



# PROPOSED COMPREHENSIVE PLAN AMENDMENT

ITEM: PA 2020-CW-3CP  
April 27, 2022

**GENERAL LOCATION:** Countywide

**SUPERVISOR DISTRICT:** All

**PLANNING AREA:** All

**PLANNING DISTRICT:** All

**SUB-DISTRICT DESIGNATION:** All

**PARCEL LOCATION:** All

**Airport Noise Policy**

For additional information about this amendment call (703) 324-1380.

**PLANNING COMMISSION PUBLIC HEARING:**  
Wednesday, May 18, 2022 @ 7:30 PM

**BOARD OF SUPERVISORS PUBLIC HEARING:**  
Tuesday, June 28, 2022 @ 4:00 PM

**PLANNING STAFF DOES RECOMMEND  
THIS ITEM FOR PLAN AMENDMENT**



Reasonable accommodation is available upon 48 hours notice. For additional information about accommodation call the Planning Commission office at (703) 324-2865, or the Board of Supervisors office at (703) 324-3151.

MAP NOT APPLICABLE

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## STAFF REPORT FOR PLAN AMENDMENT 2020-CW-3CP

### BACKGROUND

#### Authorization

On July 28, 2020, the Board of Supervisors (Board) authorized consideration of a Comprehensive Plan Amendment for the relevant Policy Plan and Area Plan sections of the Plan to allow new residential uses in the area between the 60 and 65 DNL airport noise contours. The proposed amendment would amend the Environment and Land Use elements of the Policy Plan and certain portions of the Area III section of the Plan so that, as a matter of policy, new residential uses could be considered in the area between the 60 and 65 DNL airport noise contours with commitments to noise mitigation measures, notification requirements, and appropriate construction techniques. This Plan amendment does not propose changes to planned land uses within the 60 and 65 DNL airport noise contours. If the Comprehensive Plan is amended to permit consideration of new residential uses within the 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 for new residential uses.

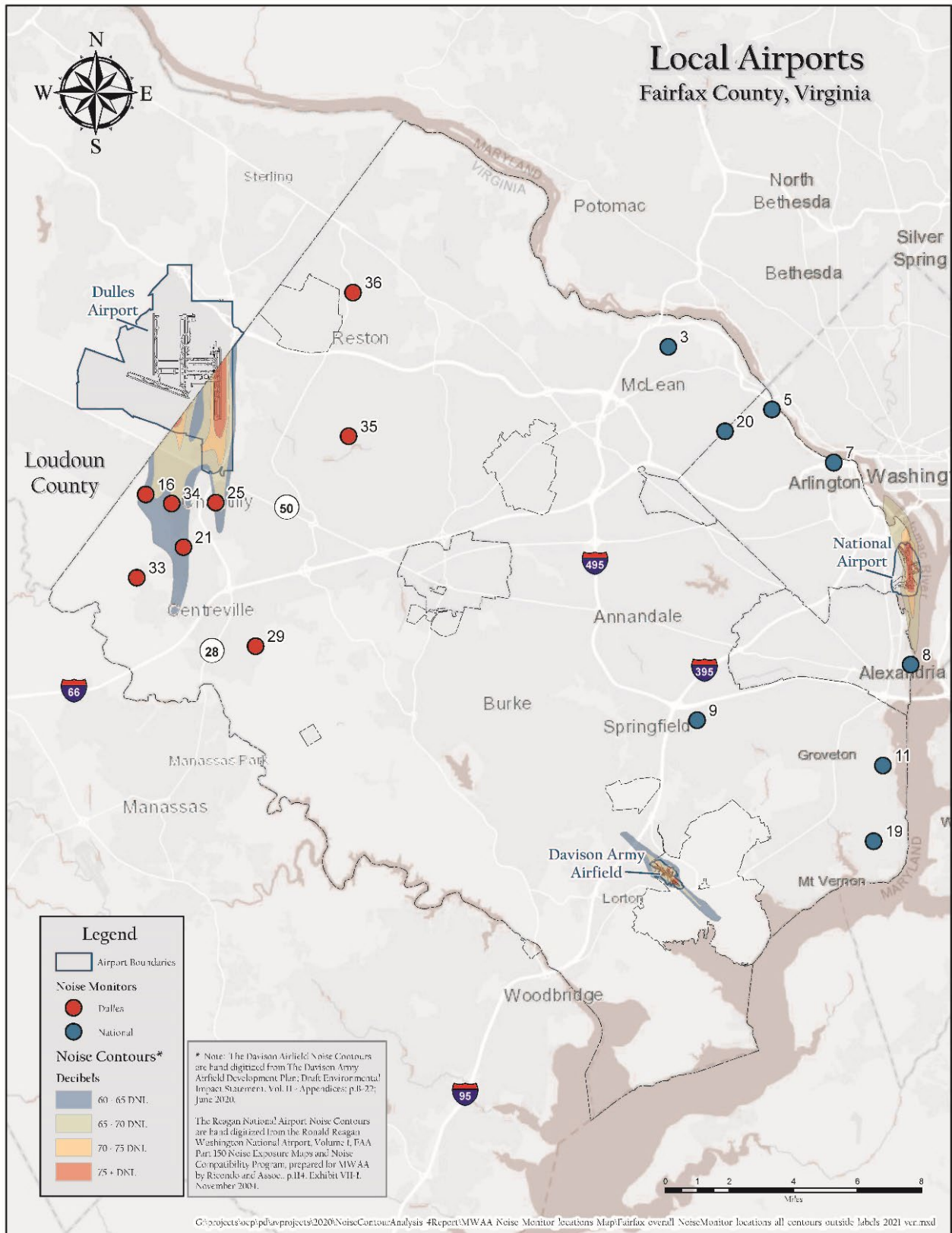
#### Issues Paper

[An issues paper, dated November 1, 2021](#), was developed in response to the Board authorization. The paper was intended to provide background information and to identify potential considerations and noise mitigations for the Plan amendment.

#### Local Airports

There are two airports located within Fairfax County: Washington Dulles International Airport (Dulles) and the Davison Army Airfield (Davison) associated within Fort Belvoir. The Board has adopted noise contours associated with Dulles; these are located to the east and south of the airport within Planning Area III, as defined by the Comprehensive Plan. 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 (National) is located outside of the County. While flights from National generate noise in Fairfax County, particularly in areas near the Potomac River, no mapped noise contours associated with the airport extend into the County. Figure 1 depicts the three airports, their associated noise contours and noise monitoring locations.

