



4. LAND USE ANALYSIS

4.1 Introduction

Land use planning and control is a dynamic, rather than a static, process. The specific characteristics of land use determinants will always reflect, to some degree, the changing conditions of the economic, social, and physical environment of a community, as well as changing public concern. The planning process accommodates this fluidity in that decisions are normally not based on boundary lines, but rather on more generalized area designations.

Computer technology enables Dyess AFB to more precisely display its flight tracks and noise zones for land use planning purposes. This same technology allows the installation a means to communicate the extent to which Dyess AFB's region of impact extends into the cities of Tye and Abilene and Taylor and Jones counties. Existing land uses have been classified into the following categories (see **Figure 4-1**):

- **Commercial:** Offices, retail, restaurants, businesses, and other types of commercial activity.
- **Industrial:** Areas and the facilities they contain that are owned or used for industrial purposes, such as manufacturing, warehousing, and other similar uses.
- **Open-Space/Low-Density:** Undeveloped land areas, forested land, agricultural land, grazing areas, water or wetland areas, and areas with residential activity at densities less than or equal to one dwelling per acre.
- **Public/Semi-Public:** Publicly owned lands or lands to which the public has access, such as public buildings or institutional facilities.
- **Recreational:** Land areas designated for recreational activity, including local parks; wilderness areas and reservations; conservation areas; and areas designated for trails, hikes, camping, and other similar uses.
- **Residential:** All types of residential activity, such as single and multi-family residences and mobile homes, at a density greater than one dwelling unit per acre.
- **Transportation:** Major transportation features including roads, freeways, interstates, and railroads.
- **Dyess AFB:** Area within the current Dyess AFB installation boundary.

4.2 Current Land Use

When Dyess AFB (then Tye Army Airfield) was built in 1942, it was constructed to the west of the existing Abilene city limits. After World War II, Abilene experienced growth that spread towards the boundary of Dyess AFB. The City of Tye, which is directly north of Runway 16/34, was created

Research on aircraft accident potential, noise, and land use compatibility is ongoing at a number of Federal and other agencies. These studies and all other compatibility guidelines must not be considered inflexible standards. They are the framework within which land use compatibility questions can be addressed and resolved.



in 1881. During World War II, the U.S. Army Air Corps established Tye Army Airfield, just south of the community. This airfield eventually became Dyess AFB in 1951. Tye incorporated in 1954 and its population grew from 521 in 1960 to 1,158 in 2000 (City of Tye 2004). The City of Tye is still a small community; therefore, the heaviest development surrounding Dyess AFB is to the east of the installation within the Abilene city limits.

The 2007 noise zones and APZs from aircraft operations at Dyess AFB are depicted on a land use map and are shown in **Figure 4-1**. The land use illustrated on this map consists of 2006 data provided by Taylor County, 2004 data provided by the City of Tye, and 2001 National Land Use Cover Data (NLCD). The NLCD was utilized for the areas of Taylor and Jones counties where no land use data existed in the Taylor County and City of Tye data.

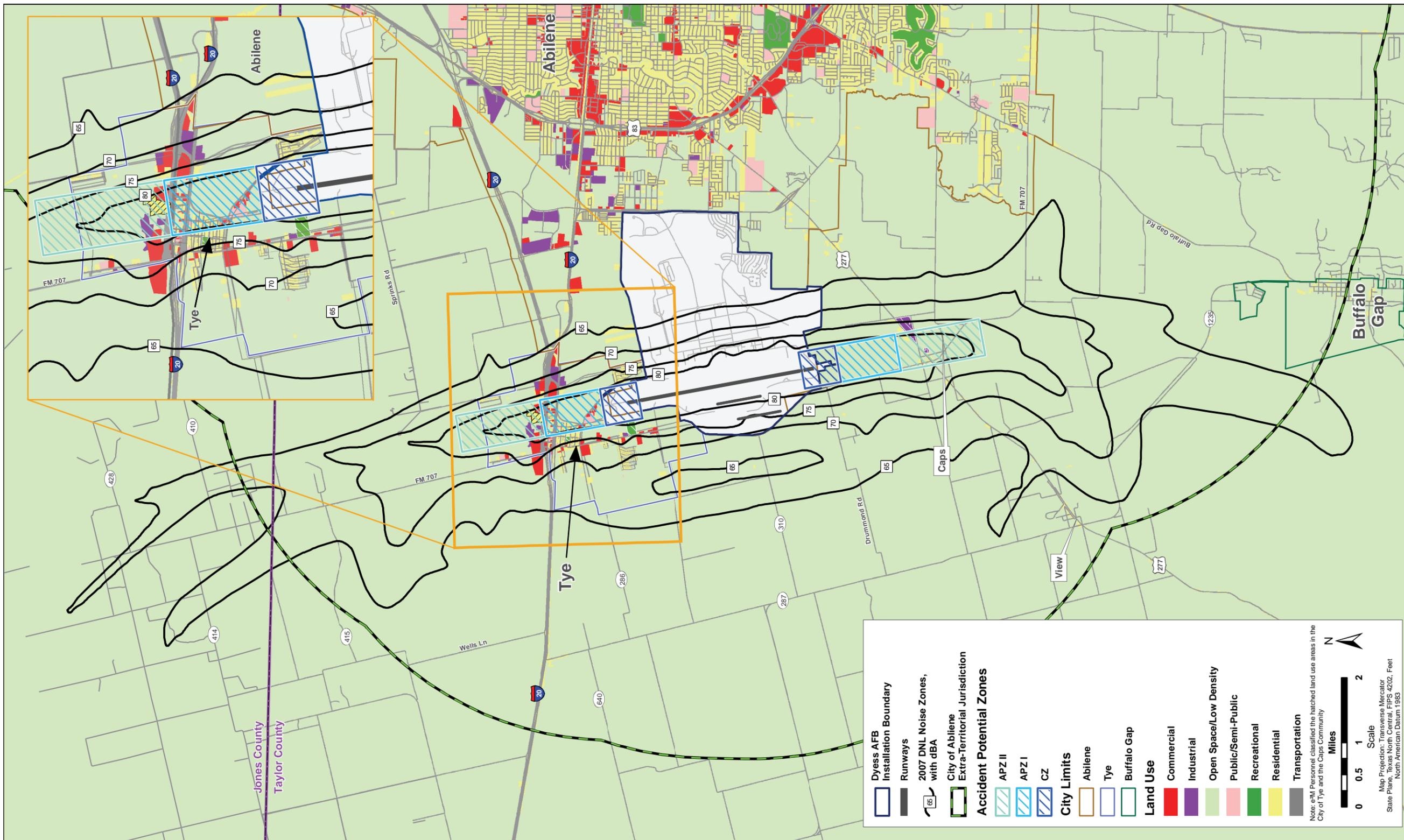
The majority of the land inside the 65–80+ dBA noise zones consists of open-space/low-density (see **Table 4-1**). The noise zones also encompass significant amounts of land used for transportation, as well as land within the installation boundaries. Smaller amounts of commercial, industrial, public/semi-public, recreational, and residential land use are also present within the 2007 noise zones.

