

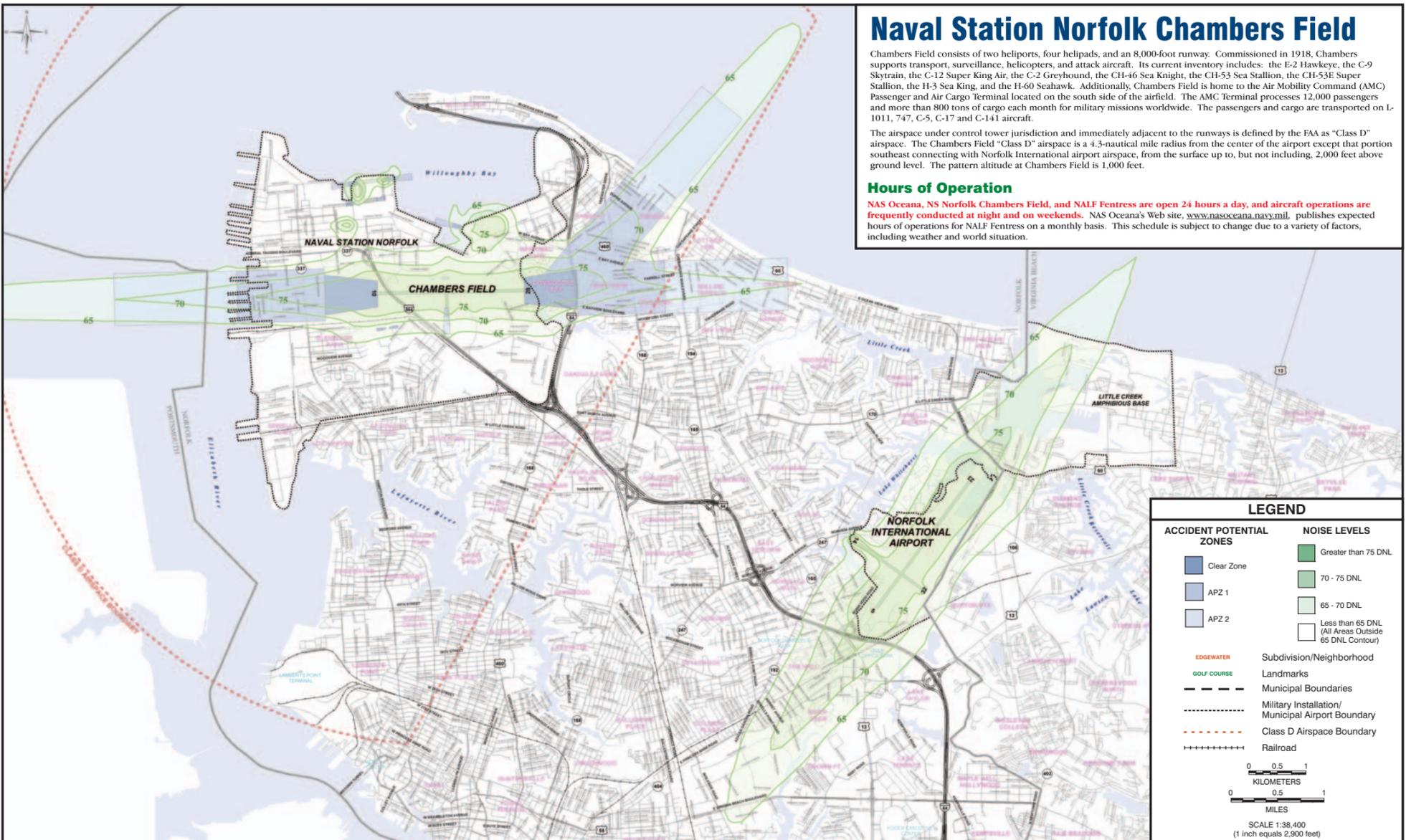
Naval Station Norfolk Chambers Field

Chambers Field consists of two heliports, four helpads, and an 8,000-foot runway. Commissioned in 1918, Chambers supports transport, surveillance, helicopters, and attack aircraft. Its current inventory includes: the E-2 Hawkeye, the C-9 Skytrain, the C-12 Super King Air, the C-2 Greyhound, the CH-46 Sea Knight, the CH-53 Sea Stallion, the CH-53E Super Stallion, the H-3 Sea King, and the H-60 Seahawk. Additionally, Chambers Field is home to the Air Mobility Command (AMC) Passenger and Air Cargo Terminal located on the south side of the airfield. The AMC Terminal processes 12,000 passengers and more than 800 tons of cargo each month for military missions worldwide. The passengers and cargo are transported on L-1011, 747, C-5, C-17 and C-141 aircraft.