**Figure 1: Local Airports, Associated Noise Contours and Noise Monitors**

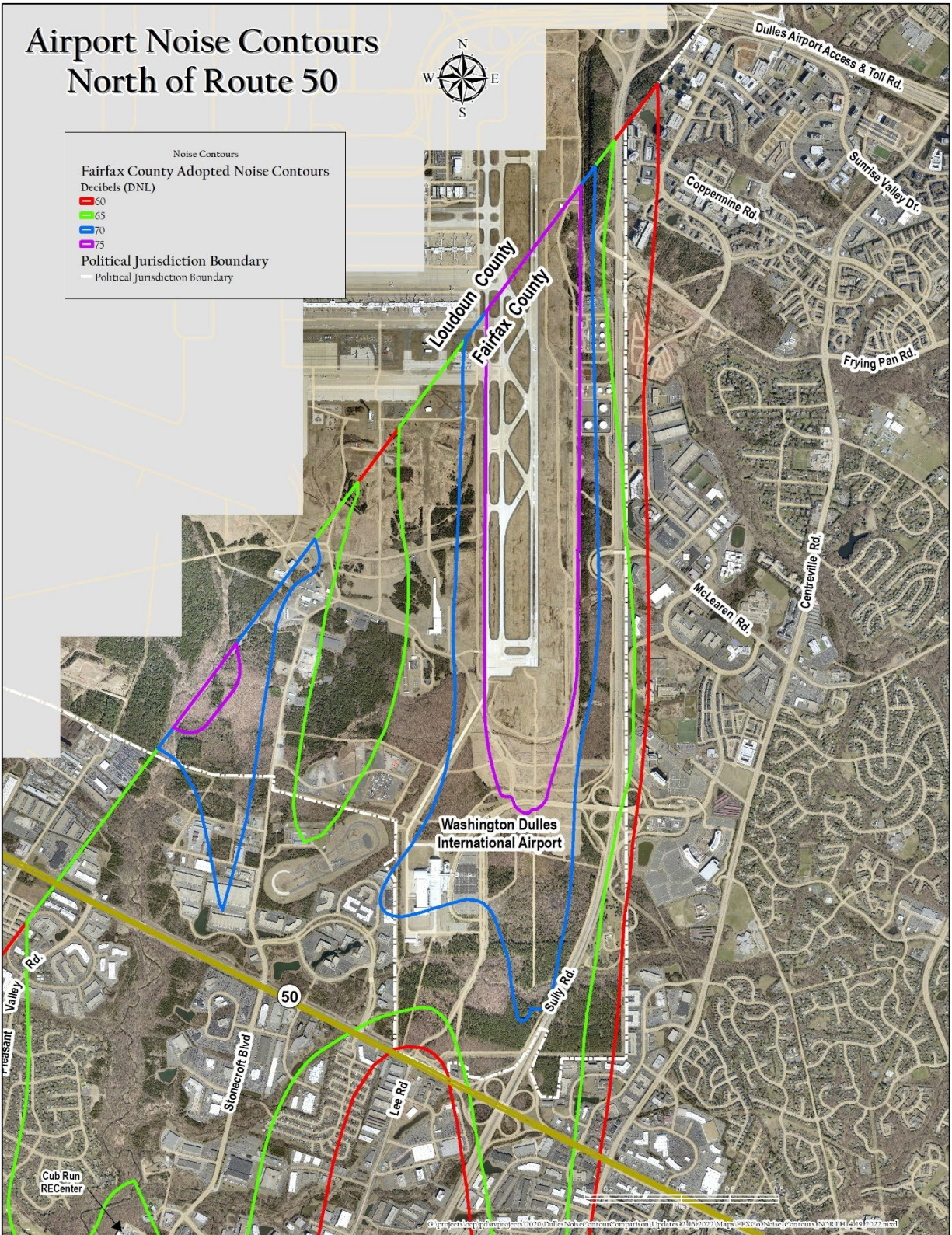


Source: Fairfax County Department of Planning and Development

## **Planning History**

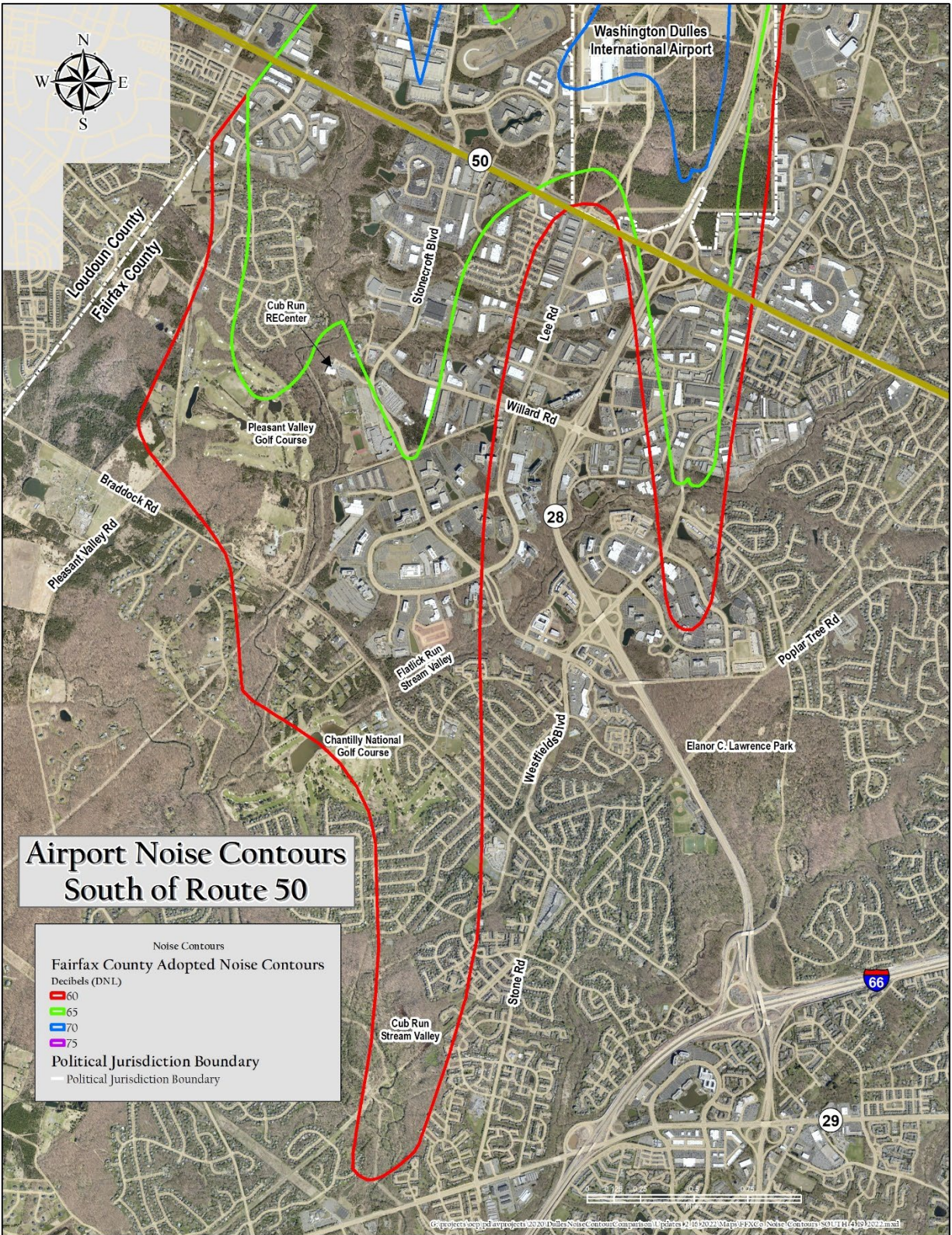
Fairfax County adopted Comprehensive Plan policies, Zoning Ordinance requirements, and/or overlay updates for the noise contours for Dulles Airport in 1979, 1982, 1984, and 1997. The existing airport-related Plan text was adopted on March 24, 1997, as part of Plan Amendment S96-CW-4CP (Revisions to Noise and Land Use Compatibility Guidance in the Dulles Airport Noise Impact Area - Policy Plan Volume; Area III Volume; and Comprehensive Plan Map). That plan amendment 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. Prior to that time, the county used contours of only 65 DNL and greater. Like the previous contours, the contours adopted in 1997 were developed by the Metropolitan Washington Airports Authority (MWAA), and reflect the full buildout of the airport, based on MWAA's 1993 model assumptions. Figures 2 and 3 below depict the Board adopted airport noise contours. (Note: unless stated otherwise, the airport noise contours referenced in this document refer to the contours adopted by Fairfax County in 1997).

Figure 2: Board Adopted Airport Noise Contours North of Route 50



Source: Fairfax County Department of Planning and Development

Figure 3: Board Adopted Airport Noise Contours South of Route 50

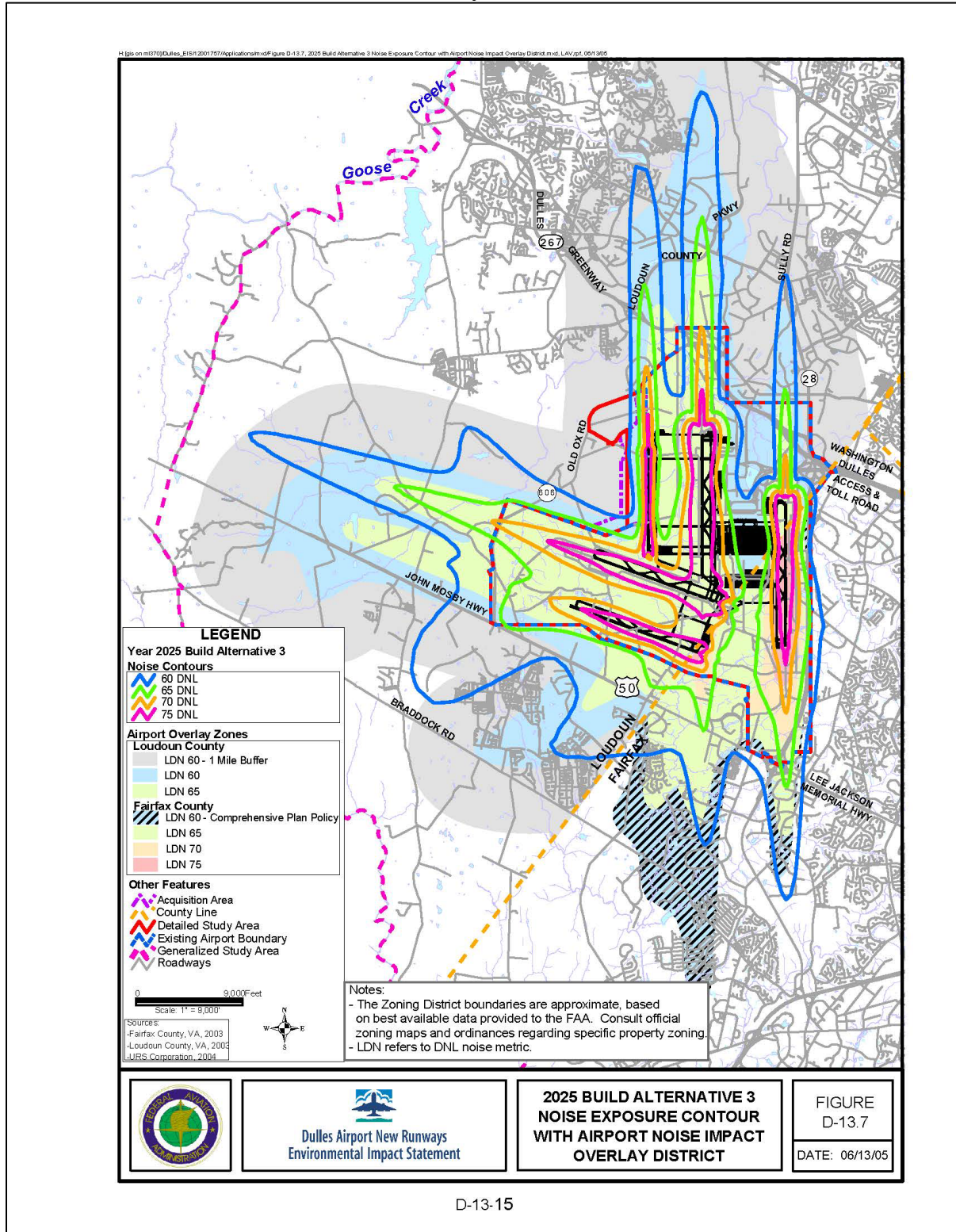


Source: Fairfax County Department of Planning and Development

In 2005, MWAA completed an Environmental Impact Statement (EIS) for the construction of two new runways (01L/19R & 12R/30L) consistent with the Dulles Airport Layout Plan that was completed in 2004. In conjunction with this EIS, MWAA generated a map depicting year 2025 noise contours (Figure 4) for the preferred option of seven evaluated, in which a fourth runway (Runway 01L/19R) would be constructed west of and parallel to Runway 01C/19C and a fifth runway (Runway 12R/30L) would be constructed southwest of and parallel to existing Runway 12/30. Runway 01C/19C has since been constructed, while Runway 12R/30L has not yet been constructed and is commonly referred to as the “5<sup>th</sup> runway.” MWAA did not request that the Boards of Fairfax County and Loudoun County adopt these contours, and neither did.



**Figure 4: 2025 Build Alternative 3 Noise Exposure Contour with Airport Noise Impact Overlay District**



D-13-15

Source: Dulles Airports New Runways EIS, MWAA

Plan Amendment 2018-III-DS1 was adopted by the Board on May 7, 2019, for Land Unit J of the Dulles Suburban Center (generally the Westfields area). This amendment added residential use as an option in the Plan within the Board adopted 60-65 DNL airport noise contour area under certain conditions, including mitigation of airport noise impacts. This plan amendment 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. At that same time, 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 recently updated MWWA 2019 noise contours. In response, the County hired Johnson Aviation, which provided a review of the MWWA 2019 contours. A report was produced that included the methodology used to develop the updated contours, as well as input related to the consideration of permitting new residential uses within the Board adopted 60-65 DNL contours. ([Microsoft Word – 031520 Fairfax County-Dulles Aircraft Noise Peer Review-Johnson Aviation](#)).

With the exception of Land Unit J of the Dulles Suburban Center, the Comprehensive Plan currently discourages new residential development within the 60-65 DNL noise contour area, although residential uses currently exist within that area.

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) ([2017 Edition of the Policy Plan – Environment \(fairfaxcounty.gov\)](#)): see Objective 4); (ii) Area III Overview ([2017 Comprehensive Plan – Area Plan Overview \(fairfaxcounty.gov\)](#)): see Pages 19-24); and (iii) the Dulles Suburban Center, which is located within Area III ([2017 Edition of the Comprehensive Plan - Dulles Suburban Center \(fairfaxcounty.gov\)](#)). The Policy Plan provides Countywide guidance while the Area III and the Dulles Suburban Center policies apply to defined areas.

### **Zoning Ordinance**

The existing airport noise zoning regulations were adopted in 1997 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 area 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 land 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 the Day-Night Average Sound Level (DNL) of 75 dBA; DNL 70-75 dBA; and 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 ([Document Viewer | Zoning Ordinance \(encodeplus.com\)](#)): subsection 3103.2 and 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 land use in a given Impact Area. Consideration of

changes to the Comprehensive Plan to permit consideration of new residential uses within the 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 for those areas with impacts of less than 65 DNL.

