extend into the County. Figure 1 depicts the three airports and their associated noise contours.

#### **BOARD DIRECTION**

Plan Amendment 2018-III-DS1, approved by the Board on May 7, 2019, added residential use as an option under certain conditions, including mitigation of airport noise impacts, for areas of Land Unit J of the Dulles Suburban Center located within the Board adopted 60-65 DNL airport noise contour area. With the exception of Land Unit J of the Dulles Suburban Center, the Plan currently discourages new residential development within the Board adopted 60-65 DNL noise contour area. Following the adoption of Plan Amendment PA 2018-III-DS1, the Board directed staff to present possible next steps regarding airport noise issues related to Dulles, including obtaining input from an independent consultant regarding the proposed airport noise contours (MCAA 2019 contours) provided in a report by the Metropolitan Washington Airports Authority (MCAA). In response, the County hired Johnson Aviation, which provided a review of the MCAA report, including the methodology used to develop the MCAA 2019 contours, as well as input related to the consideration of permitting new residential uses within the Board adopted 60-65 DNL contours.

At the Board of Supervisors' Land Use Policy Committee meeting on July 21, 2020, the consultant, Nick Johnson of Johnson Aviation, Inc., reviewed his findings. A staff presentation followed, which included a discussion of the need to balance the economic importance of the airport with the economic development needs of the County, including the provision of housing to meet future needs and the ability to permit the redevelopment or adaptive reuse of existing projects to keep them economically viable.

**Figure 1: Local Airports & Associated Noise Contours**



Both Johnson Aviation and staff recommended that the Board consider a policy change to allow new residential uses between the 60 and 65 DNL aircraft noise contours. This recommendation is consistent with the land use policies of most jurisdictions with international airports in the country.

The Board also discussed whether to adopt the MWA 2019 contours for Dulles, but ultimately decided not to adopt them. The Board's decision to not adopt the 2019 contours was based primarily on the fact that these contours are based on a projected full operational capacity that might not be reached for 90 years; that, with the exception of the Denver International Airport, the methodology used to develop the contours is not typically employed throughout the United States; that the variables that went into the creation of these contours may change over time; that most jurisdictions surrounding other international airports focus on noise abatement measures for noise-sensitive uses located within the 60-65 DNL contours; that the noise contours are based on a capacity analysis, not a demand analysis; and that such long-term projections might not predict as yet unknown technological, operational, economic, and other unknown variables, and may be inaccurate over time.

At the July 21, 2020, committee meeting there was, however, general agreement by the Board to authorize an amendment to the Plan to permit new residential uses in the 60–65 DNL noise contours with certain provisions and, to continue to work with MWA on nighttime activities to minimize community noise impacts.

Subsequently, on July 28, 2020, the Board authorized a Plan amendment for the relevant Policy Plan and Area Plan sections of the Plan to consider allowing new residential uses in areas located between the 60 and 65 DNL airport noise contours, with commitments to noise mitigation measures, notification requirements, and appropriate construction techniques.

### **CONSIDERATION OF NEW RESIDENTIAL USES WITHIN THE BOARD ADOPTED 60-65 DNL NOISE CONTOUR AREA**

Most jurisdictions in the United States with international airports permit residential uses within the 60-65 DNL noise contours, including Loudoun County (See Attachment 3), and focus on noise abatement measures for noise-sensitive uses already located within that area. These airports include Minneapolis-St. Paul International Airport, Orlando International Airport, and Portland International Airport.

Consideration of new residential uses in the Board adopted 60-65 DNL airport noise contour area would be consistent with the policies of those jurisdictions and with the policies of Land Unit J of the Dulles Suburban Center section of the Plan. The consideration of new residential uses within the Board adopted 60-65 DNL airport noise contour area, particularly in areas proximate to Dulles, could, with appropriate noise mitigation, enhance the county's economic development opportunities, provide additional housing, and provide opportunities for residents of all age groups to live and work in a vibrant area, within reasonable commutes along the Route 28 and Dulles Tollway corridors.

The Board's Economic Success Strategic Plan (ESSP), adopted in 2015, and the current draft of the County's Strategic Plan focus on ensuring the economic health of the county, the provision of housing, and the creation of "places where people want to be." The ESSP notes that "a broad spectrum of age groups, from millennials to baby boomers, seek freedom from daily dependence on the automobile and prefer to live in vibrant, pedestrian-friendly spaces with an array of work and leisure activities close at hand. Further, companies want to be in locations that are attractive to younger workers, and are increasingly becoming "consumers of place" in their search for suitable locations." (ESSP, Pages 26-27).

Goal 2.1 of the Economic Success Strategic Plan discusses focusing planning and development activities around the creation of mixed use communities, primarily in activity centers with multi-modal transportation options, employment opportunities, a mix of housing types and price points, and vibrant retail and entertainment options (see Page 27). Given the proximity of areas within the Board adopted 60-65 DNL contours to Dulles and the commuting corridors of Route 28, I-66, and Route 50, the introduction of residential uses may support the established uses in the area, as well as take advantage of the proximity to mass transit.

Consideration of changes to the Comprehensive Plan to permit new residential uses within the Board adopted 60-65 DNL noise contours would not require changes to the Zoning Ordinance, which only addresses areas of 65 DNL and greater and contains no land use restrictions on areas with impacts less than 65 DNL.

If County policy is changed to permit new residential uses within the Board adopted 60-65 DNL noise contours, prior to redevelopment, future site-specific Plan amendments would be needed to consider residential uses within areas that are not currently planned to permit new residential uses. During that, as well as the subsequent entitlement process, proposals for residential uses would need to address how noise impacts could be adequately mitigated and would need to ensure that future residents would be fully aware of airport operations.

## **CURRENT POLICIES RELATED TO AIRPORT PLANNING IN FAIRFAX COUNTY**

### **Comprehensive Plan Policies**

Current Plan policy recommends that new residential uses not be allowed in areas impacted by airport noise within the Board adopted 60-65 DNL contours, except within Land Unit J of the Dulles Suburban Center area of the County, where the Plan that permits new residential use was predicated on the provision of airport noise mitigation, among other conditions. That Land Unit J action was consistent with federal policy wherein the federal government recognizes that noise impacts may occur at levels below DNL 65 dBA but has established DNL 65 dBA as the level above which residential uses would not be considered compatible with an airport.

Much of the existing airport-related Plan text was adopted on March 24, 1997, as part of Plan Amendment S96-CW-4CP (Revisions to Noise and Land Use Compatibility Guidance in the Dulles Airport Noise Impact Area - Policy Plan Volume; Area III Volume; and Comprehensive Plan Map). The Plan Amendment was focused on Dulles, established a noise contour area of DNL 60-65 dBA for the first time for Dulles and added related policies for the DNL 60-65 dBA

contour area, including the establishment of DNL 60 dBA as a threshold above which new residential development would not be recommended. The adopted contours were developed by MWAA in 1993 and adopted by Fairfax County in 1997. These contours reflect the full buildout of the airport based on MWAA's 1993 model assumptions.

The majority of the policy guidance related to airport noise can be found in the following sections of the Plan: (i) Policy Plan (Environment Element); (ii) Area III Overview; and (iii) the Dulles Suburban Center (which is located within Area III), all of which are contained in Attachment 1 of this report. The Policy Plan provides Countywide guidance while the Area III and the Dulles Suburban Center policies are applicable to defined areas.

### **Zoning Ordinance**

The existing airport noise regulations were developed in 1993 and pertain solely to Dulles. The Zoning Ordinance text and map address airport noise through the establishment of an Airport Noise Impact Overlay District (ANIOD) which regulates land uses within the 65-70 DNL noise contour and greater but does not regulate land uses in areas with noise impacts below 65 DNL.

The ANIOD includes three Airport Noise Impact Areas. The purpose of the establishment of three Airport Noise Impact Areas is to distinguish between the levels of noise impact so that appropriate uses and acoustical performance standards can be established to mitigate the adverse impacts of aircraft noise to protect the public health, safety, and welfare. The three levels are:

- Greater than Day-Night Average Sound Level (“DNL”) 75 dBA
- DNL 70-75 dBA
- DNL 65-70 dBA

Uses within this overlay district are permitted only in accordance with the Noise Compatibility Table included in the Overlay District regulations (see Table 3103.1). The table identifies the uses, the Airport Noise Impact Areas, and, where applicable, the respective interior noise level standards and acoustical treatment measures for each use in a given Impact Area (see Attachment 2). The proposed Plan amendment would be consistent with and would not necessitate any changes to the Zoning Ordinance.

### **CURRENT POLICIES RELATED TO AIRPORT PLANNING IN LOUDOUN COUNTY**

Loudoun County is proposing a Comprehensive Plan Amendment (CPAM) to amend the Airport Noise Impact Areas (ANIA) map of the Loudoun County 2019 General Plan, along with the associated content and policy statements, to be followed by separate zoning regulation updates (see Attachment 3). The map provides the basis for administering the policies that address airport noise impacts from Dulles Airport and the Leesburg Executive Airport and for establishing the Airport Impact Overlay District (AIOD) of the Loudoun County Zoning Ordinance. If approved, the ANIA map update would reflect the MWAA 2019 contours for Dulles.

On February 2, 2021, the Loudoun County Board of Supervisors initiated the subject CPAM and directed staff to do the following:

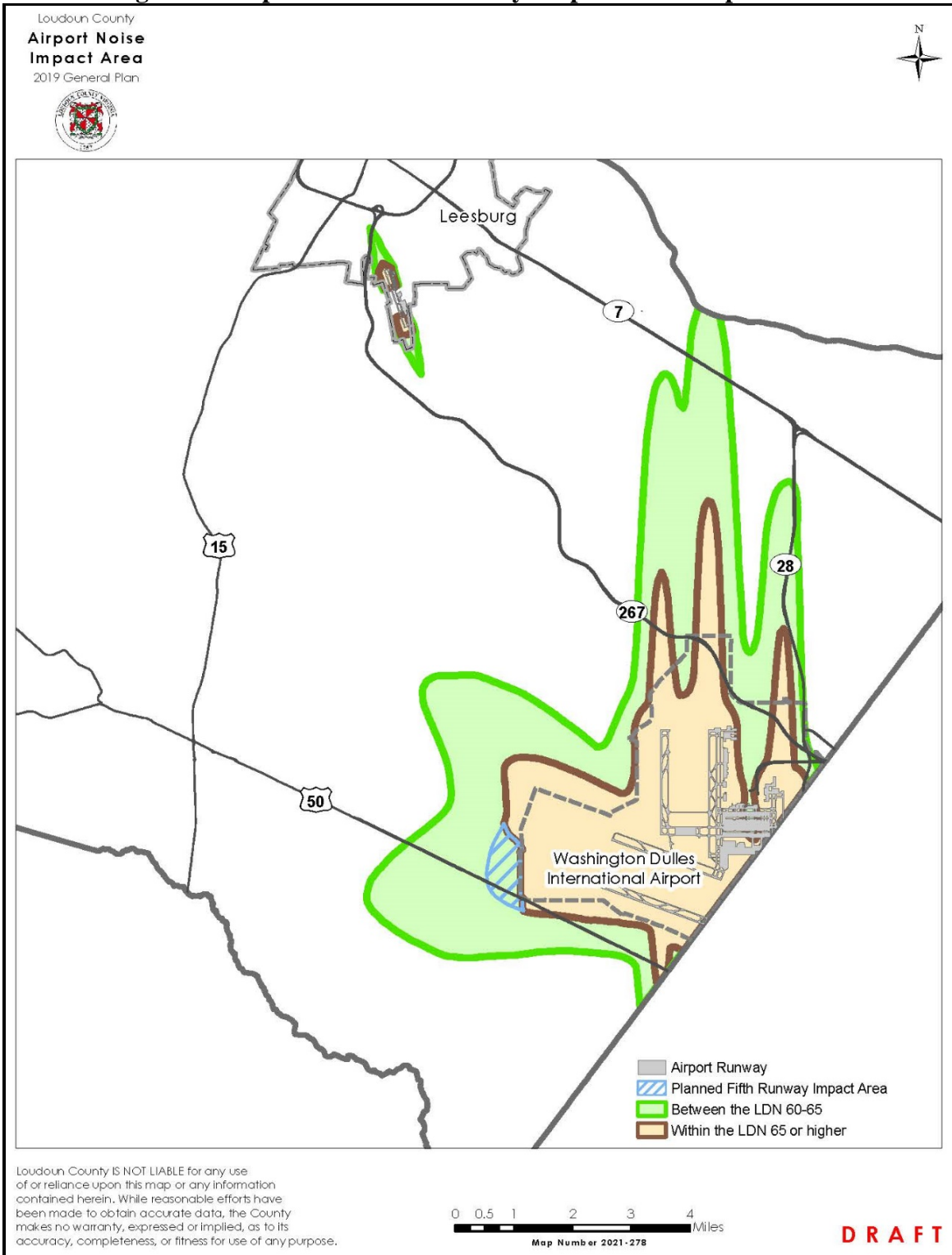
- Update the Zoning Ordinance concurrently with the CPAM: Zoning regulation updates are anticipated to be drafted separately from the comprehensive plan amendments in Fall 2021.
- Revise a Portion the 65+ Ldn Noise Impact Area from that Projected in the 2019 Noise Study: An area depicted as “Planned Fifth Runway Impact Area” on the proposed ANIA map would be treated similar to the 60-65 Ldn noise impact area, rather than the 65+ Ldn noise impact area, in order to acknowledge that the 65+ Ldn noise contour of the 2019 Noise Study anticipates impacts from a “Planned Fifth Runway,” which is not yet constructed. The timeframe for its development is potentially well beyond the planning horizon of the 2019 General Plan. Per the draft policies within the CPAM, new residential development could be allowed in this area, subject to the development standards of the AIOD, rather than prohibited, as within the 65+ Ldn noise impact area.
- Require the AIOD Disclosure for all Homes within the AIOD: Clarify that disclosure rules apply to all homes (existing and future) within the ANIA/AIOD. In addition, the Fifth Runway Impact Area would be subject to specific disclosure requirements notifying homebuyers that the level of noise impact in this area might change if the Fifth Runway were developed.
- Protect Previously Approved Rezonings: Previously approved rezonings would be able to develop in accordance with their approval and not be called into question by the proposed policy and zoning updates.
- Remove the One-Mile Buffer from the AIOD: Current zoning regulations require homes within a one-mile buffer impact area to provide disclosure to prospective buyers of their location within the AIOD. The AIOD one-mile buffer, which is currently one of three components of the ANIA/AIOD, is proposed to be removed.

Loudoun County uses airport noise contours to determine where residential development can occur. Residential uses are allowed within the 60-65 Ldn area, in accordance with the Airport Impact Overlay District, provided that requirements related to disclosure, acoustical treatment, and aviation easements are met. Loudoun County policies recommend the minimization of residential and noise-sensitive development in noise sensitive areas. New residential and other noise-sensitive uses are not permitted within the 65+ Ldn impact area. If the new contours are adopted as proposed, Loudoun County anticipates that 7.78 acres would be added to the area currently designated as 65+ Ldn, while 18.60 acres would be removed from this area. Overall, the adoption of the new contours would result in a net reduction of 10.82 acres within the 65+ Ldn impact area.

The draft “Planned Fifth Runway Impact Area” is proposed to be included as part of the 60-65 Ldn airport noise impact area, which would allow residential uses to be considered in this area in the future. The only residential zoning districts within that area are associated with existing communities. Any additional residential development in that area would require approval through a rezoning, which would be at the discretion of the Board of Supervisors.

Depicted below is the draft map of the proposed airport noise contours within Loudoun County.

**Figure 2: Proposed Loudoun County Airport Noise Impact Areas**





## **SOUND AND NOISE**

The following technical information is presented to assist in an understanding of sound and noise as they relate to residential use in the 60-65 DNL contour.

### **Fundamentals of Sound and Noise**

Sound intensity or level is measured by a logarithmic unit called a decibel (dB). Environmental noise measurements are usually made on an “A-weighted” scale that filters out very low and very high frequencies to better replicate human sensitivity. It is common to add the “A” to the measurement unit name to indicate that the measurement has been made using this filtering process (i.e., dBA). The A-weighted noise level approach has been adopted by the Federal Aviation Administration (FAA) as the accepted measure to be used to consider aircraft noise.

A sound level of 0 dBA is approximately the threshold of human hearing and is barely audible under extremely quiet conditions. Normal speech has a sound level of approximately 60 dBA. The minimum change in the sound level of individual events that an average human ear can detect is about 3 dBA. On average, a person perceives a change in sound level of 10 dBA as a doubling (or halving) of the sound’s loudness.

Noise may become an issue when it exceeds the ambient or background sound. Ambient background noise in metropolitan, urbanized areas typically varies from 60 to 70 dB and can be as high as 80 dB or greater; quiet suburban neighborhoods experience ambient sound levels of approximately 45-50 dB (U.S. Environmental Protection Agency 1978).

### **Combining Sound Levels**

The following is provided to explain noise impacts when there is both aircraft noise and roadway noise. Given that sound is measured on a logarithmic scale, sound levels cannot be added together using typical arithmetic rules. As an example, two sounds of the same intensity will result in a sound level increase of 3 dBA (e.g., 60 dBA + 60 dBA = 63 dBA), and if two sounds differ by 10 dBA, the resultant sound level will be only slightly more than the higher of the two (e.g., 60 dBA + 70 dBA = 70.4 dBA). If two sounds differ by 16 dBA or greater the cumulative sound is the same as that of the higher level.

### **Noise Metrics**

The day-night average sound level (DNL) is the standard noise metric used for FAA studies of aviation noise exposure. DNL is also the standard noise metric used by the U.S. Department of Housing and Urban Development (HUD), the U.S. Environmental Protection Agency (USEPA), and the Department of Defense. When used in the context of airports, the DNL noise metric reflects exposure to sound over a 24-hour period, expressed as the noise level for the average day of the year on the basis of annual aircraft operations. The DNL metric assigns a 10 dBA penalty for noise events occurring between 10 p.m. and 7 a.m. DNLs can be transferred onto maps as a visual representation of lines connecting points of the same decibel, resulting in noise contour lines. This approach is similar to topographical maps showing the elevation of terrain in an area.

The location of points experiencing the same noise impacts, and the resultant noise contours, depends on many variables and is influenced by factors such as aircraft arrival and departure routes. The FAA has adopted DNL 65 dBA as the threshold of significant noise exposure.

Sources:

[https://www.faa.gov/regulations\\_policies/policy\\_guidance/noise/basics/](https://www.faa.gov/regulations_policies/policy_guidance/noise/basics/)

<https://home.army.mil/belvoir/index.php/about/Garrison/directorate-public-works/environmental-division>. (See Pages 3-31 to 3-39 of the Draft EIS (No Appendices) for the DAAF ADP).

<https://www.noisequest.psu.edu/noisebasics.html>

### **Metropolitan Washington Airports Authority (MWAA) Noise Event Data**

Modernization upgrades to aircraft avionics, radar, satellite, and control systems have increased efficiencies and optimized aircraft traffic flows across the airspace, resulting in more consistent and precise flight paths for aircraft operating into and out of the region's airports. Noise monitoring stations can help to understand these impacts over time, including the concentration of aircraft over particular areas. Figure 1, located on Page 2 of this report, depicts airports in or near Fairfax County and the associated MWAA noise monitoring stations.

In January 2015, MWAA became the first U.S. airport system to upgrade its noise monitoring software using a new and improved noise source classification methodology that accounts for quieter aircraft and higher background noise levels. The modeling software is known as the Aircraft Noise Event Extraction Methodology (ANEEM). ANEEM does not solely rely on a noise monitor to detect a noise event. During noise data post-processing, ANEEM cross-references databases to identify aircraft in the vicinity of the noise monitor when the noise level rises above a background level. Aircraft-dominated noise events are identified and correlated by comparing aircraft position data with predicted noise levels for that aircraft, using FAA noise certification data. ANEEM provides a detection methodology for distinguishing aircraft noise from other noise sources experienced in neighboring communities.

Information collected and/or calculated through MWAA's noise monitoring system includes flight numbers; departure and arrival runways; the time, duration, and maximum noise level (L<sub>max</sub>) for each noise exposure; the number of noise exposures; DNL; and dBA. For peak noises, the ANEEM system captures L<sub>max</sub>-Min (the lowest peak noise); L<sub>max</sub>-Max (the highest peak noise); and L<sub>max</sub>-Modal (the most common whole number peak).