The airspace under control tower jurisdiction and immediately adjacent to the runways is defined by the FAA as "Class D" airspace. The Chambers Field "Class D" airspace is a 4.3-nautical mile radius from the center of the airport except that portion southeast connecting with Norfolk International airport airspace, from the surface up to, but not including, 2,000 feet above ground level. The pattern altitude at Chambers Field is 1,000 feet.

Hours of Operation

NAS Oceana, NS Norfolk Chambers Field, and NALF Fentress are open 24 hours a day, and aircraft operations are frequently conducted at night and on weekends. NAS Oceana's Web site, www.nasoceana.navy.mil, publishes expected hours of operations for NALF Fentress on a monthly basis. This schedule is subject to change due to a variety of factors, including weather and world situation.



LEGEND

ACCIDENT POTENTIAL ZONES	NOISE LEVELS
Clear Zone	Greater than 75 DNL
APZ 1	70 - 75 DNL
APZ 2	65 - 70 DNL
	Less than 65 DNL (All Areas Outside 65 DNL Contour)
EDGEWATER	Subdivision/Neighborhood
GOLF COURSE	Landmarks
---	Municipal Boundaries
-----	Military Installation/ Municipal Airport Boundary
- - - - -	Class D Airspace Boundary
+++++	Railroad

0 0.5 1
KILOMETERS

0 0.5 1
MILES

SCALE 1:38,400
(1 inch equals 2,900 feet)

JLUS/AICUZ Planning Map

JLUS

The JLUS for the Hampton Roads region was initiated in 2004 as part of the Department of Defense (DoD) nationwide JLUS program. It addresses land use compatibility issues among three jurisdictions – the cities of Virginia Beach, Chesapeake, and Norfolk – surrounding the three Navy airfields in the region. The objective of the Hampton Roads JLUS is to provide recommendations regarding compatible land development policy and implementation in response to the Navy's air mission in the region. For more information on JLUS, refer to the study itself located at local libraries and local planning agencies.

AICUZ Program

Overview

All airports attract development. People who work at the airport want to live nearby, and businesses are established to cater to the airport and its employees. As development encroaches upon the airfield, more people experience the noise and other impacts associated with aircraft operations.

The Noise Control Act of 1972 declared that it is the policy of the United States to promote an environment for all Americans free from noise that jeopardizes their health or welfare. This act also excluded military weapons or equipment that are designed for combat use. In response to the Noise Control Act of 1972, the Department of Defense (DoD) established the Air Installations Compatible Use Zones (AICUZ) Program to balance the need for aircraft operations and community concerns. Individual services, in turn, adopted the program. The Navy's current guidance on AICUZ may be found in Chief of Naval Operations Instruction (OPNAVINST) 11010.36B and is available for viewing on the Navy's web site of directives, http://meds.daps.dla.mil/Directives/11010_36B.pdf. The goal of the AICUZ Program is to protect the health, safety, and welfare of those living near a military airport while preserving operational assurance for the flying mission. AICUZ guidelines define zones of high noise and accident potential and recommend uses compatible within these zones. Local land use agencies are encouraged to adopt these guidelines.

Noise Zones

Under the AICUZ Program, DoD provides noise zones as a planning tool for local planning agencies. Noise exposure is measured using the day-night average sound level (DNL). For a detailed discussion of DNL, refer to the Noise Metrics section. The DNL contours on the AICUZ maps reflect the noise exposure in the surrounding communities and the fact that noise impacts diminish with distance from the airfield. DNL contours do not reflect the noise of individual aircraft events. DNL contours are used to assess average long-term noise exposure rather than the impact of a single event.

