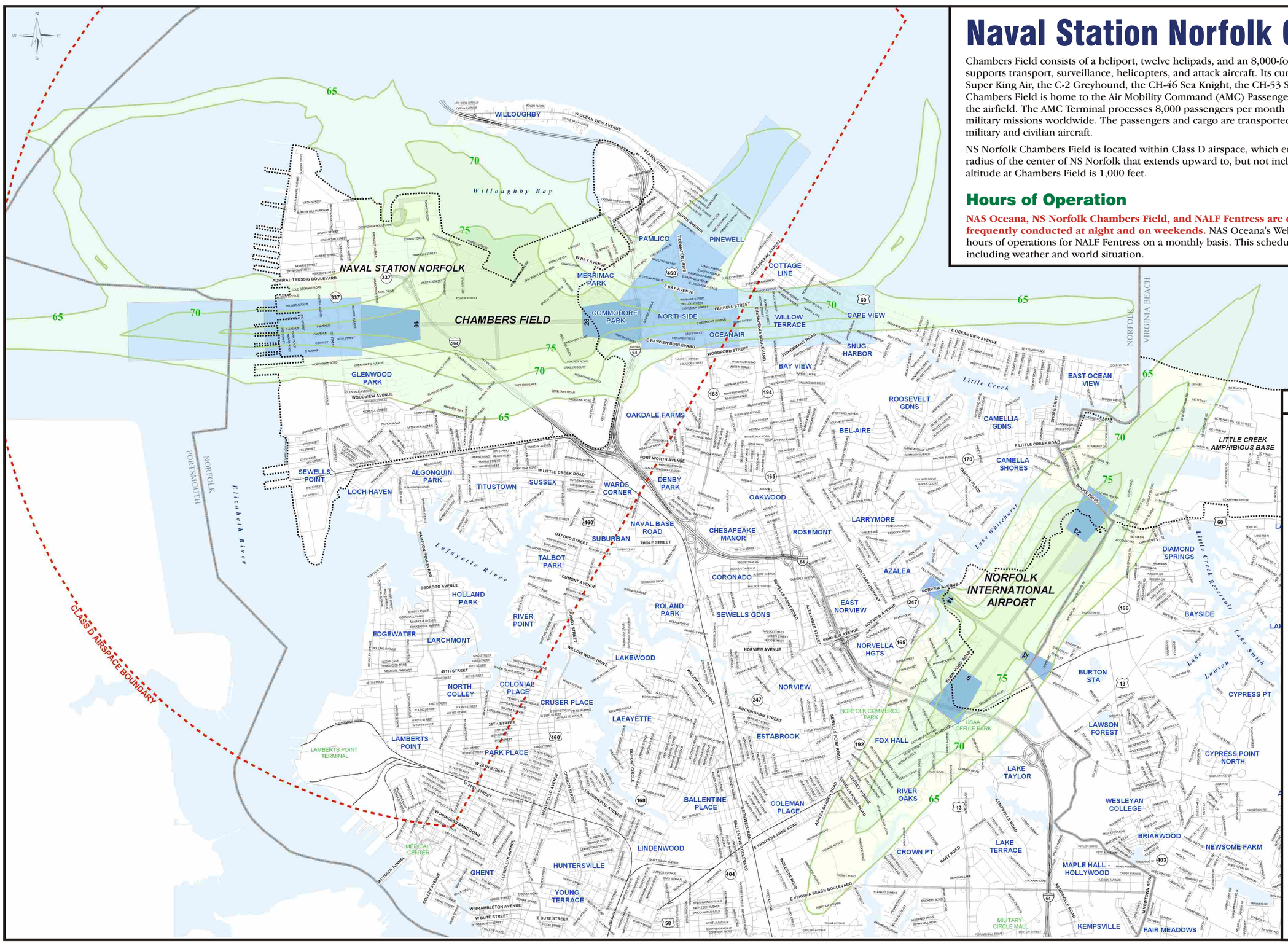
Naval Station Norfolk Chambers Field

Chambers Field consists of a heliport, twelve helipads, and an 8,000-foot runway. Commissioned in 1918, Chambers Field supports transport, surveillance, helicopters, and attack aircraft. Its current inventory includes: the E-2 Hawkeye, the C-12 Super King Air, the C-2 Greyhound, the CH-46 Sea Knight, the CH-53 Sea Dragon, and the H-60 Seahawk. In addition, 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 8,000 passengers per month and more than 2,000 tons of cargo each month for military missions worldwide. The passengers and cargo are transported on L-1011, 747, C-5, C-17, 767, 757, C-40, and other military and civilian aircraft.