There are 78 acres of residential land in the 65–69 dBA noise zone, 93 acres in the 70–74 dBA noise zone, 87 acres in the 75–79 dBA noise zone, and 70 acres in the 80+ dBA noise zone for a total of 328 acres of residential land inside the noise zones. In the 80+ dBA noise zone, Dyess AFB property constitutes almost half (49 percent) of the land, and open-space/low density constitutes approximately 42 percent of the land. The remaining 9 percent of land in the 80+ dBA noise zone consists of commercial, industrial, public/semi-public, recreational, residential, and transportation uses.

4.3 Current Zoning

The 2007 noise zones and APZs from aircraft operations at Dyess AFB are illustrated on a zoning map applicable to the area surrounding the installation, utilizing 2006 data from Taylor County (which includes the City of Abilene) and 2004 data from the City of Tye (see **Figure 4-2**). For the purposes of this Study, the City of Abilene agricultural zoning classification and the City of Tye agricultural/open-space zoning classification are shown as agricultural on **Figure 4-2**.

The majority of the area encompassed by the 2007 noise zones is in Taylor County. Outside of the city limits of Abilene and Tye this entire area is unzoned. The 65–69 dBA noise zone extends into southern Jones County, this area is also unzoned. The center of the city of Abilene is east of the installation; land is primarily zoned residential with commercial zoning along the major transportation routes. Land within Abilene city limits encompassed by the 65–69 dBA noise is primarily agricultural zoning with one parcel zoned industrial. The City of Tye is directly north of Runway 16/34 and the majority of the land within the city limits is zoned agricultural/open space. Land within the 2007 noise zones and APZs is also zoned for multiple types of residential, business, and industrial uses.



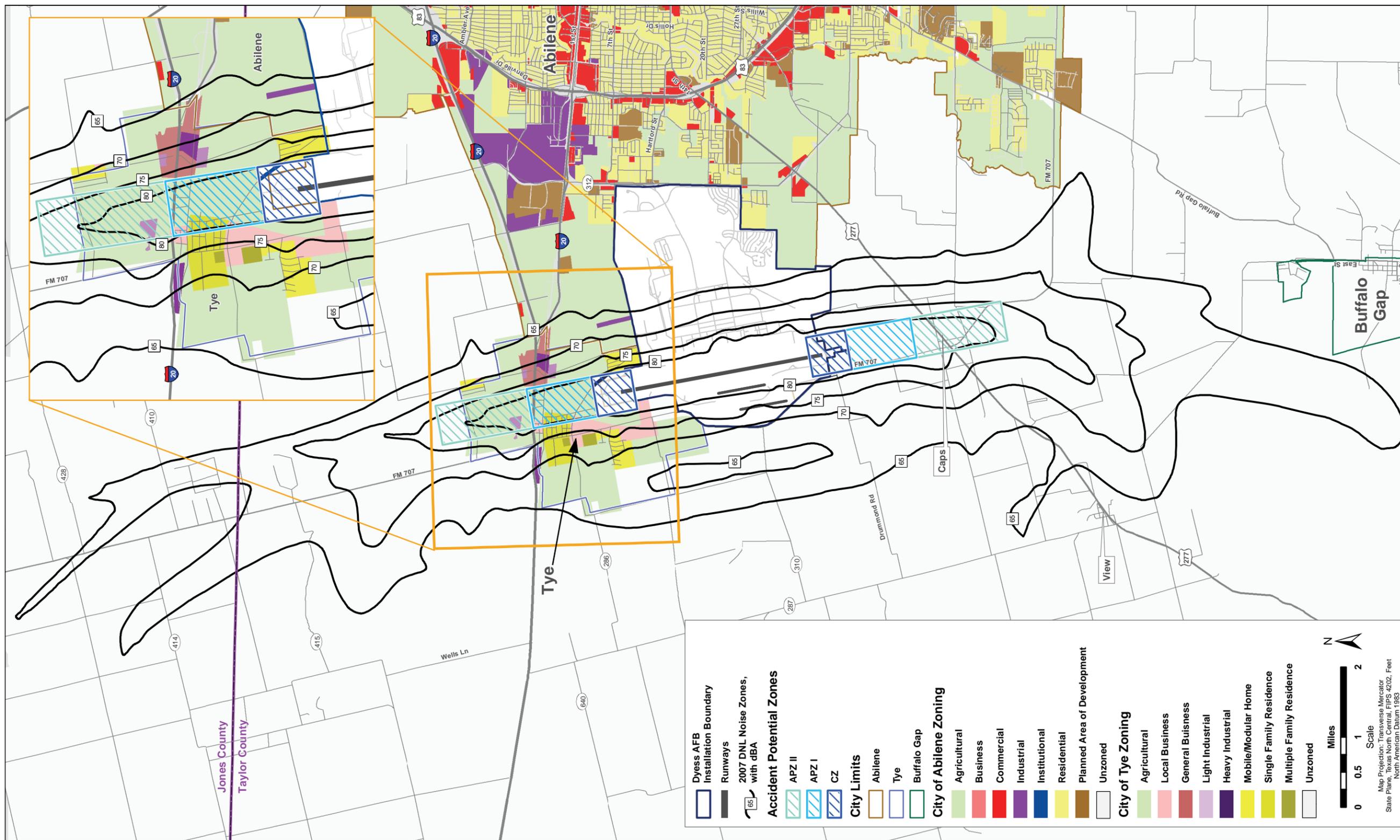
Source of Land Use: Taylor County 2006, City of Tye 2004, NLCD 2001, and Shipp 2008a