Accident Potential Zones

The DoD provides Accident Potential Zones (APZs) as a planning tool to local land use agencies. APZs are areas where an aircraft accident is likely to occur if one occurs. They do not reflect the probability of an accident. APZs follow arrival, departure, and pattern flight tracks and are based upon analysis of historical data. The AICUZ map defines three APZs - the Clear Zone, APZ 1, and APZ 2. The Clear Zone extends 3,000 feet beyond the runway and has the highest potential for accidents. APZ 1 extends 5,000 feet beyond the Clear Zone, and APZ 2 extends 7,000 feet beyond APZ 1. If an accident is to occur, it is more likely to occur in APZ 1 than APZ 2 and more likely to occur in the Clear Zone than in either APZ 1 or APZ 2.

As stated above, APZs follow arrival, departure, and pattern flight tracks. **APZs are not roadways in the sky.** Weather conditions, wind, pilot technique, and other air traffic will

Compatible Development

Certain land uses are not compatible with military flight operations. Modifications to proposed land developments near the airfield can help resolve tension between the community and the military. In general, DoD recommends that noise-sensitive uses (i.e., houses, churches, amphitheaters, etc.) be placed outside the high noise zones and that people-intensive uses (i.e., regional shopping malls, theaters, etc.) not be placed in APZs, and sound-attenuating methods be incorporated into building design and construction. For further information on local land use guidelines, please consult the appropriate city planning department. The DoD recommendations are intended to serve only as guidelines. Local governments alone are responsible for regulating land use.

Land use development should be compatible with noise zones and APZs around a military airfield. Although the military can serve in an advisory capacity, local governments control development beyond the boundaries of the military airfields. Table 1 shows the Navy's recommendations for land use development in noise zones and APZs. Further information on land use guidelines is available in the 2005 Hampton Roads JLUS Report and the OPNAVINST 11010.36B.

Development should also be compatible with flight safety. The Federal Aviation Administration (FAA) and the DoD encourage local communities to restrict development and land uses that could endanger aircraft in the vicinity of the airfield including:

- Lighting (direct or reflected) that would impair pilot vision;
- Towers, tall structures, and vegetation that penetrate navigable airspace or are to be constructed near the airfield;
- Uses that would generate smoke, steam, or dust;
- Uses that would attract birds, especially waterfowl; and
- Uses that would produce electromagnetic interference with aircraft communication, navigation, or other electrical systems.

The FAA and the DoD established height standards within aircraft approach and departure zones for military and commercial airfields. These standards are presented in the U.S. Code of Federal Regulations, Title 14, Part 77, "Objects Affecting Navigable Airspace." The cities of Virginia Beach, Chesapeake, and Norfolk review building permits in the approach and departure zones in accordance with these height standards. **The FAA must be notified of any development that is not consistent with the height standards.**

Table 1⁽¹⁾ LAND USE COMPATIBILITY WITHIN NOISE ZONES AND APZS

Land Use	Noise Zones			APZs		
	Less than 65 DNL	65-70 DNL	70-75 DNL	Clear Zone	APZ 1	APZ 2
Outdoor Amphitheaters	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Residential	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Transient Lodging	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Churches, Schools	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Commercial, Retail, Services	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Wholesale, Manufacturing	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
Agriculture, Public Rights-of-way	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible

KEY:
 Compatible
 Conditionally Compatible
 Incompatible

⁽¹⁾ Table 1 shows the Navy's recommendations for land use development in noise zones and APZs. This table is a general guide to land use compatibility around military airfields and should not be used as the basis for land use decision making. Further guidance on land use compatibility is provided in OPNAVINST 11010.36B including detailed land use compatibility recommendations. This document is available for viewing at http://meds.nbt.daps.mil/Directives/11010_36B.pdf. For further information on local land use guidelines, please consult the appropriate city planning department.

Real Estate Disclosure

Most areas of Hampton Roads, to a greater or lesser extent, experience aircraft noise and over flight. Property owners, renters, and lessees need to be aware of whether their property is located within a noise zone or APZ. **Virginia law requires that any person marketing property for sale, rental, or lease within a noise zone or APZ provide written disclosure to all prospective purchasers, renters, or lessees that such property is located within a noise zone or APZ.** The Hampton Roads REALTORS® Association also encourages its members to provide written disclosure in all real estate transactions and advise their clients to verify whether property is located within a noise zone or APZ, especially in property transactions with non-members.

