



# BTV Noise Compatibility Program Update – Technical Advisory Committee

January 23, 2018

 **The Jones Payne Group, Inc.**  
*Architects, Planners, and Information Managers*



**HARRIS MILLER MILLER & HANSON INC.**

# Purpose of TAC

- The TAC is advisory to the City solely for purposes of the BTV Part 150 Study, including:
  - Review of study inputs, assumptions, analyses, documentation, etc.
  - Input, advice, and guidance related to Noise Compatibility Plan (NCP) development
- The City shall respect and consider TAC input, but must retain overall responsibility for the Part 150 Study and NCP recommendations
- The TAC and City recognize FAA is responsible for accepting Noise Exposure Map (NEM) and NCP submissions and for approving NCP measures
- TAC members represent the interests of their organization and/or constituents
- TAC members are expected to provide two-way communication between the City and their organizations / constituents

# Agenda

Public forum and comment period

Chapter 4 - Recommended NCP Revisions **(PART 1)**

- Airport Operation Measures
- Monitoring and Review Elements
- Land Use Measures - Sound Insulation

TAC questions and comments period

# Public Forum and Comment Period

# **NCP Ch. 4 – Recommended NCP Revisions**

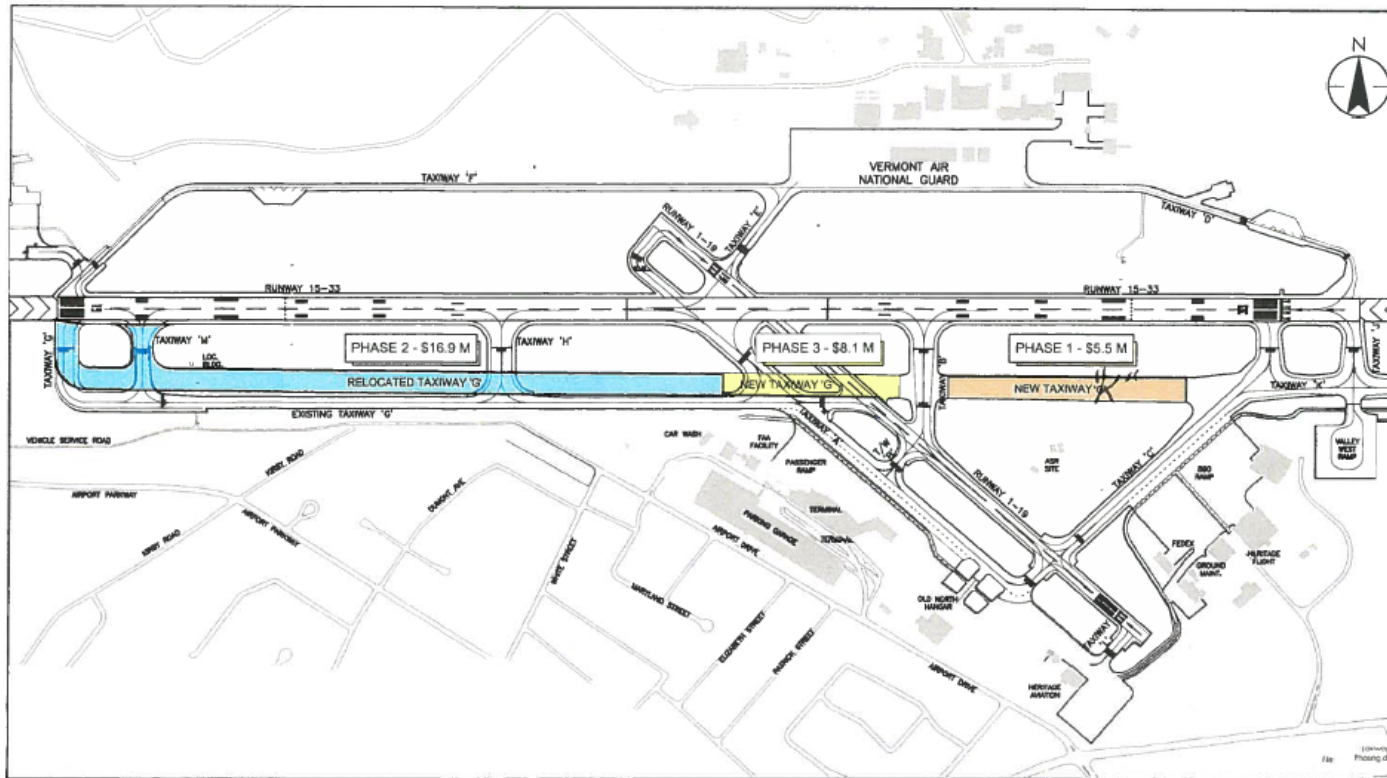
## **Airport Operations Measures**

**No new measures are planned to be added to this NCP update**

# NCP Ch. 4 – Recommended NCP Revisions

## Updates on existing NCP operations measures

- Extension of Taxiway G
  - This measure will be completed by 2020.
  - The primary noise reducing component of this measure, Taxiway K, is completed and currently in use.