Source: <https://www.flydulles.com/iad/iad-dulles-intl-noise-event-data>.

### **Federal Aviation Administration (FAA) Adopted DNL Metric and Neighborhood Environmental Survey**

Through the Aviation Safety and Noise Abatement Act (ASNA) of 1979, Congress directed the FAA to establish a single metric for assessing land use compatibility with respect to noise from aircraft operations, and to establish standards and methods for assessing the noise environment associated with ongoing aircraft operations near airports. In 1981, the FAA implemented the

ASNA provisions. These are published at 14 Code of Federal Regulations (CFR), Part 150 (“Part 150”). This regulation adopted the DNL metric, established land use compatibility guidelines for aircraft noise, and specified DNL 65 dBA as a threshold of non-compatibility for certain land uses, including residential, and established standardized methods for assessing the noise environment. Currently, the FAA uses DNL 65 dBA to support a variety of policy objectives, including the assessment, identification, and mitigation of noncompatible land uses in the vicinity of civil airports, and the evaluation of environmental consequences that would occur if changes to aircraft operations or airfield infrastructure near an airport were implemented.

On January 13, 2021, The Federal Aviation Administration (FAA) posted a summary on the Federal Register of the research programs it sponsors on civil aircraft noise which could potentially inform future aircraft noise policy. The public was invited to submit comments on the scope and applicability of the research initiatives in addressing aircraft noise. The FAA stated that comments could assist the agency in assessing how resources should be directed to better understand and manage the factors underlying the concern from aircraft noise exposure. The FAA has stated that it will not make any determinations based on the findings of these research programs for the FAA’s noise policies, including any potential revised use of the Day-Night Average Sound Level (DNL) noise metric, until it has carefully considered public and other stakeholder input along with any additional research needed to improve the understanding of the effects of aircraft noise exposure on communities.

A significant component of the FAA research is the Neighborhood Environmental Survey (NES), a multi-year research effort whose overall goal was to produce an updated and nationally representative dose-response curve that quantifies the relationship of peoples’ surveyed annoyance to aircraft noise in the United States so that the FAA has the scientific background to make informed decisions regarding aviation noise. As part of the effort to produce an updated and nationally representative dose-response curve, the NES surveyed people living near 20 airports in the contiguous United States. By combining survey results with modeled aircraft noise exposures in terms of DNL at each respondent’s location, a nationally applicable dose-response relationship between aircraft noise and annoyance was developed. As shown in the following table, the national curve results in approximately 49 percent of the people surveyed being Highly Annoyed at DNL 60 dBA and 65 percent being Highly Annoyed at DNL 65 dBA.

**Table 1: Predicted Percent Highly Annoyed (HA)**

<b>DNL Value (dBA)</b>	<b>Predicted Percent HA</b>	<b>Standard Error</b>	<b>Lower 95% Confidence Limit</b>	<b>Upper 95% Confidence Limit</b>
50	19.1	1.9	15.4	23.4
55	32.1	2.2	27.8	36.8
60	48.8	2.4	43.8	53.7
65	65.7	2.6	60.1	70.9
70	79.4	2.4	73.8	84.0

Fairfax County provided comments regarding the FAA summary of the research programs on March 9, 2021, which included recommendations regarding future aircraft noise policy (see Attachment 4).

## **CONSIDERATIONS RELATED TO LOCAL AIRPORTS**

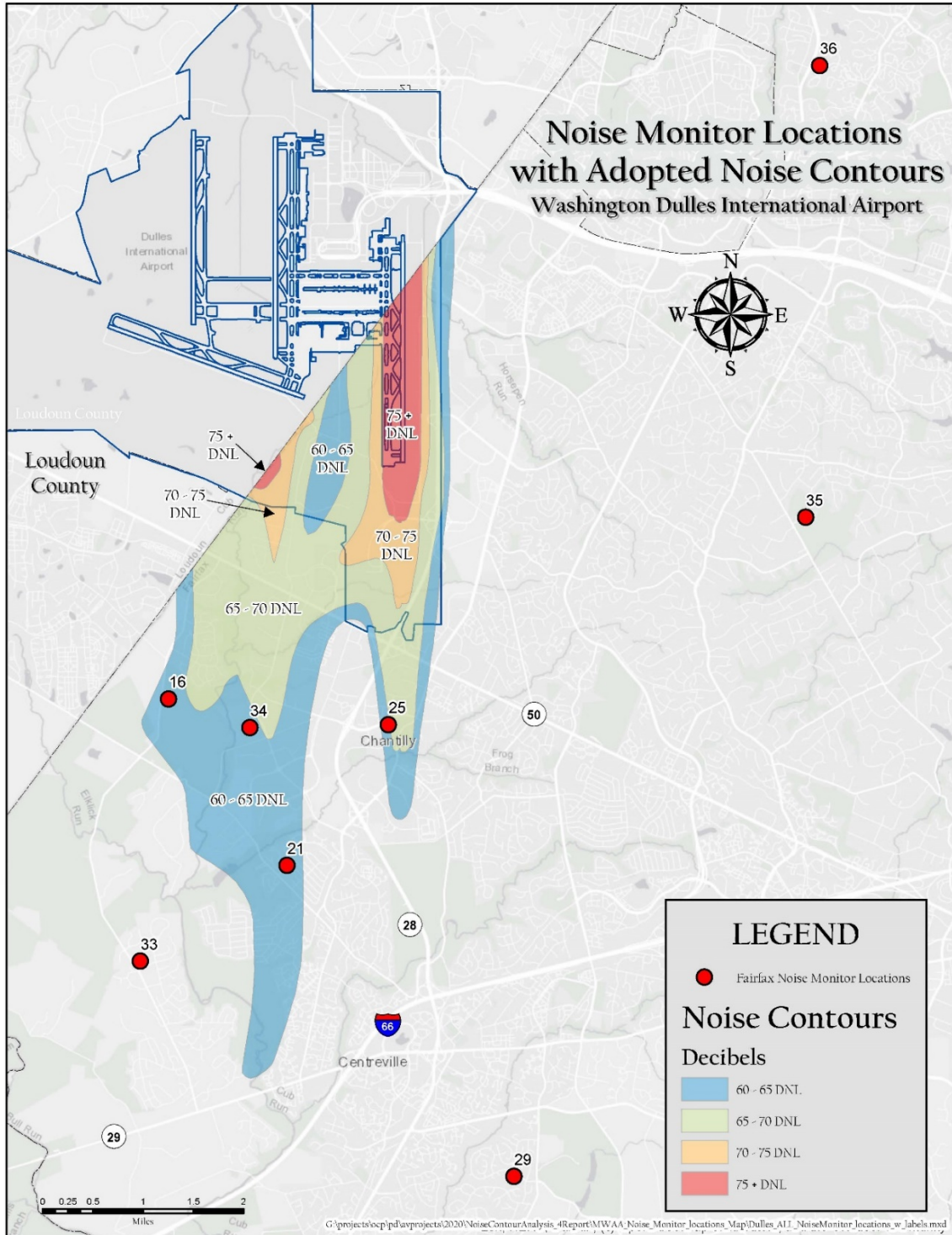
### **Dulles Airport**

The policy amendment being considered would be applicable to the area within the 60-65 DNL noise contours associated with Dulles, which were adopted by the Board in 1997. This area encompasses approximately 2,500 acres within Fairfax County, the majority of which is located to the south of the eastern north-south runway (Runway 01R/19L) and the center north-south runway (Runway 01C/19C). The 60-65 DNL noise contours associated with Runway 01R/19L extend from approximately 2.9 to 3.6 miles south of the runway. The 60-65 DNL noise contours associated with Runway 01C/19C extend from approximately 3.8 to 7.2 miles south of the runway.

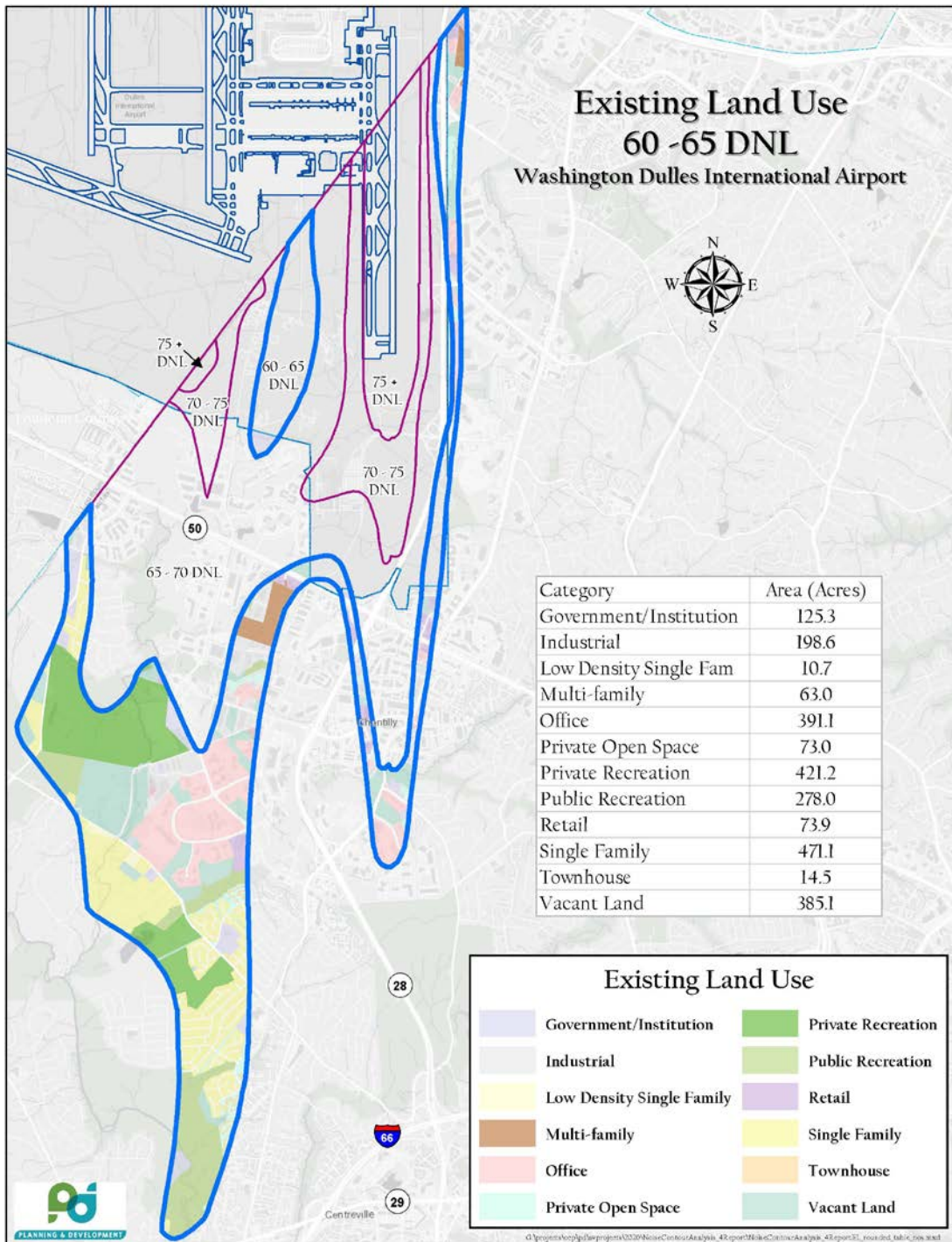
Figure 3 shows the Board adopted noise contours associated with Dulles; Figure 4 and Table 2 show the existing land uses within that area; and, Figure 5 shows the base land use recommendations of the Comprehensive Plan for the same area. With the exception of Land Unit J of the Dulles Suburban Center, most of the residential uses currently anticipated by the Plan within the Board adopted DNL 60-65 noise contours have been developed and are generally stable with limited opportunities for further residential development.

Figure 6 and Table 3 show Land Units within the Dulles Suburban Center that currently include an option for residential uses in the Plan. The Plan recommendations for Land Unit J include an option for residential use that applies to the entirety of Land Unit J. Land Unit J totals 1,156 acres, of which approximately 45 percent is within the Board adopted 60-65 DNL airport noise contours. Within Land Unit J, two rezonings for residential uses were approved prior to the adoption of PA 2018-III-DS1; three rezonings for residential uses have been approved subsequent to the adoption of PA 2018-III-DS1; and one proposed rezoning for residential uses is in review. As of December 2020, Land Unit J contained 704 dwellings. The total number of dwellings (existing + potential) recommended in the Plan for Land Unit J is 5,496 dwellings. The total number of dwellings (existing + entitled) in Land Unit J is 1,867 dwellings.

**Figure 3: Board Adopted Airport Noise Contours  
Washington Dulles International Airport**



**Figure 4: Existing Land Uses within the Board Adopted 60-65 DNL Noise Contours  
Washington Dulles International Airport**



**Table 2: Existing Land Uses within the Board Adopted 60-65 DNL Noise Contours,  
by Parcel/Lot Area  
Washington Dulles International Airport**

<b>Existing Use</b>	<b>Area (acres)</b>	<b>Percentage</b>
Government/Institutional	125.3	5.0%
Industrial	198.6	7.9%
Low-Density Single Family	10.7	0.4%
Multi-family	63.0	2.5%
Office	391.1	15.6%
Private Open Space	73.0	2.9%
Private Recreation	421.2	16.8%
Public Recreation	278.0	11.1%
Retail	73.9	3.0%
Single Family	471.1	18.8%
Townhouse	14.5	0.6%
Vacant Land	385.1	15.4%
<b>TOTAL</b>	<b>2,505.4</b>	<b>100.0%</b>

Note: Data within the Existing Land Uses table reflects information drawn from the Department of Tax Administration (DTA) database. Data may not precisely match the Planned Land Use data derived from GIS spatial queries due to differences in how land areas are assigned to land uses within the DTA database. While the Planned Land Uses table includes public rights-of-way, the Existing Land Uses table does not.





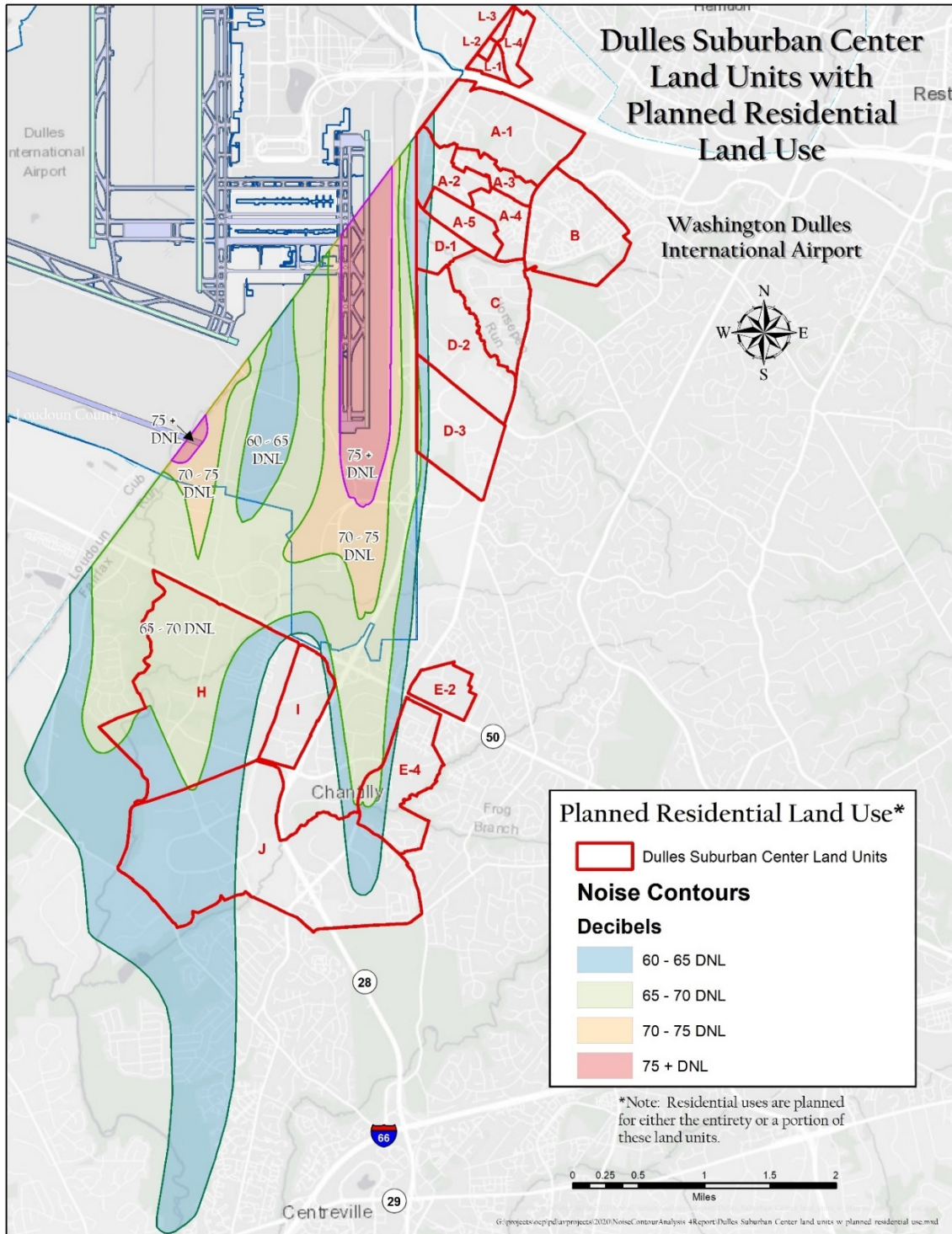


**Table 3: Planned Land Uses - Dulles Suburban Center**

<b>Land Unit</b>	<b>Planned Land Uses*</b>
A1	Transit-oriented development with a mix of residential and non-residential uses.
A2	A mix of land uses including office, hotel, support retail, and residential uses.
A3	Residential uses at a density of 8-12 dwelling units per acre (du/ac); expected to maintain the existing character, uses, and intensities.
A4	Residential uses at a density of 12-16 du/ac.
A5	Mixed use, which may include residential, office, hotel, and community serving retail.
B	Mix of residential, commercial retail, office, and public park uses.
C	Single-family detached residential uses at 1-2 dwelling units per acre, public park, and public facilities.
D1	Public park, open space, office, hotel, recreational facilities, support service retail uses, and residential uses up to 5 du/ac.
D2	Light industrial, industrial/flex, office, retail, hotel, and mixed-use development (hotel, conference center, trade or cultural facilities, school (existing), and residential (existing)).
D3	Office, mixed use (office, retail, recreation, and residential).
E2	Retail, ancillary office, mix of uses (residential, retail, hotel, and office).
E4	Industrial, industrial/flex, retail, office, residential, public facility, institutional, and governmental.
H	Industrial, research and development, industrial/flex uses, public and/or private recreational uses, and mobile home park (existing).
I	Light industrial, industrial/flex, hotel, office, tourist and employment-related uses, retail, restaurant, recreational facilities, private recreation, mix of uses (residential and office with community-serving retail).
J	Office, conference center/hotel, industrial/flex, industrial, residential, and retail.
L1	Institutional (existing) and office. Rail Transit Option: office, research and development, hotel, retail, and residential.
L2	Office and research and development. Rail Transit Option: office, research and development, hotel, retail, and residential.
L3	Office and research and development. Rail Transit Option: office, research and development, hotel, retail, and residential.
L4	Multifamily residential, office, and retail.

\* Land uses may reflect baseline, existing, and optional uses and may be parcel-specific. See Comprehensive Plan for further details regarding planned land uses: ([2017 Edition of the Comprehensive Plan - Dulles Suburban Center \(fairfaxcounty.gov\)](#)).

**Figure 6: Land Units within Dulles Suburban Center with Residential Development Options  
Near Washington Dulles International Airport  
(overlaid with the Board Adopted 60-65 DNL Noise Contours)**



## **TECHNICAL CONSIDERATIONS ASSOCIATED WITH PERMITTING NEW RESIDENTIAL USES WITHIN THE BOARD ADOPTED 60-65 DNL CONTOURS**

Staff met with noise consultants, land use attorneys, and developers to explore the technical issues associated with the introduction of new residential uses between the Board adopted 60-65 DNL noise contours. Topical areas explored included:

- Noise studies/measurements;
- Interior spaces, construction standards, and residential housing types;
- Exterior spaces;
- Airport noise disclosures and aviation easements; and
- Post-construction studies.