## **ANALYSIS**

### **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.

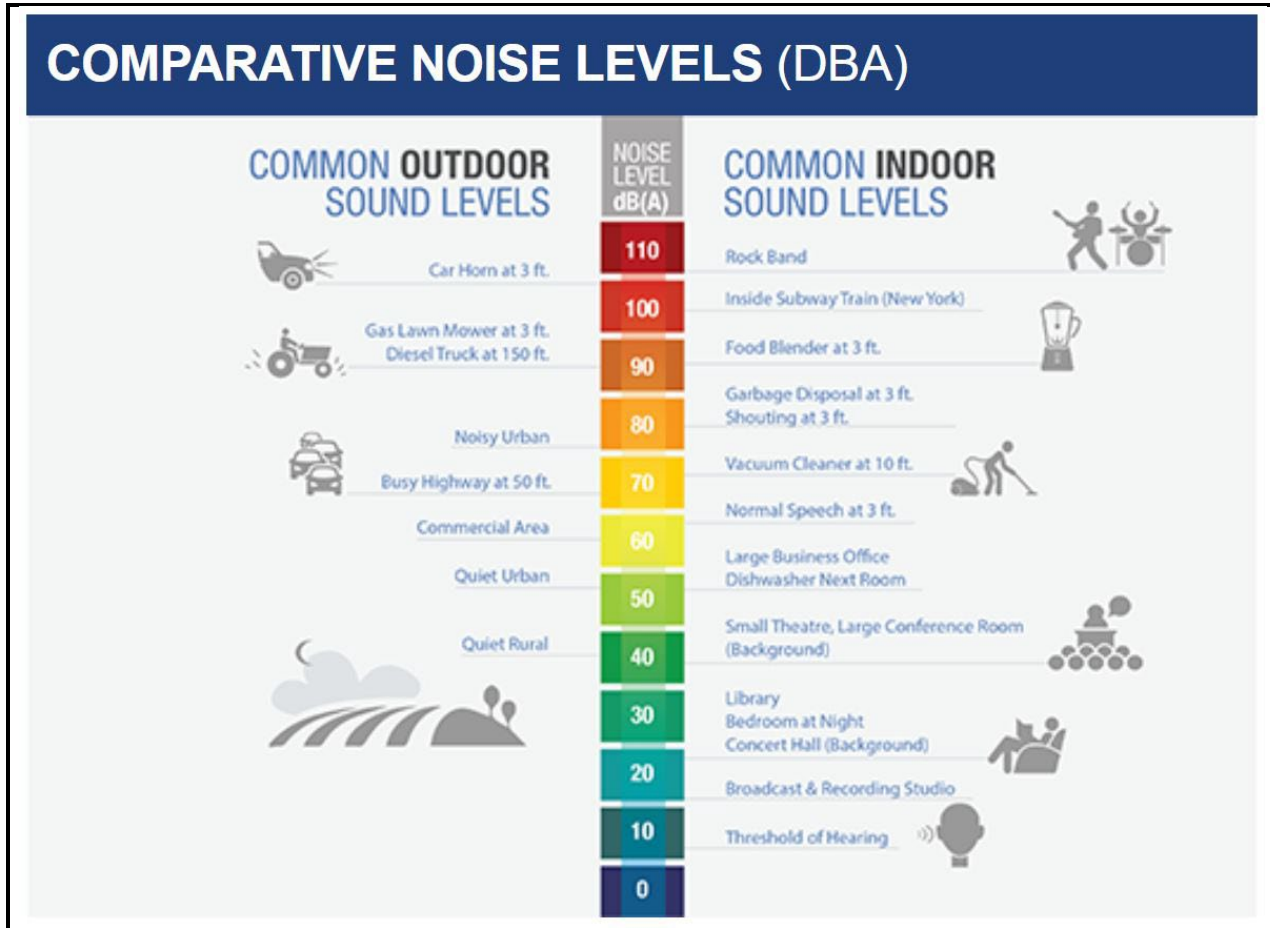
#### **Fundamentals of Sound and Noise**

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 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. Figure 5 below illustrates comparative noise levels. 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 and equates to a ten-fold increase in sound energy.

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).

Figure 5: Comparative Noise Levels



Source: [Fundamentals of Noise and Sound \(faa.gov\)](https://www.faa.gov)

### Combining Roadway and Aircraft Sound

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 (e.g., 60 dBA + 76 dBA = 76 dBA).

### 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 based on 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 depend on many variables and are 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 airports. Noise monitoring stations are used to help understand these impacts over time, including the effects of the concentration of aircraft over particular areas.

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 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). Figures 1 and 4 depict the noise monitor locations associated with Dulles Airport.

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, which are published at 14 Code of Federal Regulations (CFR), Part 150. This regulation adopted the DNL metric, established land use compatibility guidelines for aircraft noise, 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. 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.

Research published by Schultz (1978) currently informs several aspects of aviation noise policy in the United States, including land-use compatibility guidelines around airports and the factors that determine noise mitigation funding. Schultz developed a correlation between transportation noise exposure levels in terms of a relatively large range of Day-Night Average Sound Levels (DNL) and the percentage of the population highly annoyed (the so-called “Schultz curve”) using social surveys on noise annoyance conducted in the 1960s and 1970s from a variety of countries.

While the Schultz Curve remains the accepted standard for describing transportation noise exposure-annoyance relationships, its original supporting scientific evidence and social survey data were based on information that was available in the 1970s; included multi-modal transportation (air, rail, and road); and, was conducted at a time when aircraft operations were louder and less frequent. The last in-depth review and revalidation of the Schultz Curve was conducted in 1992 by the Federal Interagency Committee on Noise (FICON). More recent analyses have shown that aviation noise results in higher annoyance than other modes of transportation. Recent international social surveys have also generally shown higher annoyance than the Schultz Curve. These analyses and survey data indicate that the Schultz Curve may not reflect the current U.S. public perception of aviation noise.

Additionally, the FAA has 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, needed to safely and efficiently modernize the national air transportation system, has 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.

To ensure that the FAA’s continued efforts to reduce the effects of aircraft noise exposure on communities is based upon accurate information, the FAA conducted a nationwide survey to measure the relationship between aircraft noise exposure and annoyance in communities near airports. This survey was intended to capture the community response to a modern fleet of aircraft as they are being flown today and to use best practices in terms of noise analysis and data collection. The responses from the survey have been used to create a new National Curve.

The Survey results show that there has been a substantial change in the public perception of aviation noise relative to the Schultz Curve which may ultimately inform future FAA noise initiatives. On January 13, 2021, The 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.

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 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

Note: For a more detailed description of the Neighborhood Environmental Survey, see the FAA website ([Neighborhood Environmental Survey \(faa.gov\)](https://www.faa.gov/neighborhood-environmental-survey))

Fairfax County provided comments regarding the FAA summary of the research programs on March 9, 2021 ([Fairfax County Response to FAA Research Programs Related to Civil Aircraft Noise](#)), which included recommendations regarding future aircraft noise policy.

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.

**Land Use within the 60-65 DNL Dulles Noise Contours**

The policy amendment being considered would be applicable to areas within the 60-65 DNL noise contours associated with Dulles. Based on the Board adopted contours, 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 1 (provided earlier in the staff report) shows the noise contours associated with Dulles; Figures 6 and 7 and Table 2 show the existing land uses within that area and Figures 8 and 9 and Table 3 show the base land use recommendations of the Comprehensive Plan for the same area.

Table 2 shows that approximately 85% of the land area within the 60-65 DNL contours is already developed. Developed areas include approximately 22% residential uses (559.3 acres) and 78% non-residential uses (1,561.1 acres). Vacant land accounts for approximately 15% of the land area (385.1 acres) within the 60-65 DNL contours. Almost all of the existing residential uses were entitled and/or constructed prior to the adoption of the initial airport noise Plan policies and ultimate noise contours in 1979.

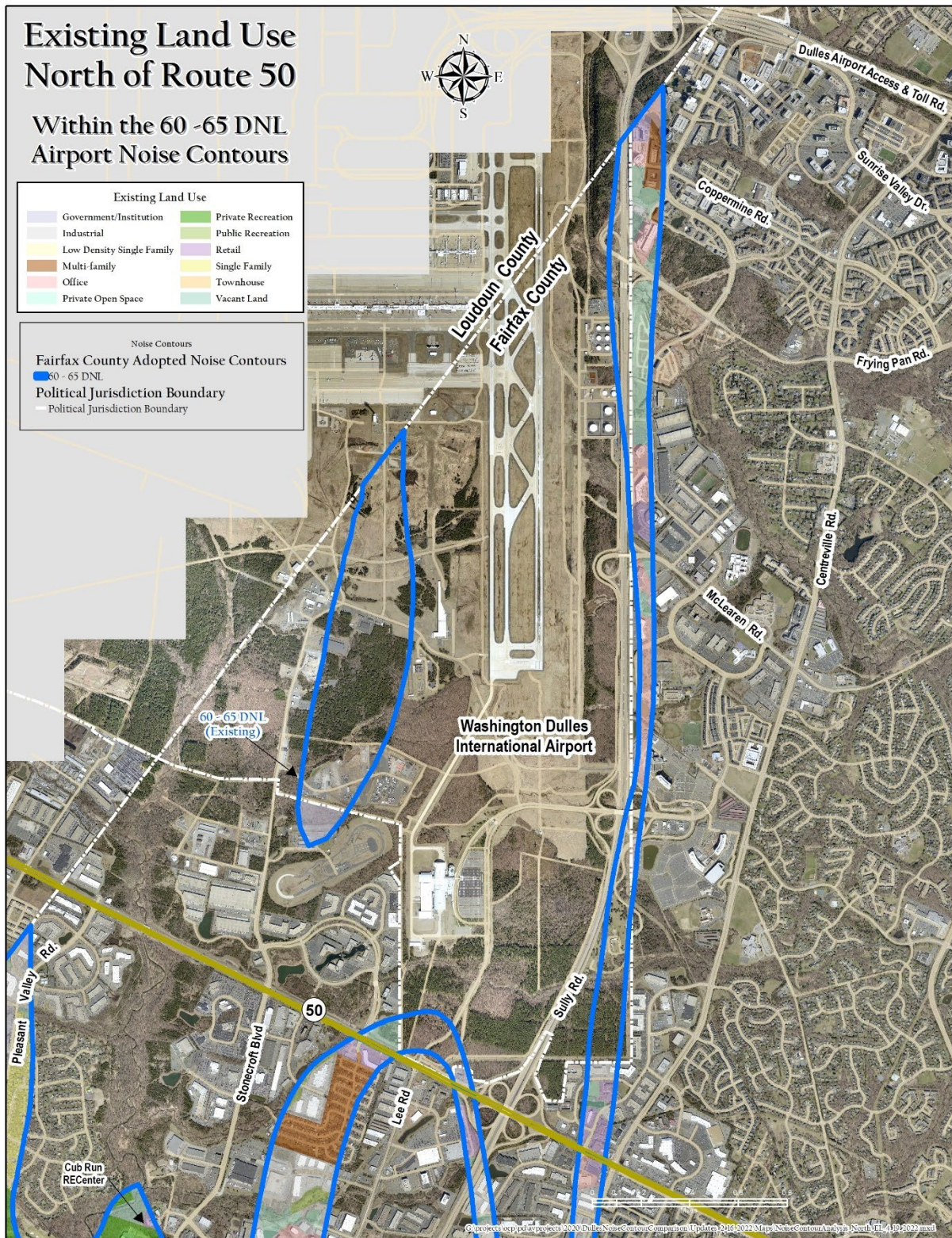
Table 3 shows that approximately 22% of the 60-65 DNL contour areas is planned for residential uses (593.8 acres); 24% for Mixed Uses (646.8 acres), which may in certain instances include options for residential uses; and 54% for other, non-residential, uses (1,456.3 acres).