# NCP Ch. 4 – Recommended NCP Revisions

## Updates on existing NCP operations measures

- Terminal Power Installation and APU/GPU Restrictions
  - All 9 jet bridges currently have power hookups.
  - The airport is currently reviewing implementation feasibility for restrictions on APU/GPU usage for aircraft utilizing the jet bridges.
  - Typical operator preference is to use ground power hookups where they are available.

# NCP Ch. 4 – Recommended NCP Revisions

## Updates on existing NCP operations measures

- Some additional ground noise limiting measures are currently in use
  - Minimized usage of the southernmost jet bridges. These are reserved as auxiliary positions since they are the only two jet bridges which aren't shielded by the terminal structure.
  - For aircraft utilizing the southernmost jet bridges, engine startups are prohibited until the aircraft is pushed back to Taxiway Alpha.



# NCP Ch. 4 – Recommended NCP Revisions

## Updates on existing NCP operations measures

- Nighttime Bi-direction Runway Use
  - To accomplish noise mitigation efforts tower needs to be fully operational, current infeasibility due to tower staffing hours.
  - Will be reviewed if towers hours are expanded at a future time.

# **NCP Ch. 4 – Recommended NCP Revisions**

## **Monitoring and Review Elements**

**No new measures are planned to be added to this NCP update**

# NCP Ch. 4 – Recommended NCP Revisions

## Updates on existing NCP monitoring and review measures

- Ongoing Monitoring and Review of NEM and NCP Status
  - Provides circumstances for revision of the NEM/NCP
    - NCP update is underway &
    - NEM update is forthcoming
  - Recommend continuation of the TAC as a Noise Committee
    - In place and planned to continue going forward
  - Purchase of a permanent noise monitoring system
    - Currently, there are no plans to have a noise monitoring system installed.

# NCP Ch. 4 – Recommended NCP Revisions

## Updates on existing NCP monitoring and review measures

- Flight Track Monitoring System
  - A BTV system is forthcoming. The airport is currently reviewing options.
  - Will allow neighbors to access flight tracking data
  - Neighbors will have the ability to report online any concerns and the airport will be able to follow up with recorded flight data.
  - Provides BTV the ability to analyze flight data and work with FAA if appropriate on airport operations

# Land Use Measures – Sound Insulation

## Land Use Measures

- The primary purpose of this NCP update is to examine and revise the land use measures.
- The first measure to be examined will be sound insulation. The remaining measures will be reviewed in future TAC meetings.
- Review of residential sound insulation programs will include:
  - Determining Eligibility
  - Development of Policy and Procedures
  - Implementation of Program

# Sound Insulation – Determining Eligibility

# Sound Insulation – Determining Eligibility

## Federal Requirements

- A sound insulation program may be implemented if it is contained in an approved 14 CFR part 150 Noise Compatibility Program (NCP).
- The identified eligible properties must be within the 65 dB DNL noise level or higher for which the land use is not considered to be compatible.
- Properties located below this threshold will not be eligible for mitigation funding unless a lower local standard is adopted by the jurisdiction or the FAA has approved “block rounding” in the NCP.
- Airport sponsor must comply with the eligibility criteria and program requirements set forth in AIP Handbook FAA Order 5100.38D Appendix R.

# Sound Insulation – Determining Eligibility

## Acoustical Test Plan (ATP)

- Development of an ATP is the first step in developing a sound insulation program.
- ATP includes:
  - Protocols for the initial testing
  - FAA review of initial testing results
  - Special circumstances
  - Final testing phase protocol



# Sound Insulation – Determining Eligibility

## Acoustical Test Plan (ATP)

- Key steps in an ATP include:
  - Neighborhood surveys
  - Pre-construction acoustical testing
  - Determination of compatible vs. non-compatible structures
  - Full sound insulation package design for eligible structures
  - Pilot Phase- install sound insulation package at sample set of eligible structures
  - Post-construction acoustical testing

# Sound Insulation – Determining Eligibility

## Eligibility Testing / Pre-testing Process

- Eligibility Criteria
  - Property title search must be completed, verifying ownership
  - Additional conditions include:
    - Structures typically must have been ***constructed prior to October 1, 1998***
    - Structures typically must be located within the current ***FAA-approved DNL 65 dB noise contour***
    - Structures must be experiencing a logarithmic (energy) ***average interior DNL of 45 dB or greater in habitable rooms***
    - \* AIP Handbook allows some specific exceptions to the first two guidelines above that, if needed, would be coordinated with FAA including block rounding

# Sound Insulation – Determining Eligibility

## Performing an artificial noise source test

- PA type loudspeaker with a signal generator are placed outside of the home and an artificial noise is transmitted to the exterior of the home.
- Measurements are taken on the inside and outside of the home with the speaker on and off in all habitable rooms. (bedroom, living, dining, family kitchen, study). Non-habitable rooms include bathrooms, foyers, laundry and garage.
- These measurements are used to calculate the Noise Level Reduction (NLR) for the home.
- Homes testing at 45 dB DNL or higher will be eligible for sound insulation.
- Homes testing lower than 45 dB DNL will not be eligible for sound insulation.