### **Noise Studies/Measurements**

Noise studies are generally submitted for land use proposals with identified noise sources and expected noise impacts to the proposed land uses. Noise sources include heavily traveled roads, aircraft operations, and railway activity. Noise studies typically assess noise using the DNL metric, which provides an average of the projected noise impacts, and, for residential and other noise sensitive uses, a commitment to the mitigation of interior average sound levels to 45 DNL. As stated previously, the DNL metric is required by the FAA for aircraft noise exposure analyses and noise compatibility planning and is the standard used by airports around the country when dealing with noise impacts. DNL is also used by the County for land use planning for those areas impacted by traffic noise.

As stated previously, MWAA collects data regarding aircraft noise levels for both the western and eastern portions of the County through a network of noise monitors, whose locations were determined by the Metropolitan Washington Council of Governments. (See the previous section titled “Metropolitan Washington Airports Authority Noise Event Data”.) Monitor locations are included on Figure 1.

While monitoring data provides useful information, these monitoring stations are limited in number and may not be located in places that can be used to determine projected noise impacts for a particular development. As an alternative, field studies might be used for a particular location. However, field measurements to determine noise impacts for a particular site may be challenging. While the state-of-the-art MWAA noise modeling program is able to discern between community background noise and aircraft overflight noise, field measurements generally are unable to do so. Additionally, unlike relatively uniform roadway traffic, discrete aircraft operations may vary greatly during various testing periods, depending on weather, the number of flight operations, and air traffic control procedures. Given the challenges associated with field noise studies and the separation of community background noise from aircraft noise, particularly without noise monitoring stations in the immediate vicinity, the DNL average noise level is applied as a noise metric.

## **Interior Spaces, Construction Standards, & Residential Housing Types**

County policies anticipate noise attenuation to achieve an interior noise level of no more than DNL 45 dBA. Noise mitigation typically includes increased Sound Transmission Class (STC) ratings for building components, to include windows, doors, roofs, walls, and sealants. Typical building construction (with windows closed) can be expected to attenuate noise impacts by approximately 20 dBA. Therefore, it can be expected that the interiors of any new residences built within the Board adopted 60-65 DNL contour would be attenuated to an average 45 DNL standard.

While the county could develop prescriptive STC ratings for various building components for particular noise mitigation standards, such an approach is not practical nor appropriate, largely due to the number of variables and the complexity of determining an overall noise reduction. As an alternative, noise studies related to specific development proposals could include a specific performance standard (i.e., an acceptable interior noise level). An analysis could determine a defined maximum outdoor aircraft noise level that will need to be mitigated. A building “shell” analysis could then be performed to define the desired STC ratings and noise attenuation for each building component to achieve the desired interior noise level for a particular building. A building shell analysis is a study by a noise consultant of the noise-reducing effects of certain building components, including roofs, walls, windows, and doors, with attention to floorplans, particularly bedroom locations, so that interior noise levels are attenuated (reduced) to acceptable levels and so that building floorplans are designed to mitigate the greatest noise impacts.

In regard to building types (single-family detached houses, townhouses, or apartments), the noise consultants felt that the building materials and the STC ratings were more critical than the building type that might be permitted within the 60-65 DNL contours. While certain building materials, such as cementitious siding and brick, may have some additional noise attenuation benefits, windows are generally the limiting factor in noise attenuation. Walls with a higher percentage of glazing (window surfaces) will generally perform more poorly than walls with less glazing. Given that the amount of glazing and the type of construction materials are the most critical factors in noise attenuation, multi-family buildings do not offer any particular noise mitigation advantage over single-family attached housing.

If the Board decides to permit new residential uses in the Board adopted 60-65 DNL contours, consideration should be given to Plan conditions that would require commitments to acceptable noise attenuation, regardless of the building type. The sample proffer included in Attachment 5 addresses this issue.

As stated, the DNL metric is typically used in identifying those areas most likely to be affected by aircraft noise since DNL is an indicator of average noise levels and takes into consideration peak noise levels experienced during aircraft overflights. Recent noise studies for proposed residential developments within Land Unit J have demonstrated that the maximum noise that is most often experienced may be up to 10 dBA higher than the DNL levels.

Typical construction techniques can be expected to reduce outside-to-inside noise levels by 20 decibels, which would meet the County’s standard of 45 decibels within residences within the 60

– 65 contour. If there is a desire to enhance attenuation to account for increased noise levels during individual overflights, the County could adopt as part of this Plan amendment the goal of achieving an outside-to-inside noise reduction of 25 decibels. A similar method has been applied by various jurisdictions, including High Point, North Carolina; Chandler, Arizona; Orlando, Florida; Eloy, Arizona; and Kent County, Delaware.

Construction costs can be expected to increase with enhanced noise reduction methods and materials, although an additional 5 dBA of noise attenuation beyond that achieved through normal construction methods (25 dBA total) is estimated to be approximately \$5,000 in 2020, depending upon the type and size of the residential unit, but could vary depending on other factors. However, the cost of noise attenuation starts to increase significantly for noise attenuation of 30 dBA and greater. It is expected that this additional cost would be passed on to home purchasers.

### **Exterior Spaces**

Current Plan guidance states that new development should not expose people to noise in excess of DNL 65 dBA in the outdoor recreation areas of homes (see Attachment 1, Page 2). The Plan further recognizes that recreation areas cannot be screened from aircraft noise. Portions of various outdoor fields, recreation areas, parks, and schools are already located within the Board adopted DNL 60-65 dBA contours associated with Dulles. This Plan amendment does not consider placing outdoor recreation facilities in the 65 DNL contour and thus would be consistent with current Plan guidance. Within the adopted Plan text for Land Unit J of the Dulles Suburban Center, mitigation to 65 dBA is encouraged for private active recreation uses only, such as the placement of facilities indoors, and/or enclosing facilities with a flexible or rigid structure, such as a dome.

If the Board decides to permit new residential uses in the Board adopted 60-65 DNL contours, the existing guidance for Land Unit J could be expanded to apply to all new residential development.

### **Airport Noise Disclosures and Avigation Easements**

Commitments to disclosure measures are often sought to help ensure that prospective purchasers and renters are aware of the presence of the airport and potential associated impacts. Disclosure measures may include copies of legally binding documents, such as recorded avigation easements, and notices in promotional materials, such as brochures and displays.

Promotional materials may be useful for initial purchasers of a residence to understand that the residence may be impacted by aircraft-generated noise from a nearby airport. However, such information might not be available to subsequent purchasers. To help ensure that all purchasers are aware of nearby aircraft operations and the potential impacts of those operations, such information could also be included in homeowner association (HOA) documents.

Avigation easements are legal recorded agreements (typically between a landowner and an airport authority or other airport operator) that run with the land and are passed on to prospective purchasers and future homeowners to make them aware of the potential impacts from aircraft operations and to recognize the right of aircraft to overfly the property. Avigation easements would be recorded in the land records and contained in the HOA documents, such that all successive purchasers would be made aware of an easement and its terms. The FAA generally requires that avigation easements be recorded for affected properties whenever federal funds are used for noise mitigation measures, particularly for properties located within areas of 65 DNL and greater. (See Attachment 6 for a sample avigation easement).

If the Board decides to permit new residential use in the Board adopted 60-65 DNL contours, consideration should be given to Plan conditions that would require commitments such that adequate assurances are provided by the property owner at the time of rezoning to ensure that future residents are aware of the airport and noise impacts prior to purchasing homes and to the rights of the airport regarding its operations. These could include:

- Marketing information, such as marketing site plans, home brochures, and standard features lists, which note that the property is impacted by noise from overflying aircraft, should be located in sales offices;
- Disclosure agreements that include requirements that, prior to entering into a contract of sale, prospective purchasers must be notified in writing of the proximity of Dulles, including the distance to the airport; that homes are located within an area that will be impacted by aircraft overflights and aircraft noise; that the noise from individual aircraft flying over the property will exceed the average aircraft noise levels for the Property; that the frequency of overflights may increase over time; and that the Property is encumbered by an avigation easement. Furthermore, a map showing the Dulles Airport, aircraft noise contour lines as adopted by Fairfax County, and the general locations of residential units and active recreation spaces should accompany such disclosure notifications. Disclosures should be included in sales contracts, property owner association (POA) disclosure statements, and master POA governing documents. The master POA documents should contain a notification that the site is in close proximity to Dulles, that dwellings may experience aircraft noise, that noise contour lines may change in the future, and that aircraft noise may increase; and
- Avigation easements should be placed over the entire property for the benefit of MWAAs indicating the right of aircraft to pass over the property.

Recent rezoning applications for residential uses within Land Unit J of the Dulles Suburban Center have included proffered commitments related to airport noise disclosures and avigation easements consistent with the foregoing. A sample proffer to this effect is included in Attachment 5.

### **Post-Construction Studies**

Current Plan guidance states that post-development noise studies should be conducted if requested in order to help staff evaluate the effectiveness of noise mitigation measures (see Attachment 1, Page 13). Such post-construction studies might be expensive and challenging to implement. However, the greatest concern is that it might be problematic to implement remedial measures post-construction should noise attenuation goals not be achieved.

As an alternative, noise modeling and certification could substitute for post-construction testing, since it is a well-established practice and is done prior to construction, such that actual construction can be modified if required to meet the agreed upon standards prior to occupancy. These models allow a consultant or builder to model building components with various Sound Transmission Class (STC) ratings to determine how to best achieve the desired noise attenuation. If required, floor plans could be modified to reduce exposure to aircraft noise.

In order to ensure that building components with the appropriate STC ratings are installed within a particular building, builders could submit verification letters, specification sheets, or testing reports, demonstrating that the building components meet the modeled STC ratings.

If the Board decides to permit new residential uses in the Board adopted 60-65 DNL contours, consideration should be given to conditions that require pre-construction noise modeling for building components, floor plans that reduce exposure to environmental noise impacts, and the submission of verification letters during the site review process, certifying that the noise-modeled components have been installed.

## **CONCLUSION**

Most jurisdictions in the United States with international airports permit residential uses within the 60-65 DNL and focus on noise abatement measures for noise-sensitive uses within those areas. Adding residential uses in this area of the County, predicated on the conditions/considerations set forth in this paper, could balance the County's economic development goals with its goals of protecting the economic viability of the airport.

## **Next Steps**

Following a community engagement process, publication of a staff report is anticipated in the second quarter of 2022 followed by public hearings before the Planning Commission and Board of Supervisors in the second and third quarters of 2022, respectively. (See <https://www.fairfaxcounty.gov/planning-development/plan-amendments/airport-noise-policy> for the latest scheduling information).

## **CONTACT INFORMATION**

Input and questions regarding the plan amendment can be directed to Joseph Gorney at (703) 324-1380 or [DPD-AirportNoisePA@fairfaxcounty.gov](mailto:DPD-AirportNoisePA@fairfaxcounty.gov).

## **Attachments**

1. Fairfax County Comprehensive Plan Excerpts
2. Fairfax County Zoning Ordinance Excerpts
3. Loudoun County Draft Comprehensive Plan and Zoning Ordinance Excerpts
4. Fairfax County Memorandum to FAA re: Research Programs related to Civil Aircraft Noise (March 9, 2021)
5. Sample Proffer Commitments
6. Sample Avigation Easement

7. Washington Dulles International Airport Master Plan and Technical Advisory Committee
8. Washington Reagan National Airport Noise Compatibility Planning
9. Davison Army Airfield
10. Link to Consultant Report and Other Materials – July 21, 2020 Land Use Policy Committee Meeting (<https://www.fairfaxcounty.gov/boardofsupervisors/board-supervisors-land-use-policy-committee-meeting-july-21-2020>).



## COMPREHENSIVE PLAN CITATIONS

### Policy Plan – Land Use

**Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Land Use – Appendix, Amended through 12-04-2018, Page 14.**

“Guidelines for Suburban Neighborhoods:

5. Environmental concerns should be considered in site selection. Multifamily development is not appropriate in areas designated as Low Density Residential Areas. Environmental Quality Corridors and areas subject to airport noise greater than DNL 60 dBA generally should be avoided.”

**Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Land Use – Appendix, Amended through 12-04-2018, Page 46.**

“5. Environment

New development should minimize human exposure to noise sensitive areas. Internal noise levels should not expose people in noise sensitive environments to noise in excess of DNL 45 dBA. Any new or proposed development should be subject to existing airport noise policies.”

### Policy Plan – Environment

**Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Environment, Amended through 12-3-2019, Pages 11-12.**

“Noise

Transportation generated noise impacts the lives of many who live in the county. Some county residents are subjected to unhealthful levels of noise from highway traffic, aircraft operations and railroads, including WMATA's Metrorail (See Figure 3). Federal agencies with noise mitigation planning responsibilities have worked with the health community to establish maximum acceptable levels of exposure (Guidelines for Considering Noise in Land Use Planning and Control). These guidelines expressed in terms of sound pressure levels are; DNL 65 dBA for outdoor activity areas, DNL 50 dBA for office environments, and DNL 45 dBA for residences, schools, theaters and other noise sensitive uses. While the federal guidelines consider all land uses to be compatible with noise levels below DNL 65 dBA, they are not proscriptive as they relate to local land use decisions. Further, it is known that adverse noise impacts can occur at levels below DNL 65 dBA and that there may be variability among communities in responses to such noise.

**Objective 4: Minimize human exposure to unhealthy levels of transportation generated noise.**

Policy a: Regulate new development to ensure that people are protected from unhealthy levels of transportation noise.

Policy b: Reduce noise impacts in areas of existing development.

New development should not expose people in their homes, or other noise sensitive environments, to noise in excess of DNL 45 dBA, or to noise in excess of DNL 65 dBA in the outdoor recreation areas of homes. To achieve these standards new residential development in areas impacted by highway noise between DNL 65 and 75 dBA will require mitigation. New residential development should not occur in areas with projected highway noise exposures exceeding DNL 75 dBA. Because recreation areas cannot be screened from aircraft noise and because adverse noise impacts can occur at levels below DNL 65 dBA, in order to avoid exacerbating noise and land use conflicts and to further the public health, safety and welfare, new residential development should not occur in areas with projected aircraft noise exposures exceeding DNL 60 dBA. Where new residential development does occur near Washington Dulles International Airport, disclosure measures should be provided.”

*Policy Plan – Economic Development*

**Fairfax County Comprehensive Plan, 2017 Edition, POLICY PLAN, Economic Development, Amended through 3-4-2014, Page 2.**

**“Objective 3: Provide a high quality transportation system to satisfy the demands of present and future economic development.**

Policy d. Support the continued development of Washington Dulles International Airport as an international gateway.”

*Area I*

**Fairfax County Comprehensive Plan, 2017 Edition, Area I, Area Plan Overview, Amended through 10-16-2018, Introduction, Page 16.**

**“Environment**

Text addressing areas with specialized environmental concerns, including the Occoquan Basin and Dulles Airport Noise Impact Area is included in the Area III Plan. Text concerning the Difficult Run watershed is presented in the Area II and Area III Plans.”

*Area II*

**Fairfax County Comprehensive Plan, 2017 Edition, Area II, Area Plan Overview, Amended through 10-16-2018, Introduction, Page 16.**

“Environment

Text addressing areas with specialized environmental concerns, including the Difficult Run Watershed, the Occoquan Basin and the Dulles Airport Noise Impact Area is presented below. Text concerning the Difficult Run watershed is also presented in the Area II Plan.”

*Area III*

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Area Plan Overview, Amended through 10-16-2018, Introduction, Page 16.**

“Text addressing areas with specialized environmental concerns, including the Difficult Run Watershed, the Occoquan Basin and the Dulles Airport Noise Impact Area is presented below. Text concerning the Difficult Run watershed is also presented in the Area II Plan.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Area Plan Overview, Amended through 10-16-2018, Introduction, Pages 19-23 (graphics excluded).**

“Land Use Planning within the Dulles Airport Noise Impact Area

Due to the location of runways, the type and frequency of various aircraft using the airport, as well as airport operating procedures, portions of Fairfax County in the vicinity of Dulles Airport are either currently, or are projected to be, subjected to levels of aircraft noise which may be incompatible with residential development and other noise sensitive land uses.

Considerable research has been done to determine to what extent there is a direct relationship between periods of exposure to certain levels of noise (particularly aircraft noise) and identifiable, adverse effects on people. The effects of noise have been researched and while complete causal relationships have not been definitively established for nonauditory effects, empirical observation has documented that noise can affect exposed individuals indirectly by disturbing the general environment in which they live. Federal agencies with noise mitigation planning responsibilities have worked with the health community to establish maximum acceptable levels of exposure (Guidelines for Considering Noise in Land Use Planning and Control). These guidelines, expressed in terms of sound pressure levels, are: DNL 65 dBA for outdoor activity areas, DNL 50 dBA for office environments, and DNL 45 dBA for residences, schools, theaters and other noise sensitive uses. While the federal guidelines consider all land uses to be compatible with noise levels below DNL 65 dBA, they are not proscriptive as they relate to local land use decisions. Further, it is known that adverse noise impacts can occur at levels below DNL 65 dBA and that there may be variability among communities in responses to such noise.

A zoning overlay district (the Airport Noise Impact Overlay District) has been established to require noise mitigation for those noise sensitive uses that are established in the impacted area. Fairfax County has delineated the boundaries of the Airport Noise Impact Overlay District based on the noise contour maps provided by the Metropolitan Washington Airports Authority (MWAA).

There are several reasons for the selection of the noise exposure contours provided by MWAA:

1. These contours represent the latest, best available and most appropriate noise impact assessment contours for land use planning purposes. They have been developed by MWAA through the use of the Federal Aviation Administration's Integrated Noise Model, using information and projections regarding the locations of average flight tracks, the frequency of use of each runway and average flight track, aircraft operating procedures, and average number of daily operations by type of aircraft and time of day.
2. Assumptions regarding future airport improvements (e.g. additional runways) and projected airport operations that were used in the determination of MWAA's noise contour maps most realistically reflect MWAA's goals for Dulles Airport expansion. This permits a full examination of the implications of Dulles Airport expansion as envisioned by its proprietor and does not prematurely place the county in the position of implicitly recommending the curtailment of the Dulles Airport expansion.
3. The noise contour maps provided by MWAA are based on the most current information regarding aviation activity forecasts; they consider existing operations and projected operations through the year 2000 and beyond. This timeframe represents the longest planning period considered in the development of the set of contours presented. Land use planning considerations based on the set of contours developed by MWAA will provide for the highest level of protection of the public health, safety and welfare based upon the most current, best available information.

Recognizing that the objective of the county is to minimize to the fullest extent the potential for adverse aircraft noise impacts upon its citizens, the county has selected noise contours which consider both existing conditions, near-term future projected conditions, as well as ultimate "potential" conditions which reflect the long-term potential Dulles Airport activity level. As new appropriate noise contours become available, this information will be brought before the Board of Supervisors so that appropriate modifications can be made, if necessary, to the Comprehensive Plan to reflect the most recent and most appropriate delineation of the Dulles Airport Noise Impact Area to which land use compatibility policies will be applied. Figure 4 illustrates the updated noise contours for Dulles International Airport. The DNL 65 dBA, DNL 70 dBA, and DNL 75 dBA contours reflect the greatest extent of these contours as displayed on several noise contour maps within the 1993 Addendum. The DNL 60 dBA contour was taken from a long-term potential DNL 60 dBA contour map provided to the county by MWAA. Related to these contours are the land use compatibility guidelines set forth in Table 2. This table establishes the basis for land use decisions within the designated Dulles Airport Noise Impact Area.

In general, the basis for the land use compatibility guidelines outlined in Table 2 can be found in existing federal guidelines. The Department of Housing and Urban Development (HUD) in Noise Abatement and Control Standards (Circular 1390.2, August 4, 1971), and the Federal Interagency Committee on Urban Noise in Guidelines for Considering Noise in Land Use Planning and Control (1980) have published noise compatibility guidelines to encourage land utilization patterns for housing and other municipal needs in noise-impacted areas. These guidelines have been applied within Federal Aviation Regulations and have been affirmed within a 1992 report issued by the Federal Interagency Committee on Noise. They are intended to separate uncontrollable noise sources from residential and other noise-sensitive areas. While the federal guidelines consider all land uses to be compatible with noise levels below DNL 65 dBA, they have been developed to guide federal noise compatibility efforts and are not proscriptive as they relate to local land use decisions. Further, it is known that adverse noise impacts can occur at levels below DNL 65 dBA and that there may be variability among communities in responses to such noise. As a result, and because recreation areas cannot be screened from aircraft noise, in order to avoid exacerbating noise and land use conflicts and to further the public health, safety and welfare, new residential development is not recommended in areas with projected aircraft noise exposures exceeding DNL 60 dBA. Where new residential development does occur near Washington Dulles International Airport, disclosure measures should be provided.”