As noted, Figures 8 and 9 depict the planned land use recommendation within the 60-65 DNL contours. There are approximately 3,117 acres of land within the 60-65 DNL contours. Excluding areas that are developed; contain parks, recreation, public facilities; recently approved entitlements; and Land Unit J of the Dulles Suburban Center, approximately 237 acres (or 8% of the total acreage within the contours) may be available for redevelopment subject to future site-specific Comprehensive plan amendments. However, some of this acreage potentially available for redevelopment already has a current Plan recommendation for residential use and, some of this acreage may not be suitable for residential use for other reasons. Therefore, the impacts of this Plan amendment are minimal.

Figure 10 and Table 4 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 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 has been approved for 704 dwellings, some of which are under construction at that time of this staff report. 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.

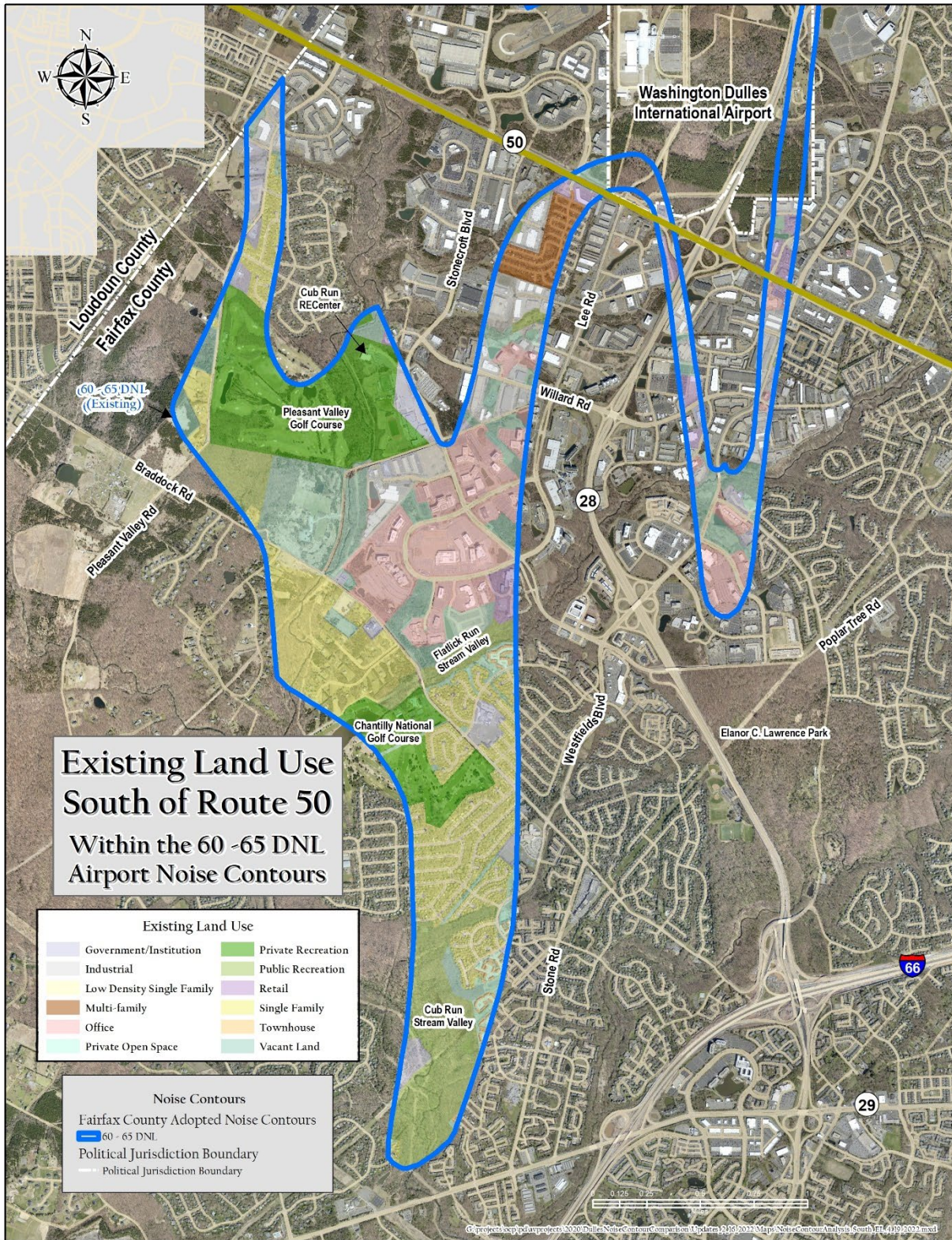


**Figure 6: Existing Land Uses within the Board Adopted 60-65 DNL Airport Noise Contours, North of Route 50  
Washington Dulles International Airport**



Source: Fairfax County Department of Planning and Development

**Figure 7: Existing Land Uses within the Board Adopted 60-65 DNL Airport Noise Contours, South of Route 50  
Washington Dulles International Airport**



Source: Fairfax County Department of Planning and Development

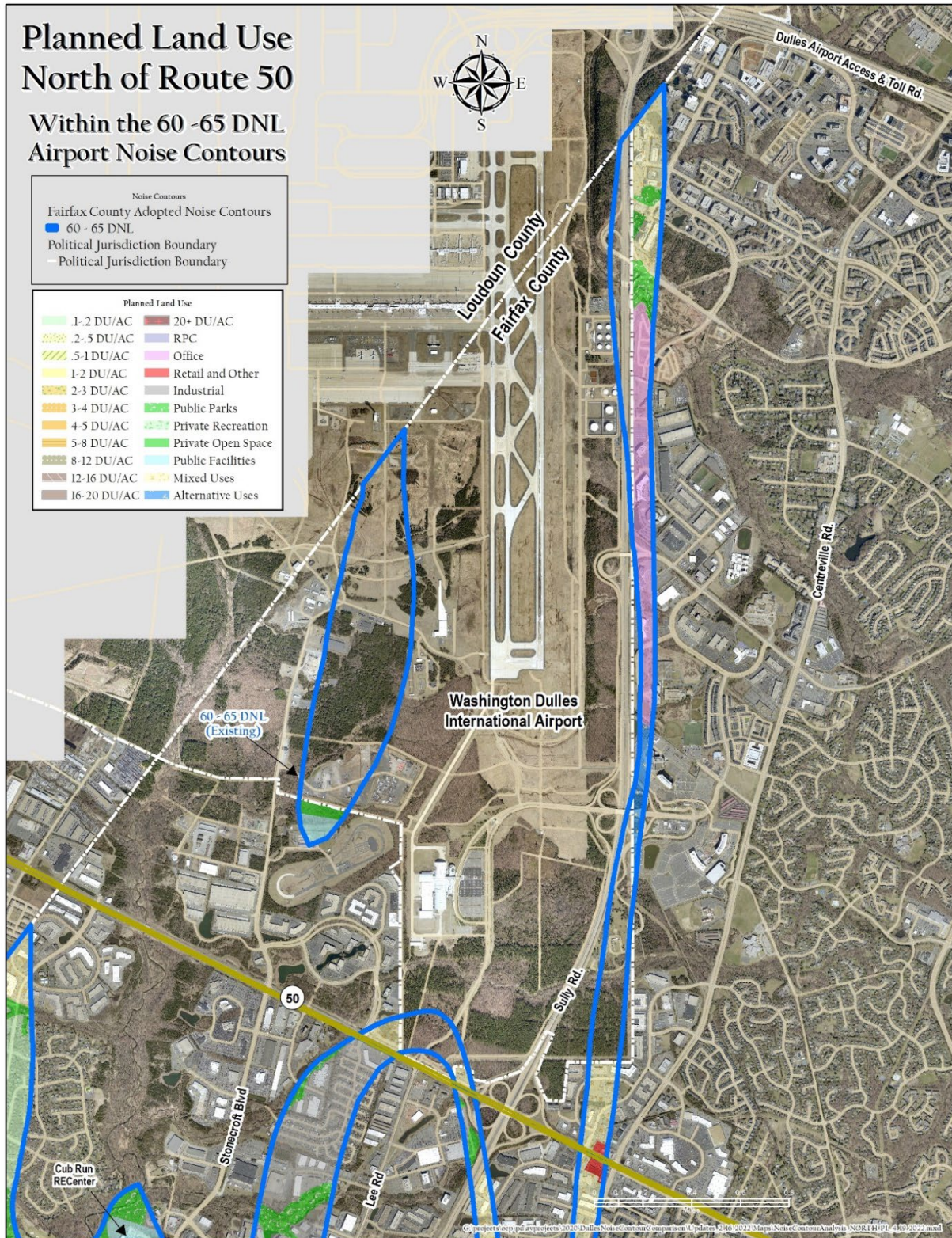
**Table 2: Existing Land Uses within the Board Adopted 60-65 DNL Noise Contours,  
by Parcel/Lot Area  
Washington Dulles International Airport**

<b>Existing Use</b>	<b>Area (acres)</b>	<b>Percentage</b>
Government/Institutional	125.3	5.0%
Industrial	198.6	7.9%
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%
Multi-Family	63.0	2.5%
Single Family	481.8	19.2%
Townhouse	14.5	0.6%
Vacant Land	385.1	15.4%
<b>TOTAL</b>	<b>2,505.5</b>	<b>100.0%</b>

Note 1: 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 data includes public rights-of-way, the Existing Land Uses data does not.

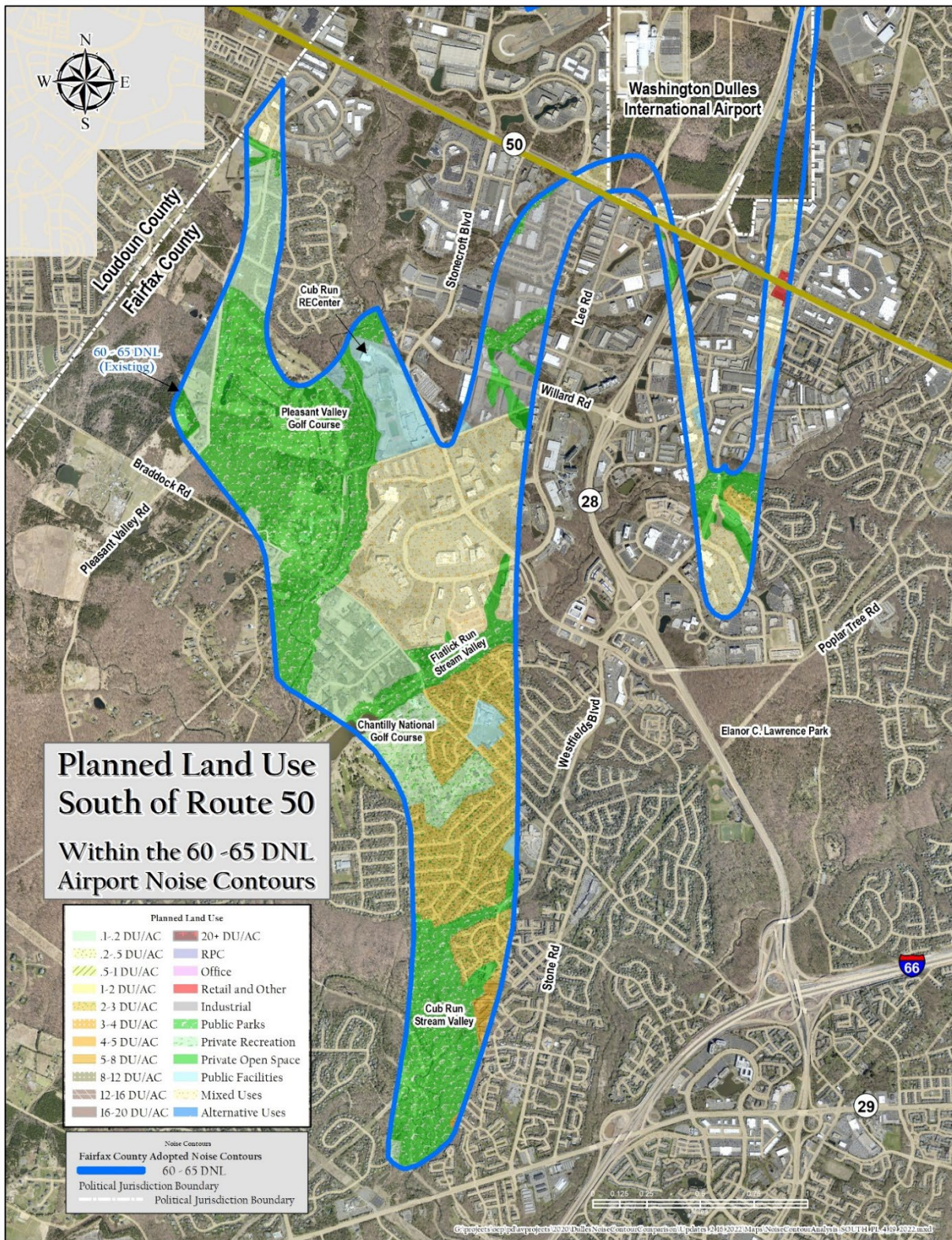
Note 2: The total of all residential uses (multi-family; single family, & townhouse) is 559.3 acres and 22.3%.

