
**2002 Addendum
Air Installations Compatible
Use Zones Report
NAS, JRB New Orleans, Louisiana**

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List of Acronyms and Abbreviations

AICUZ	air installations compatible use zones
APZ	accident potential zone
ATC	air traffic control
dB	decibel
DNL	day-night average sound level
GCA	ground-controlled approach
ICWW	Intracoastal Waterway
NAS, JRB	Naval Air Station, Joint Reserve Base
NAVFAC	Naval Facilities
Navy	United States Department of the Navy
OPNAVINST	Chief of Naval Operations

1.1 Introduction

This document is an addendum to the June 2001 Air Installations Compatible Use Zones (AICUZ) update report for Naval Air Station, Joint Reserve Base (NAS, JRB) New Orleans, Louisiana. The reason for this addendum is the proposed 2,000-foot extension of runway 04/22 at the runway 04 end. The United States Department of the Navy (Navy) generated new noise contours for the proposed change in airfield layout. In addition, the Navy revised the accident potential zones (APZs) for the Station published in the AICUZ Update, June 2001, based on the new airport layout. This addendum analyzes changes to the existing noise contours and APZs published in the Station's AICUZ Update, June 2001, and identifies changes in the AICUZ footprint (i.e., those areas of land within noise contours and APZs) and land use compatibility surrounding NAS, JRB New Orleans.

1.2 Authority

Preparation of this addendum is in accordance with Chief of Naval Operations Instruction (OPNAVINST) 11010.36A, "Air Installations Compatible Use Zones Program," 11 April 1988. The intent of this effort is to project the potential impacts to the NAS, JRB New Orleans AICUZ footprint as a result of the extension of runway 04/22 by 2,000 feet.

1.3 Changes that Require an AICUZ Update

Aircraft noise consists of two major sound sources: flight operations and ground engine maintenance "run-ups" that are associated with pre-flight and maintenance checks. The level of noise exposure is related to a number of variables, including the aircraft type, engine power setting, altitude, direction of aircraft during run-ups, duration of run-ups, flight track, temperature, relative humidity, frequency, and time of operations. Generally, these factors fluctuate from year to year. Small fluctuations in the annual number of operations of like aircraft will not have a significant effect on community noise exposure.

AICUZ reports should be updated when an air installation has a significant change in aircraft operations (i.e., number of takeoffs and landings), a change in the type of aircraft stationed and operating at the Installation, or changes in flight paths or procedures. In the case of NAS, JRB New Orleans, this AICUZ addendum is required because of a proposed change in airfield layout and flight track configuration along runway 04/22. No changes are proposed to the existing aircraft loading or flight operations at the Station.

2.1 Location

As shown in Figure 1, NAS, JRB New Orleans is located near the town of Belle Chasse, Louisiana, in northwestern Plaquemines Parrish. The Station is located 16 miles southwest of New Orleans, between the Mississippi River to the southeast, and the Intracoastal Waterway to the northwest.

2.2 Airfield Operations

The proposed action consists of a 2,000-foot runway extension at the southern end of Runway 04. This proposed configuration is noted as Runway 04X throughout this addendum. The sole purpose of the runway extension is to provide sufficient runway length to allow operations by large military aircraft, such as the C-5 and B-747 aircraft. The flight operations, runway and flight track distributions, and flight profiles remain the same as used in the 2001 AICUZ Update and detailed in the Noise Report (WR) 98-1 “Aircraft Noise Study for NASJRB New Orleans, LA” prepared by Wyle Laboratories in July 1998. This data included the replacement of Air Force Reserve F-16 Fighting Falcon aircraft with A-10 Thunderbolt II aircraft and used 1996 air operations data. This aircraft operations data remain representative of current (2002) operations. Table 1 presents the overall airfield operations used as a basis for this analysis. Figure 2 shows the proposed runway and airfield layout.