**TABLE 2**  
**Land Use Compatibility Guidelines**  
**Within The Dulles Airport Noise Impact Area**

<u>Activities and/or Land Uses</u>	<u>Greater than DNL 75 dBA</u>	<u>DNL 70-75 dBA</u>	<u>DNL 65-70 dBA</u>	<u>DNL 60-65</u>	<u>Less than DNL 60 dBA</u>
<b>Residential</b>	Not Recommended	Not Recommended	Not Recommended	Not Recommended	Compatible

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Bull Run Planning District, Amended through 10-16-2018, Overview, Page 4.**

“The adopted Comprehensive Plan recommends that the area generally on both sides of Lee-Jackson Memorial Highway and west of Sully Road (Route 28) to the county line be planned for industrial use. This area has been designated the Dulles Suburban Center. The Concept seeks to re-emphasize the desirability of this area for industrial and research and development uses. It is intended to encourage within this area light manufacturing, warehousing, repair and maintenance services, particularly for businesses which could benefit from a direct and easy connection to Dulles Airport. In addition, this designation seeks to make optimum use of the area which is most severely impacted by noise from airport operations.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Bull Run Planning District, Amended through 10-16-2018, Overview, Page 9.**

“Environment

The area near the southern edge of Dulles Airport is heavily impacted by aircraft noise. The impacted areas are designated on the Plan map and are addressed with an overlay district in the Zoning Ordinance. Residential development is not recommended where such development would be inconsistent with Environmental Objective 4 of the Policy Plan.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Bull Run Planning District, Amended through 10-16-2018, BR1-Dulles Airport Community Planning Sector, Page 44.**

**“CHARACTER**

Two areas of concern to the county, aircraft noise impacts and industrial and commercial development programs, bear especially close scrutiny as they have a major effect on development in the airport area. Additional guidance on aircraft noise impacts may be found in the Area III volume of the Comprehensive Plan, Overview section.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Bull Run Planning District, Amended through 10-16-2018, BR2-Upper Cub Run Community Planning Sector, Page 49.**

“The planning sector is subject to several major environmental constraints including significant Environmental Quality Corridor (EQC) areas associated with Cub Run and its branches. Streams in this planning sector flow into the Occoquan Reservoir. Noise impacts from Dulles Airport and the extent of these impacts must be considered in evaluating all future development in this area. Additional guidance on aircraft noise impacts may be found in the Area III volume of the Comprehensive Plan, Overview section.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Bull Run Planning District, Amended through 10-16-2018, BR3-Flatlick Community Planning Sector, Page 55.**

“Noise impacts from Dulles Airport and the extent of these impacts must be considered in evaluating all future development in this area. Additional guidance on aircraft noise impacts may be found in the Area III Overview section.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Pages 4-5.**

**“Planning History**

Land in proximity to the Dulles Airport in Fairfax County has been planned for employment or industrial use since the airport was envisioned in the late 1950s. Planning for the land adjacent to the airport has been influenced primarily by the economic benefit of the direct relationship to the airport, the excellent regional access and by the concern that residential uses may not be appropriate in some areas impacted by aircraft noise. The configuration of the Dulles employment and industrial area shifted over the years in response to changing aircraft noise

contour projections; major planning elements, such as the “outer beltway” planned in 1970 as a north-south facility between Route 28 and Route 123; and changing needs projections for the type and extent of employment uses related to the airport.

The late 1960s and early 1970s were a period of rapid development growth countywide. Up to 14,000 new residents were moving to the county each year and the western county was largely rural. In 1970, the first comprehensive plans for the Bull Run and Upper Potomac planning districts were adopted or adopted in principle. There was an emphasis in these plans to support the potential for major employment opportunities, partly to help offset the cost of public facilities for residential development and because of federal government master planning to expand the airport facility and operations. Expanded aircraft noise contours had recently been developed by the Federal Aviation Administration (FAA), which included future supersonic transport (SST) operations. The new contour extended to an “outer beltway”, shown in the Comprehensive Plan in 1970 as a north-south cross-county highway following an alignment between Lees Corner Road and Stringfellow Road and joining the present Fairfax County Parkway alignment north of Franklin Farm. Residential use was determined to be not appropriate within noise impacted areas and expansion of what was then known as the Dulles employment area eastward into this area was deemed to be appropriate.

...

The 1975 PLUS Plan recommended showplace development, including corporate headquarters, hotels, motels, convention centers and office buildings for the area north of Horse Pen Run. In the area south of Horse Pen Run, more traditional industrial uses were planned, including light manufacturing, freight distribution facilities, warehousing, and office use. A variety of general policies were adopted in conjunction with these uses pertaining to: compatibility of industrial use with residential use; restriction of residential development in noise impacted areas; coordination among developments; circulation and access; addition of major public facilities, including use of the Dulles Airport Access Road (DAAR) for commuter traffic; and expansion of sewer capacity.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Page 6.**

“Dulles Airport, a major economic catalyst for the Northern Virginia area, is adjacent to the Dulles Suburban Center. Future development within the Suburban Center will benefit from the proximity of the airport and emphasize national and international business and commercial endeavors; tourism and visitor services; major recreation and entertainment features; mixed commercial and residential areas in urban settings with compatible facilities and amenities; and industrial service areas required to support the Dulles Airport and suburban area, and the metropolitan region. A variety of housing outside the airport noise contours in the Dulles Suburban Center and adjacent Planning Districts will serve this Center.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Page 7.**

### “Integration of Residential Development

One of the principal goals outlined in the Policy Plan is to expand housing opportunities in or near employment centers as a way to minimize the impacts of commuters on county roads and to make public transit more feasible as a transportation alternative. Planning for a mixture of residential and nonresidential uses in the county's employment centers should also aid in expanding the opportunity for affordable housing and providing a variety of housing types, including higher density residential development in areas that can be served by transit and can offer access to retail and other services. In each of the Suburban Centers identified on the county's Concept for Future Development Map, including the Dulles Suburban Center, residential uses have been planned on land suitable for residential and mixed-use development and where there are services, amenities and public facilities, such as schools and parks, planned to serve the residential communities. In the Dulles Suburban Center, there are unusual constraints that may limit the ability to develop new residential use. These include the need to identify land for parks and school sites, the effect of the airport noise policy on residential uses in some areas, and retaining planned and existing industrial uses.

In planning for a variety of residential uses, consideration must also be given to creating a quality living environment in an area that will primarily be developed among nonresidential uses and where access may be limited. Residential developments will need to provide for recreational and other amenities on-site and be adequately screened and buffered to mitigate noise, light and other nuisances generated by nonresidential uses. Further, development will need to be designed so that traffic associated with nonresidential uses, including trucks, will not, in general, be traveling through residential neighborhoods. One exception may be where higher-intensity residential uses are planned as part of a mixed-use project.”

### **Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Page 8.**

“Airport operations present constraints to development in terms of allowable building heights within flight paths and noise impacts. Policies related to building heights may be found in the Area III Plan Overview in the section “Allowable Height of Structures in the Vicinity of Dulles Airport.” To provide for a healthy living environment, Fairfax County has adopted a policy which states that new residential development is not recommended in areas with projected aircraft noise exceeding DNL 60 dBA. Fairfax County has also established an “Airport Noise Impact Overlay District” (ANIOD) around Dulles Airport. Location of noise contours around Dulles Airport is calculated by a computer model of airport operations.

### History

The ANIOD boundaries shown on the 1986 and 1992 Comprehensive Plan map were adopted for planning purposes in 1983. These boundaries were based on data related to “Stage 2” aircraft, which generate relatively high noise levels, and on estimates of future flight operations that were developed in the late 1970s. Because of federal legislation requiring U.S. airlines to phase in a new generation of quieter aircraft (“Stage 3” aircraft), and because of changes in projected future aviation operations at Dulles Airport, in 1993 the Metropolitan Washington Airports Authority



revised its noise contour projections for the area around Dulles Airport. The updated noise contour lines are substantially smaller in geographic extent than the corresponding contours shown on the 1986 and 1992 Comprehensive Plan map. Plan policy recommends a higher standard than indicated by the FAA, recommending that new residential development not be located in areas with projected aircraft noise exposures exceeding DNL 60 dBA. Where new residential development does occur near Washington Dulles International Airport, disclosure measures should be provided.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Page 10.**

“15. Support Dulles Airport operations and future expansion by ensuring land use compatibility and retention of industrial land uses within the Dulles Suburban Center.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Pages 10-11.**

“IMPLEMENTATION

- Measures to increase housing to satisfy a variety of housing needs within the Center while demonstrating conformance with the airport noise policy and not reducing the tax base within the Tax District.
- Monitoring proposed changes in the airport noise contours and their impacts on land use planning.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Page 11.**

“Residential Development in the Tax District

Residential development in portions of the Dulles Suburban Center would help create a greater mix of uses, provide more housing close to employment centers, and provide for a use that generates less peak-hour traffic than might occur if land is developed by-right under the existing zoning. However, under the current structure of the Tax District, residentially zoned properties are not subject to the tax surcharge that has been established for owners of nonresidential property to fund roadway improvements. The Tax District legislation includes a mechanism by which contributions may be accepted to allow residential development without increasing the financial burden on other Tax District landowners or the county.

A factor which currently limits housing opportunities within the Tax District is the impact of airport noise. Much of the land within the Tax District located to the south of Dulles Airport is within the adopted DNL 60 dBA airport noise contour.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Overview, Page 14.**

**“Residential**

Where residential development is to be considered as an option, the proposed development should:

- Minimize human exposure to unhealthful levels of noise in accordance with the guidance provided by the Policy Plan under Environment Objective 4.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Area-Wide Recommendations, Page 16.**

“Development should be consistent with the need to maintain and enhance the economic viability of the Route 28 Tax District. New residential use is not recommended in areas that are impacted by noise from Dulles Airport as set forth in the environment recommendations for Area III. Existing stable neighborhoods within the Dulles Suburban Center that are planned for continued residential use should be preserved. Infill development in these areas should be of a compatible use, type and intensity in accordance with the guidance provided by the Policy Plan under Land Use Objectives 8 and 14.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Area-Wide Recommendations, Page 27.**

**“ENVIRONMENT**

Within the Dulles Suburban Center, airport noise and environmental quality corridors (EQC) are the primary environmental constraints to development. The floodplain areas and areas of freshwater wetlands, which account for most of the environmental quality corridor areas in the Dulles Suburban Center, are the primary environmental resources which should be protected and incorporated into the development pattern. Stormwater management and riparian buffer protection and restoration plays an important role in protecting water quality and the health of the streams.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Area-Wide Recommendations, Page 30.**

**“Airport Noise**

Much of the Dulles Suburban Center is included within the Airport Noise Impact Overlay District (ANIOD) of the Zoning Ordinance. The ANIOD was established to ensure the achievement of interior noise guidelines suggested within federal noise compatibility documents for residential and other uses that are constructed within ANIOD and to prohibit residential and certain other noise sensitive uses from areas subject to particularly severe impacts from aircraft noise. New residential development with appropriate acoustical treatment and other mitigation measures is permitted within the ANIOD. Nonetheless, Plan guidance does not recommend such development in areas with projected aircraft noise exposures exceeding DNL 60 dBA. Where new residential development does occur near Washington Dulles International Airport, disclosure measures should be provided. Figure 5 presents a map of the Dulles Airport noise contours as they relate to the boundaries of the Dulles Suburban Center. The DNL 65 dBA, DNL 70 dBA, and DNL 75 dBA contours reflect the greatest extent of these contours as displayed on several noise contour maps within the March, 1993 Addendum: FAR Part 150 Noise Compatibility Program, Washington Dulles International Airport prepared for the Metropolitan Washington Airports Authority (MWAA). The DNL 60 dBA contour was taken from the long-term potential DNL 60 dBA contour map provided to the county by MWAA.

A more extensive discussion of noise compatibility planning and Dulles Airport noise impacts is contained in the Area Plan Overview for Area III under the heading “Land Use Planning Within the Dulles Airport Noise Impact Area.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Area-Wide Recommendations, Pages 40-41.**

“Site specific recommendations for parks and recreation are contained in the Land Unit Recommendations section. Area-wide recommendations for parks and recreation are summarized as follows:

5. Master planning and detailed site design for outdoor recreation facilities (public and private) should be coordinated with appropriate transportation officials in order to mitigate the impacts of traffic, infrastructure development, and external noise to the extent possible.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 60.**

“Noise

Proposed residential uses, outdoor activity areas and other noise sensitive uses may be affected by proximity to the Dulles Toll Road and Metrorail. In addition, a small portion of the Land Unit near Route 28 is located within an area where projected aircraft noise exposures exceed DNL 60 dBA and where current and/or projected future highway noise levels exceed DNL 75 dBA (a day-night weighted average noise level).”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 105.**

“7. The area generally extending south of Vernon Street to the south of Dallas Street, east of Walney Road, is planned for and developed with residential use. This area is not within the Route 28 Tax District and residential development will not affect the viability of the Tax District. Residential use may be appropriate at a density of 16-20 dwelling units per acre, if the following conditions are met:

- Residential development is consistent with the county’s adopted policies regarding residential development in areas impacted by noise from Dulles Airport; and”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 116.**

“Land Unit H also contains the Meadows of Chantilly Mobile Home Park. The mobile home park provides important affordable housing; however, the majority of this community is located inside the DNL 60 dBA noise contour associated with projected operations at Dulles Airport.

...

4. The Meadows of Chantilly Mobile Home Park is a viable residential area. This residential neighborhood should be protected; transitional screening requirements on adjacent industrially planned parcels should neither be waived nor modified. The Meadows of Chantilly Mobile Home Park should not be expanded because it is largely within the airport noise impact area. If the Mobile Home Park is redeveloped to other uses, then relocation assistance to the tenants of the park should be provided in accord with the guidelines of the Policy Plan.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 125.**

“Noise

- While Comprehensive Plan policy discourages certain uses within the DNL 60-65 dBA aircraft noise contour, other planning goals support residential and other noise sensitive uses under the following conditions:

- o A noise study that documents the expected noise impacts is submitted during the development review process for all noise sensitive uses.

- o Commitments are provided during the development review process to construction standards and materials that mitigate interior auditory impacts to ensure that interior noise levels within

living spaces do not exceed 45 dBA. Post-development noise studies should be conducted if requested in order to help staff evaluate the effectiveness of noise mitigation measures.

o Adequate assurances are voluntarily provided by the property owner at the time of rezoning to ensure that residential development in this area will not conflict with, or pose any threat to the long-term viability of, Dulles Airport. These assurances may include such things as recorded avigation easements, hold harmless agreements, and the like.

o Mitigation to 65 dBA is encouraged for private active recreation uses, such as placement of facilities indoors, and/or enclosing facilities with a flexible or rigid structure, such as a dome.

o Disclosure statements, as well as a map of Dulles Airport, the DNL 60 dBA noise contour line, and general locations of residential units and private active recreation spaces, are included in all promotional and marketing materials and leasing and purchase agreements for residential and noise-sensitive uses, and are recorded in the land records, that state that a property is located within an area that will be impacted by aircraft noise. Notice should be made to all initial and subsequent lessors and purchasers.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 126.**

“Schools

•Property owners and developers in Land Unit J should collaborate with Fairfax County Public Schools (FCPS) to identify location(s) for school facilities preferably in advance of approval of applications for new residential developments in order to maintain and improve the county’s high standards for educational facilities and to not impact current levels of service provided by the public school system. For land, the acreage of a site(s) may be determined with FCPS staff based on school policy. For reuse of a building(s), the applicant in coordination with FCPS may select a building(s) that provides access, safety, security, and meets play space requirements. Sites or buildings would ideally be in a location outside of the DNL 60 dBA airport noise line to minimize noise impacts.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 146.**

“Noise

Proposed residential uses, outdoor activity areas and other noise sensitive areas may be affected by proximity to the Dulles Toll Road. Portions of the area are also located within one-half mile of the DNL 60 noise contour for Washington Dulles International Airport. Furthermore some of the area may be affected by noise from the quarry located to the northwest in Loudoun County.

Noise studies may be required to demonstrate that these impacts will be addressed. Provision should be made to notify future residents of the area that they may be impacted by quarry operations. The use of planted terraces, maintenance of tree canopy through the areas under consideration, the use of planted roof gardens and planted sound absorption walls have been found effective management techniques for developments near airports.”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 9-24-2019, Dulles Suburban Center Land Unit Recommendations, Page 157.**

Land Unit L-4

- All residential structures should incorporate noise attenuation measures as appropriate to meet the Interior Noise Level Standard P3, to achieve an interior noise level not to exceed 45 dBA Ldn; and”

**Fairfax County Comprehensive Plan, 2017 Edition, Area III, Upper Potomac Planning District, Amended through 10-16-2018, Overview, Page 10.**

“Environment

The Upper Potomac Planning District contains a portion of the Occoquan Reservoir watershed, the northern and western portions of the Difficult Run watershed, the entirety of Fairfax County’s portion of the Sugarland Run watershed, most of Fairfax County’s portion of the Horsepen Creek watershed and all of the Pond Branch and Nichols Run watersheds. The northern boundary of the planning district is the shoreline of the Potomac River, which is mostly park or preserved lands. The area near the eastern edge of Dulles International Airport contains a small amount of land impacted by aircraft noise.”

Area IV

**Fairfax County Comprehensive Plan, 2017 Edition Area IV, Area Plan Overview, Amended through 10-16-2018, Introduction, Page 16.**

“Text addressing areas with specialized environmental concerns, including the Occoquan Basin and Dulles Airport Noise Impact Area is included in the Area III Plan. Text concerning the Difficult Run watershed is presented in the Area II and Area III Plans.”

## **Fairfax County Zoning Ordinance, Article 3, Section 3103, Subsection 3103.2 Airport Noise Impact Overlay District**

### **2. Airport Noise Impact Overlay District**

#### **A. Purpose**

The Airport Noise Impact Overlay District is established for the general purpose of controlling conflicts between land uses and noise generated by aircraft and to protect the public health, safety, and welfare from the adverse impacts associated with excessive noise.

It is the intent of this overlay district to regulate land uses within designated existing or projected airport noise impact areas by requiring acoustical performance standards. Nothing within this section will be construed as altering building materials or construction methods from those that are specified in the USBC.

#### **B. District Boundaries**

The Airport Noise Impact Overlay District boundaries are based on noise impact contours adopted by the Board, which are subject to periodic updating and amendment in accordance with the provisions of subsection 8100.2.

#### **C. Establishment of Districts**

**(1)** For purposes of administering these regulations, there will be three Airport Noise Impact Areas:

- (a)** Greater than Day-Night Average Sound Level (“DNL”) 75 dBA
- (b)** DNL 70-75 dBA
- (c)** DNL 65-70 dBA

**(2)** The boundaries of each noise impact area will be established in accordance with the provisions of subsection B. The purpose of the establishment of three Airport Noise Impact Areas is to distinguish between the severity of the levels of noise impact so that appropriate uses and acoustical performance standards can be established to mitigate the adverse impacts of aircraft noise to protect the public health, safety, and welfare.

#### **D. Administration**

The Director is responsible for reviewing site plans, subdivision plats, and building permits to determine if the property to be developed is located in the Airport Noise Impact Overlay District; if so, it must be noted on the plan, plat, or permit. Before any building permit may be approved in the district, it must satisfy subsections E and F below.