Restrictive Easements

The Navy owns restrictive easements on 3,680 acres of land near NAS Oceana and 8,780 acres near NALF Fentress. These easements restrict new incompatible development and certain uses of existing property, as outlined in the specific easement, near the airfields. All of the easements are recorded to deed in Virginia Beach or Chesapeake.

Noise Zones

The appropriate noise zone from the list below should be included in all real estate disclosure documents:

- Greater than 75 DNL
- 70 to 75 DNL
- 65 to 70 DNL
- Less than 65 DNL

Accident Potential Zones

The appropriate APZ from the list below should be included in all real estate disclosure documents:

- Clear Zone
- APZ 1
- APZ 2
- None (outside APZs)

Noise contours and APZs are subject to change. The noise contours and APZs will be periodically updated in association with mission changes at the airfield and/or master plan updates.

Questions regarding easements or the location of a particular property within a noise zone or APZ should be directed to a local planning authority.

The Federal Housing Administration (FHA) and the Department of Veterans Affairs (VA) mortgage guarantee eligibility may be affected for homes in certain noise zones and APZs. Contact the FHA or VA for more information.

The City of Virginia Beach has created a web site, www.vbgov.com/homebuying, to assist homebuyers in accessing information relevant to the purchase of a home. "Information for Virginia Beach Homebuyers" is an informative tool that provides information such as:

- Floodplains and Flood Zone
- AICUZ Noise/APZ Maps
- School Zones and Locator Map
- Real Estate Assessments
- Virginia Beach Land Records
- Virginia Beach Newcomers Guide

Noise Metrics

Noise is unwanted sound. Sound is all around us; sound becomes noise when it interferes with normal activities, such as sleep or conversation. The main sources of noise at airfields are flight operations – which include take-offs, landings, touch-and-go operations, and engine maintenance activities. A discussion of how the effect of noise on the environment is quantitatively measured is provided below.

Decibels

A decibel (abbreviated dB) is a logarithmic unit that measures the intensity or loudness of sound. A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extreme quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels of about 130 dB are felt in the human ear as discomfort and pain.

In measuring community noise, sound frequency is taken into account by adjusting the very high and very low frequencies to approximate the human ear's lower sensitivity to those frequencies. This is called "A-weighting" and is commonly used in measuring community noise levels. An A-weighted decibel (abbreviated dBA) is a unit of sound pressure with a greater intensity than the ambient, or background, sound pressures that best reflect the range of human hearing. Table 2 shows the typical A-weighted sound levels of common sounds and noise environments. The minimum change in the sound level of individual events that the average human ear can detect is about 3 dB. On average, a person perceives a change in sound level of about 10 dB as a doubling of the sound's loudness.

DNL

The Navy considers how its operations impact the local community by calculating the day-night average sound level or DNL. The DNL noise metric is based on the number of aircraft operations that occur on an average annual day or average busy day over a 24-hour period. The DNL includes a 10 dB adjustment or penalty for aircraft noise occurring between 10:00 pm and 7:00 am because people are more sensitive to noise during normal sleeping hours, when background noise levels are lower. The DNL has been determined to be a reliable measure of community annoyance with aircraft noise and has become the standard metric used by many government agencies and organizations such as the U.S. Environmental Protection Agency (EPA), and FAA, for assessing aircraft noise. The DNL for the community is depicted as a series of contours that connect points of equal value, usually in 5 dB increments. DNL noise contours for NAS Oceana, NALF Fentress and Chambers Field are shown on the maps included in this pamphlet. Noise contours are not exact measurements. Noise levels inside a contour may be similar to those outside a contour line. The change in noise levels occurs gradually.

SEL

The sound exposure level (SEL) is a composite metric that represents both the intensity of a sound and its duration. Individual time-varying noise events (e.g. aircraft overflights) have two main characteristics - a sound level that changes throughout the event and a period of time during which the event is heard. The SEL provides a measure of the net impact of the entire acoustic event, but it does not directly represent the sound level heard at any given time. During an aircraft flyover, it would include both the maximum noise levels and the lower decibel levels produced during onset and recess periods of the overflight. **SEL levels may exceed the peak noise for an event.** Table 3 presents representative SEL values for aircraft on approach, departure, and in the FCLP or touch-and-go pattern.