Table 1. CY 1996 Annual Flight Operations

Aircraft Types	Operation Type					Total
	Departures	Straight-In Arrivals	Overhead Arrivals	Patterns ¹		
				Touch-&-Go/ Low Approach	GCA Box	
F-15 (including Transient F-15)	2,214	656	1,558	4,199	229	8,856
F/A-18 (including Transient F/A-18)	1,204	397	807	2,869	1,589	6,866
A-10	3,110	610	2,500	800	1,600	8,620
P-3	504	504		3,023	504	4,535
Transient F-16	318	64	254	127	33	796
HH65 (Same Distribution as P3)	359	359		2,153	359	3,230
C-12 (Same distribution as P3)	751	751		4,504	751	6,757
C-130 (Same distribution as P3)	250	250		1,503	250	2,254
T-39 (Same distribution as P-3)	250	250		1,503	250	2,254
Transient C-12 and C-9 (Same distribution as P3)	268	268		1,608	268	2,412
Air Carrier ²	58	58				116
Gen. Aviation (Same distribution as P3)	640	640		3,839	640	5,759
	9,926	4,807	5,119	26,128	6,473	52,455

¹Patterns counted as two operations

²Only Straight-in arrival and departures on Runway 04/22

2.3 Flight Tracks

For the purpose of this addendum, only departure/arrival, touch-and-go, and ground-controlled approach (GCA) flight tracks for Runway 04 were modified. While each of these flight tracks had their starting points relocated to the Runway 04X threshold (see Figure 2), the proportional geometry of each flight track was retained. Table 1 shows the flight events used along each of the flight tracks for NAS, JRB New Orleans. Due to the lack of information on runway/flight track distributions for the HH-65, C-12, C-130, T-39 and transient aircraft, these aircraft were assumed to have the same as the P-3 aircraft. Figures 3 through 5 show all 2002 flight tracks for runway 04/22. All other flight tracks remain the same as analyzed in the 2001 AICUZ Update.

2.4 Imaginary Surfaces

Imaginary planes and transition surfaces define the required airspace that must remain free of obstructions to ensure safe flight approaches, departures, and patterns. Obstruction may include natural terrain and man-made features such as buildings, towers, poles, and other vertical obstructions to airspace navigation. Brief descriptions of the imaginary surfaces for fixed-wing runways are provided in Table 2. These areas are labeled on Figure 6. The 2002 imaginary surfaces around the runways at NAS, JRB New Orleans that result from the 2,000-foot extension of runway 04/22 are shown on Figure 7. Generally, the surfaces extended their coverage 2,000 feet to the southwest of the 2001 imaginary surfaces. The extent of the imaginary surfaces to the north and east of the Station remains unchanged.

Table 2	
Imaginary Surfaces – Class B Fixed-Wing Runways	
Planes and Surfaces	Geographical Dimensions
Primary surface (A)	A 1,500-foot-wide plane centered over the runway and extending 200 feet beyond the end of the runway.
Clear Zone (B)	A trapezoidal area 3,000 feet beyond the end of the runway, measuring 1,500 feet wide at the runway and 2,284 feet wide at its outer edge.
Approach-departure clearance surface (glide angle: 50:1; C)	An inclined plane extending at a 50:1 angle (i.e., one vertical foot for every 50 horizontal feet), from the end of the primary surface to an elevation of 500 feet above the airfield.
Approach-departure clearance surface (horizontal; D)	A horizontal surface extending from the 500-foot elevation of the glide angle for a distance of 50,000 feet from the point of origin.
Inner horizontal surface (E)	An oval-shaped plane 150 feet above the runway, extending in a 7,500-foot radius from the center line of the end of each runway.

Table 2	
Imaginary Surfaces – Class B Fixed-Wing Runways	
Planes and Surfaces	Geographical Dimensions
Conical surface (F)	A conical surface extending 7,000 feet from the periphery of the inner horizontal surface at a 20:1 slope (i.e., one vertical foot for every 20 horizontal feet) to an elevation of 500 feet above the airfield.
Outer horizontal surface (G)	An oval-shaped plane 500 feet above the runway, extending 30,000 feet beyond the periphery of the conical surface.
Transitional surface (H)	An inclined plane that connects the primary surface and the approach-departure clearance surface to the inner horizontal surface, conical surface and outer horizontal surface.