**Figure 8: Planned Land Uses within the Board Adopted 60-65 DNL Airport Noise Contours, North of Route 50  
Washington Dulles International Airport**



Source: Fairfax County Department of Planning and Development

**Figure 9: Planned Land Uses within the Board Adopted 60-65 DNL Airport Noise Contours, South of Route 50  
Washington Dulles International Airport**



Source: Fairfax County Department of Planning and Development

**Table 3: Planned Land Use within the Board Adopted 60-65 DNL Noise Contours,  
by Land Area  
Washington Dulles International Airport**

<b>Existing Use</b>	<b>Area (acres)</b>	<b>Percentage</b>
Public Facilities	118.68	4.4%
Industrial	184.93	6.9%
Office	80.58	3.0%
Private Open Space	108.87	4.0%
Private Recreation	101.61	3.7%
Public Parks	841.13	31.2%
Retail and Other	4.52	0.2%
Mixed Uses	646.84	24.0%
16-20 DU/AC <sup>1</sup>	2.20	0.1%
0.1-0.2 DU/AC <sup>2</sup>	253.27	9.4%
2-3 DU/AC <sup>3</sup>	322.09	11.9%
5-8 DU/AC <sup>4</sup>	16.12	0.6%
Alternative Uses	16.01	0.6%
<b>TOTAL</b>	<b>2,696.85</b>	<b>100.0%</b>

<sup>1</sup> Reflects typical multi-family residential density.

<sup>2</sup> Reflects typical large-lot single family residential density.

<sup>3</sup> Reflects typical suburban single family residential density.

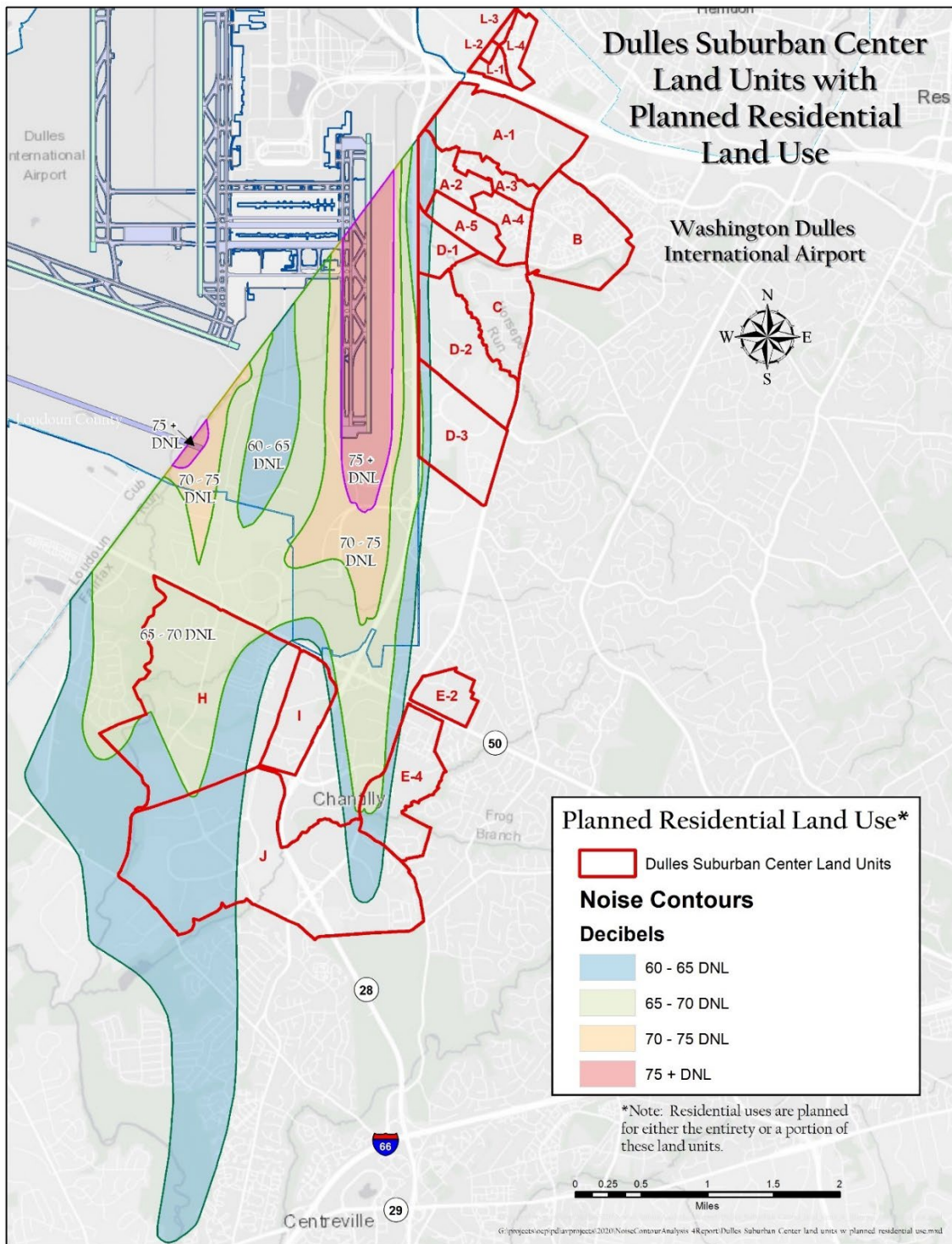
<sup>4</sup> Reflects typical townhouse density.

Note 1: "DU/AC" = dwelling units per acre.

Note 2: Data within the Planned Land Use table reflects information drawn from GIS spatial queries. Data may not precisely match the Existing Land Uses data derived from the Department of Tax Administration (DTA) database due to differences in how land areas are assigned to land uses within the DTA database. While the Planned Land Uses data includes public rights-of-way, the Existing Land Uses data does not.

Note 3: The total of all residential uses (multi-family; single family, & townhouse) is 593.68 acres and 22%.

**Figure 10: Land Units within the Dulles Suburban Center with Residential Development Options Near the Washington Dulles International Airport (overlaid with the Board Adopted 60-65 DNL Airport Noise Contours)**



Source: Fairfax County Department of Planning and Development

**Table 4: 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 \(fairfaxcounty.gov\)](#)).



### **Consideration of New Residential Uses Within the 60-65 DNL Noise Contour Area**

Most jurisdictions in the United States with international airports, including Loudoun County, permit residential uses within the 60-65 DNL noise contours. The Johnson Aviation Report (March 15, 2020) ([Microsoft Word – 031520 Fairfax County-Dulles Aircraft Noise Peer Review-Johnson Aviation](#): Pages 31-36) highlights the experiences of several airports, including Dulles, Denver, and Minneapolis-Saint Paul in managing aircraft noise.

Allowing for the consideration of new residential uses in the 60-65 DNL airport noise contour area would be consistent with the policies of most 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 60-65 DNL airport noise contour area, specifically in areas proximate to Dulles, could, with appropriate noise mitigation, enhance economic development opportunities, provide additional housing, and provide opportunities for residents to live and work in a mixed use area with reasonable commutes along the Route 28, I-66, and Dulles Tollway corridors. Allowing new residential uses within the 60-65 DNL airport noise contour area would also allow the conversion of under-performing, single-use, non-residential uses, such as office parks, into residential and mixed-use developments with a mix of amenities that could keep these areas economically viable.

The Board's Economic Success Strategic Plan (ESSP), updated in 2019, and the Countywide Strategic Plan, adopted in 2021, focus on ensuring the economic health of the County, the provision of housing, and placemaking - *"creating environments where people can thrive, where members of the community want to gather, and where businesses want to locate and grow."* (Countywide Strategic Plan, Page 8). The ESSP notes that *"[c]reating places where people want to be is an overarching focus for Fairfax County. We are growing our activity centers, investing in transformational multi-modal transportation systems, and focusing on creating unique and energized public spaces."* (ESSP, Page 15).

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 served by multi-modal transportation options and containing vibrant retail entertainment employment opportunities and a mix of housing types serving all income levels. (ESSP, Page 16). Given the proximity of areas within the 60-65 DNL contours to Dulles and the commuting corridors of Route 28, I-66, and Route 50, the consideration of additional residential uses may support the established uses in the area and further the goals of these county initiatives.

If the Comprehensive Plan is changed to permit consideration of new residential uses within the 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 for new residential uses. During that process, 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 current and future airport operations. As noted above, there are approximately 3,117 acres of land within the 60-65 DNL contours; however, 92% of this area is already developed or subject to previously approved Plan amendments and entitlements. Further, some of these areas have a current Plan recommendation for residential use or may not be suitable for residential use for other reasons. While the impacts

of this Plan amendment are minimal, adoption of this Plan amendment would now align the Comprehensive Plan with the Zoning Ordinance and other jurisdictions that permit residential in the 60-65 DNL noise contours.

### **Potential Development Criteria**

The following criteria are the basis for development of draft Plan language to permit consideration of new residential uses within the 60-65 DNL contours. These items are consistent with existing Plan guidance and were used for the review of recent residential rezoning applications within Land Unit J of the Dulles Suburban Center:

- Noise studies/measurements
- Interior noise attenuation
- Exterior spaces
- Airport noise disclosures and avigation easements

### Noise Studies/Measurements

Noise studies are generally submitted for land use proposals with identified noise sources and address the 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. 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 Figures 1 and 4.

