RONALD REAGAN WASHINGTON NATIONAL AIRPORT

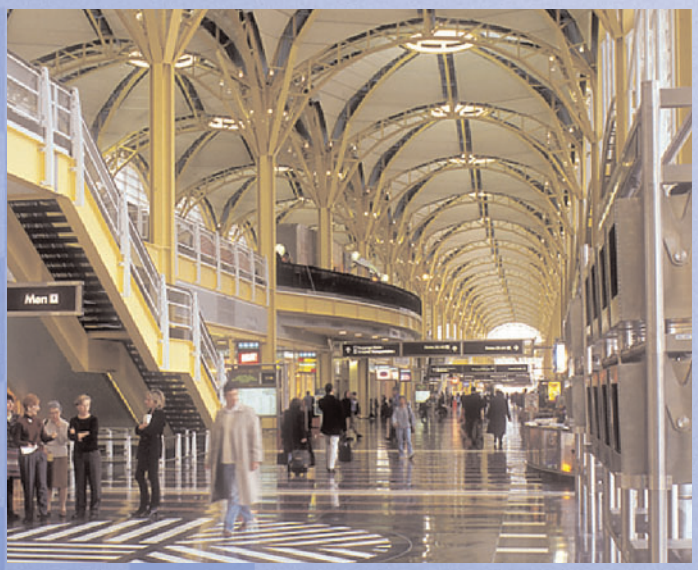
FAR PART 150 ADVISORY COMMITTEE

Advisory Committee's Final Recommendations to the Metropolitan Washington Airports Authority

Prepared for:

METROPOLITAN WASHINGTON AIRPORTS AUTHORITY

Metropolitan Washington Council of Governments



Purpose of This FAR Part 150 Program Update

The Metropolitan Washington Council of Governments (MWCOG) Committee on Noise Abatement and Aviation at National and Dulles Airports (CONAANDA) partnered with the Metropolitan Washington Airports Authority (the Authority) to update the Federal Aviation Regulations (FAR) Part 150 Noise Compatibility Program for Ronald Reagan Washington National Airport (the Airport). The purpose of the update is to reflect changes in aircraft operations, fleet mix, and land uses in the Airport environs since the approval of the previous FAR Part 150 Program in 1997. In addition to updating the noise exposure maps, the process allowed the Authority the opportunity to: (1) review the status and effectiveness of those measures recommended in the previous Noise Compatibility Program (NCP), (2) identify which measures should be maintained for continued implementation, and (3) identify new measures to further reduce aircraft noise exposure and its effects on the Airport environs.

The Authority and CONAANDA established an external advisory committee (the Committee) at the beginning of the project. The Committee included elected officials and their citizen representatives from the local jurisdictions as well as representatives from the Federal Aviation Administration (FAA), airlines serving the Airport, the Air Line Pilots Association (ALPA), the Environmental Protection Agency (EPA), the National Park Service (NPS), the Greater Washington Board of Trade, and members of the general public. All of these constituencies were involved in the development of the noise exposure maps and noise compatibility plan. Thirteen separate meetings of the Committee were held during the development of the NCP.

Early in the process, the Committee ensured that public input would be considered by means of a community outreach survey that included a series of telephone surveys, structured interviews, and focus groups. Information from the survey was provided to the Committee so that Committee members could better understand the noise issues in the region. Two sets of public information workshops were held to facilitate public involvement. The first set (two workshops) was held on June 18-19, 2002, and the second set (three workshops) was held on April 28-30, 2004. Citizens provided oral and written comments about the Airport and Airport-related noise concerns.

This document is a summary of the Committee's work on the noise compatibility program. These recommendations will be will be forwarded to the Authority who will then hold a public hearing in October of 2004. The Authority will submit the report, along with the public comments, to the FAA for their review and approval.

Noise Compatibility Program

The NCP Update includes 14 measures that: (1) lessen the extent and effects of aircraft noise on residents in the Airport environs, (2) identify agencies and jurisdictions responsible for implementation and monitoring of flight routes and operational changes, including advanced technology departure procedures, and (3) establish new noise management techniques to provide noise abatement information to the community. These measures provide either noise abatement or noise mitigation.