Figure 4-1. 2007 DNL Noise Zones and APZs on Land Use Map



Table 4-1. Land Use Acreage in Relation to 2007 Noise Zones

Noise Zone	Land Use Category	Acres
65–69 dBA	Dyess AFB	658
	Commercial	11
	Industrial	8
	Open-Space/Low-Density	14,239
	Residential	78
	Transportation	400
	<i>Subtotal</i>	<i>15,394</i>
70–74 dBA	Dyess AFB	589
	Commercial	80
	Industrial	31
	Open-Space/Low-Density	4,960
	Public/Semi-Public	4
	Residential	93
	Transportation	264
<i>Subtotal</i>	<i>6,021</i>	
75–79 dBA	Dyess AFB	536
	Commercial	59
	Industrial	25
	Open-Space/Low-Density	1,994
	Public/Semi-Public	5
	Recreational	17
	Residential	87
	Transportation	166
<i>Subtotal</i>	<i>2,889</i>	
80+ dBA	Dyess AFB	1,456
	Commercial	31
	Industrial	26
	Open-Space/Low-Density	1,238
	Public/Semi-Public	13
	Recreational	5
	Residential	70
	Transportation	135
<i>Subtotal</i>	<i>2,974</i>	
Total		27,278



Source of Zoning: Taylor County 2006 and City of Tye 2004

Figure 4-2. 2007 DNL Noise Zones and APZs on Zoning Map



4.4 Land Use and Zoning by County and City

The following sections describe the current land use and zoning that apply to the Dyess AFB area by county and city, which includes Taylor and Jones counties and the cities of Abilene and Tye. In the following sections, a discussion of relevant county or city land use planning documents precedes the discussion of the current and future land use of that county or city. Planning information is presented first to show the policies that guide the development of the county or city. The same approach is applied to zoning, with the zoning policies (such as a zoning ordinance) presented first, followed by a discussion of the current zoning applicable to the county or city.

4.4.1 Taylor County

Land Use. Taylor County does not have land use regulations. As shown in **Figure 4-1** the majority of the land encompassed by the 2007 noise zones is in Taylor County. Land use to the north and west of the installation consists primarily of open-space/low-density with the exception of the City of Tye, which is directly north of Runway 16/34. Land northeast of the installation, outside the city limits of Tye and Abilene, consists primarily of open-space/low-density use with a few residential parcels.

The Caps community in Taylor County is approximately 1.5 miles south of the installation boundary at the intersection of U.S. Highway 277 and Farm to Market 707. U.S. Highway 277 has attracted a small amount of development along its route through the 2007 noise zones and APZ II. Land use in the Caps community consists primarily of open-space/low-density, but there are small amounts of residential land around the intersection and industrial land south of U.S. Highway 277.

Zoning. Taylor County (including the Caps community) currently has no zoning authority; therefore as shown in **Figure 4-2**, the area outside the cities of Tye and Abilene is unzoned.

4.4.2 Jones County

Land Use. Portions of the 65–69 dBA noise zone extend north into Jones County. Jones County does not have land use regulations. As shown on **Figure 4-1**, land in the 65–69 dBA noise zone within Jones County consists entirely of open-space/low-density use.

Zoning. Jones County does not have a zoning authority; therefore as shown on **Figure 4-2**, the area where the 65–69 dBA noise zone is present in Jones County is unzoned.



4.4.3 City of Abilene

Land Use. The City of Abilene's land use policies are discussed in their Comprehensive Plan published in 2004 (City of Abilene 2004). The purpose of the Comprehensive Plan is to establish a coordinated set of policies to guide Abilene's physical development over the next 10 to 15 years. The City of Abilene recognizes Dyess AFB as a significant asset to the local economy and is committed to promoting policies that will enable Dyess AFB to meet current and future mission requirements. Abilene considers an open line of communication with Dyess AFB a priority at all times (City of Abilene 2004).

The City of Abilene established an extra-territorial jurisdiction in 1988 that extends outside the existing Abilene city limits. According to the city's subdivision ordinance (Bryner 2008a) the City of Abilene's current extra-territorial jurisdiction (approved in 2001) is defined as that contiguous unincorporated area not part of any other city within 5 miles of the corporate limits of the City of Abilene. Exceptions to the City of Abilene's extra-territorial jurisdiction exist on the west and south sides of the City of Abilene where the Cities of Tye and Buffalo Gap and their respective extra-territorial jurisdictions are located within 5 miles of the City of Abilene (Bryner 2008a).

