



New Residential Development



Adjacent Agricultural Uses

4.1 OPERATIONAL IMPACTS

The Homestead Air Reserve Base generates a variety of operational impacts due to its training mission and unique geographic setting, including:

- aircraft noise;
- air safety (both for people on the ground and for pilots engaged in training activities);
- the on-base storage of munitions;
- the risk of aircraft striking birds in flight;
- vertical encroachments into air space, such as cell towers;
- proximity to light, glare, smoke or other conditions that may obscure pilot vision;
- proximity to environmentally sensitive wildlife and habitat resources that require protection;
- drainage issues related to extensive nearby canal and wetlands systems; and
- the need for flexibility to accommodate expanding existing and future military missions

4.2 AIR INSTALLATION COMPATIBLE USE ZONE

The Air Installation Compatible Use Zone (AICUZ) Program is a Department of Defense planning initiative first developed in 1973 to promote compatible land uses around military airfields. The purpose of the AICUZ is two-fold:

- to assist local, regional, state and federal officials in protecting public health, safety, and welfare in the AICUZ area of influence

- to protect Air Force operational capability from the effects of nearby land uses that are incompatible with aircraft operations

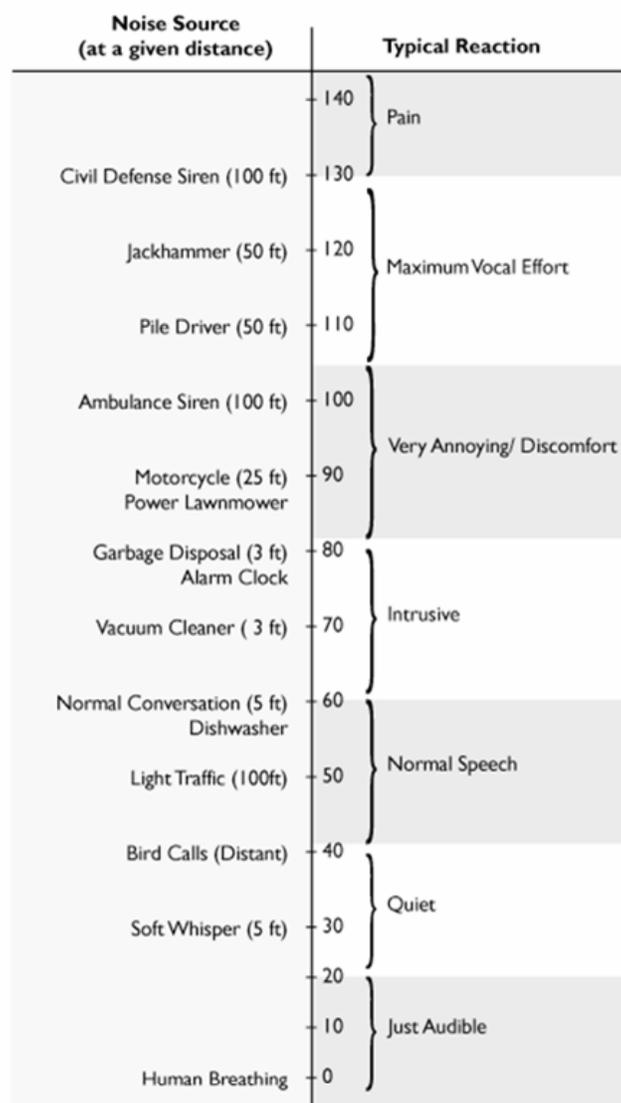
The AICUZ study produced by each installation identifies three constraints that may affect or result from airfield operations: aircraft noise, the statistical risk of an aircraft mishap, and height obstructions. The study generates a series of specific geographic zones around the airfield, as described below, to reflect relative operational hazards. The zones then form the basis for land use guidelines to promote more suitable development.

Noise

The military measures noise in decibels (dB) and assigns a weighting based on the noise frequency and source. A-weighting, expressed as dBA, depicts higher frequency noise caused by aircraft and vehicle operations. The contours around the base reflect an annualized noise measure that converts noise varying from peak bursts to relative quiet into a steady measure of acoustic energy over a 24 hour period. The contours essentially take all operations that occur at HARB over the year and divide by 365 days, producing the average day-night sound level (DNL). The measure further “penalizes” or places a higher decibel value on noise that occurs at night because it is more disruptive to the surrounding population.

Through the use of special NOISEMAP computer modeling software, the HARB AICUZ study plots noise contours in increments of five decibels, ranging from a DNL of 65 to 80. In general, noise in excess of 65 dB can become intrusive and prolonged exposure to noise above the 85 dBA threshold can, over time, cause hearing loss. Figure 6 equates decibel levels with the sound of everyday activities.