Noise abatement measures generally refer to actions that are intended to reduce the extent of aircraft noise to which existing and planned noise-sensitive land uses and population are

exposed or are projected to be exposed. Noise reduction is usually achieved through changes in aircraft operational procedures, airfield layout, runway use, or flight tracks. Although noise abatement measures reduce the extent to which noise-sensitive land uses and the population are exposed to significant levels of aircraft noise[1], in the case of the Airport, no noise-sensitive facilities or population are, or are projected to be, exposed to significant aircraft noise. Noise mitigation measures are intended to reduce the potential for development of noise-sensitive uses in areas exposed to significant aircraft noise[1]. Noise mitigation measures that reduce the adverse effects of noise on existing land uses are referred to as *remedial* measures. As there are no noise-sensitive dwellings within the area exposed to DNL 65 and higher, no remedial measures are necessary. Noise mitigation measures that reduce the potential for noise-sensitive land uses to be developed in areas exposed to significant levels of aircraft noise are referred to as *preventative* measures

Noise Abatement Measures

Many noise abatement alternatives were evaluated during development of the NCP, including changes to flight tracks, runway use, and aircraft operating procedures. The evaluation criteria included, but were not limited to, effect on airspace, safety, cost, and potential for noise reduction. The following noise abatement measures are recommended in this FAR Part 150 Update.

NOISE ABATEMENT MEASURE 1: Form a working group to develop advanced navigation procedures for arrivals and departures on all runways, and encourage the use of advanced navigation technology by airlines to provide pilots the ability to follow more predictable and precise flight tracks along the center of the Potomac and Anacostia River corridors.

Advanced navigation procedures rely on navigational equipment in the aircraft cockpit allowing pilots to follow a more precise and predictable departure or arrival path. The intent of implementing advanced navigation procedures for the Airport would be for pilots to use a series of defined navigation points, known as waypoints, to fly a procedure that follows the center of the rivers to the maximum extent possible. As a result, noise exposure would be reduced for noise-sensitive land uses, particularly from single aircraft overflights that do not occur over the center of the rivers. With the assistance of advanced navigation, pilots would be able to reduce the variance from defined arrival and departure flight tracks. Pilots would also be able to use advanced navigation procedures during inclement weather and poor visibility conditions. Therefore, there would be less variability in the courses followed by pilots regardless of weather conditions.

NOISE ABATEMENT MEASURE 2: Through training and educational materials, encourage air traffic controllers to direct flights arriving on Runway 01 or departing on Runway 19 during nighttime hours (10:00 p.m. to 7:00 a.m.), when traffic permits, to distribute the locations at which aircraft turn onto, or off of, the route along the center of the Potomac River (the River) over the area between 5 and 10 miles south of the Airport; and

[1] The FAA defines noise levels of day-night average sound level (DNL) 65 and higher as significant noise.

to instruct pilots to fly directly to the center of the River and then remain over the center of the River as long as possible.

The Potomac TRACON air traffic control representatives stated that they would be willing to distribute training information to air traffic controllers to educate them about the community concerns and the noise-sensitive areas along the Potomac River corridor, and request that they voluntarily distribute aircraft within a 5- to 10- mile area instead of turning all aircraft at one location during nighttime hours. It is recommended that, during controller training and in related documentation, the Potomac TRACON include specific information about the noise-sensitive land uses along the River corridor and request that, when traffic conditions permit, controllers direct pilots to fly routes that mimic routes used during daytime hours to ensure more equitable distribution of the noise during the late night hours and avoid repetitive turns over the same locations.

The Committee recommends that the FAA prepare controller training materials and procedures so that controllers will instruct pilots to fly directly to the center of the River and remain over the River for as long as possible.

NOISE ABATEMENT MEASURE 3: Through training and educational materials, encourage air traffic controllers to direct flights arriving on Runway 01 or departing on Runway 19 during daytime hours (7:00 a.m. to 10:00 p.m.), when traffic permits, to distribute the locations at which aircraft turn onto, or off of, the route along the center of the Potomac River (the River) over the area between 5 and 10 miles south of the Airport; and to instruct pilots to fly directly to the center of the River and then remain over the center of the River as long as possible.

The Committee requested that controllers direct pilots to execute their turns as effectively and efficiently as possible so that direct routes are used to and from the River and transit over residential areas is minimized while the aircraft are at lower altitudes.

The Committee recommends that controller training and related documentation be prepared so that, through a concentrated education effort, controllers will be more sensitive to community noise concerns and be better able to disperse aircraft equitably in the daytime, provided that doing so does not interfere with the safe and efficient movement of aircraft.
Recognizing that implementation of this measure may be restricted by controller workload and safety considerations, the intention is to avoid repetitive flights over a limited geographical area during periods of relatively light activity at the Airport. Turns to and from the River should also be made so as to minimize overflight of large residential areas south of the Airport at lower altitudes.

NOISE ABATEMENT MEASURE 4: Request the FAA Flight Standards Office to revise language in the Airport Facility Directory to reflect the current noise abatement procedures at the Airport.