Figure 1

Figure 2

Figure 3

Figure 4

Figure 5

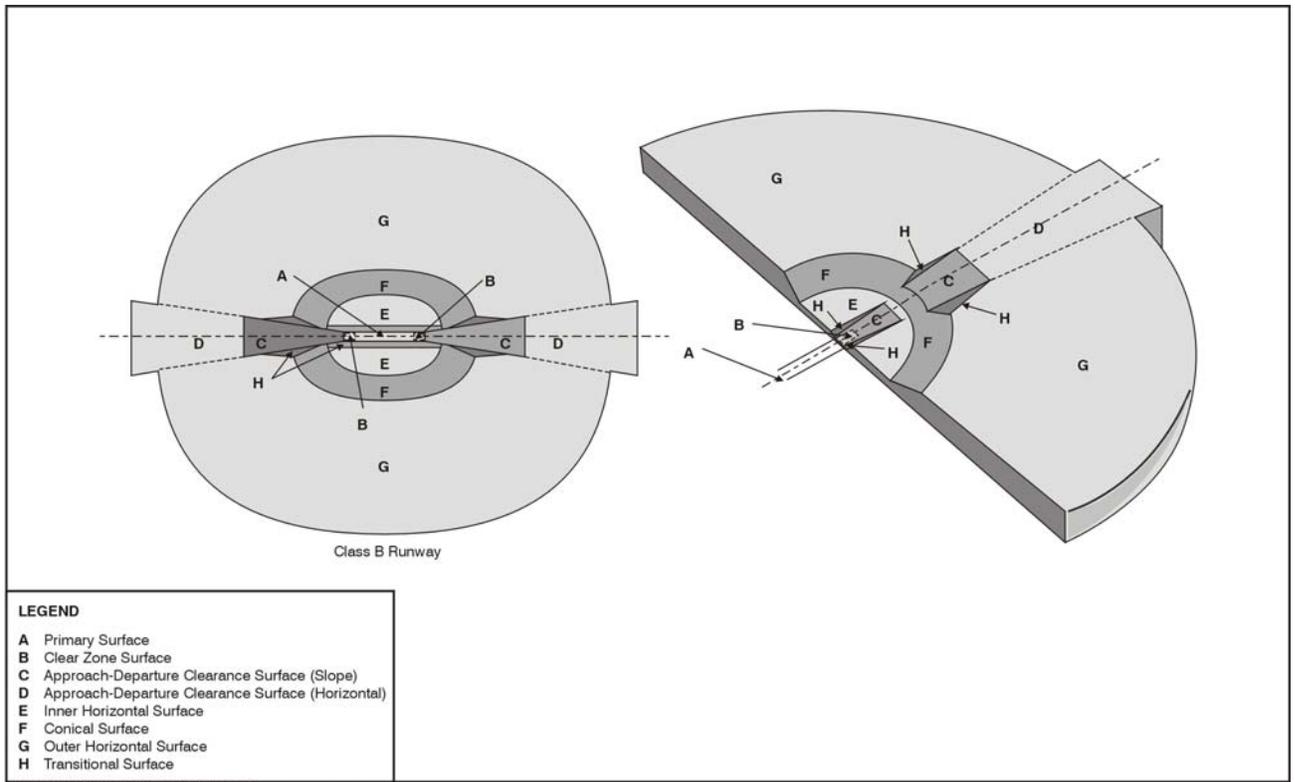


Figure 6. Imaginary Surfaces and Transition Planes for Class B Fixed-Wing Runways

Figure 7

3.1 Modeled 2002 DNL Noise Contours

The Navy conducted a noise study in 2002 to identify changes in the noise contours based on a shift in the Station's flight tracks. In accordance with Section II, OPNAVINST 11010.36A, since aircraft operations at the Station have not changed sufficiently since 1996, noise exposure contours for this AICUZ Update were generated based on actual CY 1996 aircraft that were projected through CY2002. Appendix A of the 2001 AICUZ Update provides a breakdown by aircraft type and projected operations.

Projected 2002 noise contours were generated using NOISEMAP 7. The number of average busy-day operations used to generate the 2002 contours remains at 278. The noise contours generated from this effort for NAS, JRB New Orleans are shown in Figure 7.

Figure 8 shows the modeled 2002 noise contours resulting from the proposed 2,000-foot extension of Runway 04. Figure 9 shows a comparison of the 2001 noise contours as presented in the 2001 NAS, JRB New Orleans AICUZ report, and the modeled 2002 contours. As can be seen in Figure 9, the noise contours with a runway extension retain the same general shape as the noise contours without the runway extension. However, to the southwest of the airfield, the revised 65-day-night average sound level (DNL) contours extend approximately 3 miles from the threshold of Runway 04X when compared with the previous 2001 contours, which extend 2.5 miles from the same threshold. This represents a shift of approximately 0.5 mile. A similar shift (this time, a reduction in the extent of the contours) is observed to the northeast with the 70- and 75-DNL contours. This shift in contours is a result of the 2,000-foot extension of runway 04. When compared to the previous contours, the 65-DNL contours south of runway 32 are slightly smaller. While the air operations data used to model the 2002 noise contours is the same data as used for the previous AICUZ report, a newer version of the modeling software NOISEMAP (version 7.0 instead of 6.5) was used. The updated version of NOISEMAP resulted in slightly smaller contours when compared to the contours derived from NOISEMAP 6.5 used for the 2001 AICUZ update. As shown in Table 2 the total area encompassed by the modeled 2002 noise contours is similar in area to the 2001 noise contours. Any change is primarily a result of the difference in the versions of the model software.

