

BURLINGTON INTERNATIONAL AIRPORT
PART 150 NOISE COMPATIBILITY PROGRAM UPDATE (NCP)
TECHNICAL PAPER – RECOMMENDED NOISE MITIGATION PROGRAM

September 19, 2019

Introduction

The purpose of this paper is to provide the Technical Advisory Committee (TAC) with the recommended noise compatibility program (NCP) for Burlington International Airport. These recommendations are based upon feedback from the committee members, written comments from local jurisdictions including South Burlington and Winooski and public comments received at the Noise Exposure Map Open House.

The purpose of this NCP update is to develop a more robust noise mitigation program focused on community-based programs which are designed to preserve and enhance the existing land use rather than a program focused on changing the existing land use. The City prefers the local surrounding residential areas to remain as a source of affordable housing and stability for the area. All programs are recommended to be voluntary.

Upon approval of the NCP by the FAA, the City will undertake the development of a noise implementation plan which will develop key policies, funding, and phasing priorities and schedules.

2018 and 2023 Noise Exposure Map

The Noise Exposure (NEM) Map Update identified the existing and projected aircraft operations and associated noise exposure. This update was undertaken to accurately assess the anticipated impacts of the transition of Vermont Air National Guard from F16 to F35 military aircraft operations.

The 2023 noise contour is anticipated to elongate along the ends of Runway 15/33 and contract along the sideline bringing a larger impact to the north into the City of Winooski and reducing the number dwelling units in South Burlington when compared to the 2020 contour.

Estimated Population and Dwelling Units

The 2018 and 2023 Noise Exposure Map document provides detailed analysis of the estimated affected population and land. Table 4, Estimated Residential Population within the 2018 and 2023 Contour Cases and Table 5, Estimated Residential Population within the 65 dB DNL Historical Contour Cases delineate the population and dwelling units by jurisdiction for each noise contour band.

The table below presents the summarized estimated residential population within the 2023 NEM contour. These estimates were developed by counting the dwelling units within each contour band and assuming the average household size for the units within the Census blocks is 2.32 residents.

The table below summarizes the total population and dwelling units that located within the 65 and higher dB DNL contour. These dwelling units will be eligible for the FAA approved noise compatibility program providing they meet FAA participation requirements.

Estimated Population and Dwelling Units within the 2023 Noise Contours

Day-Night Average Sound Level (DNL)	Estimated Dwelling Units and Population	Single Family Parcels	Multi-Family & Mixed Use Parcels	Estimated Total
65 -70 dB Contour	Dwelling Units	781	1,563	2,344
	Population	1,812	3,626	5,438
70-75 dB Contour	Dwelling Units	97	186	283
	Population	225	432	657
75 dB+	Dwelling Units	12	1	13
	Population	28	2	30
Total	Dwelling Units	890	1,750	2,640
	Population	2,065	4,060	6,125

Noise Compatibility Program Recommendations

The NCP is comprised of three types of measures; 1) airport operations, 2) monitoring and review and 3) land use. Below are the measures the City intends to include in the NCP.

Airport Operations Measures

No new aircraft operations measures are being considered under this update. A summary of actions taken under the previous NCP is contained in the Noise Exposure Map document, Chapter 4, Existing Noise Compatibility Program.

Monitoring and Review Elements

Ongoing Monitoring & Review of NEM and NCP Status

This measure provides for the revision of the NEM and NCP when unanticipated changes in the level of airport activity occur.

Recommendations: The City recommends the NEM and NCP documents are updated when necessitated by operational changes. The Airport is committed with the Vermont Air National Guard to a joint NEM update one year after the operation of the F35 aircraft. This update is anticipated to be funded in FFY2021.

Flight Track Monitoring

Acquisition of flight tracking software to be able to provide the City, public and operators with information regarding aircraft operations.

Recommendation: The City recommends the purchase of a flight tracking system.

Land Use Measures

The City will utilize the 2023 NEM future contour as the means of determining eligibility and implementation for the land use measures recommended.

The properties must be within the 65 dB DNL or higher noise contour for which the land use is considered not compatible (49 USC § 47502, as implemented by Table 1 of Appendix A in 14 CFR Part 150). The requirements for implementing these types of programs is defined by the FAA in accordance with Appendix R “Noise Compatibility Planning/Projects” of FAA Order 5100.38D “Airport Improvement Program (AIP) Handbook¹”.

Land Acquisition and Relocation

Non-compatible land use includes residences within the 65 dB DNL contour. Eligible property owners will be paid fair market value for their property at the highest and best rate, and provided relocation assistance in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (the “Uniform Act”) and implementation of Department of Transportation (DOT) regulations. The City, in coordination with applicable jurisdictions, will define program boundaries and identify options for compatible reuse of the acquired properties.

Recommendation: The City recommends land acquisition and relocation for non-compatible residential land use within the 75 dB DNL noise contour where the majority of the parcel is located within the contour. It is no longer recommending acquisition for land below 75 dB DNL.