The extra-territorial jurisdiction gives the City of Abilene limited authority to plan for future growth in areas outside of the current city limits (Bryner 2008a). For the purposes of land use, within this extra territory the City of Abilene is given jurisdiction regarding platting, subdividing, and annexation of land (Bryner 2008a). In addition, the design of infrastructure associated with the act of subdividing must comply with standards approved for the City of Abilene.

One of the strategies in the *City of Abilene Comprehensive Plan* states that the City of Abilene should pursue intergovernmental agreements related to the city's extra-territorial jurisdiction with Taylor, Callahan, Jones, and Shackelford counties in order to (City of Abilene 2004):

- Direct the development of urban-intense uses within the city where a full range of existing services are available.
- Revise infrastructure requirements for development within the extra-territorial jurisdiction that are consistent with city standards.

In addition to the City of Abilene extra-territorial jurisdiction, the city is in the process of approving the annexation of land to the south and east of Abilene Regional Airport as a means for controlling incompatible encroachment (Bryner 2008b and City of Abilene 2004). The future annexation of land to the south and west of Dyess AFB is also provided in the city's 2004 comprehensive plan. However, due to the recently modified airport zoning ordinance that provides control measures to limit incompatible encroachment around Dyess AFB, the city is not pursuing annexing these areas at this time (Bryner 2008b).

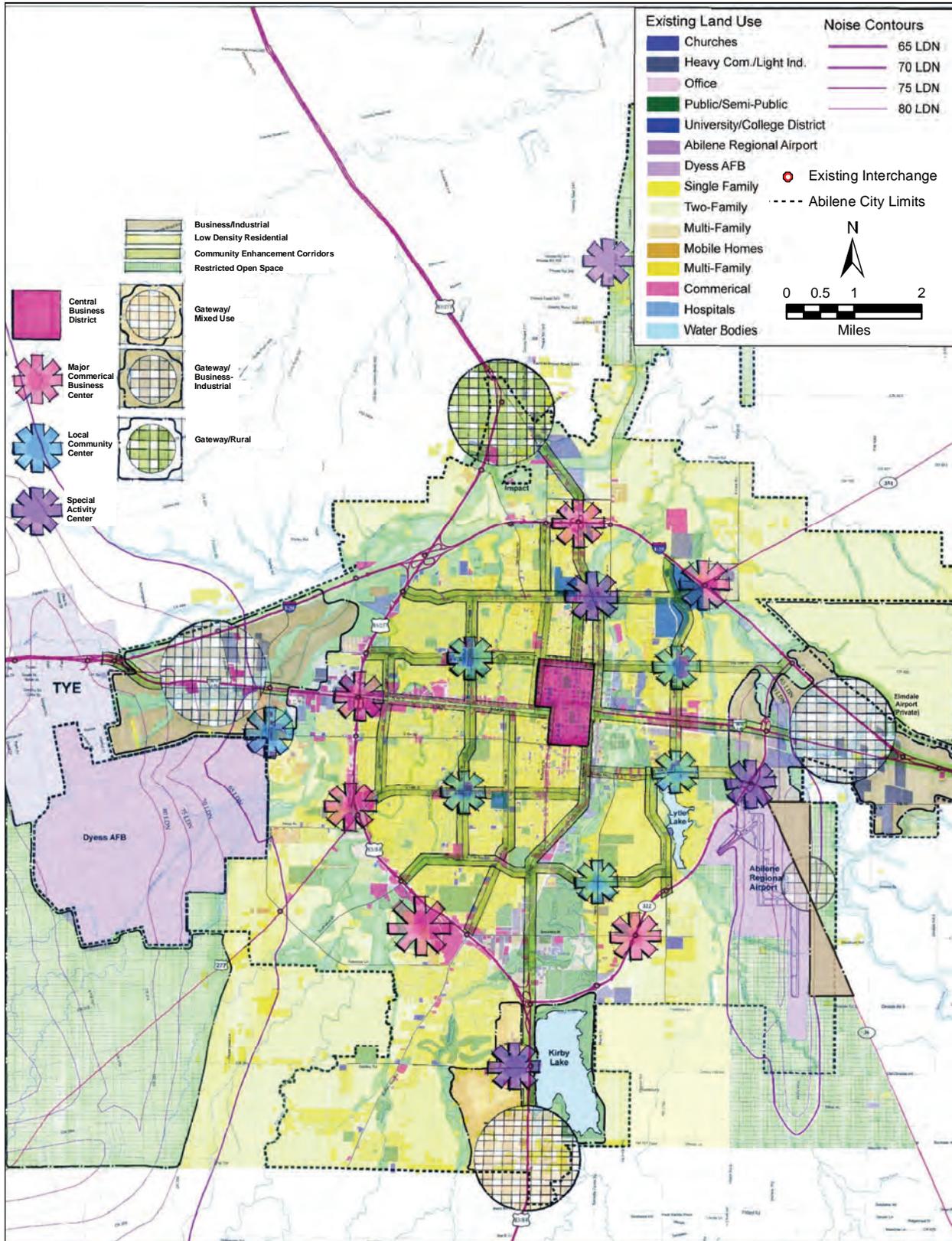


As shown on **Figure 4-1** land within the Abilene city limits encompassed by the 2007 noise zones is present north of the installation and consists of open-space/low-density and residential use. A variety of land uses are present east of Dyess AFB and the 2007 noise zones and include residential, public/semi-public, commercial, industrial, and recreational. The western and southwestern limits of the City of Abilene are adjacent to the 65–69 dBA noise zone in several areas. Land use in these areas currently consists of open-space/low-density with small parcels of residential land.