Figure 6. Common Sounds and Decibel Levels



Noise contours should be viewed as a planning tool, not as a series of discrete lines that sharply divide noise-affected land from non-noise affected areas. But, contours are a useful framework for identifying those off-post areas in which noise exposure may be high enough to generate annoyance among a certain percentage of people. As shown on Figure 7, areas exposed to noise levels of 65 DNL or higher include lands both

east and west of the base.

Accident Potential

Department of Defense analysis of historical flight data has determined that areas immediately beyond the ends of the runways and along the approach and departure flight paths exhibit the highest potential for aircraft mishaps. The DoD then developed three zones to reflect the proportional risk of accidents.

Clear Zone (CZ) - This 3,000-foot wide by 3,000-foot long area at the immediate ends of the runway warrants special protection due to the highest incidence of aircraft accidents. Overall, the risk in this zone is such that the US Air Force generally seeks to prevent development through the purchase of easements.

Accident Potential Zone I (APZ I) - Though less critical than the CZ, APZ I still possesses significant potential for accidents. This 3,000-foot wide by 5,000-foot long area just beyond the CZ can safely accommodate a wide variety of industrial, manufacturing, transportation, open space and agricultural uses. However, uses that concentrate people in small areas, such as housing pose a conflict with the safety risks associated with this zone.

Accident Potential Zone II (APZ II) - APZ II displays the lowest historical incidence of aircraft mishaps among the three zones, but still carries a measurable risk of an accident. This zone is 3,000 feet wide and extends 7,000 feet in length beyond the APZ I. Compatible land uses include those of APZ I, as well as low density single family residential, and lower intensity commercial activities. High density functions such as multi-story buildings and places of assembly (e.g., theaters, schools, churches and restaurants), however, raise compatibility issues.

As shown on Figure 8, areas subject to aircraft safety hazards include lands to the southwest and northeast of the airfield.

4.3 ANALYSIS OF CURRENT LAND USE

The following analysis assesses the compatibility of existing civilian land uses around HARB. When compatible, land uses can exist next to each other without causing interference or exposing people to undue safety risks or nuisance. In this JLUS context, Air Force training activities raise compatibility issues when next to the following nearby land uses:

- Noise sensitive uses, such as housing, schools, medical facilities or places of worship;
- Uses that tend to concentrate people, particularly those with a limited ability to respond to emergencies;
- Uses that concentrate employees;
- Uses that involve materials with explosive, fire, toxic or other hazardous characteristics;
- Uses involving utilities and services required for an area-wide population; and
- Uses that can interfere with safe air navigation, such as tall structures, or activities that attract birds or throw off excessive lighting, smoke or dust, thus impairing vision.

Uses that generate the issues noted above are referred to as encroachment.

For purposes of evaluating compatibility, the JLUS draws guidance from the DoD's Air Installation Compatible Use Program and Air Force Handbook 32-7084. These compatibility guidelines are standards only and do not determine acceptable uses of land within communities. Only local governments have the authority to establish permissible land uses and to define the relationship between specific properties and noise or safety zones.

The following section assesses the compatibility of various land uses relative to levels of noise and air safety exposure. Tables 1 and 2 are intended to give generalized guidance on the types of uses that are appropriate within Accident Potential Zones and high noise contours. Section 5 and the Technical Appendix contain more detailed information on development compatibility standards and recommended land uses around HARB.

In general, the guidelines sort land uses into three categories:

- Activities that are compatible without any restriction and do not raise a land use conflict with nearby military operations (Y);
- Activities that are compatible on a conditional basis and thus require some form of limitation (C); and
- Activities that are not recommended because they may adversely affect nearby military operations or jeopardize the public health and safety by exposing people to nuisance and risk (N).

Table 1. Air Safety Compatibility Guidelines

Land Use	CZ	APZ I	APZ II
Residential	N	N	C
Industrial	N	C	Y
Retail	N	N	C
Restaurants	N	N	C
Personal or professional services	N	N	C
Business or repair services	N	C	Y
Wholesale trade	N	C	Y
Hospitals or	N	N	N

medical facilities			
Schools	N	N	N
Government services	N	N	C
Places of public assembly or arenas	N	N	N
Outdoor recreation and parks	N	C	Y
Agriculture	N	Y	Y

Table 2. Noise Zone Compatibility Guidelines

Land Use	65-69 DNL	70-74 DNL	75+ DNL
Residential	C	C	N
Industrial	Y	C	C
Retail	Y	C	C
Restaurants	Y	C	C
Personal or professional services	Y	C	C
Business or repair services	Y	C	C
Wholesale trade	Y	C	C
Hospitals or medical facilities	C	C	N
Schools	C	C	N
Government services	Y	C	C
Places of public assembly or arenas	Y	N	N