While data from these monitoring stations 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 can be used for a particular location, although 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 differentiate 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 can vary greatly during testing periods depending on weather, the number of flight operations, and air traffic control procedures. To address this, the DNL average noise level is applied as a noise metric. A combination of data from MWAA noise monitors and pre-development field noise studies can be used to assess sound levels experienced in particular locations for noise sensitive uses.

Current Plan guidance states that post-development field noise studies should be conducted if requested in order to evaluate the effectiveness of noise mitigation measures. 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 of building materials and construction techniques could substitute for or be in addition to post-development noise studies. This is a well-established practice that is conducted prior to construction and results in the actual construction materials and techniques being agreed upon prior to construction. These noise 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 necessary, modeled floorplans can 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 installed building components meet the modeled STC ratings.

Consideration should be given to conditions that require pre-development noise studies, pre-construction noise modeling for building components, and the submission of verification letters, certifying that the noise-modeled components have been properly installed. Additionally, post-development noise studies should be conducted if requested in order to evaluate the effectiveness of noise mitigation measures.

#### Interior Noise Attenuation

County policies anticipate that noise attenuation measures will be implemented 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 60-65 DNL contour would be attenuated to an average 45 DNL standard through normal construction practices.

While the County could develop prescriptive STC ratings for various building components for particular noise mitigation standards, such an approach might not always be practical or appropriate, largely due to the number of variables and the complexity of determining an overall noise reduction in a site specific basis. As an alternative, noise studies related to specific development proposals could include the outdoor aircraft noise level that would need to be mitigated and a specific performance standard for an acceptable interior noise level. 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), noise consultants have related that building materials and STC ratings are more critical than building types that might be permitted within the 60-65 DNL contours when considering noise impacts. While certain building materials, such as cementitious siding and brick, 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.

To inform the development of Plan guidance, consideration was given to Plan conditions that would require commitments to construction standards and materials that mitigate interior noise levels to 45 dBA, regardless of the building type.

As stated previously, the DNL metric is typically used to identify those areas most likely to be affected by aircraft noise. It should be recognized that DNL is an indicator of average noise levels. Recent noise studies for proposed residential developments within Land Unit J have demonstrated that the maximum noise that is most often experienced during aircraft overflights may be 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 general noise standard of an average of 45 decibels within residences within the 60–65 DNL contours. 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 or more. 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) was estimated to be approximately \$5,000 in 2020, depending on 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. Portions of various outdoor fields, recreation areas, parks, and schools are already located within the DNL 60-65 dBA contours associated with Dulles. This Plan amendment does not consider placing outdoor recreation areas of homes in the 65 DNL contour and would be consistent with current Plan guidance.

### 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 an airport and its 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 or renters 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 or renters. To help ensure that all purchasers and renters are aware of nearby aircraft operations and the potential impacts of those operations, such information could also be included in homeowner association (HOA) documents as well as in leasing materials.

Avigation easements are legal recorded documents (typically between a landowner and an airport authority or other airport operator) that run with the land and are passed to prospective purchasers and future homeowners to make them aware of the potential impacts from aircraft operations and of 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.

MWAA has developed an Avigation Easement template and has requested that local jurisdictions, including Fairfax County, utilize this template. County staff have reviewed the MWAA template, which is generally consistent with, but not identical to, the Avigation Easements provided by developers in recent Land Unit J cases. The County has coordinated with MWAA regarding potential edits to the template and MWAA is agreeable to these edits. Furthermore, Avigation Easements submitted in recent Land Unit J cases included a metes and bound description of the area of the easement but did not include a plat; plats showing the location of the easement should be included as part of future Avigation Easements submitted to the County.

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 the associated noise impacts prior to purchasing or renting homes and to the rights of the airport regarding its operations. These should include the following:

- 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 and leasing offices;
- All promotional and marketing materials and leasing and purchasing agreements include disclosure statements that disclose the presence of the airport and potential associated impacts, as well as a map of Dulles Airport, the DNL 65 dBA noise contour line, and general

locations of residential units and private active recreation spaces. Such disclosure statements, as well as a map of Dulles Airport and the DNL 65 dBA noise contour line are included in any community association documents and recorded in the land records. Notice of such statements, maps, and noise contours are made to all initial and subsequent lessors and purchasers; and

- Adequate assurances are provided by the property owner at the time of rezoning to include such things as recorded aviation easements/plats, hold harmless agreements, and/or similar assurances.

The Fairfax County Department of Planning and Development – Planning Division maintains a webpage regarding community noise, which includes information regarding airport noise ([Noise - Issues and Resources | Planning Development \(fairfaxcounty.gov\)](#)). This information could also be considered as part of the marketing information. Questions regarding this information can be addressed to the Planning Division.

### **Loudoun County Airport Noise Policies And Regulations**

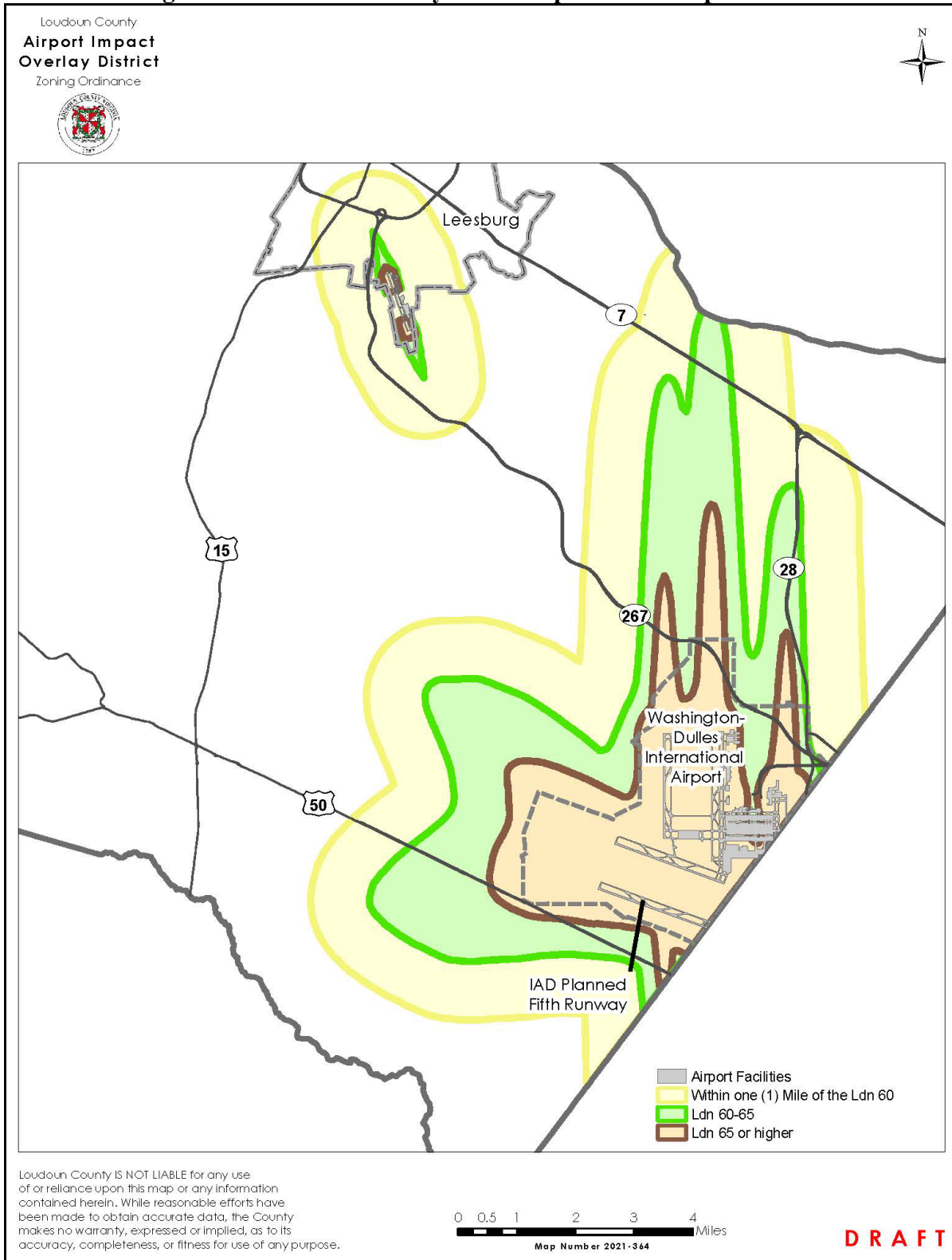
Loudoun County uses airport noise contours to determine where residential development can occur. Residential uses are allowed within the 60-65 Day-Night Average Sound Level (Ldn) area, in accordance with Loudoun County's Airport Impact Overlay District (AIOD) for the Dulles and for the Leesburg Executive Airports, provided that requirements related to disclosure, acoustical treatment, and aviation easements are met. New residential and other noise-sensitive uses are not permitted within the 65+ Ldn impact area and greater

Loudoun County proposes three coordinated actions to update the maps, policies, and zoning text related to the AIOD. A Comprehensive Plan Amendment (CPAM-2021-0001) proposes to amend the Airport Noise Impact Area (ANIA) map of the Loudoun County 2019 General Plan. The map provides the basis for administering the 2019 Plan policies that address airport noise impacts and for establishing the Airport Impact Overlay District (AIOD) of the Zoning Ordinance. The Comprehensive Plan Amendment proposes to update the ANIA map by replacing the noise contours for Dulles based on the 2019 Washington Dulles International Noise Contour Map Update provided by the MWAA. Additional amendments to associated content and policy statements are also proposed as part of the Amendment. The Zoning Map Amendment (ZMAP-2021-0011) and the Zoning Ordinance Amendment (ZOAM-2021-0002) propose corresponding Zoning Ordinance updates to the map of the overlay district and to the zoning regulation text, respectively, to maintain consistency with the CPAM.

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. Public hearings are currently scheduled for June 2022.

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

Figure 11: Loudoun County Draft Airport Noise Impact Areas



Source: Loudoun County

## COMMUNITY OUTREACH

An [Airport Noise Issues Paper](#) was published and posted on-line in November 2021. The issues paper was intended to provide background information to the community regarding aircraft noise and to identify noise mitigations that could be considered to accommodate consideration of new residential uses between the 60 and 65 DNL airport noise contours.

A total of twenty-three (23) outreach meetings were held related to the Plan amendment. Nine (9) meetings were held following authorization and through March 2021 to discuss the authorization with the following groups: an Acoustic Engineering Working Group (comprised of representatives from local acoustical engineering firms); land use attorneys; the Northern Virginia Building Industry Association/Commercial Real Estate Development Association (NVBIA/NAIOP); the Metropolitan Washington Airports Authority (MWAA); and planners from Loudoun County. Twelve (12) outreach meetings were held, beginning in January 2022, with the Fairfax County Airports Advisory Committee; the Acoustic Engineering Working Group; NVBIA/NAIOP; the Joint Sully District Land Use and Transportation Committee (comprised of members of the Sully District Council of Citizens Associations (SDCCA) and West Fairfax County Citizens Association (WFCCA)); the Mount Vernon Council of Citizens' Associations; the Environmental Quality Advisory Council; the Braddock District Land Use and Environment Committee; the McLean Citizens' Association; MWAA; and individual Supervisor District offices. Meetings were offered to all land use committees. Additionally, two virtual open house meetings were held in January 2022 to solicit community input. A dedicated email address was also created to solicit input (DPDAirportNoisePA@fairfaxcounty.gov). A summary of stakeholder comments can be found at: [Plan Amendment 2020-CW-3CP | Planning Development \(fairfaxcounty.gov\)](#).