NS Norfolk Chambers Field is located within Class D airspace, which encompasses an area within a 4.3-nautical-mile (nm) radius of the center of NS Norfolk that extends upward to, but not including, 2,000 feet above ground level (AGL). 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, https://cnic.navy.mil/Oceana/, 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

- Clear Zone
- APZ 1
- APZ 2

NOISE LEVELS

- Greater than 75 DNL
- 70 - 75 DNL
- 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
Roadway/Highway

0 0.5 1
MILES

SCALE 1:38,400
(1 inch equals 3,200 feet)

Note: The boundaries of the Noise Zones and Accident Potential Zones (APZs) represented on this brochure have not changed from those represented on the AICUZ Pamphlet published by the U.S. Navy in 1999.

Disclaimer: The Norfolk International Airport noise contours were provided by airport authority and have been added to the map for informational uses only. They are not part of the Naval Station (NS) Norfolk Chambers Field Air Installations Compatible Use Zones (AICUZ Study) or part of the Hampton Roads Joint Land Use Study (JLUS). For further information on the Norfolk International noise contours, please contact the Norfolk Airport Authority at (757) 857-3351.

JLUS/AICUZ Planning Map

Joint Land Use Study (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 responding to the Navy's air mission in the region. For more information on JLUS, refer to the study, 2005 Hampton Roads JLUS Report, located at http://www.hrpdc.org/JLUS/JLUS.asp or at local libraries or the city planning department.

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 guidance on AICUZ may be found in Chief of Naval Operations Instruction (OPNAVINST) 11010.36C and is available for viewing on the Navy's web site of directives, **http://doni.daps.dla.mil/Directives/11000%20Facilities%20and%20Land%20Management%20Ashore/11-00%20Facilities%20and%20Activities%20Ashore%20Support/11010.36C.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 governments are encouraged to apply these guidelines in their land-use decision-making processes.

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 occurs, 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 cause some lateral deviation within the landing pattern around an airport.

Compatible Development

Certain land uses are not compatible with military flight operations. Modifications to proposed land developments near the airfield can help resolve concerns between the community and the military. In general, DoD recommends that noise-sensitive uses (e.g., houses, churches, amphitheaters, etc.) be placed outside the high noise zones, that people-intensive uses (e.g., regional shopping malls, theaters, etc.) not be placed in APZs, and that 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 11010.36C.

Development should also be compatible with flight safety. The Federal Aviation Administration (FAA) and the DoD encourage local communities to restrict development or 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 to ensure compliance with these height standards. **The FAA must be notified of any development that is not consistent with the height standards.**

KEY:

Compatible | Conditionally Compatible | Incompatible

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	Greater than 75 DNL	Clear Zone	APZ 1	APZ 2
Outdoor Amphitheaters							
Residential							
Transient Lodging							
Churches, Schools							
Commercial, Retail, Services							
Wholesale, Manufacturing							
Agriculture, Public Rights-of-way							

(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 11010.36C, including detailed land use compatibility recommendations. This document is available for viewing at http://doni.daps.dla.mil/Directives/11000%20Facilities%20and%20Land%20Management%20Ashore/11-00%20Facilities%20and%20Activities%20Ashore%20Support/11010.36C.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 overflight. 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 concerning details relating to AICUZ easements or the location of a particular property within a noise zone or APZ should be directed to the NAS Oceana AICUZ office. Questions pertaining to AICUZ-related provisions of local government policies and ordinances should be directed to the planning office of the appropriate locality.

Federal Housing Administration (FHA) and 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's eMapping web site allows users to locate properties on a map by entering an address, street name, or geographic parcel identification number (GPIN). This tool provides property-specific information, including:

- AICUZ Noise/APZ Maps
- Floodplains and Flood Zones
- Real Estate Assessments
- Virginia Beach Land Records
- School Locations

To find more information about AICUZ and access the eMapping site, go to http://www.vbgov.com/aicuz.

The City of Chesapeake also has a web site that provides a substantial amount of background information on various related topics. This information can be found at: http://cityofchesapeake.net/services/depart/planning/index.shtml. This useful web site provides such information as:

- NALF Fentress AICUZ Noise Zone Map
- NALF Fentress Navy Purchased Easement Map
- 2026 City Land Use Plan
- 2050 City Master Transportation Plan
- Chesapeake Open Space and Agriculture Preservation Program
- Citywide Floodplain Maps

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 (dB)

A 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 extremely 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 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.

Day-Night Average Sound Level (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. DNL has become the standard metric used by many government agencies and organizations, including 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 because the change in noise levels occurs gradually.