Outdoor recreation and parks	C	C	C
Agriculture	Y	Y	Y

Overall, the high risk of accident potential in the Clear Zone warrants the prohibition of all structures. The guidelines, however, show more flexibility in the less hazardous APZ I, indicating that a variety of activities may fit compatibly, including industry and manufacturing, business and repair services, transportation, trade, open space, recreation and agriculture. In general, these permitted uses in APZ I should be of a low scale or intensity of operation. APZ II can accommodate all of the uses in APZ I, along with some low intensity retail and single family detached housing at a density of 1 to 2 dwelling units per acre. The guidelines specifically recommend against the development of housing in the CZ or APZ I, and advise limitations on multi-family residential uses in any of the three zones.

Noise guidelines do not suggest any restrictions on uses in areas with exposure below 65 DNL. Standards indicate that residential uses with exposure between DNL 65-74 dB should consider additional protective measures, such as indoor noise reduction. Additionally, areas in higher noise zones may not qualify for federal mortgage insurance in residential categories without noise attenuation. Guidelines deem noise levels in excess of 75 DNL to be in conflict with all residential uses. Many activities, such as manufacturing, retail, government facilities, and agriculture, however, can be suitable even within a relatively high noise setting. Although parks and other outdoor uses may be compatible with noise, recent studies suggest that noise may interfere with enjoyment, particularly in natural environments, such as Biscayne National Park where quiet is an intrinsic part of the recreational experience.

Unlike many military installations around the country, HARB suffers from limited encroachment within its air safety zones



Migrant Housing



South Miami Dade Landfill

and high noise contours. As shown in Figure 9, much of the area to the south and east of the base is in agricultural use, posing few conflicts with noise and air safety zones. Low and medium density residential and some commercial and institutional uses surround the installation to the north and west. Land within the noise contour and accident potential zones to the northeast of HARB contains a largely compatible existing mix of low density housing, park land, and water conservation areas.

Despite a predominantly rural and low intensity land use pattern around the base, three pockets of existing activity raise compatibility issues with nearby aircraft operations:

- Migrant worker housing on the southeast corner of Campbell Drive and Speedway Boulevard; a portion of the complex lies inside the southwest APZ I;
- Itinerant housing east of the base inside the 70-75 noise contour;
- A significant portion of the Homestead Sports complex falls inside the southwest APZ II; the complex includes a stadium, five baseball fields, four softball fields and a 130-room dormitory and hosts a variety of sports and youth events

It is the recommendation of the JLUS to grandfather any existing uses that are not in compliance with the land use compatibility guidelines identified in this study.

Though not within a noise or air safety zone, the county's South Dade landfill, often called "Mount Trashmore," generates the risk of a bird air strike. The facility, which is approximately four miles northeast of the base on SW 97 Ave receives half of the county's waste or about 4,200 tons a day, attracting a significant bird population. Currently, the Air Force retains a USDA biologist to disperse scavenging birds from the site.

A series of natural wetlands along the western shore of Biscayne



Homestead Park of Commerce



Homestead Miami Speedway



Sports Complex

National Park may also exacerbate the bird air strike hazard. The wetlands are approximately one and a half to three miles from HARB and within the primary approach and departure zones for aircraft. CERP efforts to restore wetlands functions to the area are likely to attract more birds, thus increasing strike hazards.

Two major land uses in proximity to HARB maintain relative compatibility with base operations. The City of Homestead has an industrial complex, the Park of Commerce that falls partially within the southwest APZ II. Zoned for industrial uses, the 280-acre area is intended to accommodate variety of light manufacturing facilities, transportation and distribution nodes, low intensity retail and service businesses, industry and office. These uses generally do not conflict with the statistical risk of accident associated with this safety zone. According to the Encroachment Study prepared by the Vision Council, the Park of Commerce Master Plan illustrates a clustering of taller buildings on the center of the site, under APZ II. These structures, however, fall below the 200-foot height restriction recommended by the US Air Force.

The Homestead Miami Speedway is south of the base and outside of designated AICUZ areas. This 600 acre facility has a 65,000 seat grandstand, viewing tower, and 1.5 mile oval racing track. As a major noise generator during events, the speedway shares an interest with HARB in limiting the approach of residential growth in this southeast portion of the city. The speedway has been a cooperative planning partner with the US Air Force, coordinating on such issues as the use of shielded lighting to minimize light pollution that may otherwise interfere with pilot vision

4.3 ANALYSIS OF ZONING

As shown in Figure 10, much of the area surrounding the base is zoned for agriculture or planned area development. Areas to the east are primarily vacant. In the City of Homestead, lots for any use in the Agricultural district must contain a minimum of



Adjacent Agricultural Activity

five acres and have street frontage of at least two hundred feet. The maximum lot coverage for one acre lots or larger is set at fifteen percent of the total lot area and increases to 25 percent of the total area for smaller lots. Permitted uses in existing districts are largely consistent with compatibility guidelines. Frequent rezoning activity, however, can gradually erode the compatibility of this current pattern by introducing denser residential or commercial activities, particularly southwest of the base.