The Planning Commission Land Use and Environment Committees met jointly in February and March 2022 to discuss the proposed plan amendment. The Board's Land Use Policy Committee discussed the proposed plan amendment at its March 15, 2022 meeting.

## CONCLUSION

Most international airports in the United States are located within areas with significant existing development and most jurisdictions with international airports permit residential uses within the 60-65 DNL and focus on noise abatement measures for noise-sensitive uses within those areas to help ensure the economic viability of the airports. The consideration of new residential uses within the 60-65 DNL airport noise contour area could, with appropriate noise mitigation, enhance economic development opportunities, provide housing, and provide opportunities for residents to live and work in a mixed use area, with reasonable commutes along the Route 28, I-66, and Dulles Tollway corridors. There are approximately 3,117 acres of land within the 60-65 DNL contours; however, 92% of this area is already developed or subject to previously approved Plan amendments and entitlements. If the Comprehensive Plan is changed to permit consideration of new residential uses within the 60-65 DNL noise contours for the minimal areas not currently developed, planned or entitled, prior to redevelopment, future site-specific plan amendments would be needed. However, some of these areas have a current Plan recommendation for residential use or may not be suitable for residential use for other reasons.



During that process, 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 current and future airport operations. Allowing for the consideration of residential uses in the 60-65 DNL area would also align the Comprehensive Plan more closely with the Zoning Ordinance, which does not currently regulate land uses within the 60-65 DNL airport noise contour area.

## **RECOMMENDATION**

Staff recommends that the Comprehensive Plan be modified as shown below. Text proposed to be added is shown as underlined. Text proposed to be deleted is shown with a ~~strikethrough~~.

## PROPOSED REVISIONS

### COMPREHENSIVE PLAN 2017 Edition

Staff recommends the Comprehensive Plan be modified as shown below. Text proposed to be added is shown as underlined and text proposed to be deleted is shown with a ~~striketrough~~.

There are no proposed changes to the planned land uses within the DNL 60-65 dBA contour.

#### *Policy Plan – Environment*

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Environment, Amended through 11-9-2021, Pages 11-12:

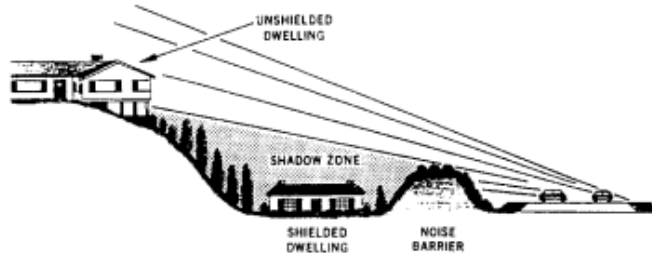
#### Noise

Transportation-generated noise impacts the lives of many who live in the county. Some county residents are subjected to unhealthy 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 federal guidelines consider all land uses to be compatible with noise levels below DNL 65 dBA, 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 still occur at levels below DNL 65 dBA. Planning goals supporting new residential development in the DNL 60-65 dBA airport noise contours could be supported under specified conditions.~~ ~~and that there may be variability among communities in responses to such noise.~~

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

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

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



**EFFECT OF ACOUSTIC BARRIER**

Explanatory Note: This figure illustrates the function of an acoustical barrier. The shadow zone indicates a mitigated area that is sheltered by a noise barrier and is therefore relatively quiet.

Source: American Association of State Highway and Transportation Officials, 1988, *Guide on the Evaluation and Attenuation of Traffic Noise*, p. 2.

**FIGURE 3**

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 or projected aircraft noise exposures exceeding DNL 65 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.~~

In order to avoid exacerbating noise and land use conflicts and to further the public health, safety and welfare, where new residential development does occur is considered in the DNL 60-65 dBA aircraft noise contours near Washington Dulles International Airport, the following should be fulfilled:

- A noise study that documents the expected noise impacts is conducted during the development review process.

- Commitments to construction standards and materials are provided during the development review process to ensure that noise levels within interior living spaces do not exceed 45 dBA.
- Pre-construction noise modeling for building components is conducted and documentation submitted to the County for review and approval prior to building permit issuance to ensure noise levels within interior living spaces do not exceed 45 dBA.
- Verification letters are submitted to the County certifying that the noise-modeled components have been properly installed prior to issuance of a Residential Use Permit.
- Post-development noise studies are conducted, if requested by Fairfax County prior to issuance of a Residential Use Permit in order to evaluate the effectiveness of the noise mitigation measures.
- Adequate assurances are provided by the property owner at the time of rezoning to address potential conflicts or threats to the long-term viability of, Dulles Airport. These assurances may include such things as recorded avigation easements/plats, hold harmless agreements, and/or similar assurances.
- All promotional and marketing materials and leasing and purchasing agreements include disclosure statements that disclose the presence of the airport and potential associated impacts, as well as a map of Dulles Airport, the DNL 65 dBA noise contour line, and general locations of residential units and private active recreation spaces. Such disclosure statements, as well as a map of Dulles Airport and the DNL 65 dBA noise contour line are included in any community association documents and recorded in the land records. Notice of such statements, maps, and noise contours are made to all initial and subsequent lessors and purchasers.

*Policy Plan – Land Use*

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Policy Plan, Land Use – Appendix, Amended through 02-23-2021, 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~~ 65 dBA generally should be avoided.”

Area III

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Area Plan Overview, Amended through 10-16-2018, Introduction, Pages 19-24:  
“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. Federal guidelines consider all land uses to be compatible with noise levels below DNL 65 dBA. ~~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 noise contours and boundaries of the Airport Noise Impact Overlay District based on noise contour maps provided by the Metropolitan Washington Airports Authority (MWAA), shown in Figure 4, below.

~~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 MWWA's noise contour maps most realistically reflect MWWA'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.~~

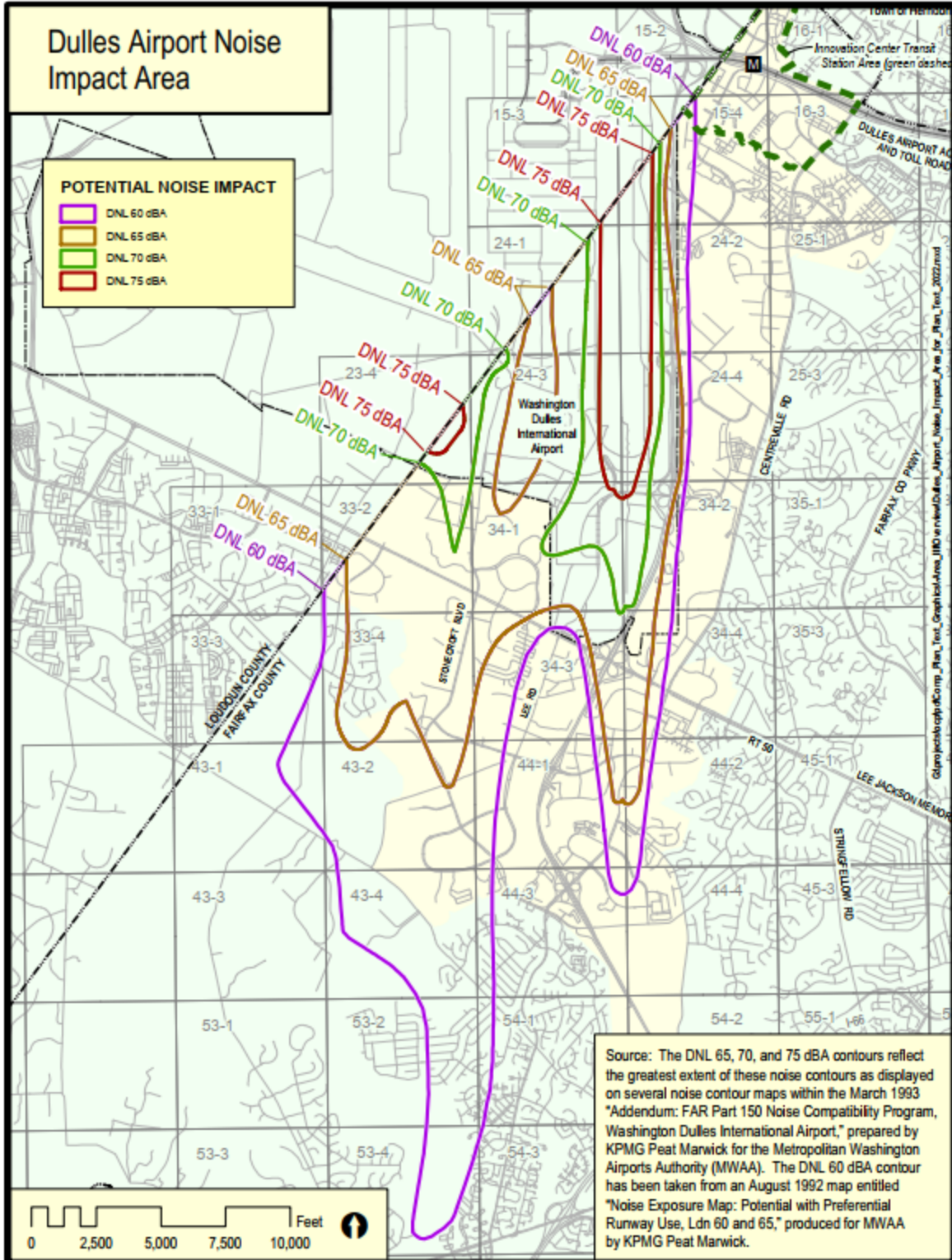
~~3. The noise contour maps provided by MWWA are based on the most current information regarding aviation activity forecasts; they consider existing operations and projected operations through the year 2000 and beyond. This timeframe represents the longest planning period considered in the development of the set of contours presented. Land use planning considerations based on the set of contours developed by MWWA 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 County-adopted 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 MWWA. 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.

The basis for the airport land use compatibility guidelines outlined in Table 2 can be found in existing federal regulations and guidelines. In 1980 the Federal Interagency Committee on Urban Noise published "Guidelines for Considering Noise in Land Use Planning and Control" to encourage compatible land utilization patterns for housing and other municipal needs in noise-impacted areas. These guidelines were affirmed in a 1992 report issued by the Federal Interagency Committee on Noise (FICON) entitled "Federal Agency Review of Selected Airport Noise Analysis Issues." The Federal Interagency Committee on Aviation Noise (FICAN) was formed in 1993 as a standing federal interagency committee to fulfill a FICON recommendation to provide a forum for noise-related discussions. U.S. Department of Housing and Urban Development (HUD) noise standards may be found in 24 CFR Part 51, Subpart B (Noise Abatement and Control). For proposed new construction in high noise areas, projects must incorporate noise mitigation features. Noise is also to be considered in the acquisition of

undeveloped land and existing development. Airports may collaboratively address noise near airports by using a voluntary program called “Airport Noise Compatibility Planning,” or Part 150, which was created through the Aviation Safety and Noise Abatement Act of 1979 under 14 CFR Part 150. The program began in 1981 and provides a structured approach for airport operators, airlines, pilots, neighboring communities, and the FAA to work together to reduce the number of people who live in significantly noise-impacted areas. The program provides financial assistance to airport owners to assess noise impacts and to identify and carry out noise-reduction measures. FAR Part 150 establishes requirements for airport owners who choose to submit noise exposure maps and develop noise compatibility planning programs to the FAA for review and approval. 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. Federal guidelines consider all land uses to be compatible with noise levels below DNL 65 dBA; however, 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 in order to avoid exacerbating noise and land use conflicts and to further the public health, safety and welfare, Since outdoor recreation areas cannot be screened from aircraft noise, new residential development is not recommended in areas with projected aircraft noise exposures exceeding DNL 60 65 dBA. In order to avoid exacerbating noise and land use conflicts and to further the public health, safety and welfare, where new residential development does occur near Washington Dulles International Airport, the guidance found in Objective 4 of the Environment Element of the Comprehensive Plan Policy Plan should be followed.”