## E. Uses and Use Standards

Uses are permitted according to the underlying zoning district(s), except as qualified below. In addition to the use standards presented in Article 4, the following apply:

- (1)** Uses within this district are permitted only in accordance with the Noise Compatibility Table in subsection G below.
- (2)** In those instances where a proposed use is not listed in the table, the Director, using the table as a guide, will determine which use is most similar and which provisions of the table are applicable.
- (3)** Where a structure contains different occupants or tenants, the more stringent requirements of the table apply, unless it is architecturally possible to achieve the interior noise levels specified in subsection F below for the area occupied by each occupant or tenant.
- (4)** The table identifies the uses, the Airport Noise Impact Areas, and, where applicable, the respective interior noise level standards and acoustical treatment measures for each use in a given Impact Area. The following subsections explain how uses are designated and permitted:
  - (a)** If a use is permitted in a given Impact Area without any interior noise level standard, it is represented on the table with a "P." If a given use is not permitted, it is represented with a "NP."
  - (b)** Many uses are permitted in a given Impact Area, but only if acoustical treatment measures are provided to achieve a specified interior noise level standard for the entire structure. Such uses are represented on the table with a designation of "P1," "P2," or "P3," which corresponds with the three interior noise level standards presented in subsection F below.
  - (c)** Many uses are represented on the table with a designation of "P1," "P2," or "P3," and are qualified with an asterisk (\*). Such uses are permitted only if acoustical treatment measures are provided for those portions of the building that contain offices or other noise sensitive uses in accordance with one of three interior noise level standards presented in subsection F below.
- (5)** In the greater than DNL 75 dBA Impact Area, dwellings are not permitted, but new dwelling units and additions to existing dwelling units may be permitted if:
  - (a)** The lot is located in an R district or a residential area of a P district;
  - (b)** The lot had final plat approval before July 26, 1982; and
  - (c)** The new dwelling unit or addition complies with the Interior Noise Level Standard P1 set forth in subsection F below.

## F. Interior Noise Level Standards



- (1)** The acoustical treatment requirements of this Section are to achieve the interior noise levels set forth below and will apply to the construction of new structures and the alteration or repair of existing structures with enclosed interior space as established under the USBC.
- (2)** Nothing within this section will be construed as altering building materials, construction methods, plan submission requirements, or inspection practices from those that are specified in VUSBC, and the acoustical treatments required must comply with the provisions of VUSBC.
- (3)** Any structure existing in the Airport Noise Impact Overlay District for which a building permit was issued before April 8, 1997 and that does not comply with the applicable interior noise level standards in subsection 3103.2.G is a noncompliant structure.
- (4)** There will be three different interior noise level standards as identified on the table. These standards are described as follows:

**(a) Interior Noise Level P1:** In the greater than DNL 75 dBA Impact Area, all structures or portions of structures as applicable will provide acoustical treatment measures that achieve an interior noise level not to exceed DNL 45 dBA. This standard must be met by one of the following:

- 1.** The use of roof and exterior wall assemblies that have a laboratory sound transmission class (STC) of at least 50, and doors and windows that have a laboratory STC of at least 42. The STC of construction assemblies will be determined by a certified sound testing laboratory; or
- 2.** A certification by an acoustical engineer that the construction practices or materials of the structure will achieve the specified interior noise level. The acoustical professional will submit relevant information to permit the Director to verify that the proposed measures will achieve the interior noise level standard.

**(b) Interior Noise Level Standard P2:** In the greater than DNL 75 dBA Impact Area, all structures or portions of structures as applicable will provide acoustical treatment measures that achieve an interior noise level not to exceed DNL 50 dBA. In the DNL 70-75 dBA Impact Area, all structures will provide acoustical treatment measures that achieve an interior noise level not to exceed DNL 45 dBA. This standard must be met by one of the following:

- 1.** The use of roof and exterior wall assemblies that have a laboratory sound transmission class (STC) of at least 45, and doors and windows that have a laboratory STC of at least 37. The STC of construction assemblies will be determined by a certified sound testing laboratory;
- 2.** A certification by an acoustical engineer that the construction practices or materials of the structure will achieve the specified interior noise level. The

acoustical professional will submit relevant information to permit the Director to verify that the proposed measures will achieve the interior noise level standard; or

**3.** A determination by the Director that the interior noise level standard is met based on the exterior or interior wall and roof assemblies and the location of the use in the structure.

**(c) Interior Noise Level Standard P3:** In the DNL 70-75 dBA Impact Area, all structures or portions of structures as applicable will provide acoustical treatment measures that achieve an interior noise level not to exceed DNL 50 dBA. In the DNL 65-70 dBA Impact Area, all structures will provide acoustical treatment measures that achieve an interior noise level not to exceed DNL 45 dBA. This standard must be met by one of the following:

**1.** The use of roof and exterior wall assemblies that have a laboratory sound transmission class (STC) of at least 39 and doors and windows that have a laboratory STC of at least 28. The STC of construction assemblies must be determined by a certified sound testing laboratory;

**2.** A certification by an acoustical engineer that the construction practices or materials of the structure will achieve the specified interior noise level. The acoustical professional will submit relevant information to permit the Director to verify that the proposed measures will achieve the interior noise level standard; or

**3.** A determination by the Director that the interior noise level standard is met based on the exterior or interior wall and roof assemblies and the location of the use in the structure.

## G. Noise Compatibility Table

<b>Table 3103.1: Noise Compatibility Table</b>			
For KEY to table, refer to subsection 3103.2.E, Use Limitations			
Use	Noise Impact Areas (DNL dBA)		
	75+	70-75	65-70
<b>AGRICULTURAL AND RELATED USES</b>			
Agricultural Operation			
<i>Growing of crops</i>	P	P	P
<i>Livestock</i>	NP	P3*	P
<i>Residential use</i>	NP	P2	P3
Farm Winery, Limited Brewery, or Limited Distillery	P2*	P3*	P
Stable, Riding or Boarding	NP	P3*	P
<b>RESIDENTIAL USES</b>			
<b>Household Living</b>			
<i>Additions to existing dwellings &amp; new dwellings on certain existing lots</i>	P1	P2	P3
<i>All other new construction</i>	NP	P2	P3
Dwelling, Multifamily	See Above		
Dwelling, Single-Family Attached			
Dwelling, Single-Family Detached			
Dwelling, Stacked Townhouse			
Group Residential Facility			
Live-Work Development			
Manufactured Home	NP	NP	P3
<b>Group Living</b>			
Congregate Living Facility	NP		
Group Household			
Religious Group Living			
Residence Hall			

**Table 3103.1: Noise Compatibility Table**

For KEY to table, refer to subsection 3103.2.E, Use Limitations

Use	Noise Impact Areas (DNL dBA)		
	75+	70-75	65-70
<b>PUBLIC, INSTITUTIONAL, AND COMMUNITY USES</b>			
<b>Community, Cultural, and Educational Facilities</b>			
Adult Day Support Center	NP	P2	P3
Alternate Use of Public Facility	<i>See most similar use</i>		
Child Care Center	NP	P2	P3
Club, Service Organization, or Community Center	NP	P2	P3
College or University	P1	P2	P3
<i>with residential facilities</i>	NP	P2	P3
Community Swim, Tennis, and Recreation Club	P	P	P
Convention or Conference Center	P2	P3	P
Cultural Facility or Museum	NP	P2	P3
Public Use	<i>See most similar use</i>		
Religious Assembly	NP	P2	P3
Religious Assembly with Private School, Specialized Instruction Center, or Child Care Center	NP	P2	P3
School, Private	NP	P2	P3
Specialized Instruction Center	NP	P2	P3
<b>Funeral and Mortuary Services</b>			
Cemetery	P2*	P3*	P
Crematory			
Funeral Home	P2	P3	P
<b>Health Care</b>			
Adult Day Care Center	NP	P2	P3
Continuing Care Facility	NP	P2	P3
Independent Living Facility	NP	P2	P3
Medical Care Facility			
<i>Educational and residential</i>	NP	P2	P3
<i>Offices and research</i>	P2	P3	P
<b>Transportation</b>			

**Table 3103.1: Noise Compatibility Table**

For KEY to table, refer to subsection 3103.2.E, Use Limitations

Use	Noise Impact Areas (DNL dBA)		
	75+	70-75	65-70
Transit Facility	P2*	P3*	P
<b>Utilities</b>			
Utility Facility, Heavy	P2*	P3*	P
Utility Facility, Light			
<b>COMMERCIAL USES</b>			
<b>Animal-Related Services</b>			
Animal Shelter	NP	P3*	P
Kennel			
Pet Grooming Establishment			
Veterinary Hospital			
<b>Food and Lodging</b>			
Bed and Breakfast	P1	P2	P3
Catering	P2	P3	P
Hotel or Motel	P1	P2	P3
Restaurant	P2	P3	P
Restaurant, Carryout			
Restaurant with Drive-Through			
Retreat Center	NP	P2	P3
<b>Office and Financial Institutions</b>			
Alternative Lending Institution	P2	P3	P
Drive-Through Financial Institution			
Financial Institution			
Office			
Office in a Residential District	<i>See standards for dwellings</i>		
<b>Personal and Business Services</b>			
Business Service	P2	P3	P
Household Repair and Rental Service			
Massage Therapy Establishment			
Personal Service			
<b>Recreation and Entertainment</b>			
Banquet or Reception Hall	P2	P3	P
Campground	NP	NP	P

**Table 3103.1: Noise Compatibility Table**

For KEY to table, refer to subsection 3103.2.E, Use Limitations

Use	Noise Impact Areas (DNL dBA)		
	75+	70-75	65-70
Commercial Recreation, Indoor	P2	P3	P
Commercial Recreation, Outdoor	P2*	P3*	P
Entertainment, Adult	P2	P3	P
Entertainment, Public	P2	P3	P
Golf Course or Country Club	P2*	P3*	P
Health and Exercise Facility, Large	P2	P3	P
Health and Exercise Facility, Small	P2	P3	P
Marina, Commercial or Private Noncommercial	P	P	P
Quasi-public Park, Playground, or Athletic Field	P2*	P3*	P
Smoking Lounge	P2	P3	P
Stadium or Arena	NP	NP	P
Zoo or Aquarium	NP	P3*	P
<b>Retail Sales</b>			
Convenience Store	P2	P3	P
Drive-Through, Other	P	P	P
Drive-Through Pharmacy	P2	P3	P
Drug Paraphernalia Establishment	P2	P3	P
Garden Center	P2*	P3*	P
Pawnshop	P2	P3	P
Retail Sales, General	P2	P3	P
Retail Sales, Large	P2	P3	P
<b>Vehicle-Related Uses</b>			
Car Wash	P	P	P
Commercial Off-Street Parking	P	P	P
New Vehicle Storage	P2	P3	P
Truck Rental Establishment	P2*	P3*	P
Vehicle Fueling Station	P2*	P3*	P
Vehicle Repair and Maintenance, Heavy	P2*	P3*	P
Vehicle Repair and Maintenance, Light	P2*	P3*	P
Vehicle Sales, Rental, and Service	P2*	P3*	P
Vehicle Transportation Service	P2*	P3*	P

**Table 3103.1: Noise Compatibility Table**

For KEY to table, refer to subsection 3103.2.E, Use Limitations

Use	Noise Impact Areas (DNL dBA)		
	75+	70-75	65-70
<b>INDUSTRIAL USES</b>			
<b>Freight Movement, Warehousing, and Wholesale Distribution</b>			
Data Center	P2*	P3*	P
Freight Distribution Hub			
Goods Distribution Hub			
Self-Storage			
Warehouse			
Wholesale Facility			
<b>Industrial Services and Extraction of Materials</b>			
Building Materials Storage and Sales	P2*	P3*	P
Contractor's Office and Shop			
Extraction Activity			
Petroleum Products Storage Facility			
Specialized Equipment and Heavy Vehicle Sale, Rental, or Service			
Storage Yard			
Vehicle Storage or Impoundment Yard	P	P	P
<b>Production of Goods</b>			
Craft Beverage Production Establishment	P2*	P3*	P
Production or Processing			
Production or Processing, Heavy			
Small-Scale Production Establishment			
<b>Waste and Recycling Facilities</b>			
Junkyard	P	P	P
Mixed Waste Reclamation Facility			
Recycling Center			
Solid Waste Disposal Facility			
<b>OTHER USES</b>			
Alternative Use of Historic Building	<i>See most similar use</i>		

## **Fairfax County Zoning Ordinance, Article 8, Section 8101, Subsection 8101.3 Special Exceptions, Special Permits, and Variances**

### **D. Additional or Modified Submission Requirements for Specific Special Exception Applications**

The following are additional or modified submission requirements for special exception applications for:

#### **(3) Airport, Helipad, and Transit Facility**

**(a)** All such uses proposed by a public authority must include a copy of the law, ordinance, resolution, or other official act adopted by the governmental body proposing the use, authorizing the establishment of the proposed use at the proposed location.

**(b)** All applications must include evidence that the proposed facility will meet the standards and requirements imposed by such agencies as the Federal Aviation Administration and all other federal, State, or local statutes, ordinances, rules or applicable regulations.

**(c)** A statement must be provided detailing all noise abatement procedures, methods, and devices that will be employed in the operation of the facility, and sufficient analysis must be presented to indicate what adjoining lands will be affected by the anticipated noise.

**(d)** In the case of airports, a map must be presented showing the landing and take-off corridors as projected, such map to cover an area within at least a 5,000-foot radius of the boundaries of the proposed facility.



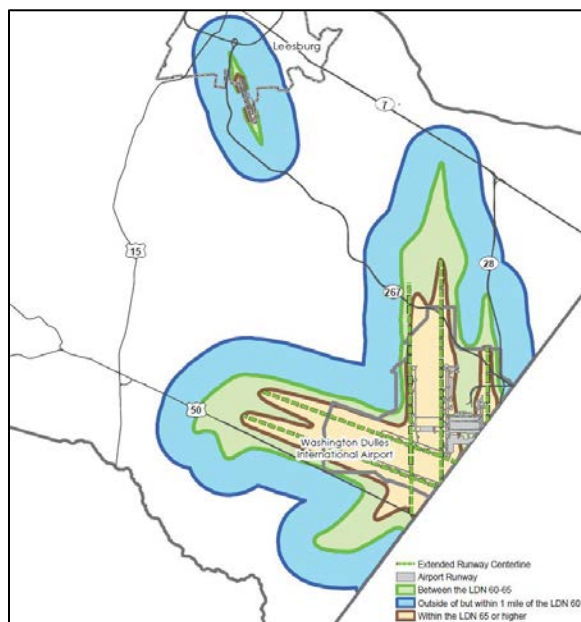
**LOUDOUN COUNTY**  
**Comprehensive Plan Amendment**  
**CPAM-2021-0001, Airport Impact Overlay District Update**

*Project Narrative*

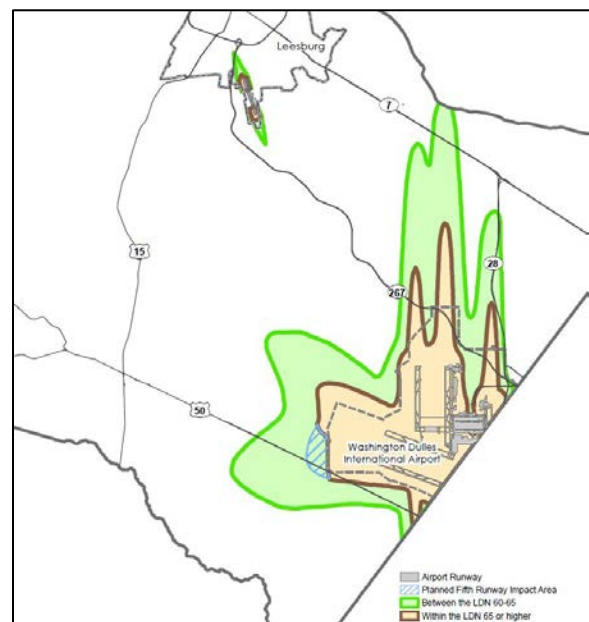
**Introduction**

This Comprehensive Plan Amendment (CPAM) proposes to amend the Airport Noise Impact Areas (ANIA) of the *Loudoun County 2019 General Plan* (2019 GP). The map provides the basis for administering the 2019 GP policies that address airport noise impacts and for establishing the Airport Impact Overlay District (AIOD) of the Zoning Ordinance. Figures 1 and 2 depict the existing and proposed ANIA maps of the 2019 GP. A [web-based mapping tool](#) is also available for more detailed review of the proposed changes at a parcel level. This CPAM proposes to update the ANIA map by replacing the noise contours for Washington Dulles International Airport based on the projected noise contours in the 2019 Washington Dulles International Noise Contour Map Update (2019 Noise Study). Additional amendments to associated content and policy statements are also proposed with this CPAM and described herein.

**Figure 1.**  
**Existing ANIA Map**



**Figure 2.**  
**Proposed ANIA Map**



**Background**

The adopted  $Ldn^1$  noise contours were established based on noise studies for Washington Dulles International Airport (Dulles Airport) and Leesburg Executive Airport conducted in 1992 and 1985, respectively. The County's current AIOD was adopted into the Zoning Ordinance by the Board of Supervisors (Board) in 1993.

<sup>1</sup>Day-Night Average Sound Level: The energy-average level of sound, in decibels, for 24 hours adjusted to include a 10 decibel penalty for noise exposures during night-time hours (10:00 pm to 6:00 am).

In 2018, the Metropolitan Washington Airports Authority (MWAA) conducted an updated noise study and established newly projected noise contours (2019 Projected Contours) based on the planned ultimate buildout and operational plans for Dulles Airport. Policy guidance within the 2019 GP – which was adopted on June 20, 2019 – includes, “Consider replacing the existing noise contours for Washington Dulles International Airport to reflect the noise contours in the 2019 Washington Dulles International Noise Contour Map Update” (Chapter 3, Complementary Elements Action 7.2.F). Accordingly, on February 2, 2021, the Board initiated the subject CPAM. The item was referred to the Transportation and Land Use Committee for discussion and recommendations, which were discussed and acted upon by the Board at their June 15, 2021, Board Business Meeting.

The Board’s work plan and policy guidance to staff for this project includes the following:

- **Update the Zoning Ordinance concurrently with the CPAM.** Corresponding updates to the Zoning Ordinance are integrated with this CPAM work plan. The work plan is structured such that the draft ANIA/AIOD map is drafted first (represented in Figure 2), followed by draft policy statement updates in the 2019 GP, followed by the draft zoning regulation updates. The draft map and policy updates are provided for review in this referral packet. ***The zoning regulation updates are anticipated to be drafted and sent on referral separate from the comprehensive plan amendments in the fall of 2021.***
- **Revise a portion the 65+ Ldn noise impact area from that projected in the 2019 Noise Study.** The area depicted as “Planned Fifth Runway Impact Area” on the Proposed ANIA Map (Figure 2) will be treated similar to the 60-65 Ldn noise impact area rather than the 65+ Ldn noise impact area. The purpose for this shift is to acknowledge that the 65+ Ldn noise contour of the 2019 Noise Study anticipates impacts from a “Planned Fifth Runway,” which is not yet constructed and the timeframe for its development is potentially well beyond the planning horizon of the 2019 GP. A full-size Proposed ANIA Map is provided as an attachment to this referral packet. Per the draft policies set forth with this CPAM, new residential development could be allowed in this area subject to the development standards of the AIOD, rather than prohibited as within the 65+ Ldn noise impact area.
- **Require the AIOD Disclosure for all Homes within the AIOD.** Clarify within the County’s policies and zoning regulations that disclosure rules of the AIOD apply to all homes – existing and future – within the ANIA/AIOD. In addition, the Board directed that the Fifth Runway Impact Area should be subject to specific disclosure requirements notifying home-buyers that the level of noise impact in this area may change if the Fifth Runway is developed.
- **Protect previously approved rezonings.** The Board’s direction with this update includes that previously approved rezonings be able to develop in accordance with their approval, and not be called into question by these policy and zoning updates.
- **Remove the One-Mile Buffer from the AIOD.** The AIOD one-mile buffer, which is currently one of three components of the ANIA/AIOD, is proposed to be removed (compare Figures 1 and 2). Current zoning regulations require homes within the one-mile buffer impact area to provide disclosure to prospective buyers of their location within the AIOD.