# Sound Insulation – Development of Policies and Procedures

# Sound Insulation – Development of Policies and Procedures

Following approval of the ATP, the airport sponsor will develop a policy and procedures manual to describe the programs:

- Purpose
- Goals and typical modifications
- Project planning and management
- Construction contract bid and award cycle
- Construction process
- Eligible spaces
- Architectural, mechanical, electrical and other types of treatments
- Building code requirements

# Sound Insulation – Development of Policies and Procedures

## Prioritization of Homes

Prioritization will begin with the homes in the highest noise levels and working out towards the program boundary.

Program may also use the following criteria to help with prioritization:

- Length of residency
- Ownership vs. rental property
- Contiguous blocks vs. by noise level

# Sound Insulation – Development of Policies and Procedures

## Pace of Program

The pace of the overall program is dependent upon:

- FAA grant cycles and availability of funding
  - First grant for design and bidding
  - Second grant for construction
  - Typical design, bid, construction cycle is approximately 12-18 months depending on the size of the construction contract
- Airport sponsor will work with FAA's Airport District Office (ADO) to develop a capital programs work plan.

# Sound Insulation – Development of Policies and Procedures

## Types of Treatments

Allowable sound insulation measures include:

- Replacement of windows
- Replacement of doors
- Addition and/or replacement of caulking and weather stripping
- Installation of central air-conditioning or ventilation systems where none exist





# Sound Insulation – Development of Policies and Procedures

## Types of treatments (cont.)

Additional measures may be included as part of a treatment package with approval from the FAA's local ADO:

- Addition of attic and/or wall insulation
- Addition of extra layers of wall and/or ceiling board
- Removal or treatment of through-wall A/C units
- Removal mail slots, pet doors, milk chutes



# Sound Insulation – Development of Policies and Procedures

## By Noise Contour Level

- Sound insulation programs generally target a post-construction NLR values as follows:

Contour Range (DNL)	Post-Construction NLR Value	Sound Insulation Treatments to Obtain Post-Construction NLR Value
65-70 dB	30 dB	Basic treatments as outlined
70-75 dB	35 dB	Basic treatments plus: <ul style="list-style-type: none"><li>• Windows and doors may require upgrades to commercial or custom made products.</li><li>• Additional treatments to exterior walls and ceilings may be required.</li></ul>
75+ dB	40 dB	Not recommended for residential: <ul style="list-style-type: none"><li>• Commercial products required</li><li>• Double wall construction or addition of multiple layers of gypsum board may be needed</li><li>• Preferred mitigation method is acquisition</li></ul>

# Sound Insulation – Development of Policies and Procedures

## Building Code Compliance

- Understanding the local/state building codes is the key component to the implementation.
- Appendix R states which treatments are grant eligible. The airport sponsor, working with local building officials will determine what will be required to obtain a building permit.
- Code required improvements may not be reimbursable.
- Some items that may be required by code but are not necessary for the reduction of interior noise levels include:
  - Smoke detectors
  - Carbon monoxide monitors
  - Electrical upgrades
  - Egress

# Sound Insulation – Implementation of Program

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## Implementation of Program

Each phase (typically 50 units per phase) will follow these steps:

Pre-Design

Invitation Letters

Application and Initial Survey

Homeowner Outreach Meeting

Pre- Acoustical Testing

Design

Assessment Visit

Design of Treatments

Homeowner Review and Participation Agreement

Development of Construction Documents



# Sound Insulation – Implementation of Program

## Implementation of Program

### Bid and Award

- Public Bid is Issued to Contractors who are:
  - Insured
  - Background Checked
  - Bonded/Licensed
- City of Burlington awards to lowest responsible bidder
- Notice to Proceed is issued

# Sound Insulation – Implementation of Program

## Implementation of Program

### Construction

- Contractor Verifies Products and Measurements
- Contractor Orders Products
- Construction Begins – Notify Homeowners 6-8 weeks before work starts
- Each home takes approximately 30 days

### Post-Construction and Post-Acoustical Testing



# TAC Preliminary Topics and Schedule

## TAC Meeting 4

March 13, 2018

NCP Ch. 4 – Part 2

- Land use measures – sound barriers/buffers
- Land use measures – sales assistance / purchase assurance
- Land use measures – real estate disclosure
- Land use measures – land acquisition and relocation
- Land use measures – easement acquisition

Discussion and feedback from TAC 3

## TAC Meeting 5

May 2018

Discussion and feedback from TAC 4

## Public Hearing and Comment Period

estimated August – September 2018



# TAC questions and comments

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