4.4 ANALYSIS OF FUTURE LAND USE

As shown in Figure 11, the City of Homestead designates land southwest of HARB as future areas for Agriculture and a Planned Regional Activity Center (PRAC). The Future Land Use map also shows a pocket of industrial uses under the southwest APZ II to reflect Park of Commerce activities. According to the city's 2005 Comprehensive Plan, the Agricultural designation includes farming and related activities and housing not to exceed one dwelling unit per five acres. The PRAC area may contain a mix of uses, including housing, light industrial, office, schools, and conservation and recreation uses. The average residential density of a PRAC area cannot exceed 10 dwelling units per acre. Agricultural activities remain fully consistent with recommended land use standards around the base. While the PRAC designation can result in dense housing or uses that concentrate people in one area, the flexibility of the policy permits integrated site planning and the clustering of buildings.

The Adopted 2005 and 2015 Land Use Plan for Miami-Dade County identifies areas east of HARB as primarily agricultural and open land (GIS data are not available for inclusion in Figure 11). The Comprehensive Development Master Plan (CDMP) also calls for residential development in this area at a density of no more than one unit per five acres. The county specifically permits only rural residential uses on Open Land areas and reviews other proposed uses on a case-by-case basis.

Additionally, the CDMP defines an Urban Development Boundary

(UDB) that includes the City of Homestead and HARB, but excludes land to the southwest of the base, as well as areas to the east near Biscayne National Park. The purpose of the UDB is to differentiate preferred development areas from lands that due to environmental characteristics or distance from established communities are less suitable for urbanized uses.

The current UDB boundary should contain sufficient developable land to accommodate projected countywide residential demand until the year 2015. The county maintains a variety of policies to direct growth during this period, including an emphasis on developing more intensely around existing centers of activity, revitalizing blighted areas, prioritizing infrastructure enhancements within the UDB, and promoting contiguous urban expansion, rather than leapfrogging sprawl. The entire unincorporated area within the UDB is also eligible to receive and use Severable Use Rights under Miami-Dade County's existing program.

Current UDB policies support the less intense agricultural and rural activities that are consistent with nearby military operations. The Land Use Map, however, identifies an Urban Expansion Area (UEA) intended to absorb growth beyond 2015 as the supply of existing land in the UDB constricts. The 2015 UEA boundary will increase development opportunities southwest of HARB near APZ II and higher noise areas on the base's northeast side.

Overall, the analysis of existing land uses reveals relatively limited encroachment at HARB. Increasing development pressure throughout South Dade and robust residential development in southeast Homestead, however, indicate that surrounding communities must engage in a concerted and forward-looking land use planning effort to reduce the risk of incompatible development in the years ahead.

4.5 CITY AND COUNTY COMPATIBILITY TOOLS

In general, Miami-Dade County and the City of Homestead maintain a highly collaborative relationship with HARB. In 1991, the city adopted the Homestead Comprehensive Airport Zoning Ordinance, as proposed by HARB, which restricts the height of structures around the airfield to minimize airspace obstructions, regulates building construction in noise affected areas, and provides for the protection of private property rights. The ordinance, however, does not contain specific references to land uses and development standards consistent with AICUZ land use guidelines. The city's 2005 Comprehensive Plan features language on intergovernmental coordination with Homestead Reserve Base, but does not include specific land use and development policies to promote compatibility with military operations.

Miami-Dade County also has a Homestead Air Force Base Zoning Ordinance with a focus on limiting the height of buildings in the approach-departure surface zones of the airfield. The ordinance does not establish similar standards for land uses in the accident potential and noise zones.

The CDMP lays out several policies relevant for planning around HARB including:

1. Policies 7A and 7B of the Aviation Sub-Element indicate that the county shall implement the Homestead Air Force Base AICUZ through the CDMP, zoning ordinance and South Florida Building Code; and shall update its airport compatible zoning ordinance to promote compatible land use around HARB
2. Policy 3E of the Intergovernmental Coordination Element states the county will use its authority to maintain, site, construct and/or operate public facilities and protect and promote health, safety and welfare by retaining regulatory control over land use, development, and service delivery for facilities of countywide significance. The CDMP specifically identifies HARB as a facility of such countywide significance.