Table 3. Comparison of Off-Base Noise Contours for Modeled (2002) and Existing (2001) Noise Contours

Noise Contour (DNL)	2002 (Acres)	2001 (Acres)
65	3,529	3,286
70	1,662	2,012
>75	1,116	1,035
Total (65-85)	6,307	6,333

3.2 Flight Events and APZs

The APZs presented in this addendum were developed in accordance with OPNAVINST 11010.36A, “Air Installations Compatible Uses Zones Program,” 1988; Naval Facility (NAVFAC) P-80.3, “Facilities Planning Factor Criteria for Navy and Marine Corps Shore Installations,” Appendix E, “Airfield Safety Clearances,” and the AICUZ instructions manual entitled “AICUZ Program Procedures and Guidelines For Department of the Navy Air Installations” published by the Navy in 1998.

For the purpose of APZ computations, touch-and-go and GCA operations are counted as one event, as opposed to air traffic control (ATC) counts of two operations for closed patterns. Based on the types of operations conducted at NAS, JRB New Orleans, the Station’s runways are classified as Class B for APZ definition purposes. Further, APZs are drawn for flight tracks with 5,000 or more annual events, in the shape described in Figure 10. When this criterion is met, the APZs may be curved (as shown by dashed lines of Figure 10) to follow the centerline of the flight tracks associated with the operation.

Air ops used in computing the APZs for NAS, JRB New Orleans can be found in Appendix A of the 2001 NAS, JRB New Orleans AICUZ Update. While there is a shift in some of the APZs as a result of the proposed runway extension, the general geometry of the APZs remained the same as the 2001 published APZs. Figure 11 shows the revised APZs based on the extended runway 04/22 and modified flight tracks. When compared to the APZs published in the 2001 AICUZ, the location of the turn to crosswind and the final segment of flight track 04P1 were shifted down 2,000 feet to reflect the relocated threshold for this type of operation. Figure 12 shows an overlay of the APZs published in the 2001 AICUZ Update and the modeled 2002 APZs developed for this addendum. Figure 13 shows the modeled 2002 NAS, JRB New Orleans AICUZ footprint.

Figure 8

Figure 9

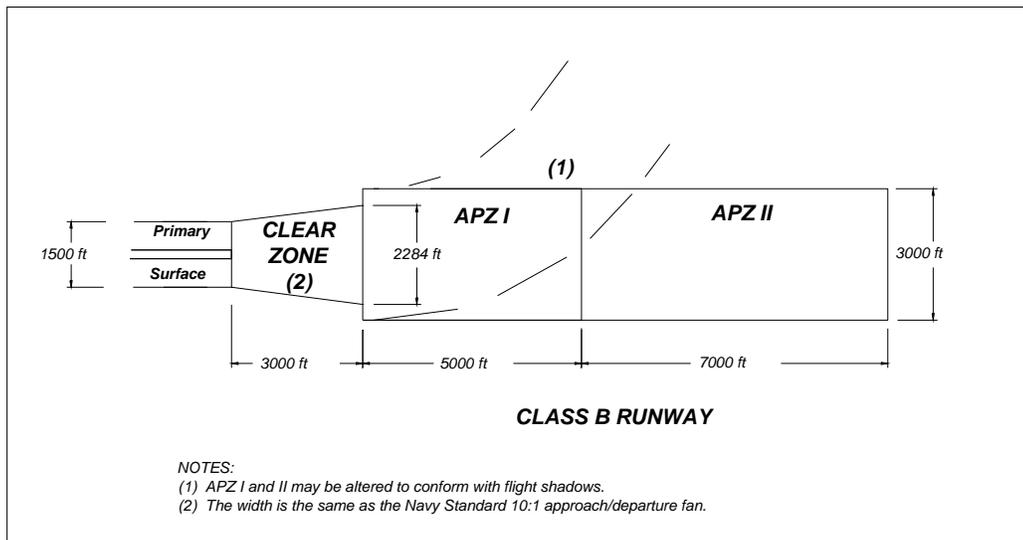


Figure 10. Dimensions of Accident Potential Zones for Fixed-Wing Aircraft on Class B Runway

4.1 Land Use Compatibility

The APZs and noise zones comprise the AICUZ map or “footprint” for an air installation (see Figure 13). The AICUZ map is the minimum recommended acceptable area within which land-use controls are needed to protect the health, safety, and welfare of those living near a military airfield, and to preserve the defense flying mission. The AICUZ map and the information derived from the map are the fundamental tools necessary for the AICUZ planning process. This section addresses land-use compatibility within the AICUZ footprint by examining existing land uses near NAS, JRB New Orleans. The land use analysis and recommendations presented are a modification to the analysis and recommendation printed in the 2001 NAS, JRB New Orleans AICUZ Update.