The *City of Abilene Comprehensive Plan* provides a future land use plan (see **Figure 4-3**). At the center of the city is the central business district. Under the proposed plan, there would be five local community centers and a special activity center surrounding the central business district. Local community centers would include a mix of shopping, employment, entertainment, and civic uses for the surrounding neighborhoods. Special activity centers would provide locations for unique attractions or activities serving local, regional, and statewide needs. Along the main loop of roadways that surround the city center, there would be six major commercial business centers and two special activity centers. A local community center is planned on the northeastern corner of the installation boundary (City of Abilene 2004).

The hypothetical noise zones presented in the 2000 AICUZ Study are shown in the *City of Abilene Comprehensive Plan* (see **Figure 4-3**). Some of the future land uses surrounding Dyess AFB are based on the boundaries created by these noise zones. South of the installation, restricted open-space is planned to prevent encroachment from incompatible land uses. Low-density residential land use is proposed southeast of the installation, this type of development would continue east into the City of Abilene. This proposed residential land use is not encompassed by the 2007 noise zones. A Gateway/Business-Industrial area is proposed northeast of the installation; only a very small portion of the western side of this proposed land use would be within the 2007 noise zones. Potential developers should adhere to the regulations in the *City of Abilene Zoning Ordinance* titled “Airport Zoning” (Chapter 23, Article III, Section 23-319) regarding proposed structures in the vicinity of Dyess AFB.

During the planning process of the *City of Abilene Comprehensive Plan*, the residents of Abilene stressed the importance of ensuring that land use and development decisions protect and support the continued success of Dyess AFB. Due to the fact that Dyess AFB is surrounded by the cities of Abilene and Tye and Taylor and Jones counties, the citizens of Abilene recognize that protecting Dyess AFB as a community asset will require close intergovernmental cooperation to ensure that decisions made by one entity do not compromise the goals of another entity. The City of Abilene’s *Comprehensive Plan* provides a series of strategies to ensure this type of intergovernmental cooperation is successful. If the strategies outlined in the Plan are implemented, encroachment around Dyess AFB should be avoided.



Source: City of Abilene 2004

Figure 4-3. Planned Future Land Use and Development for the City of Abilene



Zoning. Zoning regulations for the City of Abilene are provided in the city's zoning ordinance that was most recently updated in May 2007 (City of Abilene 2007). The purpose of the zoning ordinance is to divide the city into separate districts that, in combination with regulations pertaining to such districts, are designed to comply with the city's Comprehensive Plan. The ordinance contains 20 zoning districts and four overlay zones. Each of the four overlay zones provides a specific purpose in accordance with the city's Comprehensive Plan.

In April 2008, the *City of Abilene Zoning Ordinance* was modified to include additional regulations pertaining to airport zoning. The purpose of the new regulations, found in Chapter 23, Article III, Section 23-319 Airport Zoning, was to establish regulations limiting the height of structures, natural growth, and potential obstructions, as well as to establish compatible land uses and noise attenuation standards, for the areas surrounding Dyess AFB and Abilene Regional Airport. The airport zoning regulations apply to the corporate limits and unincorporated areas within the extra-territorial jurisdiction of the City of Abilene, as well as Airport Hazard Areas in and surrounding Dyess AFB and Abilene Regional Airport. An Airport Hazard Area is defined as "an area of land or water on which an airport hazard could exist" (City of Abilene 2008). Please see Section 23-319 of the zoning ordinance for the full definition of an airport hazard. Section 319.7 of the ordinance established a procedure for acquiring an Airport Zone Development Permit, which is now required for any development, construction, reconstruction, modification, repair, remodeling, or change in use within an area regulated by Section 23-219. The ordinance also provides an enforcement mechanism for the City of Abilene in the areas around the airports, both within and outside the extra-territorial jurisdiction. The exception to the City's enforcement will be any incorporated areas.

Dyess AFB is not within a zoning district in the city's zoning ordinance; Dyess AFB is its own entity. The *City of Abilene Comprehensive Plan* places Dyess AFB in a sensitive development area called the Airport Influence Zone (AIZ). The AIZ is not specifically discussed in the Comprehensive Plan; however it is shown on the Sensitive Development Areas Map presented as pages 80–81 of the Plan. The Sensitive Development Areas Map shows two AIZs in the Abilene extra-territorial jurisdiction. The boundary of the eastern AIZ matches the noise zones for Abilene Regional Airport, and the boundary of the western AIZ matches the hypothetical noise zones for Dyess AFB presented in the 2000 AICUZ Study. One of the priorities in the Comprehensive Plan is to "avoid potential hazard situations/areas, including areas delineated in the Sensitive Development Areas Map" (City of Abilene 2004).

Zoning in the City of Abilene is depicted on **Figure 4-2**. The center of the city consists primarily of residential zones with industrial and commercial zones along transportation routes and business zones in the downtown area. Towards the outskirts of the city, zoning consists mostly of agricultural, industrial, and planned areas of development. Planned areas of development might encompass industrial parks, office or other commercial centers, shopping centers, residential developments of multiple or mixed housing, or



any appropriate combination thereof. Land within the Abilene city limits, within the 65–74 dBA noise zones, is zoned agricultural with a parcel of industrial zoning in the 65–69 dBA noise zone. Most of the land adjacent to the 65–69 dBA noise zone northeast of the installation is zoned agricultural with residential, commercial, and planned area of development to the east.

4.4.4 City of Tye

Land Use. The City of Tye’s land use policies are discussed in their General Plan Report published in 2004 (City of Tye 2004). The planning districts apply to the Tye city limits and the Tye extra-territorial jurisdiction. The City of Tye extra-territorial jurisdiction encompasses land 1/2 mile outside of the city limits. The Tye extra-territorial jurisdiction and Abilene extra-territorial jurisdiction are in close proximity to each another, as is the Dyess AFB installation boundary. Jurisdictional control in some areas of the Tye extra-territorial jurisdiction overlaps with the Abilene extra-territorial jurisdiction; therefore, a shared oversight to development between the City of Tye and the City of Abilene is necessary for these areas. The City of Tye contains eight planning districts and the extra-territorial jurisdiction has two additional districts.