4.6 AIR FORCE COMPATIBILITY TOOLS

In addition to preparing the AICUZ study, the Air Force has taken a series of operational steps to reduce impacts on the surrounding community. The base limits nighttime flying activities to mission critical arrivals and departures and routes tracks to avoid populated areas.

The Air Force obtained several easements on property under air safety zones (See Figure 12). The easements restrict development in the southwest Clear Zone and APZ I, but protect only a portion of the northeast APZ I.

The Air Force also maintains long-standing safety easements on property along SW 137th Avenue that fall within or adjacent to the Explosive Quantity/Distance Arcs (QD) (See Figure 13). The QD boundary and associated Clear Zone require a physical separation intended to protect the surrounding population in the event of an accidental explosion of munitions stored on base.

The acquired easements restrict residential uses and prohibit activities that would result in gatherings of more than 25 people. The Air Force has requested that owners with an interest in developing property encumbered by easements submit a plan that describes proposed uses. The Air Force will review such development requests on a case-by-case basis to determine consistency with the safety conditions laid out in the easement.

4.7 STATE COMPATIBILITY TOOLS

Florida is one of the innovators of state-wide planning to prevent encroachment around military facilities. In 2004, the state legislature passed Statutes § 163.3177 and § 163.3175, §163.3187, and §163.3191 of the Growth Management Act. These sections require each affected jurisdiction to consult with the commanding officer of any nearby installation regarding proposed changes to the comprehensive plan and land

development regulations that would affect the intensity, density or use of land adjacent to military operations. The law required affected local governments to amend their comprehensive plans by June 30, 2006, to include criteria that promote the compatibility of surrounding land uses with military installations. To facilitate the exchange of information, local jurisdictions must include a representative of a military installation as an ex officio, nonvoting member of the local government's land planning or zoning board.

The State of Florida's land acquisition program is also one of the most aggressive in the country, with \$300 million allocated annually to purchase environmentally sensitive lands through the Florida Forever program. The state has recently used these funds to purchase land surrounding military installations for the purpose of reducing future encroachment risks.

The Northwest Florida Greenway is one of the best examples of a regionally-based conservation approach. In 2003, the State of Florida, the U.S. Department of Defense and The Nature Conservancy entered into a partnership to establish a 100-mile protected corridor that connects Eglin Air Force Base and the Apalachicola National Forest.

In addition to statewide conservation efforts, the military and government sectors have an opportunity to participate in multi-state sustainability initiatives. The Southeast Regional Partnership for Planning and Sustainability (SERPPAS) is a pilot effort formed in 2005 to forge closer working relationships among the DoD, the States of Florida, Georgia, Alabama, North Carolina and South Carolina, and other stakeholders. Among the intended goals of SERPPAS is to explore strategies for sustaining the natural environments and resources critical to military testing and training, such as establishing regional habitat and green space corridors.

The state designates the Florida Defense Alliance (FDA), an organization within Enterprise Florida, as the organization to ensure that Florida and its military installations maintain a

competitive positions as the United States continues the realignment and downsizing of missions. The FDA serves as an overall advisory body for Enterprise Florida defense-related activity.

The state legislature is also currently considering the Jordan Encroachment Bill, which would require local governments to adopt an ordinance that limits within five miles of the military installation future uses on the property which may be hazardous to aircraft operation or interfere with military operations or training.