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

Activities and/or Land Uses	Greater than DNL 75 dBA	DNL 70-75 dBA	DNL 65-70 dBA	DNL 60-65	Less than DNL 60 dBA
<b>Residential</b>	Not Recommended	Not Recommended	Not Recommended	Compatible with mitigation <del>Not Recommended</del>	Compatible
<b>Educational and Institutional</b> <sup>1</sup>	Not Recommended	Not Normally Recommended	Conditionally Compatible	Compatible	Compatible
<b>Auditoriums, Concert Halls</b>	Not Recommended	Not Recommended	Not Recommended	Compatible	Compatible
<b>Offices, Personal, Business and Professional Services, Retail Commercial Uses, Movie Theaters, Restaurants</b> <sup>2</sup>	Conditionally Compatible	Conditionally Compatible	Compatible	Compatible	Compatible
<b>Transient Lodging (Hotels, Motels)</b>	Not Recommended	Conditionally Compatible	Conditionally Compatible	Compatible	Compatible
<b>Sports Arenas, Outdoor Spectator Sports</b>	Not Recommended	Not Recommended	Compatible	Compatible	Compatible
<b>Playgrounds, Neighborhood Parks</b>	Not Recommended	Not Recommended	Compatible	Compatible	Compatible
<b>Golf Courses, Driving Ranges, Water Recreation, Cemeteries</b> <sup>3</sup>	Compatible	Compatible	Compatible	Compatible	Compatible
<b>Commercial Wholesale and Selected Retail, Industrial/ Manufacturing, Transportation Communication and Utilities</b> <sup>4</sup>	Compatible	Compatible	Compatible	Compatible	Compatible
<b>Animal-related services</b> <sup>5</sup>	Not Recommended	Compatible	Compatible	Compatible	Compatible
<b>Agricultural</b>	Compatible	Compatible	Compatible	Compatible	Compatible

Footnotes to Activities and/or Land Uses:

<sup>1</sup> School classrooms, libraries, churches, hospitals.

<sup>2</sup> Professional and financial offices, banks, savings and loan associations, mortgage bankers, insurance offices, real estate offices, architects, engineers, attorneys-at-law, decorators, medical and dental clinics and labs, funeral homes and mortuaries, retail stores, clothing stores, department stores, food and dairy markets, cafes, restaurants (enclosed and drive-in), cafeterias, barber shops, beauty shops, new and used car sales, country clubs.

<sup>3</sup> Swimming pools, shooting ranges, miniature golf courses.

<sup>4</sup> Auto salvage and wrecking yards, industrial metal and waste salvage yards, manufacturing facilities, gasoline service stations, ambulance services, automotive repair garages, public storage garages, taxi dispatch offices, automobile washing stations, lumber yards, warehousing, motor freight terminals, railway passenger and freight stations, airport services.

<sup>5</sup> Animal grooming services, dog kennels, veterinarians and veterinarian hospitals.

## Allowable Height of Structures in the Vicinity of Dulles Airport

The Federal Aviation Administration (FAA) has established criteria for formal notice to FAA of certain proposed construction or alterations of structures near airports. It also has established standards in what are commonly known as the FAA Part 77 regulations, for determining what may be obstructions in navigable airspace. Once an obstruction has been identified, the FAA will undertake an aeronautical study to determine whether the structure will have a substantial adverse effect on the safe and efficient utilization of the airspace--i.e., whether the structure would be deemed a hazard to air navigation.

It is the policy of the Board of Supervisors not to permit the erection of structures which have been determined by FAA to pose a hazard to air navigation. It is further the policy of the Board of Supervisors to carefully evaluate all proposed structures which, if constructed, would constitute an obstruction (as defined by an application of FAA Part 77 obstruction standards to Dulles International Airport's facility configuration, technical characteristics, and surrounding terrain).

In order to implement these policies, ~~the public is~~ developers are advised to undertake official notification of the FAA Regional Office of the proposed construction of any structure meeting any of the following criteria:

1. The construction or alteration will be more than 200 feet in height above ground level at its site.
2. The construction will be in an instrument approach area, available information indicates it might exceed an obstruction hazard standard, and the FAA makes a specific request for notice. ✕
3. The construction penetrates an imaginary surface that extends outward and upward from the nearest point of the runway at a 100:1 slope, for a distance of 20,000 feet.

In order to further implement the policies of the Board of Supervisors, the county will utilize FAA's obstruction standards, as applied to Dulles Airport and contiguous land, as guidance in making its own determinations as to the allowable height of structures. The three relevant obstruction standards are (i.e., an obstruction will be found if it is higher than any of the following):

1. A height of 500 feet above ground level at the site.
2. Two hundred feet above ground level or the "established airport elevation" (312 feet), whichever is higher, within three nautical miles of the "established reference point" (near the bottom of the westerly north-south runway, 19R-1L), with that height increasing 100 feet for each additional mile from the reference point up to a maximum of 500 feet. ✕
3. An imaginary surface, 1,000 feet wide, extending from the end of the runway, at a slope of 50:1, for 10,000 horizontal feet, and at 40:1 for an additional 40,000 horizontal feet, with its outermost edge being 16,000 feet wide.

It should be noted that the standards presented here are simplified from FAA's Part 77 regulations. There are "imaginary" or geometric surfaces described in the regulations that apply in the analysis for the potential for obstruction, and the piercing of any of these surfaces by a structure will cause a finding that such is an obstruction. Whether an actual hazard is created will still remain within the purview of the FAA.

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 02-23-2021, Dulles Suburban Center Overview, Page 8:

“Future Growth of Dulles Airport

Growth of Washington Dulles International Airport is a major factor affecting planning for the Dulles Suburban Center and the quality of life in western Fairfax County. The airport serves as a regional economic focal point. It is one of the region's major employers. Passenger service and cargo operations are major contributors to the region's economic well-being.

Planning should reflect and accommodate the potential increase in airport operations. ~~The Airport Master Plan calls for five runways which, on completion will permit flight operations of up to 750,000 flights per year.~~

While airport employment may be expected to increase, and additional growth may be induced by the international character of the airport, fundamental estimates of future employment, commercial office facilities, and industrial services are uncertain. Factors that may influence the rate of growth within the next twenty to fifty years include changes in aviation technology, level of investment needed, and changes in land use in the region.

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. Consistent with Federal Aviation Administration (FAA) policy, the ANIOD does not prohibit residential uses in areas with noise impacts below DNL 65 dBA. Location of noise contours around Dulles Airport is calculated by a computer model of airport operations and shown in the Comprehensive Plan and Zoning Ordinance.

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. Consistent with FAA policy, the plan recommends new residential development not be located in areas with projected aircraft noise exposures exceeding DNL 65 dBA. Where new residential development does occur is considered in the DNL 60-65 dBA aircraft noise contours near Washington Dulles International Airport, the guidance found in Objective 4 of the Environment Element of the Comprehensive Plan Policy Plan should be followed.~~”

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 02-23-2021, 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.”~~

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 02-23-2021, 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~~ 65 dBA. Where new residential development ~~does occur~~ is considered in the DNL 60-65 dBA aircraft noise contours near Washington Dulles International Airport, the guidance found in Objective 4 of the Environment Element of the Comprehensive Plan Policy Plan should be followed. 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.”

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 02-23-2021, Dulles Suburban Center Land Unit A Recommendations, Pages 60-61:

**“Land Unit A-5**

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).

Broader planning goals for the Innovation Center TSA may suggest that sites near the Dulles Toll Road and Metrorail would be appropriate for residential development and/or other noise-sensitive uses, even where projected noise impacts may exceed DNL 75 dBA. However, design approaches may be available that would shield noise-sensitive areas from these impacts. Efforts should be taken to design noise-sensitive uses to minimize, if not avoid, the exposure of facades of noise-sensitive interior spaces to noise levels above DNL 75 dBA.

Where residential or other noise-sensitive uses are proposed near rail and major highways, such proposals should only be considered with the provision of a noise study during the review of the development, appropriate commitments to noise mitigation measures and potentially commitments to the provision of disclosure statements and may necessitate a post-development noise study if feasible. The noise study during development review should clearly define the noise levels impacting the proposed uses as a measure of dBA DNL. The noise study should include noise contours and/or noise impacts at each façade of each affected building with current noise levels and future noise levels based on a minimum 20-year traffic volume projection for the roadway and other transportation noise sources. In addition, the noise study should identify differing noise levels that may affect building facades at different elevations.

For those studies that indicate noise levels in excess of DNL 65 dBA on proposed noise-sensitive uses, appropriate mitigation measures should be provided with the goal of achieving DNL 45 dBA for interior space and DNL 65 dBA for outdoor recreation areas. Attenuation may include siting and orientation of the noise-sensitive use, as well as the use of appropriate building

materials and noise barriers.

In areas where projected noise impacts at affected building facades will exceed DNL 75 dBA, and for dwelling units where outdoor spaces including balconies will be projected to be exposed to noise levels that exceed DNL 65 dBA, disclosure statements should be provided to potentially affected residents and users within the impacted uses or units, which clearly identify the mitigated and unmitigated noise levels for interior space and the noise levels for any affected balconies in addition to noise mitigation for interior space and outdoor recreational areas. Post-development noise studies should be conducted in order to help staff evaluate the effectiveness of noise mitigation measures.”

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 02-23-2021, Dulles Suburban Center Land Unit H Recommendations, Page 116:

**“Land Unit H**

Land Unit H also contains the Meadows of Chantilly Mobile Home Park. The mobile home park provides important affordable housing; a portion of this community is located within the DNL 65-70 dBA noise contour associated with projected operations at Dulles Airport. ~~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 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.”

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 2-23-2021, Dulles Suburban Center Land Unit J Recommendations, Page 125:

**“Land Unit J**

Noise

Residential and other noise-sensitive uses that are proposed within the DNL 60-65 dBA airport noise contours should address the guidance found in Objective 4 of the Environment Element of the Policy Plan.”

~~• 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.”~~

**MODIFY:** Fairfax County Comprehensive Plan, 2017 Edition, Area III, Dulles Suburban Center, Amended through 02-23-2021, Dulles Suburban Center Land Unit L Recommendations, Page 146-147:

## “Land Unit L

### 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.”

**COMPREHENSIVE LAND USE PLAN MAP:**

The Comprehensive Land Use Plan Map will not change.

**COUNTYWIDE TRANSPORTATION PLAN MAP:**

The Countywide Transportation Plan Map will not change.