The City of Tye is north of Runway 16/34 (as shown on the insert in **Figure 4–1**) and the majority (77 percent) of the land within the city limits consists of open-space/low-density use. There are two residential areas to the west and northeast of Runway 16/34. Both of these areas are outside of the APZs and within the 65–75 dBA noise zones. The large residential area northwest of Runway 16/34 is interspersed with recreational and public/semi-public land use and is within APZ I and the 70–80+ dBA noise zones. A residential area directly east of the CZ is within the 70–80+ dBA noise zones. A recreational vehicle park that is considered a residential land use is directly north of Interstate 20 within the 75–80+ dBA noise zones and APZ II. Rister Park, a recreational land use, is directly west of the northern CZ. The majority of housing within the City of Tye consists of mobile/modular homes.

The northern CZ is entirely within the installation boundaries with the exception of Air Base Road, which traverses the northeastern corner of the CZ. Land in the northern APZ I consists primarily of open-space/low-density use but also contains residential, commercial, and public/semi-public use. Land in the northern APZ II also consists primarily of open-space/low-density use but includes large commercial and industrial parcels.

The *City of Tye, Texas General Plan Report 2004-2020* recognizes the importance of Dyess AFB and the Dyess AFB AICUZ area as a growth development restraint (City of Tye 2004). The city is aware that older established neighborhoods are already located in, or in close proximity to, the APZs. The city has no practical solution for these areas other than community awareness; however, the Plan specifies that the APZs should be avoided for new major housing development. Since the majority of the City of Tye is inside of the 65–80+ noise zones, the city should ensure that new

The City of Tye General Plan Report states that the AICUZ Study “is most significant in the future growth of Tye, as it will provide certain guidelines for determining the direction and intensity of urban growth” (City of Tye 2004a).



construction of noise-sensitive facilities will be built with the incorporation of NLR measures.

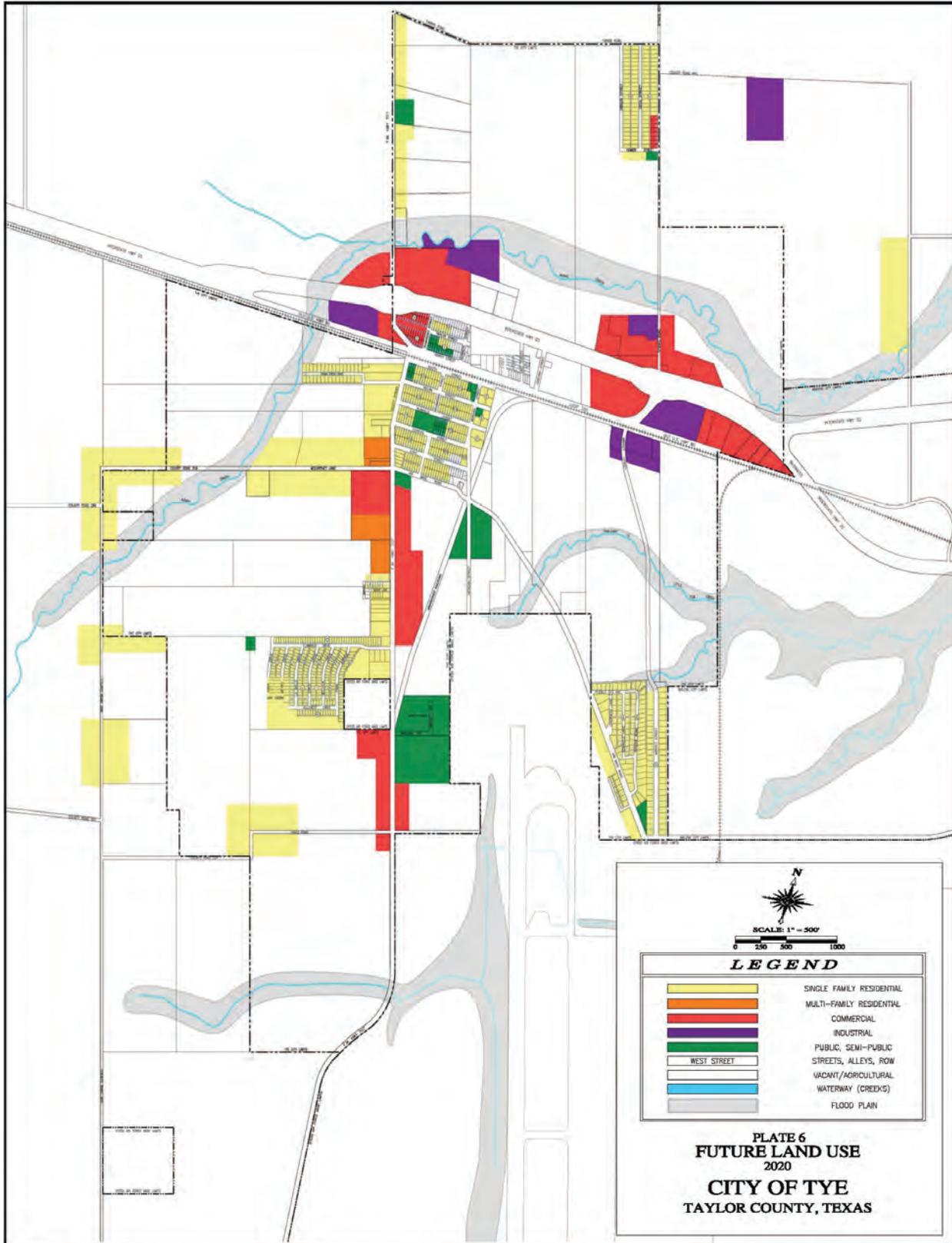
The City of Tye General Plan Report provides a plan for future land use through 2020 (see **Figure 4-4**). Two major considerations were examined when the City of Tye projected their future land use. One was the identification of areas where potential growth might occur because of community need, existing trends, and the availability of community facilities. The second consideration was identifying areas in which growth should be restricted or mitigated due to physical limitations. The AICUZ Program area (noise zones and APZs) would fall under the second consideration. The city plans to establish a written procedure that will include an extra-territorial jurisdiction agreement with the City of Abilene and a development review process with Dyess AFB (City of Tye 2004). This written procedure should help to prevent any future incompatible development.