Figure 7. Noise Contours, HARB

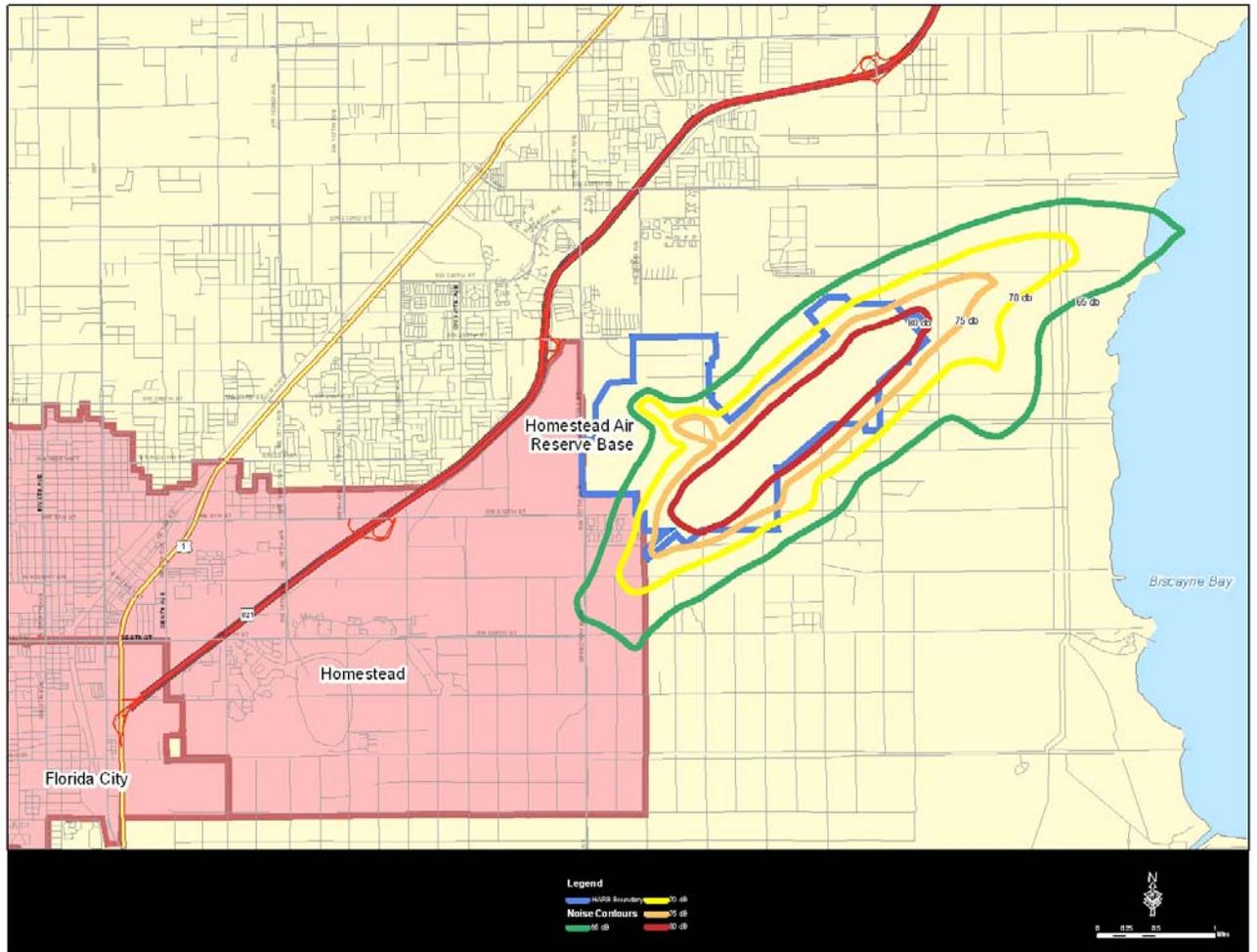


Figure 8. Clear Zones and Accident Potential Zones, HARB