Modifications to flap and power settings for departures are a proven means of reducing aircraft noise exposure in certain areas near an airport. Typically, under these procedures, pilots climb to a safe altitude under full takeoff power setting, reduce power, adjust flap settings, and climb using the reduced power settings for a specified distance before increasing to full climb power. Most airlines have defined standard departure procedures for the aircraft

in their fleets, with the intention of reducing the noise of departing aircraft. The Airport Facility Directory (AFD) does not contain language that reflects current operations. To eliminate any possible confusion, it is recommended that the FAA Flight Standards Office revise the AFD to specify that pilots use full takeoff power until reaching 1,500 feet, then reduce power and climb as directed by Air Traffic Control (ATC).

Another revision to the AFD could reduce the number of aircraft that turn on or off the River corridor early and specify which procedure is to be used to follow the River corridor. This revision would primarily be an administrative change that would avoid confusion among pilots departing from the Airport. The AFD indicates that the existing noise abatement procedures are defined in terms of the type of flight plan being filed, whether visual flight rules (VFR) or instrument flight rules (IFR), rather than in terms of the actual weather conditions. By updating the AFD to define the noise abatement procedures in terms of visual meteorological conditions (VMC) and instrument meteorological conditions (IMC) rather than VFR and IFR, use of the visual approach path along the River corridor could be enhanced. The purpose of this measure is not to change existing procedures, but to improve conformance with existing procedures.

NOISE ABATEMENT MEASURE 5: Request a voluntary phase-out of hushkitted Stage 3 aircraft through discussions with airlines and the Air Transport Association.

Although hushkitted aircraft do meet Stage 3 noise standards, their noise levels are significantly higher than the noise levels generated by most of the aircraft manufactured to meet Stage 3 standards, and are still the loudest aircraft that operate at U.S. airports.

The restriction of any type of aircraft, including a hushkitted Stage 3 aircraft, would require the Authority to complete an FAR Part 161 "Notice and Approval of Airport Noise and Access Restrictions" study. However, the Authority can work with the airlines that have hushkitted aircraft in their fleets to encourage them to use the quieter aircraft manufactured to meet Stage 3 standards. The Authority should publish a chart indicating those airlines that use hushkitted Stage 3 aircraft (see Measure 6 below) as a means of encouragement. This chart could also indicate whether these operations occur during daytime or nighttime hours.

NOISE ABATEMENT MEASURE 6: Update the Airport Noise Monitoring and Flight Tracking System to reflect the latest technology.

Important elements of a noise compatibility program are the monitoring of aircraft noise and operations and also the monitoring of progress toward implementation of noise abatement measures. Administrative means can be used to monitor implementation of some measures (e.g., monitoring of noise complaints, use of quieter aircraft). Monitoring implementation of certain types of measures requires the continual data collection on the noise levels of individual aircraft operations and the trajectories (flight paths and altitude profiles) of individual aircraft operations. Modern noise and flight track monitoring systems include features such as the following:

- Microsoft Windows-based operating systems, allowing for easier applications and data sharing between parties.
- Upgraded graphic capabilities, with the ability to incorporate Geographic Information Systems (GIS) images to allow for a better representation of airport operations.

- Advanced means for reviewing and analyzing aircraft operations, flight tracks, and profiles, enhancing the ability to monitor specific noise abatement procedures (use of advanced navigational technology, compliance with quiet fleet requirements, etc.).
- The ability to provide on-line near-real-time aircraft flight replay information via the website (depending on federal security clearances).
- Improved methods to correlate and classify noise events with specific aircraft operations or community events.
- Ability to implement a digital voice recording system allowing the noise abatement office to monitor pilot conversations with FAA ATC, allowing the ability to research the cause of possible deviations from the flight path for safety reasons.

The Committee recommends the Authority purchase a new noise and flight track monitoring system to enhance the Airport noise response program with the consideration to incorporate some of the above features. The Authority would also benefit from determining whether or not the Remote Monitoring Terminals are in proper locations and if additional sites would provide a more accurate and complete perspective of the noise created by aircraft overflights.

NOISE ABATEMENT MEASURE 7: Establish a system to report airline compliance with noise abatement measures.

A reporting system that addresses community concerns regarding pilot compliance with the established noise abatement procedures would assist in better monitoring of airline performance. Possible criteria to be used in such a system include:

- Noise abatement procedure performance—both flight tracks and profiles
- Quiet fleet allocation
- Use of advanced navigation technology
- List of airlines operating aircraft that are 5 dB quieter than the noise level limits
- Daytime operations versus nighttime operations

A report should be generated by the noise abatement staff, and presented to CONAANDA on a quarterly basis. It is recommended that the Authority enhance its existing quarterly report to provide information on airline compliance with noise abatement procedures.