### Impacts to Land Use

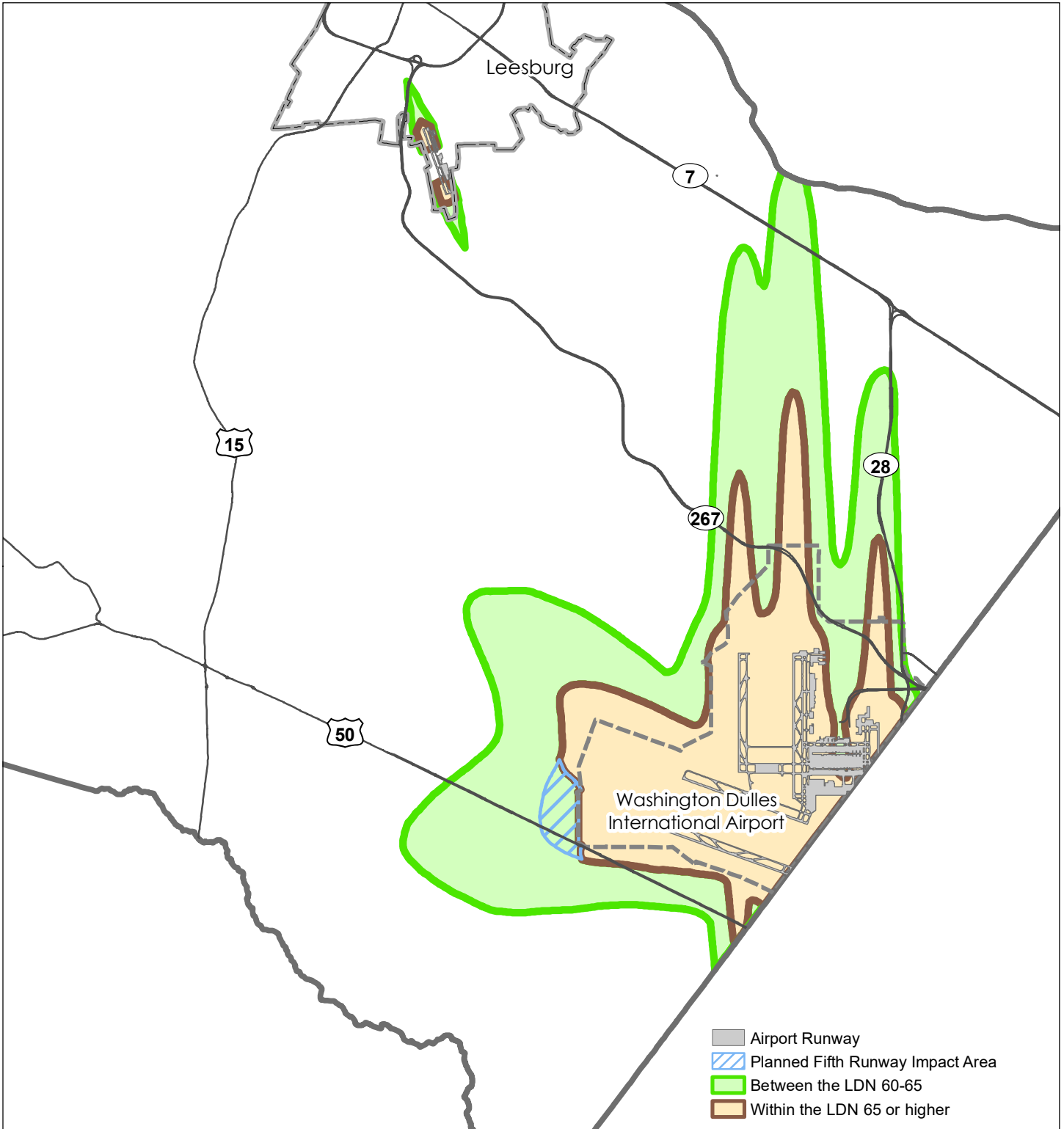
The AIOD directly impacts land use by regulating where residential development can and cannot occur. As set forth in both the zoning regulations and policies of the 2019 GP, new residential and other noise-sensitive uses are not permitted within the 65+ Ldn impact area. Adoption of a new 65+ Ldn contour line would newly encumber some areas by prohibiting new residential uses (unless buildable lots were established prior to adoption of the new AIOD), while some areas that are currently encumbered would potentially become available for residential development. Other impact areas of the ANIA/AIOD may require performance measures for residential development but do not *prohibit* development, so evaluation of land use impacts focuses on where developable land is added to or removed from the 65+ Ldn impact area. Table 1 provides an overview of acreage and residential development capacity changes that are anticipated with the proposed ANIA/AIOD updates. These figures are based primarily on changes in acreage of developable land.<sup>2</sup>





**Table 1. Summary of Acreage and Residential Density Changes in 65+ Ldn Impact Area**

		Net New Development	Demographic Calculations	
<b>AREAS ADDED TO 65-LDN</b>				
PLACE TYPE	ACRES	Residential Units	Households	Population
URBAN TRANSIT CENTER	0.00	0	0	0
SUBURBAN MIXED USE	7.78	93	87	221
SUBURBAN NEIGHBORHOOD	0.00	0	0	0
SUBURBAN COMPACT NEIGHBORHOOD	0.00	0	0	0
<b>TOTALS</b>	<b>7.78</b>	<b>93</b>	<b>87</b>	<b>221</b>
<b>AREAS REMOVED FROM 65-LDN</b>				
PLACE TYPE	ACRES			
URBAN TRANSIT CENTER	0.00	0	0	0
SUBURBAN MIXED USE	16.82	200	189	482
SUBURBAN NEIGHBORHOOD	1.78	8	6	19
SUBURBAN COMPACT NEIGHBORHOOD	0.00	0	0	0
<b>TOTALS</b>	<b>18.60</b>	<b>208</b>	<b>195</b>	<b>501</b>
<b>NET: REMOVED FROM 65-LDN MINUS ADDED TO 65-LDN</b>				
PLACE TYPE	ACRES			
URBAN TRANSIT CENTER	0.00	0	0	0
SUBURBAN MIXED USE	9.04	107	102	261
SUBURBAN NEIGHBORHOOD	1.78	8	6	19
SUBURBAN COMPACT NEIGHBORHOOD	0.00	0	0	0
<b>TOTALS</b>	<b>10.82</b>	<b>115</b>	<b>108</b>	<b>280</b>

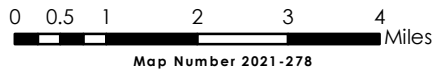
<sup>2</sup> The acreages shown in the table represent actual developable land. A GIS analysis was conducted to select areas that are neither developed nor subject to an approved rezoning (vacant-unentitled acreage). The acreage figures were further refined to eliminate vacant-unentitled acreage that could not reasonably be expected to develop with residential uses, such as slivers of land or land that is otherwise constrained. In at least one case, acreage of an existing, undeveloped approval was included in these figures based on a reasonable expectation that, as a direct result of this CPAM, its entitlements could be amended to allow additional residential density.

Loudoun County  
**Airport Noise  
Impact Area**  
2019 General Plan



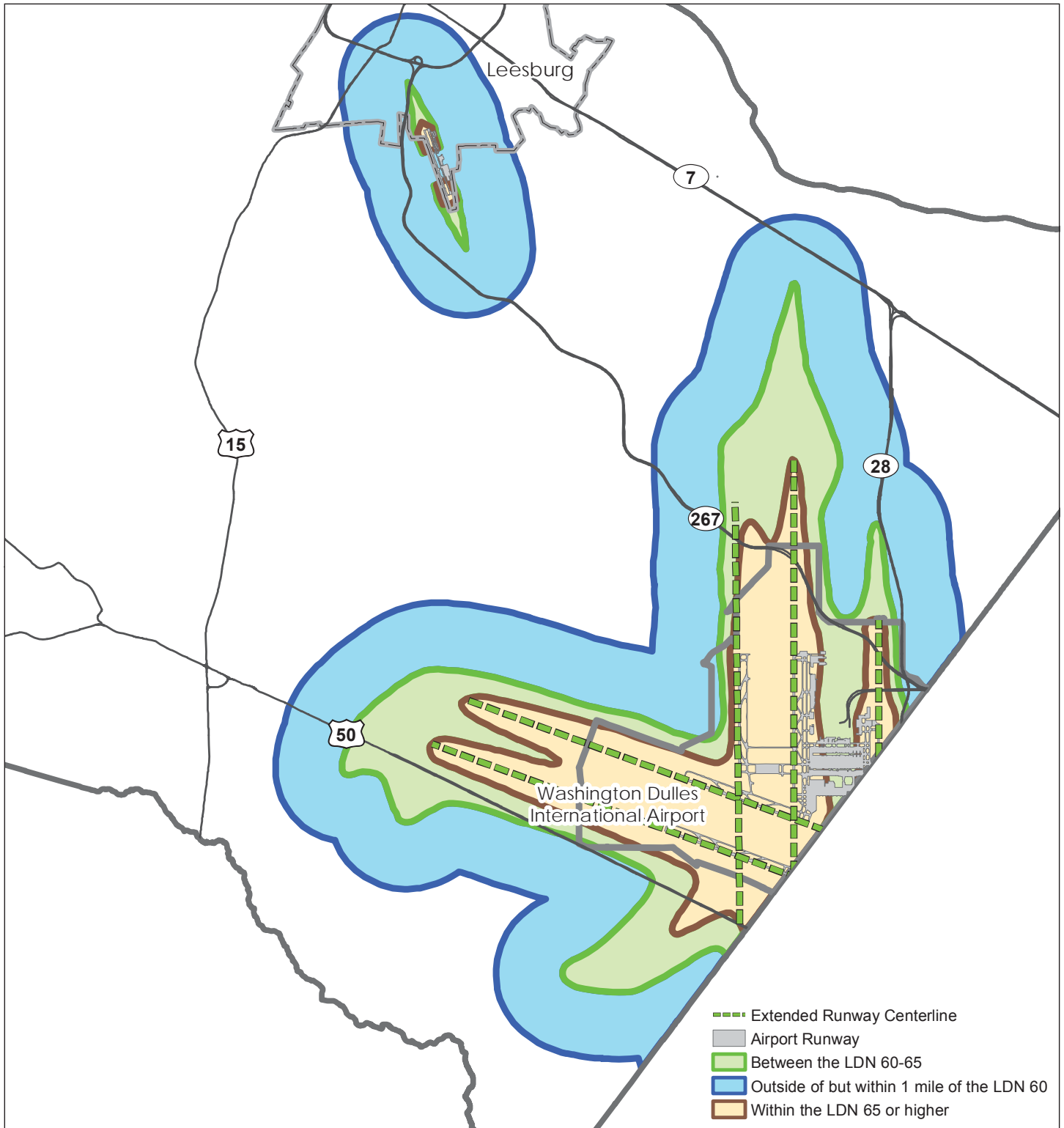
-  Airport Runway
-  Planned Fifth Runway Impact Area
-  Between the LDN 60-65
-  Within the LDN 65 or higher

Loudoun County IS NOT LIABLE for any use of or reliance upon this map or any information contained herein. While reasonable efforts have been made to obtain accurate data, the County makes no warranty, expressed or implied, as to its accuracy, completeness, or fitness for use of any purpose.



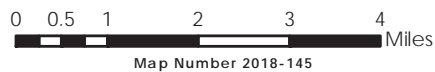
**DRAFT**

Loudoun County  
Airport Impact  
Overlay District  
2019 General Plan



- Extended Runway Centerline
- Airport Runway
- Between the LDN 60-65
- Outside of but within 1 mile of the LDN 60
- Within the LDN 65 or higher

Loudoun County IS NOT LIABLE for any use of or reliance upon this map or any information contained herein. While reasonable efforts have been made to obtain accurate data, the County makes no warranty, expressed or implied, as to its accuracy, completeness, or fitness for use of any purpose.



## Comprehensive Plan Amendment

CPAM-2021-0001, Airport Impact Overlay District Update

### Tracking Sheet for text edits to the Loudoun County 2019 General Plan

Page in 2019 GP	Edits	Amended Text
2-25	IR Action 1.7.F	<i>Where compatible with surrounding land uses, allow residential or mixed-use development in areas of the Arcola village core that fall outside the 65-Ldn <a href="#">(day-night average noise level)</a> noise contours of Washington Dulles International Airport, applying the standards of the Suburban Neighborhood Place Type.</i>
2-41	Chapter 2, Introduction	<i>The Suburban Policy Area is defined on the north by the Potomac River and on the south by Braddock Road. Its eastern edge is the Fairfax County line, and its western edge begins at the Potomac River and follows a southerly path along the Goose Creek just east of Leesburg, the Goose Creek and Beaverdam Reservoirs, and a combination of property lines, roads, <a href="#">and</a> power line easements, <del>and Washington Dulles International Airport's 65 Ldn (day-night average noise level) noise contours.</del></i>
3-12	Chapter 3, Aural Environment	<i>Efforts to protect existing and future residents from increased levels of environmental noise have focused primarily on airport noise surrounding Washington Dulles International Airport (IAD) and Leesburg Executive Airport (see <del>Airport Impact Overlay District</del> <a href="#">Airport Noise Impact Area</a> Map).</i>
3-12	Chapter 3, Aural Environment	<i>The Airport Impact Overlay District <a href="#">(AIOD) of the Zoning Ordinance</a> imposes development restrictions within specified areas</i>
3-29	Chapter 3, Complementary Elements, ANIA call-out box	<i>The Airport Noise Impact Area (ANIA) consists of three (3) components or aircraft noise <del>contours</del> <a href="#">impact areas</a> :</i> <i>(i) <del>Within the</del> Ldn 65 or higher;</i> <i>(ii) <del>Between the</del> Ldn 60-65; and</i> <i>(iii) <del>Outside of but within one mile of the Ldn 60</del> <a href="#">The Planned Fifth Runway Impact Area.</a>*</i> <i><a href="#">*Applies only to Washington Dulles International Airport</a></i>
3-30	CE Action 7.2.C	<i>Prohibit residential encroachment into the <del>existing</del> areas designated as within the Ldn 65 or higher aircraft noise contours to ensure that residential development will not create pressure for reductions in the intensity of service or prohibit the expansion of service at the airport.</i>

3-30	CE Action 7.2.E	<del>Consider the 2019 Washington Dulles International Noise Contour Map Update when reviewing land development applications surrounding the airport</del> <a href="#">[Implemented with CPAM-2021-0001, ZMAP-2021-0011, and ZOAM-2021-0002, Airport Impact Overlay District Update]</a>
3-30	CE Action 7.2.F	<del>Consider replacing the existing noise contours for Washington Dulles International Airport to reflect the noise contours in the 2019 Washington Dulles International Noise Contour Map Update</del> <a href="#">[Implemented with CPAM-2021-0001, ZMAP-2021-0011, and ZOAM-2021-0002, Airport Impact Overlay District Update. See Chapter 7, Implementation Matrix, Complementary Elements Action 7.2.F.]</a>
3-30	New Statement (CE Action 7.2.H)	Allow residential rezonings that were located outside the 65 Ldn noise contour at the time of approval but subsequently moved inside the 65 Ldn noise contour as a result of updates to the AIOD to develop in accordance with their approval.
3-30	New Statement (CE Action 7.2.I)	Require disclosure to prospective buyers of homes within the Airport Noise Impact Area that the property is within the ANIA. For prospective buyers of homes that are within the IAD Planned Fifth Runway Impact Area, this disclosure should state that the noise impact caused by aircraft overflights may change if the planned fifth runway is constructed.
3-33	Chapter 3 Reference Maps	<del>Airport Impact Overlay District (Map #2018-145)</del> <a href="#">Airport Noise Impact Area (Map #2021-278)</a>
3-38	[Map replacement]	<a href="#">[Replace the current Airport Impact Overlay District map with the proposed Airport Noise Impact Area map]</a>
7-4	Implementation Strategy, Other priority implementation actions	Provide a resolution of intent to amend the Zoning Ordinance to the Board to consider replacing the existing noise contours for Washington Dulles International Airport and consider adopting the noise contours in the 2019 Washington Dulles International Noise Contour Map Update. <a href="#">[Implemented with CPAM-2021-0001, ZMAP-2021-0011, and ZOAM-2021-0002, Airport Impact Overlay District Update]</a>

7-27	Implementation Matrix, Complementary Elements	7.2.F. Consider replacing the existing noise contours for Washington Dulles International Airport to reflect the noise contours in the 2019 Washington Dulles International Noise Contour Map Update. <a href="#">[Implemented with CPAM-2021-0001, ZMAP-2021-0011, and ZOAM-2021-0002, Airport Impact Overlay District Update]</a>
7-38	Implementation Matrix, Initial Board-Directed Amendments to the Zoning Ordinance	Provide a resolution of intent to amend the Zoning Ordinance to the Board to consider replacing the existing noise contours for Washington Dulles International Airport and consider adopting the noise contours in the 2019 Washington Dulles International Noise Contour Map Update. <a href="#">[Implemented with CPAM-2021-0001, ZMAP-2021-0011, and ZOAM-2021-0002, Airport Impact Overlay District Update]</a>
Glossary-2	Definition of "Airport Noise Impact Area"	Airport Noise Impact Area: Areas within <del>one mile of</del> the Ldn 60 and greater aircraft noise contour, <a href="#">as depicted on the Airport Noise Impact Area map (see Chapter 3 for the ANIA map and relevant policy guidance)</a> .





JEFFREY C. MCKAY  
CHAIRMAN

COMMONWEALTH OF VIRGINIA  
**COUNTY OF FAIRFAX**  
BOARD OF SUPERVISORS  
FAIRFAX, VIRGINIA 22035

Suite 530  
12000 GOVERNMENT CENTER PARKWAY  
FAIRFAX, VIRGINIA 22035-0071

TELEPHONE 703- 324-2321  
FAX 703- 324-3955

[chairman@fairfaxcounty.gov](mailto:chairman@fairfaxcounty.gov)

March 9, 2021

Federal Aviation Administration  
Docket Operations, Room W12-140, West Building, Ground Floor  
1200 New Jersey Avenue SE  
Washington, DC 20590-0001

**RE: Docket Number FAA-2021-0037: Summary of FAA Research Programs related to Civil Aircraft Noise**

This memorandum provides comments from Fairfax County, Virginia regarding the Federal Aviation Administration's (FAA) summary of the research programs it sponsors on civil aircraft noise, which could potentially affect future aircraft noise policy. The FAA summary was posted on the Federal Register on January 13, 2021. The FAA has stated that it intends that the research results, as reflected in the programs and studies described in the notice, will be used to provide new information on how aircraft noise in communities near airports may be effectively managed and to affect future decision making related to the FAA's aircraft noise policies.

As stated by the FAA, community response to noise has historically been a primary factor underlying its noise-related policies, including the establishment of DNL 65 dB as the threshold of "significant" aircraft noise exposure. The FAA has been using a DNL of 65 dB as the basis for: (1) setting the agency's policy goal of reducing the number of people exposed to significant aircraft noise; (2) establishing the level of aircraft noise exposure below which residential land use is "normally compatible," as defined in regulations implementing the Aviation Safety and Noise Abatement Act of 1979; and (3) establishing the level of aircraft noise exposure below which noise impacts of FAA actions in residential areas are not considered "significant" under section 102(2)(C) of the National Environmental Policy Act of 1969.

The public was invited to submit comments that could assist the FAA in assessing how resources should be directed to better understand and manage the factors related to aircraft noise exposure. The FAA has stated that it will not make any determinations related to its noise policies until it has carefully considered public and other stakeholder input along with any additional research needed to improve the understanding of the effects of aircraft noise exposure on communities and that, unless and until any changes become effective, all existing FAA regulations, orders, and policies will remain in effect.

Fairfax County has one international airport within its jurisdiction (Dulles International - IAD) and is directly affected by a second (Reagan National – DCA). As such, Fairfax County has considerable interest in this FAA initiative. In its public notice in the Federal Register on January 13, 2021, the FAA stated that is seeking public comment on the following topical areas. The county is providing responses in each of the requested areas.

### **Additional Investigation, Analysis, & Research**

The FAA states that it may undertake additional investigation, analysis, or research in three categories as described below:

1. Effects of Aircraft Noise on Individuals and Communities, including speech interference and children's learning; health and human impacts research; impacts to cardiovascular health; and economic impacts:

As part of this portion of the FAA's research effort, the Massachusetts Institute of Technology (MIT) will conduct an assessment of the economic impacts to businesses located underneath aircraft flight paths. This assessment will take into account the economic benefits from aviation activities, as well as potential environmental and health impacts that might reduce economic productivity. The FAA has also stated that it is in the developmental stage of a research project that would build on existing work done previously by MIT that used housing value data to reveal the willingness of people to pay to avoid aircraft noise exposure. This research is intended to serve as a follow on to the Neighborhood Environmental Survey, which was released as part of the Federal Register notice.