Sound Insulation of Residences and Noise Sensitive Buildings

Qualified incompatible residential and noise sensitive land uses within the 65 and 70 dB DNL contours and residential land use located within the 75 dB DNL noise contours where the majority of the parcel is located outside the 75 dB DNL contour would be included in a sound insulation program. For qualified properties, the City will provide an acoustical treatment package designed to reduce interior noise levels to 45 DNL and a minimum reduction of 5 dB from the existing interior noise level in accordance with FAA guidelines².

Recommendation: The City is recommending sound insulation for residential and noise sensitive land within the 65 and 70 dB DNL noise contour. It is recommending sound insulation for residential land located in the 75 dB DNL where the majority of the parcel is not located within the 75 dB DNL contour. The City will not require an avigation easement.

Purchase Assurance Program³

Qualified incompatible residential and noise sensitive land uses within the 65 and 70 dB DNL contours would be included in a purchase assurance program. The City would acquire the home in exchange for an avigation easement, provide sound insulation and resell the home on the open market for fair

¹ FAA Order 5100.38D “Airport Improvement Program Handbook”, Appendix R “Noise Compatibility Planning/Projects”, Change 1, effective date February 26, 2019.

² FAA Order 5100.38D “Airport Improvement Program Handbook”, Appendix R “Noise Compatibility Planning/Projects”, Change 1, effective date February 26, 2019.

³ FAA Order 5100.38D Appendix R, Table R-6 “Noise Compatibility Planning/Project Requirements”, f. “Acquire Easement for Noise Compatibility”

market value. Proceeds from the sale of the home would be utilized to fund further noise mitigation programs. Land use includes eligible properties within the 65 dB DNL noise level or higher for which the land use is considered non-compatible. (49 USC § 47502, as implemented by Table 1 of Appendix A in 14 CFR part 150).

Recommendation: The City is recommending a purchase assurance for non-compatible land use within the 65 and 70 dB DNL noise contour. Per FAA requirements an avigation easement will be required.

Sales Assistance Program⁴

Qualified incompatible residential and noise sensitive land uses within the 65 and 70 dB DNL contours would be included in a sales assistance program. In exchange for an avigation easement, the City would provide an incentive to assure homeowners receives fair market value for the sale of their home on the open market. Land use includes eligible properties within the 65 dB DNL noise level or higher for which the land use is not considered to be compatible as well as those properties approved by the FAA for neighborhood equity⁵. (49 USC § 47502, as implemented by Table 1 of Appendix A in 14 CFR part 150).

Recommendation: The City is recommending a sales assistance program for non-compatible land use within the 65 and 70 dB DNL noise contour where properties are not eligible for sound insulation. Per FAA requirements an avigation easement will be required.

Programs Considered but Not Recommended:

Sound Barriers and Buffers

Physical barriers can be effective means of reducing exposure of ground level operations in certain situations. However, sound barriers begin to be effective only when the line-of-sight between the source and receiver is broken. Simply breaking the line of sight between the source and receiver provides a very minimal amount of shielding from noise produced by the source.

In accordance with Appendix R “Noise Compatibility Planning/Projects” of the Federal Aviation Administration (FAA) Order 5100.38D Airport Improvement Program Handbook⁶ (AIP Handbook), a noise barrier must be able to reduce aircraft noise levels by at least 5 dB⁷. If construction of a noise barrier is funded through the Part 150 program, any residences receiving a 5 dB reduction in DNL would

⁴ FAA Order 5100.38D Appendix R, Table R-6 “Noise Compatibility Planning/Project Requirements”, f. “Acquire Easement for Noise Compatibility”

⁵ FAA Order 5100.38D “Airport Improvement Program Handbook”, Appendix R “Noise Compatibility Planning/Projects”, Change 1, effective date February 26, 2019.

⁶ FAA Order 5100.38D “Airport Improvement Program Handbook”, Appendix R “Noise Compatibility Planning/Projects”, effective date September 30, 2014.

⁷ FAA Order 5100.38D Appendix R, Table R-6 “Noise Compatibility Planning/Project Requirements”, m. “Noise Mitigation Measures – On-airport Noise Barriers” Paragraph (4): “The project must reduce noise to a land use non-compatible with aircraft noise by at least 5 dB.”

be considered mitigated and would likely not maintain eligibility for other mitigation measures such as sound insulation or acquisition.

Recommendation: The City will not recommend the design and development of a sound barrier due to its significant cost and limited effectiveness for the entire affected area.

Purchase of Avigation Easement for Noise⁸

The objective of an easement acquisition is to provide land use compatibility by obtaining an avigation easement for a cash payment.

Recommendation: The City will not recommend the acquisition of avigation easements for land use compatibility. The City along with the affected local jurisdictions believe the noise mitigation funds should be focused on maintaining and preserving the affected neighborhoods.

[END OF MEMORANDUM]

⁸ FAA Order 5100.38D Appendix R, Table R-6 “Noise Compatibility Planning/Project Requirements”, f. “Acquire Easement for Noise Compatibility”