NOISE ABATEMENT MEASURE 8: Enhance the noise complaint response system.

In addition to the flight replay website that would allow citizens to research their own complaints, it is recommended that the Airport Noise Abatement Office provide a page on the website that allows citizens to file their complaints electronically. It is also recommended that the website allow complainants to obtain past records of complaints. Complainants should receive an acknowledgement of their complaint within 24 hours of the complaint being received by the Noise Abatement Office, with follow-up responses within 3 business days. The anonymity of all parties would have to be maintained in any information released by the Authority. The Noise Abatement Office could also sponsor a "Noise 101" workshop that would provide participants with a better understanding of topics such as noise

monitoring methodology, air traffic control procedures, federal regulations, and Airport operations. The Committee recommends the Authority develop a web-based noise complaint system that would allow citizens to submit complaints online.

Noise Mitigation Measures

Following implementation of the recommended noise abatement measures described above, high levels of aircraft noise are still expected to occur over areas developed with noise-sensitive land uses. Noise mitigation measures are intended to reduce the potential for development of noise-sensitive uses in areas exposed to significant aircraft noise. The following noise mitigation measures are recommended in this FAR Part 150 Update:

MITIGATION MEASURE 1: Amend Comprehensive Plans and Zoning Maps to Promote Compatible Land Uses.

Amend local zoning ordinances, plans, and maps to permit only compatible land uses in specified Airport noise zones.

MITIGATION MEASURE 2: Encourage Airport Noise Overlay Zoning

Encourage the local jurisdictions to amend zoning ordinances and plans to incorporate specified sound insulation requirements for the Airport noise zones. Performance standards associated with overlay zones would ensure that infill development or substantial reconstruction would provide acceptable interior noise levels.

MITIGATION MEASURE 3: Amend Building Codes to Require Soundproofing.

Amend building codes to require soundproofing for construction in the Airport noise zones to specified interior noise levels.

MITIGATION MEASURE 4: Disclose Noise Levels Prior to Contract for Sale or Lease.

Require disclosure of aircraft noise levels and their meaning to purchasers or renters prior to contract or title transfer for residential property.

MITIGATION MEASURE 5: Expand Airport Noise Information Program

Publicize noise levels, Airport policies, and noise abatement actions and distribute such information to the general public, developers, financial institutions, realtors, and leasing agents.

MITIGATION MEASURE 6: Encourage Local Jurisdictions to Adopt Discretionary Project Review Guidelines for Subdivisions, Rezoning, Special Use, Conditional Use, and Variance Applications (in the environs of the Airport).

Encourage local jurisdictions to allow the Authority the opportunity to review and comment on proposed developments in areas surrounding the Airport.

Implementation of mitigation measures 1, 2, 3, 4 and 6 will be the responsibility of the local planning/governmental jurisdictions.

Into the Future

The Noise Compatibility Program Update for Ronald Reagan Washington National Airport can serve to reduce the number of people affected by aircraft noise in the future. It can also help to limit the potential for future incompatible development in areas exposed to significant aircraft noise. Continuing program management will provide for timely response to conditions that may change over time. While the Authority will provide leadership and coordination for much of the NCP, the success of the program hinges on the cooperation of all involved parties, including the FAA, the airlines, and local jurisdictions and planning agencies.

The following two pages include noise exposure contours showing the existing conditions (September 1, 2000 to August 31, 2001) overlaid on an aerial image and the future conditions (2009) including all the noise abatement measures overlaid on generalized land use.

EXISTING CONDITIONS

(September 1, 2000, to August 31, 2001)

Noise Exposure Contours Over Aerial Photograph

Interstate Highway

Jurisdictional Boundary

Noise Exposure Contours (expressed in DNL)