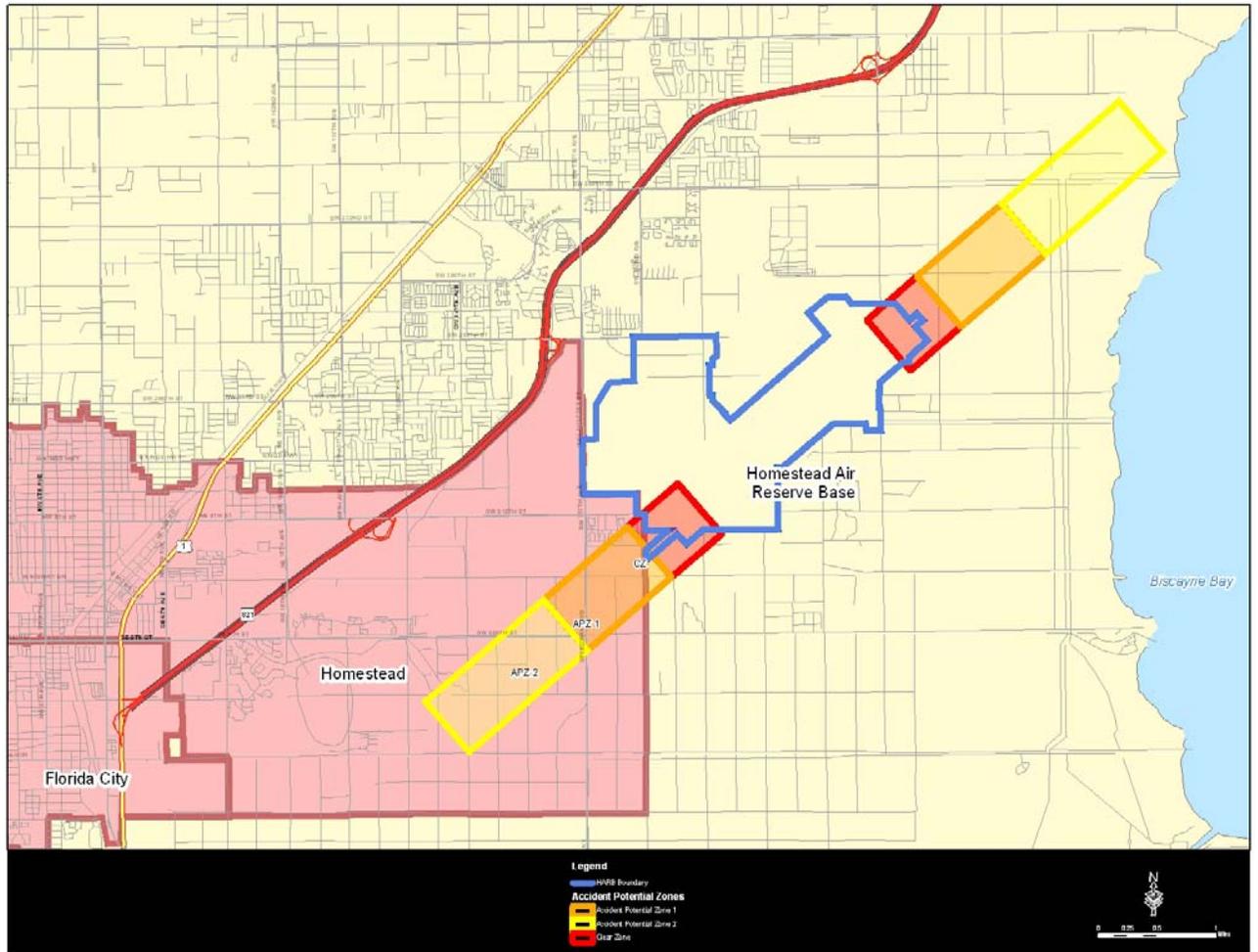


Figure 9. Existing Land Use

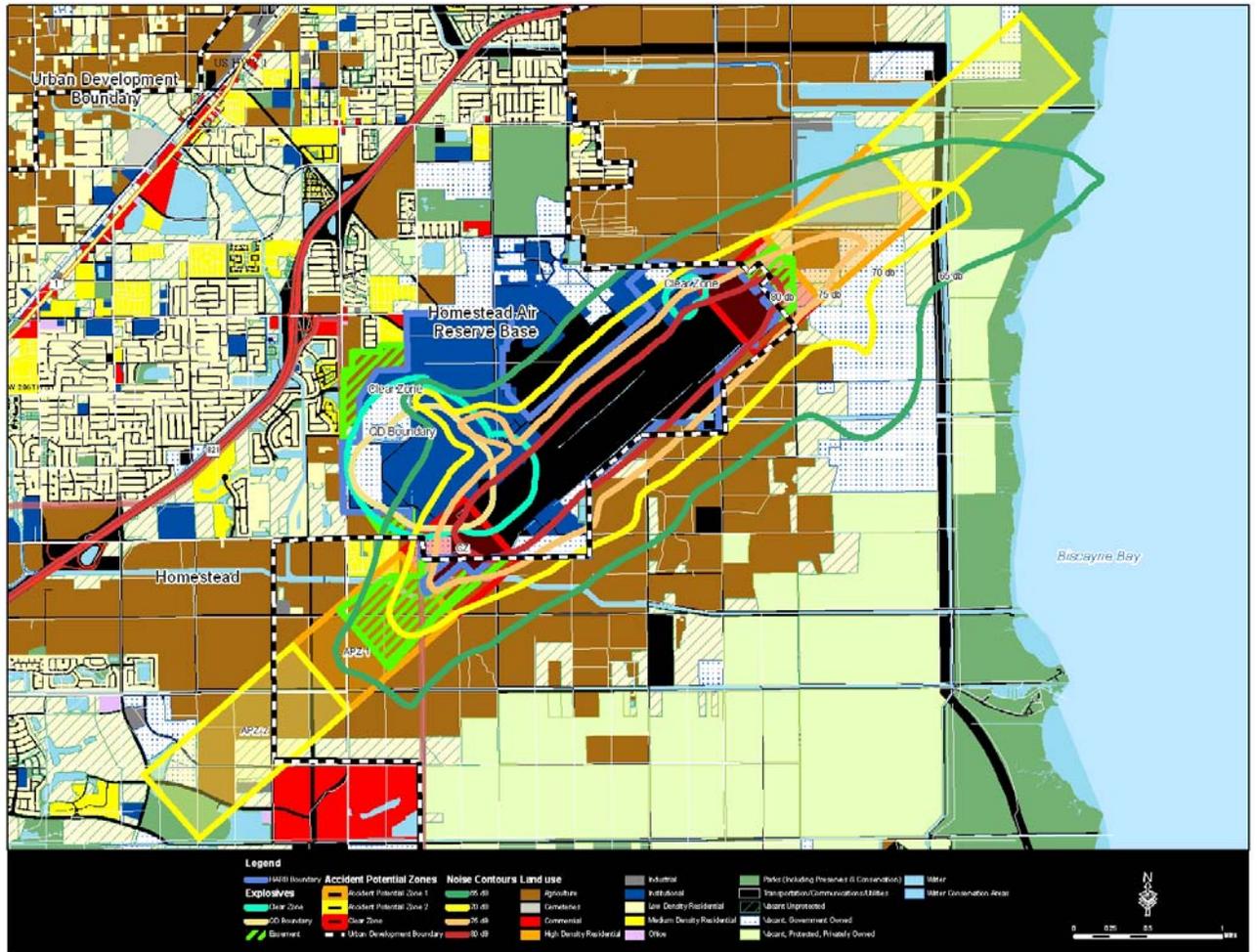