It should be noted that the land-use recommendations for land-use compatibility within the 2001 AICUZ footprint provided in the 2001 NAS, JRB New Orleans AICUZ Update were not fully adopted by Plaquemines and Jefferson parishes. Similarly, the parishes adopted the 1997 Southern Building Code to govern all new construction within the parish, yet neither code addresses the specific conditions within an AICUZ footprint to reflect those recommendations. Both Plaquemines Parish and Jefferson Parish adopted comprehensive zoning ordinances on October 22 and October 8, 1998, respectively. Neither zoning document authorizes more restrictive airfield zoning districts within the composite AICUZ footprint, and current zoning follows closely to existing land use

To identify land use compatibility with the AICUZ footprint, noise contours and APZs were overlaid on existing land use map of Plaquemines Parish. The existing lands uses within the boundaries of the noise contours and APZs were identified and compared with the land use compatibility guidelines presented in OPNAVINST 11010.36A. The Navy compatibility guidelines can be found beginning on page 51 of the 2001 NAS, JRB New Orleans AICUZ Update. Table 4 provides a summary of the extent (in acres) of compatible, conditionally compatible, or incompatible land uses within each of the 2002 APZs and noise contour. The land use analysis discussion in this AICUZ addendum is limited only to changes in the land use compatibility within the modeled 2002 AICUZ footprint when compared to the 2001 AICUZ footprint.

Table 4. Compatible Land Uses (in acres) Within Each 2002 AICUZ Footprint

Land Use Compatibility	2002 AICUZ Zone					
	Clear Zone	APZ I	APZ II	65 DNL	70 DNL	>75 DNL
Compatible	118.4	559.1	1223.5	1032.5	135.0	108.8
Conditionally Compatible	N/A	181.4	851.1	2496.6	1527.0	906.2
Not Compatible	6.8	78.6	N/A	N/A	N/A	100.9

4.2 On-Station Development

NAS, JRB New Orleans encompasses approximately 3,343 acres, including approximately 1,649 acres of aviation easements. Existing development on-station is generally compatible with the revised 2002 AICUZ footprint (see Figure 14). On-base development is concentrated around the core of the airfield and is dominated by air operations and operations/training facilities. Because most, if not all, uses located in this portion of the Station are mission-specific, these uses are considered compatible with the AICUZ footprint. Notable exceptions include those training and administrative facilities identified as on-base facilities within the >75 DNL noise contours along Rear Admiral Fowler Street. The planned new Armed Forces Reserve Center along Olson Avenue would be located within the 75-DNL noise contour and may require additional noise attenuation measures for administrative facilities.

4.3 Off-Station Development

Generally the overall extent of the 2002 AICUZ footprint does not differ drastically from the 2001 AICUZ footprint. However, as a result of the new 2002 AICUZ footprint, there are a number of changes in the land use compatibility within each of the AICUZ zones (see Figures 15 and 16). These areas are discussed in detail below:

1. **Runway 04, Clear Zone:** The new clear zone for runway 04 is compatible with the agriculture/forestry related land uses in the area. However, parts of the clear zone may need to have the trees removed to comply with the aircraft safety zone height requirements.
2. **Runway 04, APZ II, and Runway 22, APZ II:** New, low-density, single-family residences are developing along Walker Road to the east of the Intracoastal Waterway (ICWW) within APZ II for runway 04 and the 65 to 70-DNL noise contour. An additional land use concern for this area is the planned roadway bridge across the ICWW to connect Peters Road with Walker Street. Depending on the proposed bridge height, it may exceed the height restrictions of the imaginary surface zone.

Additionally, a new single-family subdivision is being developed to the north of the Lake Park subdivision. This area is located within APZ II of runway 22 and the 65 to 70-DNL noise contour. Because of the slight shift in the noise contours to the southwest, some of the areas to the north of the Station may experience a reduction of 1 to 3 DNL. However, while low-density residential developments are permitted in APZ II and the 65 to 70 DNL noise zone, noise attenuation measures of 25 to 30 dB are recommended.