65-70 dBA

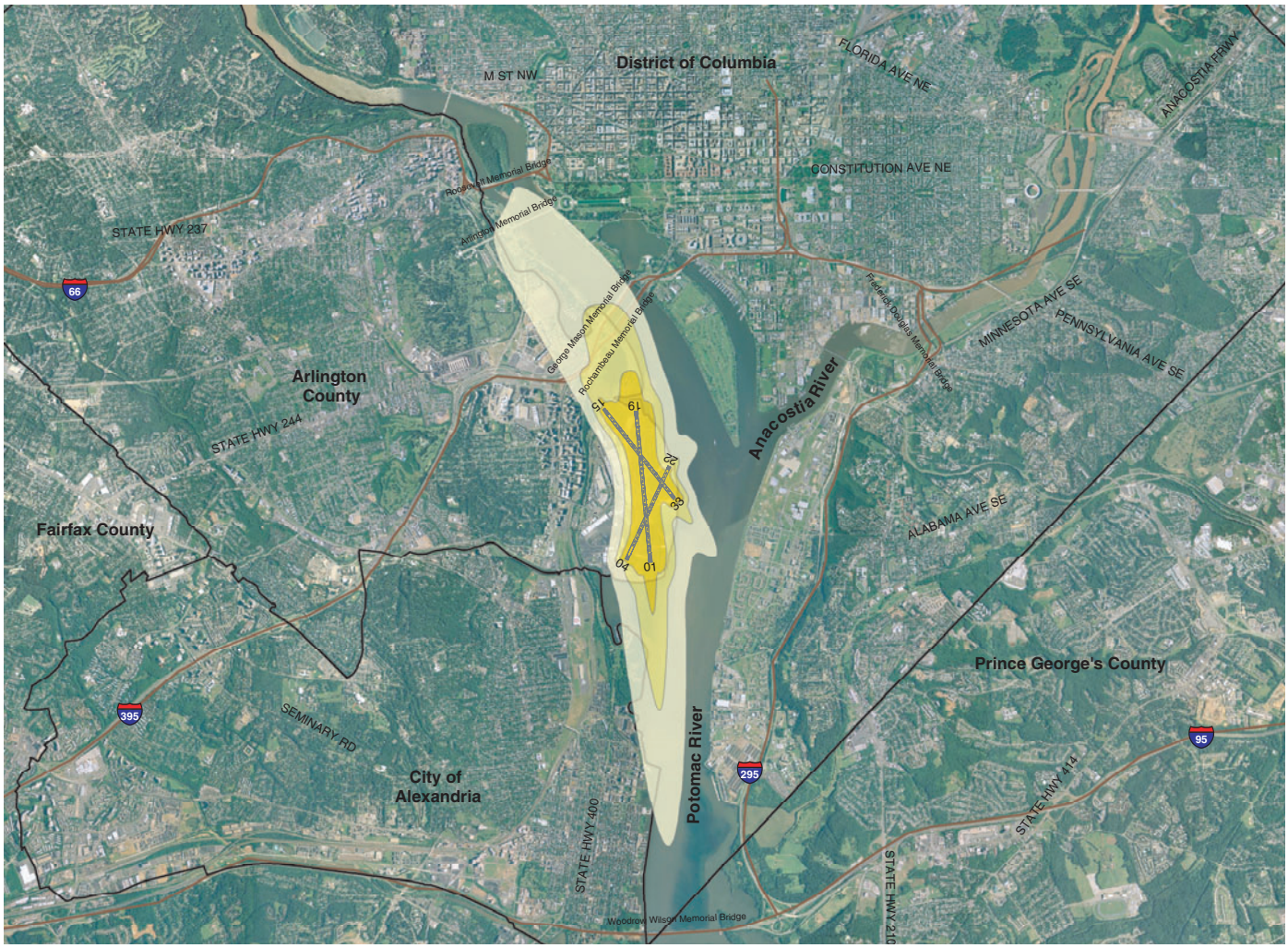
70-75 dBA

75+ dBA

north

0 1 mile

DNL = Day-Night Average Sound Level - A metric used to describe the existing and predicted cumulative noise exposure for communities surrounding the Airport. DNL is expressed in A-weighted decibels (dBA) and represents the average noise level over a 24-hour period. In calculating DNL, the average sound level for each hour during the nighttime period (10:00 p.m. to 7:00 a.m.) is increased by a 10-decibel weighting penalty.



FUTURE CONDITIONS (2009)

Noise Exposure Contours With Recommended Noise Abatement Measures Over Existing Generalized Land Use

- Hospitals
- Schools
- Daycare
- Libraries
- Religions Facilities
- Landmarks
- Major Road
- Interstate Highway
- Jurisdictional Boundary

north

0 1 mile

- Residential
- Commercial
- Mixed Use
- Industrial
- Institutional/ Government
- Parks and Recreation
- Open Space
- Vacant Space
- Ronald Reagan Washington National Airport
- Water

DNL = Day-Night Average Sound Level - A metric used to describe the existing and predicted cumulative noise exposure for communities surrounding the Airport. DNL is expressed in A-weighted decibels (dBA) and represents the average noise level over a 24-hour period. In calculating DNL, the average sound level for each hour during the nighttime period (10:00 p.m. to 7:00 a.m.) is increased by a 10-decibel weighting penalty.