#### Fairfax County Recommendations:

Fairfax County recommends that the FAA make available the results of its assessments and research efforts as they become available.

2. Noise Modeling, Noise Metrics, and Environmental Data Visualization:

For more than four decades, the FAA has worked with industry, academic, and governmental stakeholders to advance research and development in aircraft noise modeling. High-fidelity modeling allows the FAA to model aircraft noise over relatively large areas in a consistent manner with attention to the following:

- Noise Screening: Building from the noise modeling capabilities of the Aviation Environmental Design Tool (AEDT), the FAA is developing an updated noise screening tool, which will use a simplified noise modeling process to facilitate an expedited review of proposed federal actions where significant noise impacts are not expected.
- Supplemental Noise Metrics: The FAA's primary noise metric is the Day-Night Average Sound Level (DNL), which identifies aviation noise exposure. As stated by the FAA, while the DNL is focused on cumulative average noise exposure, other noise metrics may better assist in understanding noise impacts and may be useful in evaluating arrival and departure flight track changes to minimize noise impacts on the community.
- Noise Mitigation Research: To reduce the impacts of aircraft noise exposure, the primary current mitigation strategies that are employed by the federal government involve encouraging responsible land use planning near airports, the application of sound insulation treatments to



eligible homes and other noise-sensitive public buildings, such as schools and hospitals, and, in extreme cases, the acquisition of residential homes and their conversion to non-residential land uses. The FAA states that it is exploring the costs and benefits of noise mitigation strategies and technologies to better direct where and how limited mitigation resources should be applied.

Fairfax County Recommendations:

Fairfax County recommends that the FAA:

- Continue development of an updated noise screening tool.
- Continue the use of DNL values in noise analyses; involve communities near airports in the evaluation of other noise metrics that may be considered; and identify potential community-specific differences in tolerance for noise exposure.
- When completing noise analyses, calculate future buildout using realistic airport operational capacities and as well as 20-year timeframes which are typically associated with strategic planning.
- Ensure that the full geographic extent of noise-impacted areas is considered in noise modelling.
- Evaluate the noise impacts of current and projected procedural and operational alternatives.
- Continue to explore the costs and benefits of noise mitigation strategies and technologies; analyze the federal funding criteria associated with the provision of noise mitigation; and involve communities near airports in discussions as to how the FAA might change where and how limited mitigation resources should be applied.
- Construct additional continuous noise monitoring stations under the flight paths for Dulles (IAD) and National (DCA) Airports using state of the art modeling and make measurements readily accessible and comprehensible to the community.

3. Reduction, Abatement, and Mitigation of Aviation Noise:

The FAA stated that, since 1983, more than 250 airports have considered changes to local land use planning and zoning, sound insulation, acquisition of homes and other noise-sensitive property, aircraft noise abatement routes and procedures, and other measures with more than \$6 billion in funding provided for noise compatibility programs and noise mitigation. The FAA and industry are developing technologies to create aircraft and engines with lower noise and emissions and improved fuel efficiencies. Recent advances in aircraft navigation enable aircraft to fly on any desired flight path within the coverage and capabilities of navigation systems. Research is examining the effectiveness of current procedures and identifying means of improving their use to, among other things, control flight paths and move them away from noise-sensitive areas; determine how changes in aircraft performance could be safely managed to reduce noise; and how the use of systematic departure flight track dispersion can be implemented to abate noise concerns.

Fairfax County Recommendations:

Fairfax County recommends that the FAA:

- Analyze and make recommendations on construction techniques, building materials, and noise mitigation measures for noise-sensitive uses, including residences and schools.
- Analyze which sound insulation treatments are most effective for interior spaces; compare the cost of insulation and higher Sound Transmission Class (STC) ratings for the applicable building components with their expected benefits; identify rating levels needed for individual building components to achieve a particular noise level reduction.



- Continue to refine and use voluntary Noise Abatement Departure Procedures in the vicinity of airports to reduce community noise.
- Explain the level of additional noise reduction, if any, that could be expected due to future advances in aircraft engine and shell technology.

### **Factors Affecting Annoyance**

A significant component of the FAA's research is a Neighborhood Environmental Survey (NES), a multi-year effort, which quantified the impacts of aircraft noise exposure on communities around commercial service airports in the United States. The NES generated an aircraft dose-response curve, which quantified the relationship between aircraft noise exposure and perceived community annoyance. In comparison to prior studies on this topic, the NES national curve shows more people highly annoyed for a given DNL aircraft noise exposure level. The FAA defines annoyance as a *"summary measure of the general adverse reaction of people to noise that causes interference with speech, sleep, the desire for a tranquil environment, and the ability to use the telephone, radio, or television satisfactorily."*

The FAA recognizes that a range of factors may be driving the increase in annoyance shown in the NES survey which may include changes in commercial aircraft operations; population distribution; how people live and work; and societal response to noise.

The FAA noted that the number of commercial enplanements has increased from approximately 200 million in 1975 to approximately 930 million in 2018. In recent years, as aviation growth has led to an increase in operations, the number of people and the size of the areas experiencing significant aircraft noise has expanded. The introduction of Performance Based Navigation (PBN) procedures, as needed to safely and efficiently modernize the national air transportation system, has also provided noise benefits by allowing new and more efficient flight paths, but has in some places resulted in community concerns, particularly related to an increased concentration of flights. In response, the FAA has developed and begun implementing a comprehensive and strategic approach to transform and enhance FAA community involvement practices, including the use of airport community roundtables, to equitably discuss opportunities to shift or, when possible, reduce aircraft noise exposure.

### **Fairfax County Recommendations:**

In order to address concerns of its citizens regarding airport noise, Fairfax County recommends that the FAA:

- Consider that communities differ considerably from one another in the prevalence of annoyance induced by the same levels of noise exposure. As such, any criteria established by the FAA should reflect community-specific differences in tolerance for noise exposure as well as whether complaints have arisen from changes in flight paths.
- Determine the reasons for community complaints regarding airport noise, to include the presence of direct overflights, the number of aircraft operations, and the time of the operations, as well as whether homes in the community were constructed to attenuate noise.
- Determine whether advances in avionics and other technologies have resulted in a concentration of flight activities; determine whether routing changes would be likely to decrease noise impacts.
- Consider and propose operational changes that would minimize community annoyance, to include altered departure and approach routes, engine settings during climbs and descents, lateral displacement from impacted areas; and visual barriers, including buildings and trees.

FAA, Docket Number FAA-2021-0037

March 9, 2021

Page 5

- Involve local communities in decision making regarding operational changes that could minimize noise complaints while still considering the economic value of the airport to the jurisdiction.

**Additional Categories of Investigation, Analysis, or Research**

The FAA stated that it might undertake additional categories of investigation, analysis, or research to inform noise policy, related to the following:

- Changes to where people are choosing to live, including increasingly urban environments;
- Growth and changes to the makeup of suburban communities;
- Working and living conditions, including an increased number of in-home businesses and the increased use of teleworking;
- Changes in expectations regarding time spent outdoors versus indoors;
- The rise of social media, the internet, and other information sources, leading to an increased awareness and perception of noise issues; and
- Overall societal response to noise.

**Fairfax County Recommendations:**

Fairfax County recommends that the FAA:

- When investigating these additional categories, consider community perceptions related to providing housing opportunities proximate to airports.
- Complete a Safety Risk Analysis (SRA) to determine what controls or mitigations can be undertaken to reduce risks on the ground from the takeoff, initial climb, final approach, and landing phases of flight.

**Conclusion:**

Fairfax County appreciates the ability to provide input into this FAA effort and respectfully requests that the FAA continue to involve Fairfax County in any further research efforts as well as the development of any subsequent policy changes. If you have any questions regarding these comments, please contact Joseph Gorney at 703-324-1380 or [joseph.gorney@fairfaxcounty.gov](mailto:joseph.gorney@fairfaxcounty.gov).

Sincerely,

Jeffrey C. McKay, Chairman  
Fairfax County Board of Supervisors

cc: Members, Fairfax County Board of Supervisors  
Members, Fairfax County Congressional Delegation  
Bryan Hill, County Executive  
Rachel Flynn, Deputy County Executive (Planning + Development)  
Barbara Byron, Director, Department of Planning & Development (DPD)  
Leanna H. O'Donnell, Director, Planning Division, DPD  
Board of Directors, Metropolitan Washington Airports Authority



## **SAMPLE NOISE PROFFERS**

Noise Attenuation. All residential units on the Property must employ construction measures designed to ensure that interior noise resulting from airplane overflights is mitigated to levels that do not exceed a modal Lmax of 45 dBA, or less, as well as other background noise (inclusive of traffic noise) of DNL 45 dBA, or less. Construction measures must be in accordance with the recommendations made in the “Stonebrook at Westfields Airport Noise Analysis – Modal Lmax” report, prepared by Phoenix Noise & Vibration, LLC, dated March 18, 2020, and may include, but not be limited to, appropriate and upgraded Sound Transmission Class (“STC”) ratings for windows, doors, exterior walls, and roofs; stone wool, mineral wool, or other enhanced insulation materials; additional layers of dry wall; resilient channels or clips; and appropriate seals and caulking between surfaces. At the time of building permit issuance, compliance with these requirements must be certified by an acoustical engineer licensed in the Commonwealth of Virginia.

Prior to the issuance of the first RUP, the Applicant must conduct post-development interior noise testing of any model homes constructed on the property, with such tests certified by an acoustical engineer, to demonstrate that an interior noise level of DNL 45 dBA, or less, has been achieved. The results of such post-development interior noise testing must be provided to EDRB. In addition, and if requested by the County, the Applicant must conduct additional tests of no more than five units, which should be dispersed throughout the development. Corrective measures, if necessary, to achieve an interior noise level of DNL 45 dBA, or less, could include, but are not limited to, installing windows and doors with higher STC ratings, adding additional insulation or dry wall, and improving seals and caulking between surfaces. Notwithstanding the limitation for testing of five additional units, corrective measures must be applied to any number of units as necessary to ensure that all units achieve an interior noise level of DNL 45 dBA, or less.

Airport Noise Disclosure Statement. Prior to entering into a contract of sale, prospective purchasers must be notified in writing by the Applicant of the proximity of Dulles International Airport, including the distance to the airport that homes are located within an area that may be impacted by aircraft overflights and aircraft noise, that the noise from individual aircraft flying over the property may exceed the average aircraft noise levels for the Property, that the frequency of overflights may increase over time, and that the Property is encumbered by an avigation easement. In addition, a map showing Dulles International Airport, the DNL 60 and 65 dBA contour lines as adopted by Fairfax County, and the general locations of residential units and private active recreation spaces must accompany such disclosure notification. Such disclosure must be accomplished by inclusion of this information in all sales contracts, Master POA disclosure statements, and Master POA governing documents so as to give notice to all initial and subsequent purchasers, and by inclusion in the land records. In addition, marketing collateral in any sales office, such as marketing site plans, home brochures, and standard features lists, must note that the property is impacted by noise from planes flying overhead.

Avigation Easement and Airport Noise Notification. Prior to approval of the first RUP for the Property, the Applicant must offer to provide an avigation easement over the entire Property for the benefit of the MWAA in a form approved by the Office of the County Attorney, indicating

the right of aircraft flight to pass over the Property. The Master POA Documents required pursuant to Proffer 9 must contain a notification that the site is in close proximity to Dulles International Airport, that the dwelling units may experience aircraft noise, that noise contour lines may change in the future, and that aircraft noise may increase.

Prepared by and return to:

McGuireWoods LLP  
 1750 Tysons Boulevard, Suite 1800  
 Tysons, Virginia 22102  
 Attn: Steven M. Mikulic  
 VSB: 92408  
 Fairfax County Tax Map Number: 043-4 ((01)) 0016

THIS DEED OF EASEMENT is made this \_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_, by and between **WESTFIELDS VENTURE, LP**, a Delaware limited partnership (“Owner”), Grantor; and the **METROPOLITAN WASHINGTON AIRPORTS AUTHORITY** (“MCAA”), Grantee.

WITNESSETH:

WHEREAS, the Owner is the owner of certain property by virtue of a deed recorded in Deed Book 22727, at Page 0665, among the land records of Fairfax County, as more particularly described in **EXHIBIT A** attached hereto and made a part hereof (the “Property”); and

WHEREAS, the Property is not subject to the lien of any deed of trust; and

WHEREAS, MCAA is the operator of Washington Dulles International Airport (the “Airport”) situated in the Counties of Fairfax and Loudoun, Commonwealth of Virginia; and

WHEREAS, Owner is legally capable of conveying an easement in the airspace above the Property and is willing to convey an easement upon MCAA in such airspace to accommodate the flight of aircraft operated in a non-negligent manner, landing at, or taking off from, the Airport.

**AVIGATION EASEMENT**

NOW, THEREFORE, for and in consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Owner, for itself, its successors and assigns, hereby grants to MCAA an Avigation Easement (the “Easement”) for the passage of aircraft operated in a non-negligent manner landing at, or taking off from, the Airport, together with the right to cause to emanate from such aircraft upon the Property and improvements thereon such noise as many now or hereafter be incident to the non-negligent operation of aircraft landing at, or taking off from the Airport. The Easement is subject to the following conditions:

1. Except as specifically provided herein, Owner, for itself, its successors and assigns, hereby releases MCAA from any and all claims, liability or causes of action that it has or will have against MCAA on account of noise emanating upon the Land and improvements thereon which may now or hereafter be incident to the non-negligent operation of aircraft landing at, or taking off from, the Airport, as well as any claim or cause of action for inverse condemnation arising out of the non-negligent operation of aircraft landing at, or taking off from the Airport.

2. This Easement shall not be construed to preclude Owner, its successors and assigns, from seeking or obtaining just compensation, to the extent permitted by law, from any



governmental authority other than MWAA, responsible for enactment, promulgation, issuance, rescission, or amendment of any law, ordinance, proclamation, order, or regulation which deprives the Owner or its successors or assigns of all reasonable use of any portion of the Property.

**COVENANTS REAL**

The Owner declares that the agreements and covenants stated in this Deed are not covenants personal to the Owner, but are covenants real, running with the land.

**FREE CONSENT AND DESIRE**

This Deed is made with the free consent and in accordance with the desire of the undersigned owners, proprietors, and trustees, if any.

**MISCELLANEOUS**

This Deed shall be governed by and construed in accordance with the laws of the Commonwealth of Virginia. This Deed may be executed in counterparts, each of which shall be deemed an original, but which together shall constitute one and the same instrument.

Witness the following signatures and seals:

**[SIGNATURES APPEAR ON THE FOLLOWING PAGES]**

Witness the following signatures and seals:

**WESTFIELDS VENTURE, LP** a Delaware limited partnership:

BY: \_\_\_\_\_

TO-WIT: \_\_\_\_\_

STATE OF \_\_\_\_\_

CITY/COUNTY OF \_\_\_\_\_

I, \_\_\_\_\_, a notary public in and for the State and County aforesaid, do certify that \_\_\_\_\_, a \_\_\_\_\_ for WESTFIELDS VENTURE, LP whose name is signed to the foregoing instrument dated \_\_\_\_\_, 20\_\_\_\_, has acknowledged the same before me on behalf of the partnership.

GIVEN under my hand this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_.

\_\_\_\_\_  
Notary Public

Registration No.: \_\_\_\_\_

My Commission Expires \_\_\_\_\_

**WASHINGTON DULLES INTERNATIONAL AIRPORT MASTER PLAN &  
TECHNICAL ADVISORY COMMITTEE**

The Metropolitan Washington Airports Authority (MWAA) is in the process of developing a revised Airport Master Plan for the Washington Dulles International Airport. The stated purpose of the Master Plan study is to establish a plan for the airport's future development projects in a way that satisfies aviation demand in a financially feasible manner while balancing the aeronautical, environmental, and socioeconomic issues in the community with respect to the airport.

MWAA has formed a Technical Advisory Committee (TAC) to provide insight and guidance on the master planning analyses and the associated tasks from a technical perspective. The TAC would review and comment on the technical and operational analyses and recommendations issued throughout the master planning process. TAC members include representatives from MWAA, the FAA, the Transportation Security Administration, Customs and Border Protection, airlines, metropolitan planning organizations (MPOs), municipal and county community and transportation planning agencies, the Dulles Air Traffic Control Tower, and other key airport users. MWAA intends to conduct meetings with the TAC at key milestones throughout the master planning process, typically on a quarterly basis. The initial TAC Meeting was held on September 29, 2021. The next meeting is anticipated to be held in November 2021. Additionally, public workshops are planned in both Fairfax and Loudoun Counties.

**WASHINGTON REAGAN NATIONAL AIRPORT**  
**NOISE COMPATIBILITY PLANNING**

In 2004, MWAA completed a Noise Compatibility Program (NCP) Update for the Washington Reagan National Airport. The update was prepared in accordance with FAR Part 150, "Airport Noise Compatibility Planning." The program is known as Part 150, as it was created under 14 CFR Part 150, and began in 1981, following the passage of the Aviation Safety and Noise Abatement Act in 1979. Part 150 provides a structured approach for airport operators, airlines, pilots, neighboring communities, and the FAA to work together to reduce the number of people who are affected by airport noise. Through the Part 150 process, airport operators may consider a variety of strategies to reduce noise. Changes in operational procedures, such as take-offs or landings or routing flight paths over less noise sensitive areas, can lower noise impacts. A Part 150 Program has two parts. The first step is to develop noise exposure maps that identify the land uses around the airport. The maps help in the development of noise mitigation efforts in the second step of the Part 150 process, which is to identify specific measures to reduce noise levels on potentially affected land uses, resulting in a Noise Compatibility Program (NCP).

The NCP for National Airport included noise exposure maps reflecting "existing" (2004) and anticipated "future" conditions (2009). The contour maps depict noise levels of 65 dBA and greater. These contour areas are generally concentrated over the Potomac River and outside of Fairfax County. Another map was completed using a grid of expected sound levels across a more extensive area. No areas of 60 DNL or greater are within Fairfax County. Figure 1 depicts noise contours for National of 65 DNL and greater. Figure 2 depicts the modeled grid of noise levels.

A Part 150 study is generally triggered by airport operational changes, such as a new runway or a major change in the fleet mix. Given that no such changes are planned or expected for National Airport, substantive changes are not expected in the noise contours over what was modeled for 2009 and an updated Part 150 Study is not anticipated.