Sound Exposure Level (SEL)

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 Field Carrier Landing Practice (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
	120	
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)		
Motorcycle (25 ft)	90	Boiler Room
Prop. Plane Flyover (1,000 ft)*	88	
Diesel Truck, 40 mph (50 ft)	84	
Garbage Disposal (3 ft)	80	High Urban Ambient Sound
Passenger Car, 65 mph (25 ft)	77	
Living Room Stereo (15 ft)	76	
Vacuum Cleaner (3 ft)	70	
Electronic Typewriter (10 ft)		
Normal Conversation (5 ft)	60	Data Processing Center
Air Conditioning Unit (100 ft)		Department Store
Light Traffic (100 ft)	50	Private Business Office
Bird Calls (Distant)	44	
	40	Lower Limit of Urban Ambient Sound
Soft Whisper (5 ft)	30	Quiet Bedroom Recording Studio
	20	
	10	Just Audible
	0	Threshold of Hearing

*For specific aircraft, see Table 3.

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	92
	800	97	109	115	89	109	86	93

* 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

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

NS Norfolk Chambers Field
Operations Office
(757) 322-3429

Norfolk International Airport
(757) 857-3351

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

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

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

Planning Departments:

City of Virginia Beach	(757) 385-4621
City of Chesapeake	(757) 382-6176
City of Norfolk	(757) 664-4752

Web Sites:
NAS Oceana
http://cnic.navy.mil/Oceana/

Naval Station Norfolk Chambers Field
http://cnic.navy.mil/NorfolkSTA/

City of Virginia Beach
http://www.vbgov.com/aicuz

City of Chesapeake
http://cityofchesapeake.net/services/depart/planning/index.shtml

City of Norfolk
http://www.norfolk.gov

Hampton Roads Planning District Commission
http://www.hrpdcva.gov/JLUS/JLUS.asp

Hampton Roads REALTORS® Association
http://www.centerforrealestate.com

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 the Joint Land Use Study prepared under sponsorship of the Hampton Roads Planning District Commission and the cities of Virginia Beach, Chesapeake, and Norfolk. Technical information was provided by the U.S. Navy for the JLUS effort.

This planning map was prepared under contract with the Hampton Roads Planning District Commission with financial support from the Office of Economic Adjustment, Department of Defense. The content reflects the views of the Hampton Roads Planning District Commission and the jurisdictions involved and does not necessarily reflect the views of the Office of Economic Adjustment.

2005; Revised 2010

NAS Oceana
Apollo Soucek Field

In 1940, the Navy acquired the land that would eventually become Naval Air Station (NAS) Oceana. At that time, the surrounding area was mainly farmland. NAS Oceana has grown to become one of the largest and most advanced air stations in the world, with an area of 5,331 acres and an additional 3,680 acres in restrictive easements. Its runways, measuring 8,000 feet and 12,000 feet, are designed for high-performance aircraft. NAS Oceana's primary mission is to train and deploy the Navy's East Coast Strike/Fighter squadrons–the F-14 Tomcats (until their retirement in 2006) and the F/A-18 Hornets and Super Hornets.

The airspace under control tower jurisdiction and immediately adjacent to the runways is defined by the FAA as "Class D" airspace. At NAS Oceana, Class D is that airspace from the surface to 2,500 feet above ground level within a 5-mile radius from the center of the airport. The pattern altitude at NAS Oceana is 1,000 feet. Flight operations that are conducted into and out of NAS Oceana as part of the typical training syllabus for flight crews include departures, arrivals, touch-and-go landings, practice radar approaches, flights to and from NALF Fentress, and flights to and from offshore training areas. **Flights operating within NAS Oceana's Class D airspace may be routed anywhere within the 5-mile radius at an altitude above 1,000 feet, or lower when necessary for takeoff or landing.**

NALF Fentress

The Naval Auxillary Landing Field (NALF) Fentress is located approximately 7 miles southwest of NAS Oceana. It was established in 1940 and comprises 2,560 acres, with an additional 8,780 acres in restrictive easements. NALF Fentress has one 8,000-foot runway equipped to simulate an aircraft carrier flight deck. Squadrons stationed at NAS Oceana and NS Norfolk Chambers Field utilize NALF Fentress for Field Carrier Landing Practice (FCLP) operations. These operations are intended to familiarize pilots with carrier landings and must be conducted under both daytime and nighttime operational conditions. Prior to deployments, the local community may experience increased operations as pilots complete training exercises. The pattern altitude at NALF Fentress is 800 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.

Note: The boundaries of the Noise Zones and Accident Potential Zones (APZs) represented on this brochure have not changed from those represented on the AICUZ Pamphlet published by the U.S. Navy in 1999.

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