3. **Runway 22, APZ I:** Because of the 2,000-foot shift to the southwest, the curved portion of APZ I of runway 22 no longer encompasses the southern portion of the residential area west of Barriere Road and east of the ICWW. Based on the land use guidelines, all residential uses are incompatible in APZ I. Furthermore, this residential area is now located in the 65-DNL noise contour, rather than in the 75-DNL noise contour under the 2001 AICUZ footprint.

APZ I of runway 22 also encompasses an area of industrial land uses, and a small area of residential uses in the Stonebridge Subdivision on the western side of the ICWW. Industrial uses are conditionally compatible with APZ I. Residential uses, however, are not compatible with APZ I.

4. **Runway 22, APZ II:** The multi-family residential uses located west of Barriere Road and east of the ICWW are no longer located in the curved portion of APZ II for runway 22. However, due to the shift of the APZ to the southwest, there are now residential land uses in the Stonebridge subdivision of which portions are encroaching on APZ II. These residential uses are conditionally compatible, depending on their densities. This area of residential land use in the Stonebridge Subdivision is furthermore located in the >75 DNL noise contour and, therefore, incompatible with the Navy land use guidelines. This area represents the only noise zone-based incompatible land uses within the 2002 noise contours. The Station may help the community to identify possible noise attenuation measures to reduce the noise impacts for these residential areas to a more acceptable level.

4.4 Land Use Control Recommendations

Although ultimate control over land use and development in the vicinity of NAS, JRB New Orleans is the responsibility of the local government, the Navy has the ability and responsibility to conduct actions and implement programs in support of the local effort. At the Installation level, the air installation commander is the responsible authority for ensuring a successful AICUZ program. Pursuant to OPNAVINST 11010.36A (AICUZ Program) the air installation commander at NAS, JRB New Orleans is committed to and shall:

- Familiarize himself with the AICUZ program;
- Implement an AICUZ plan for the Installation;
- Actively work with state and local planning officials to implement the objectives of the AICUZ plan;
- Notify the chain-of-command in the AICUZ program office whenever local conditions merit update or review of the AICUZ plan;
- Promote attendance at AICUZ seminars by commanding officers, executive officers, air operations and traffic control facility officers, and other aviation-related staff personnel to increase awareness of current trends and techniques for AICUZ program development and implementation;
- If appropriate, designate a community liaison officer to assist in the execution of the AICUZ plan by the Installation and to act as spokesperson for the Command in AICUZ matters;
- Maintain a documentary file on the implementation of the AICUZ plan at the Installation. Such a file should contain, among other things, a chronological narrative of important

events, newspaper articles, data and referenced aerial and ground photographs, and pertinent correspondence;

- Provide assistance in developing AICUZ information, including operational data needed to update the AICUZ plan; and
- Justify the retention of land or interest of land required for operational performance.

NAS, JRB New Orleans should continue to be active in the community planning process and stay alert to all proposed development around the Station. The Station should actively participate in the local zoning board's review of projects located within the Station's AICUZ footprint to preclude incompatible rezoning or incompatible zoning variances. However, the Station's interests should not be limited to projects within the AICUZ footprint. Station personnel should recognize that large-scale developments adjacent to the AICUZ boundary – housing, commercial, or infrastructure improvements – could ultimately have an adverse impact on the AICUZ footprint.

While local planning goals may not be in consonance with AICUZ recommendations, NAS, JRB New Orleans should continue to educate the community about airfield operations and the Navy's efforts to mitigate noise impacts in the community.

In addition to working with the community, the Navy is permitted to acquire interest in properties (acquisition) to protect the operational integrity of its air installations. The first priority for acquisition, whether in fee or by restrictive easement, is the clear zone. In the case of NAS, JRB New Orleans, efforts should be undertaken to protect the new clear zone of runway 04 from possible encroachment through a land acquisition program. Currently, this area is located outside the Station boundary. In the interim, the Station should coordinate with the local government to implement land use controls such as restrictive zoning regulations to protect the area from further encroachment.

The second priority is other APZs. Noise zones outside the clear zone and APZs may be considered for acquisition only when all avenues of achieving compatible-use zoning or similar protection have been explored and the operational integrity of the Installation is manifestly threatened. Land can be purchased through negotiation and voluntary agreement of the land or it can be through condemnation procedures, using the power of eminent domain.

Figure 11

Figure 12

Figure 13

Figure 14

Figure 15

Figure 16

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