Figure 11. Future Land Use

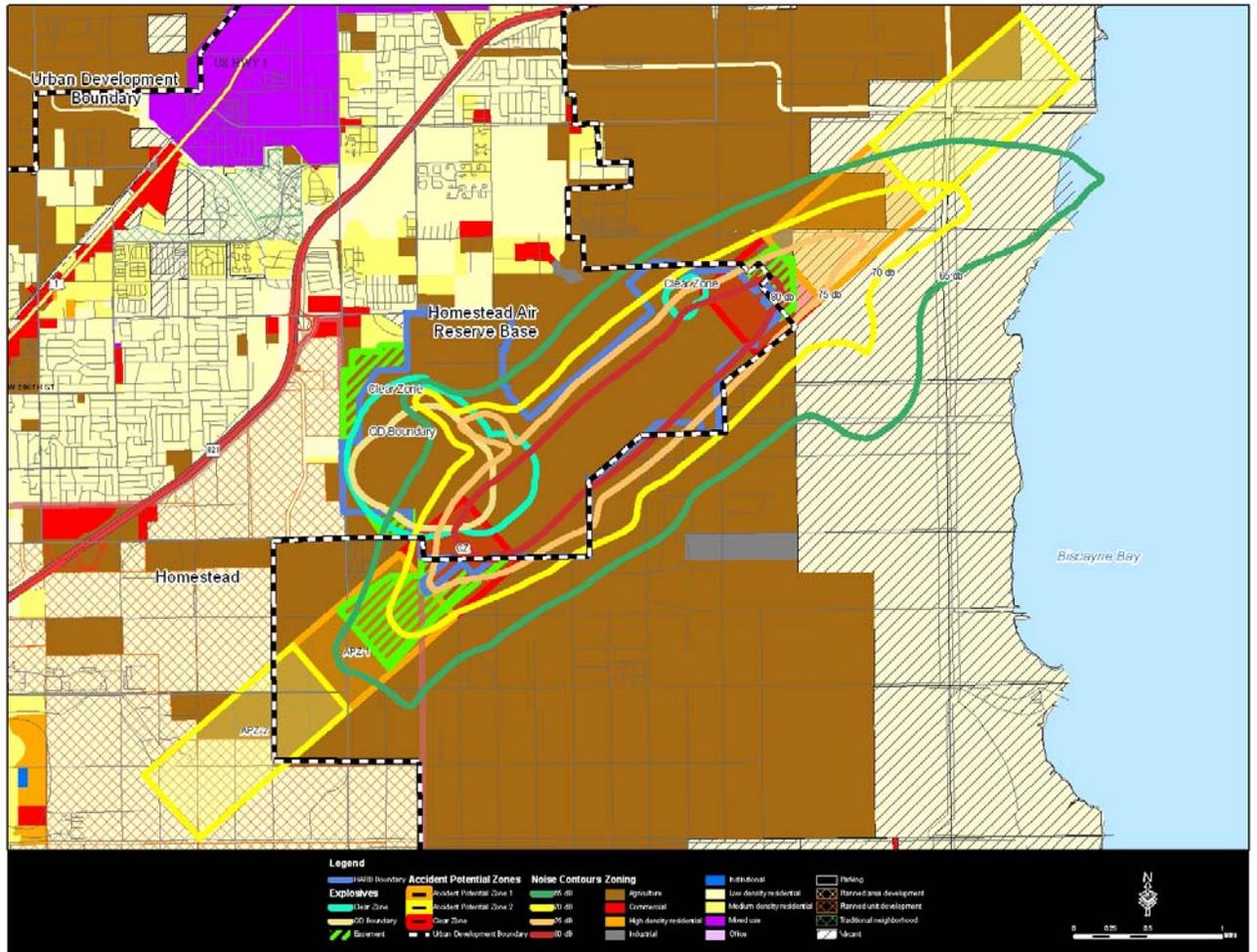


Figure 12. Existing Safety Easements