Table 2 TYPICAL A-WEIGHTED SOUND LEVELS OF COMMON SOUNDS AND NOISE ENVIRONMENTS

NOISE SOURCE (at a given distance)	A-WEIGHTED SOUND LEVEL SCALE (dBA)	NOISE ENVIRONMENT
Civil Defense Siren (100 ft)	130	Carrier Flight Deck Threshold of Pain
Pile Driver (50 ft)	110	Rock Music Concert
Jet Fighter Departure (1,000 ft)	108	
Jet Fighter Arrival (1,000 ft)	104	
Ambulance Siren (100 ft)	100	
Newspaper Press (5 ft)	96	Printing Press Plant
Power Lawn Mower (3 ft)	90	
Motorcycle (25 ft)	88	Boiler Room
Prop. Plane Flyover (1,000 ft)	84	
Diesel Truck, 40 mph (50 ft)	80	High Urban Ambient Sound
Garbage Disposal (3 ft)	80	
Passenger Car, 65 mph (25 ft)	77	
Living Room Stereo (15 ft)	76	
Vacuum Cleaner (3 ft)	70	
Electronic Typewriter (10 ft)	60	Data Processing Center
Normal Conversation (5 ft)	60	Department Store
Air Conditioning Unit (100 ft)	60	Private Business Office
Light Traffic (100 ft)	50	
Bird Calls (Distant)	44	
	40	Lower Limit of Urban Ambient Sound
	40	
	30	Quiet Bedroom Recording Studio
Soft Whisper (5 ft)	30	
	20	
	10	Just Audible
	10	
	0	Threshold of Hearing

Table 3 Comparison of Representative SEL Values (dB) for Aircraft on Approach, Departure, and in the FCLP or Touch-and-Go Pattern

Operation	Altitude (ft. AGL)	F-14 B/D	F/A-18 C/D	F/A-18 E/F	E-2/C-2	C-5A	H-60	H-53
Approach	1,000	87	109	114	82	110	85	97
Departure	1,000	108	117	117	94	114	79	96
FCLP*								
	1,000	95	108	113	87	109	83	93
	800	97	109	115	89	109	86	92

* FCLP or touch-and-go pattern altitude reflects the highest altitude of the downwind leg of the pattern. SEL values for helicopters is given for level flight.

Key: AGL- Above Ground Level FCLP- Field Carrier Landing Practice

For Further Information:

AICUZ:
NAS Oceana AICUZ Office
 (757) 433-3158

Flight operations recording for FCLP and flight demo at NAS Oceana/NALF Fentress:
 (757) 433-3733

Noise Concerns (NAS Oceana/NALF Fentress):
Noise Concern Hotline
 (757) 433-2162

Noise Concerns (NS Norfolk Chambers Field):
Noise Concern Hotline
 (757) 322-3429

Noise Concerns (Norfolk International Airport):
Norfolk International Airport
 (757) 857-3351

Federal Loan Guarantees:
U.S. Department of Housing and Urban Development
 (800) 842-2610, ext. 3212

U.S. Department of Veterans Affairs
 (800) 933-5499

Real Estate Disclosure:
Hampton Roads REALTORS® Association
 (757) 473-9700

Web Site
NAS Oceana
<http://www.nasoceana.navy.mil>
Hampton Roads REALTORS® Association
<http://www.centerforrealestate.com>
City of Virginia Beach Homebuying Site
<http://www.vbgov.com/homebuying>

Hampton Roads Joint Land Use Study (JLUS)/ Air Installations Compatible Use Zones (AICUZ) Planning Map

For
Naval Air Station Oceana
Apollo Soucek Field
 Virginia Beach, Virginia

Including
Naval Auxiliary Landing Field Fentress
 Chesapeake, Virginia

Naval Station Norfolk Chambers Field
 Norfolk, Virginia

This brochure is the product of a cooperative effort by the cities of Virginia Beach, Chesapeake, Norfolk, and the U.S. Navy for the JLUS.

2005