Population projections for the city indicate modest growth; the city anticipates that new housing will be multi-family units and apartments (City of Tye 2004). The Plan stipulates that new construction should utilize vacant tracts within the city where utilities are available and that areas that are incompatible with AICUZ recommendations should be avoided.

As shown on **Figure 4-4**, the residential areas northwest, northeast, and east of Runway 16/34 do not change under the future land use plan. The residential area west of Runway 16/34 expands slightly to the north and south and new residential parcels are proposed west of Runway 16/34.

Residential land use is conditionally compatible within the 65–69 dBA or 70–74 dBA noise zones and is incompatible if it is within the 75–79 dBA or 80+ dBA noise zones. Therefore, current and proposed portions of the western, northwestern, and eastern residential areas within the City of Tye are considered incompatible uses under AICUZ guidelines. The proposed residential parcels west of Runway 16/34 would be considered conditionally compatible since they would be constructed within the 65–69 dBA and 70–74 dBA noise zones. Rister Park, which is listed as a public/semi-public land use under the Tye General Plan Report, is west of the CZ and would expand to the south. This would almost double the size of the park. Land in the eastern portion of the park would continue to be considered an incompatible use since it is within the 80+ dBA noise zone, while the western portion would continue to be considered a conditionally compatible use since it is in the 75–79 dBA noise zone.

In APZ I and II, the General Plan Report proposes to convert several existing large industrial and commercial parcels, along with some small residential lots, to vacant/agricultural use. This would alleviate some of the compatibility issues associated with the APZs. However, there is public/semi-public land in the northern APZ I (which is also within the 80+ dBA noise zone) that is considered an incompatible use. This parcel would expand within APZ I.



Source: City of Tye 2004

Figure 4-4. Planned Future Land Use for the City of Tye



The City of Tye General Plan Report proposes to change some of the land use within the city limits that is conditionally compatible or incompatible in the 2007 AICUZ noise zones. However, there are other areas with conditionally compatible or incompatible uses that are projected to grow. The City of Tye should monitor development in these areas to ensure that future land use changes do not promote incompatible development around Dyess AFB or prevent the safe accomplishment of the Dyess mission.

Zoning. Zoning regulations for the City of Tye are provided in the city's zoning ordinance published in 2006 (City of Tye 2006). The City of Tye is divided into eight zoning districts: agricultural/open space, single family residence, multi-family residence, mobile/modular home, local business, general business, light industrial, and heavy industrial. Dyess AFB is outside of Tye's city limits and is therefore not included in their zoning regulations. The City of Tye zoning ordinance provides permitted uses and height restrictions within each zoning district.

As shown on the insert in **Figure 4-2**, the majority (77 percent) of the land within the city limits is zoned as agricultural/open space. Three mobile/modular home districts are west, northeast, and east of Runway 16/34, and each district spans multiple noise zones. A single family residence district is northwest of Runway 16/34 within APZ I and the 65–80+ dBA noise zones. Most of the land in APZ I is zoned agricultural/open-space but contains portions of land zoned for single family residence and local business. Land in APZ II is also zoned primarily for agricultural/open space but contains land zoned for light industrial use. Some of the parcels in the 80+ dBA noise zone and APZ I and APZ II are zoned for agricultural/open-space use but are used for commercial purposes (see **Figure 4-1**).

4.5 Incompatible Land Uses

As discussed in paragraph 3.4, the USAF has established recommended land use guidelines for the AICUZ environs. To determine land use compatibility, the type of land use is compared to the USAF recommended guidelines in relation to APZs and noise zones (see **Table 3-2**). Land uses are defined as compatible, conditionally compatible, or incompatible. Compatible refers to those land uses and related structures that are recommended within the AICUZ environs without restriction. Incompatible refers to those land uses and related structures that are not recommended within the AICUZ environs and should be prohibited. Conditionally compatible refers to land uses and related structures that are generally recommended within the AICUZ environs, with certain restrictions. Restrictions can include limits on densities of people and structures, requirements that NLR measures be incorporated into the design and construction of structures, or the restriction that personnel should wear hearing protection devices. Please see the key and notes for **Table 3-2** for all the limitations on land use compatibility.



4.5.1 Noise Zones

The compatibility status of existing land use in the vicinity of Dyess AFB in relation to the 2007 noise zones is shown in **Figure 4-5**. This land use compatibility was developed by taking the land use categories presented in **Figure 4-1**, choosing the respective land use classifications from **Table 3-2**, and applying the recommended land use compatibility. DOD and other Federal agencies, such as HUD and Federal Housing Authority, use a DNL of 65 dBA as a land use planning threshold. **Table 4-2** summarizes the acres associated with various land use compatibilities within the noise zones evaluated. The compatibility analysis resulted in no incompatible land uses within the 65–69 dBA and 70–74 dBA noise zones; however there are incompatible land uses in the 75–79 dBA and 80+ dBA noise zones. Conditionally compatible land use exists in every noise zone.