Figure 1: Noise Contours - Washington Reagan National Airport

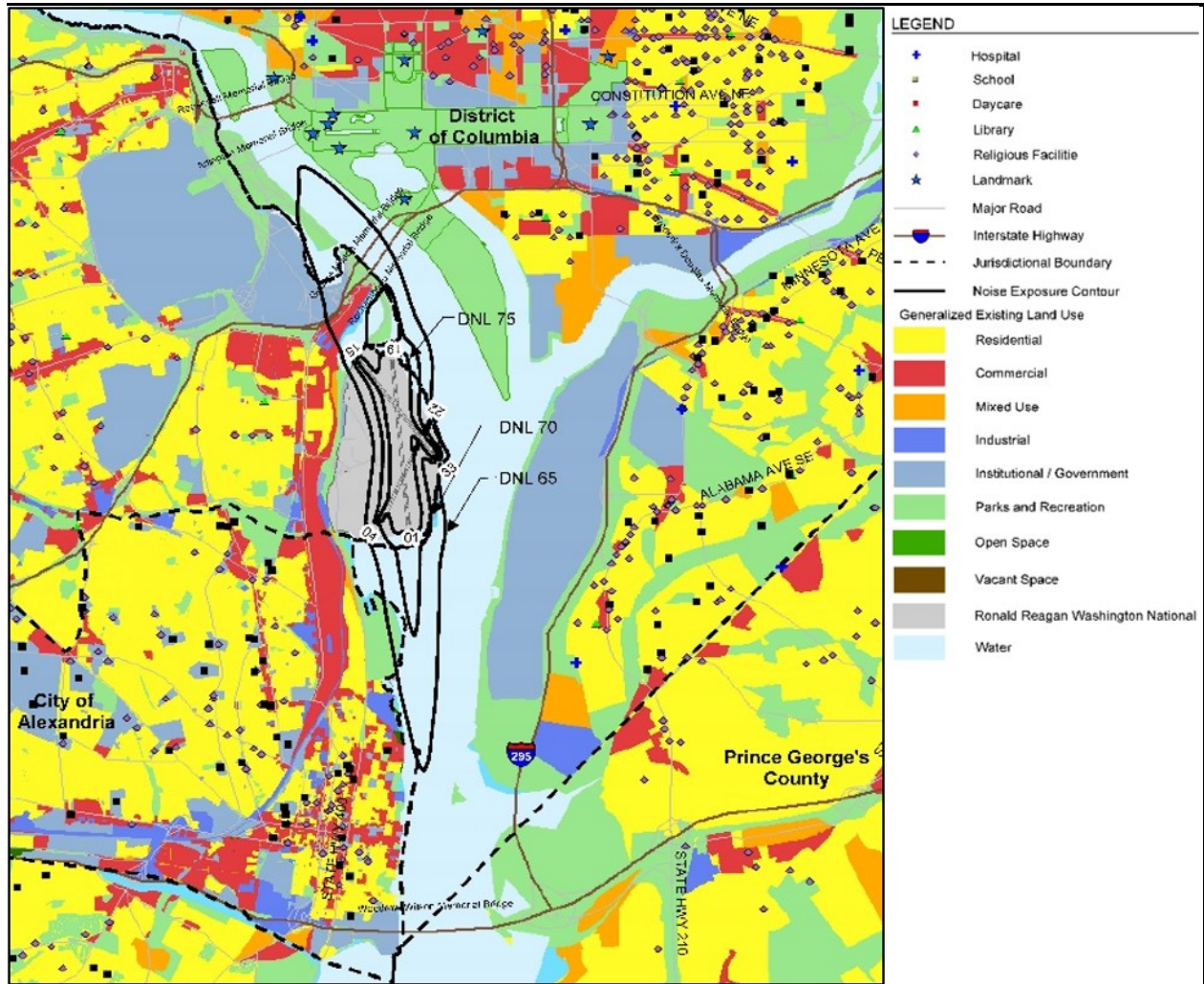
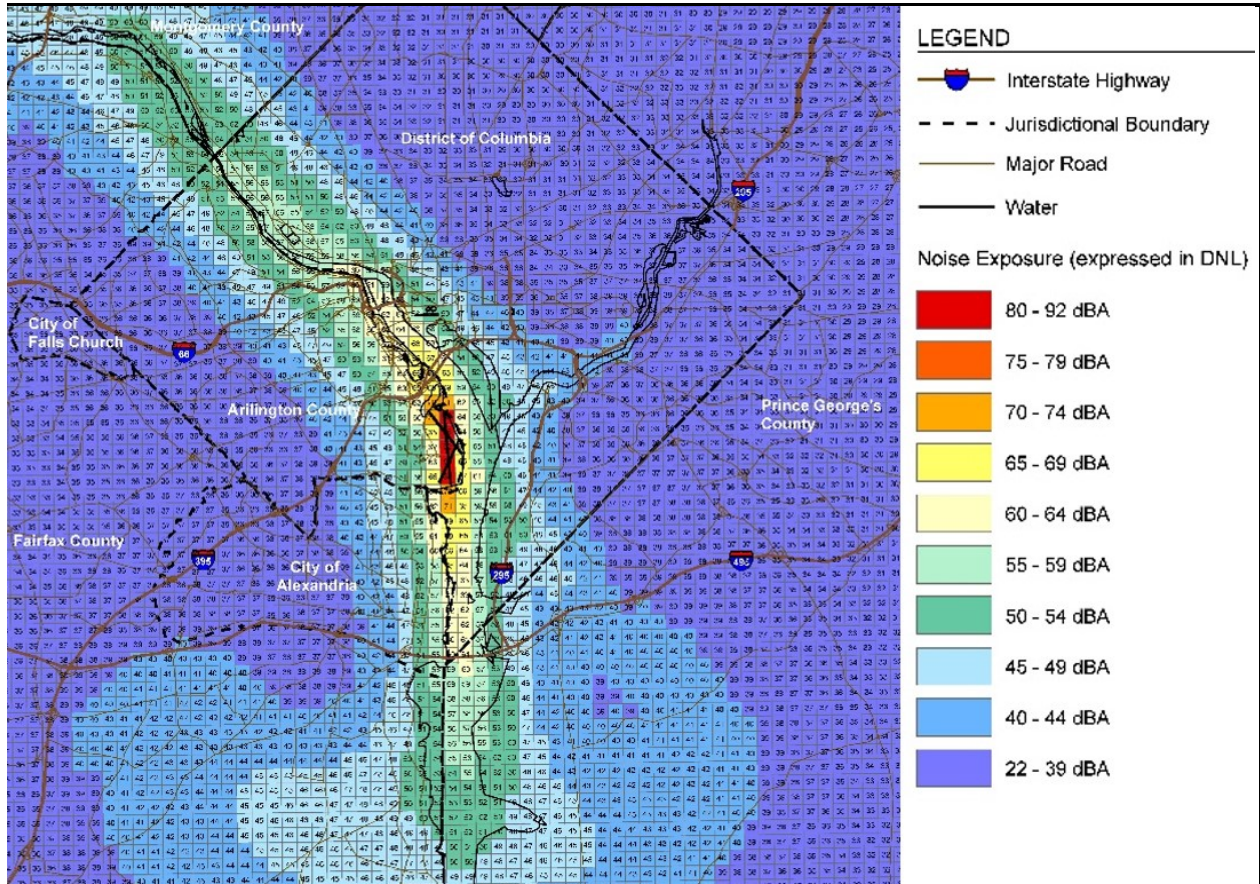




Figure 2: Noise Grid - Washington Reagan National Airport



**Washington Reagan National Airport Noise Community Working Group**

MWAA established the Washington Reagan National Airport Noise Community Working Group (CWG) in October 2015 in response to increasing community concerns regarding aircraft noise from National’s flight operations which affected residential areas in the District of Columbia, Virginia, and Maryland primarily along the Potomac and Anacostia rivers. The CWG includes community representatives from Washington, D.C., Arlington County, Alexandria, Fairfax County, Montgomery County, and Prince George’s County, as well as representatives from American Airlines and the Metropolitan Washington Airlines Committee. MWAA serves as the facilitator; MWAA and the FAA serve as non-voting, advisory members.

The CWG is intended as a cooperative effort to identify practical solutions and to recommend these solutions to MWAA for submission to the FAA for its consideration and action.

Topics considered by the CWG include issues related to:

- Air safety requirements;
- Existing and emerging technologies that affect aircraft movements and performance;
- Roles and responsibilities of government and business entities related to aircraft noise;

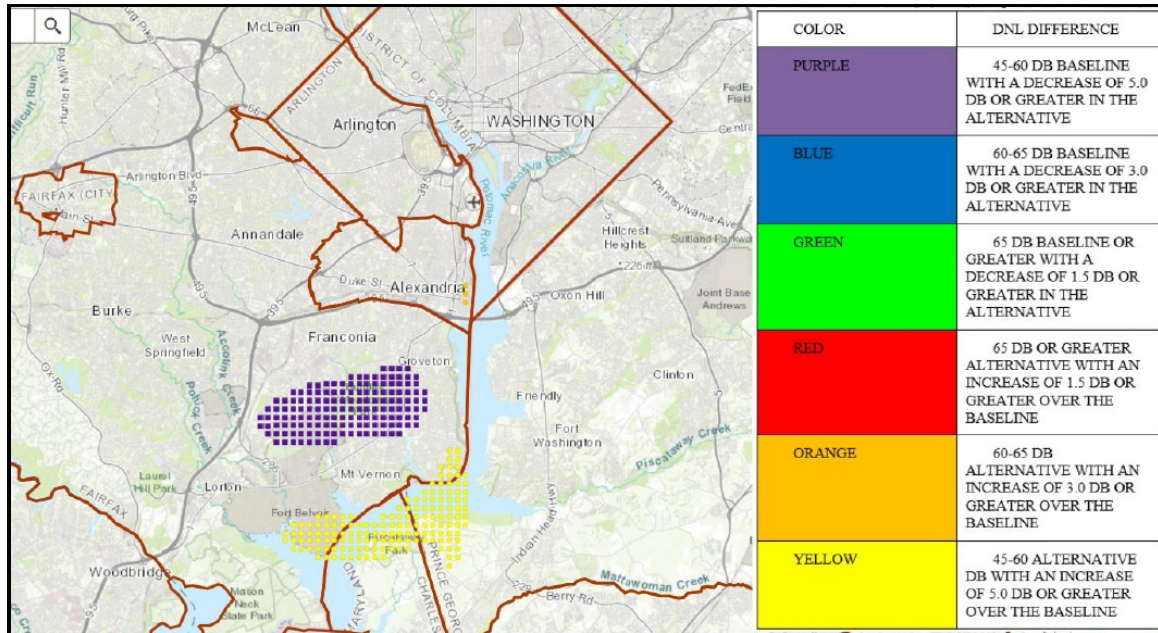
- Standard Arrival and Standard Instrument Departure procedures;
- North and south flow operating conditions;
- Early-morning and late-night airline schedules;
- DCA Nighttime Noise Rule history and enforcement;
- Airline fleet mix;
- Noise monitoring system; and
- Experiences of other airport communities in addressing noise issues.

Additionally, a South of Airport (SOA) Subcommittee was formed to explore these issues as they relate to communities in Alexandria, Fairfax County, and Prince George's County which are impacted by noise associated with aircraft operations. 22 recommendations were submitted by the CWG to the FAA for consideration; this included three recommendations from the SOA exclusively related to National Airport. These include:

- Recommendation 3: Modification of flight paths south of National to keep aircraft more centered over the Potomac River on departures, as well as the modification of waypoints to move departing aircraft farther down the Potomac River before turning east or west. This recommendation would reduce the noise impacts associated with aircraft overflights of residential areas.
- Recommendation 8: Specific recommendations regarding south departures and arrivals. These recommended flight procedures would eliminate early, low-level turns over nearby areas and keep southerly departures centered over the Potomac River. Planes would be required to climb to certain minimum altitudes prior to initiating various turns and to avoid crossing land near Fort Washington, Maryland. Additionally, noise modeling is recommended to assess impacts from current overflights and modified procedures.
- Recommendation 21: Specific recommendations for "not lower than" Initial Approach Fix (IAF) altitudes for various south arrivals primarily impacting the Accokeek and Fort Washington, Maryland areas. Noise impacts in these areas have not been precisely determined due to a limited number of noise monitors and the location of existing monitors. A change in procedures and adherence to existing "not lower than" IAF altitudes, deviations from which are routinely approved, may alleviate some noise impacts.

The FAA completed a noise screening analysis in 2018 associated with Recommendation 8. The noise screening analysis results are depicted in the following figure. If implemented, Recommendation 8 is expected to result in a noise reduction for areas in Fairfax County under the current departure flight path (purple area) and a noise increase in areas depicted in the yellow area.

### FAA Screening Document Washington Reagan National Airport



Overall, the FAA analysis of the SOA Subcommittee’s Recommendation 8 regarding south departures and arrivals concluded that the recommended changes to flight operations would: (i) cause no significant increases in noise in the study area; (ii) result in a reportable noise increase east of Fort Belvoir and west of Fort Washington (yellow area); and (iii) reduce noise in southeast Fairfax County (purple area). The FAA reports that even with a reduction in noise in the purple area, the overall noise level in the that area would still be greater than the noise level in the yellow area.

The localities represented by the SOA Subcommittee are pursuing the use of a consultant to analyze the pertinent recommendations of the previously cited Recommendations 3, 8, and 21, to work with the SOA Subcommittee, and to interface with the FAA on an ongoing basis. The consultant’s analysis could then be provided to the FAA to potentially gain support for new or revised flight procedures. Such an effort could take from two to five years to be considered, evaluated, and approved by the FAA.



**DAVISON ARMY AIRFIELD**  
**Limited Residential Uses within the 60-65 DNL Contours**

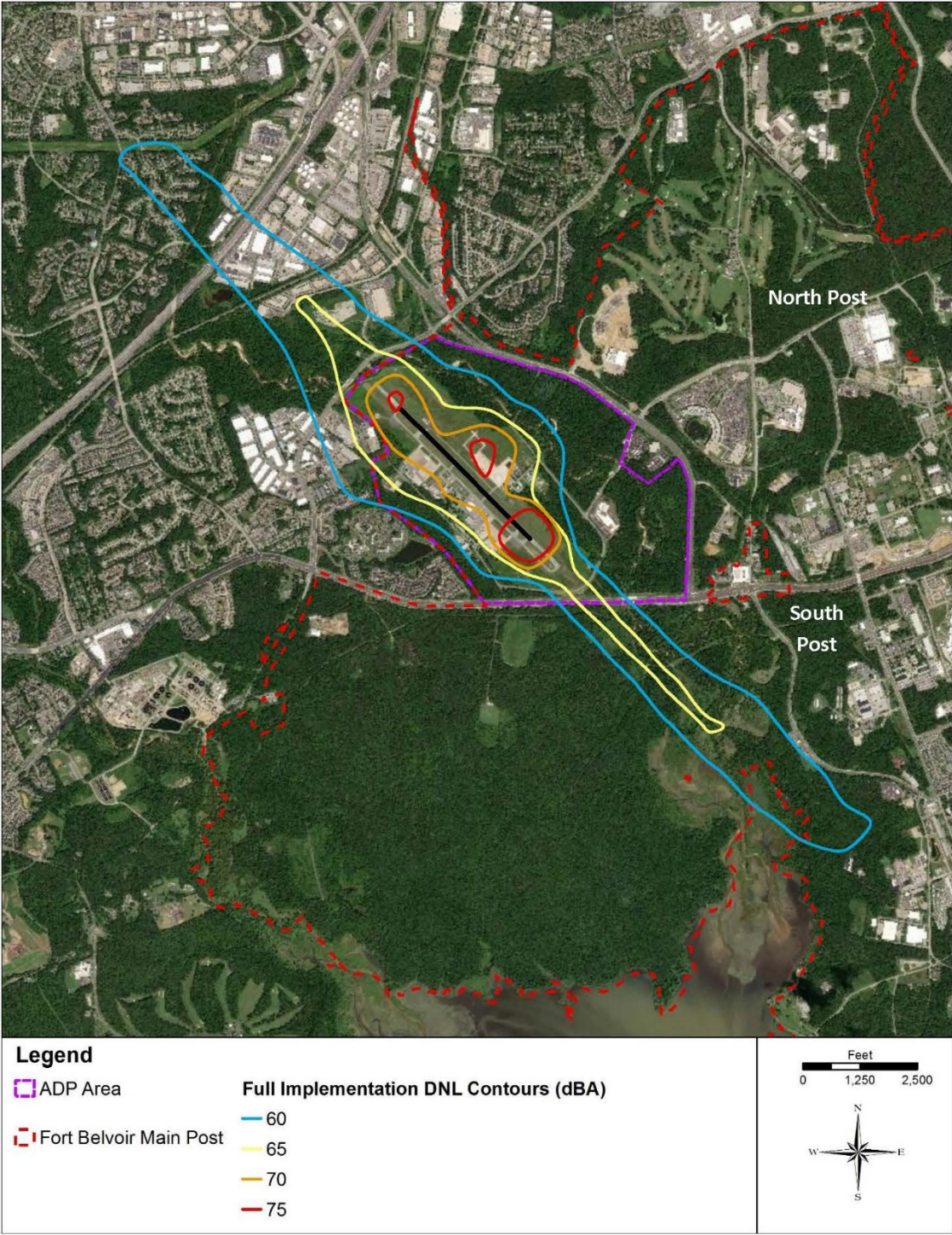
Contours representing the existing/baseline (2017) DNL noise conditions at Davison were most recently generated as part of an Environmental Impact Statement (EIS) which is considering the enhancement of airfield facilities for fixed wing aircraft and rotary wing helicopters. The noise contours for Davison align with the runways and the dominant flight tracks for arrivals, departures, and flight patterns. In addition to flight operations, pilots and maintenance personnel regularly conduct static engine run-ups as part of maintenance or standard pre-flight and post-flight procedures. Run-ups are performed in designated locations at Davison while an aircraft is stationary. Noise from such run-up operations is accounted for in the baseline noise modeling.

DNL noise contours modeled under the Full Implementation Alternative of the Davison EIS are nearly identical to the 2017 existing/baseline conditions. Fairfax County has not adopted any noise contours associated with Davison in either the Plan or the Zoning Ordinance.

DNL noise contours generated by aircraft operations and engine run-ups at Davison are shown in the figure below. Noise levels of 70 dBA DNL and greater are entirely confined to Davison. No noise-sensitive land uses would be located within the modeled 65-70 dBA DNL noise contours within Fairfax County beyond Davison's boundaries.

Approximately 248 acres of the 590 acres of land area within the 60-65 DNL contour associated with Davison are located off-post. The majority of the off-post area is located to the northwest of the airfield and is planned and developed with non-residential uses, in recognition of the proximity to I-95, Route 286, and Davison. Approximately 31 acres of existing residential uses and 44 acres of planned residential uses outside of Fort Belvoir are located within the 60-65 dBA DNL contours. Most of the residential uses contained within the 60-65 DNL contours were generally developed prior to the adoption of Countywide policies regarding residential uses within the 60-65 DNL contours. Additionally, these residential areas are generally stable with no planned opportunity for further residential development. Even though there are no adopted noise contours related to Davison, if an application for residential use were submitted, the applicant could be asked to submit a noise study to consider background noise levels, which might include both traffic and aircraft noise, and provide mitigation consistent with the Comprehensive Plan.

### Full Implementation Noise Contours - Davison Army Airfield (Not Board Adopted)



**Table 1: Land Area within the Davison Army Airfield Noise Contour Zones  
(Full Implementation of EIS Alternatives)**

Noise Zone	On-Post Acreage	Off-Post Acreage
60-65 DNL	341.9	247.6
65-70 DNL	147.3	38.0
70-75 DNL	113.6	0.0
>75 DNL	29.7	0.0
<b>Total</b>	<b>632.5</b>	<b>285.6</b>

Note: Data was generated using a GIS spatial query and reflects the total land area contained within each contour area, including public rights-of-way.

**Table 2: Existing Land Uses in the 60-65 DNL Noise Contours, by Parcel/Lot Area  
Davison Army Airfield, Off-Post Areas**

Existing Use	Area (acres)	Percentage
Government/Institutional	10.71	4.85
Industrial	89.64	40.56
Office	5.09	2.30
Private Open Space	7.01	3.17
Public Recreation	13.54	6.13
Retail	0.77	0.35
Single Family	29.76	13.47
Townhouse	1.00	0.45
Vacant Land	63.48	28.72
<b>TOTAL</b>	<b>221.00</b>	<b>100.00</b>

Note: Data within the Existing Land Uses table reflects information drawn from the Department of Tax Administration (DTA) database. Data may not precisely match the Planned Land Use data derived from GIS spatial queries due to differences in how land areas are assigned to land uses within the DTA database. While the Planned Land Uses table includes public rights-of-way, the Existing Land Uses table does not.

**Table 3: Planned Land Uses in the 60-65 DNL Noise Contours, by Land Area  
Davison Army Airfield, Off-Post Areas**

Planned Land Use	Area (acres)	Percentage
2-3 DU/AC	38.99	16.54
4-5 DU/AC	0.54	0.23
8-12 DU/AC	4.69	1.99
Industrial	101.58	43.10
Private Open Space	0.46	0.20
Private Recreation	24.04	10.20
Public Parks	65.39	27.74
<b>TOTAL</b>	<b>235.69</b>	<b>100.00</b>

Note: Data within the Existing Land Uses table reflects information drawn from the Department of Tax Administration (DTA) database. Data may not precisely match the Planned Land Use data derived from GIS spatial queries due to differences in how land areas are assigned to land uses within the DTA database. While the Planned Land Uses table includes public rights-of-way, the Existing Land Uses table does not.

Source: <https://home.army.mil/belvoir/index.php/about/Garrison/directorate-public-works/environmental-division>

(See Pages 4-21 to 4-28 of the Draft EIS Vol. I (No Appendices) - DAAF ADP).

(See Pages B-6 to B-25 of the Draft EIS Vol. II (Appendices) - DAAF ADP).

Link to Consultant Report and Other Materials

July 21, 2020 Land Use Policy Committee Meeting

[Board of Supervisors Land Use Policy Committee Meeting: July 21, 2020 | Board Of Supervisors \(fairfaxcounty.gov\)](#)