The vast majority of the land within the 2007 noise zones consists of open-space/low-density use, which is compatible in every noise zone. As shown on **Figure 4-1**, there are four main residential housing areas within the City of Tye that are west, northwest, northeast, and east of Runway 16/34. The residential land use north of Interstate 20 within the 75–80+ dBA noise zones and APZ II is a recreational vehicle park. As shown in **Table 3-2** (SLUCM number 11 through 16) residential land in the 65–69 dBA and 70–74 dBA noise zones is a use that is “generally compatible with noise level reduction measures; however measures to achieve an overall noise level reduction do not necessarily solve noise difficulties and additional evaluation is warranted.” Therefore, as discussed in **Section 4.5**, this restriction makes residential land use conditionally compatible in these noise zones. Residential land within the 75–79 dBA and 80+ dBA noise zones is a use that is not compatible and should be prohibited. Therefore, portions of the western, northwestern, and eastern residential areas within the City of Tye are incompatible uses under AICUZ guidelines. The northeastern residential area is conditionally compatible because it is completely within the 65–74 dBA noise zones.

In addition to the residential areas in the City of Tye, conditionally compatible land in the 65–69 dBA noise zone consists of residential use in the Caps community (shown in the inserts in **Figure 4-5**), along with two residential parcels northeast of the installation within the Abilene city limits. The conditionally compatible land in the 70–74 dBA noise zone consists of residential and industrial use in the City of Tye and the Caps community, as well as public/semi-public and commercial use in the City of Tye. The conditionally compatible land in the 75–79 dBA noise zone consists of industrial use in the Caps community and the City of Tye, as well as commercial, public/semi-public, and recreational use in the City of Tye.

Incompatible land in the 75–79 dBA noise zone consists of residential and recreational use in the City of Tye. Conditionally compatible land in the 80+ dBA noise zone consists of industrial use in the Caps community and the City of Tye. Incompatible land uses in the 80+ dBA noise zone include residential use in the Caps community and the City of Tye as well as public/semi-public, commercial, and recreational land in the City of Tye.



Table 4-2. Land Use Compatibility Status in Relation to 2007 Noise Zones Based on USAF Recommended Land Use Compatibility Guidelines

Noise Zone	USAF Recommended Land Use Compatibility Status	Acres
65–69 dBA	Dyess AFB	658
	Compatible	14,658
	Conditionally Compatible (residential)	78
	Incompatible	0
	<i>Subtotal</i>	<i>15,394</i>
70–74 dBA	Dyess AFB	589
	Compatible	5,224
	Conditionally Compatible (residential, public/semi-public, industrial, and commercial)	208
	Incompatible	0
	<i>Subtotal</i>	<i>6,021</i>
75–79 dBA	Dyess AFB	536
	Compatible	2,160
	Conditionally Compatible (industrial, commercial, public/semi-public, and recreational)	92
	Incompatible (residential and recreational)	101
	<i>Subtotal</i>	<i>2,889</i>
80+ dBA	Dyess AFB	1,456
	Compatible	1,373
	Conditionally Compatible (industrial)	26
	Incompatible (residential, public/semi-public, commercial, and recreational)	119
	<i>Subtotal</i>	<i>2,974</i>
Total		27,278

Recreational vehicle parking qualifies as residential transient lodging (SLUCM number 15 in **Table 3-2**); therefore the recreational vehicle park in the City of Tye, in the 75–80+ dBA noise zones, is considered incompatible.

Rister Park, which is a recreational land use, is directly west of the northern CZ in the City of Tye. As shown in **Table 3-2** (SLUCM number 76), park land is an incompatible use in the 75–79 dBA and 80+ dBA noise zones. Therefore, Rister Park is considered an incompatible land use because it is within the 75–80+ dBA noise zones. Additional details of the methodologies used to produce the noise zones are presented in **Appendix A**.



4.5.2 Accident Potential Zones

The same methodology as described in **Section 4.5.1** was applied to land use compatibility within the Dyess AFB APZs. APZs are made up of three zones: CZs, APZ I, and APZ II. Each CZ encompasses an area 3,000 feet wide by 3,000 feet long, APZ I is 3,000 feet wide by 5,000 feet long, and APZ II is 3,000 feet wide by 7,000 feet long (see **Appendix B**).

Table 4-3 summarizes land use compatibility status in relation to the APZs, as shown in **Figure 4-6**. The vast majority of the land within the APZs consists of open-space/low-density, which is compatible in every APZ. The northern CZ is within the installation boundaries, with the exception of Air Base Road. Roads are compatible in CZs as long as they are two lanes (or less) and have no sidewalks; therefore, the Air Base Road in the northern CZ is considered a compatible use.

As shown on **Table 3-2** (SLUCM 11 through 16) residential land is considered an incompatible use in APZ I. Therefore, the residential land in the northern APZ I, shown in **Figure 4-6**, is considered incompatible. The public/semi-public and commercial land in the northern APZ I is also considered conditionally compatible. Land in the northern APZ II consists of residential, commercial, and industrial uses, which are considered conditionally compatible. The residential land that is considered conditionally compatible in northern APZ II includes a recreational vehicle park. Residential land in APZ II is compatible with a maximum density of 1 to 2 dwellings per acre.

Approximately half of the land in the southern CZ is within the installation boundaries; the remaining land consists of open-space/low-density, which is compatible in a CZ. All of the land in the southern APZ I and the majority of the land in the southern APZ II consists of open-space/low-density, which is compatible. Residential and industrial lands within southern APZ II (in the Caps community) are considered conditionally compatible uses.

The majority of the land in the LZ APZs (as discussed in **Section 3.3** and shown in **Figure 3-8**) is within the installation boundary. A small portion of land in the southern APZ for Runway 16b/34b (paved LZ) extends outside the installation boundary. Land use in this area consists of open-space/low-density, which is compatible in all AICUZ environs.

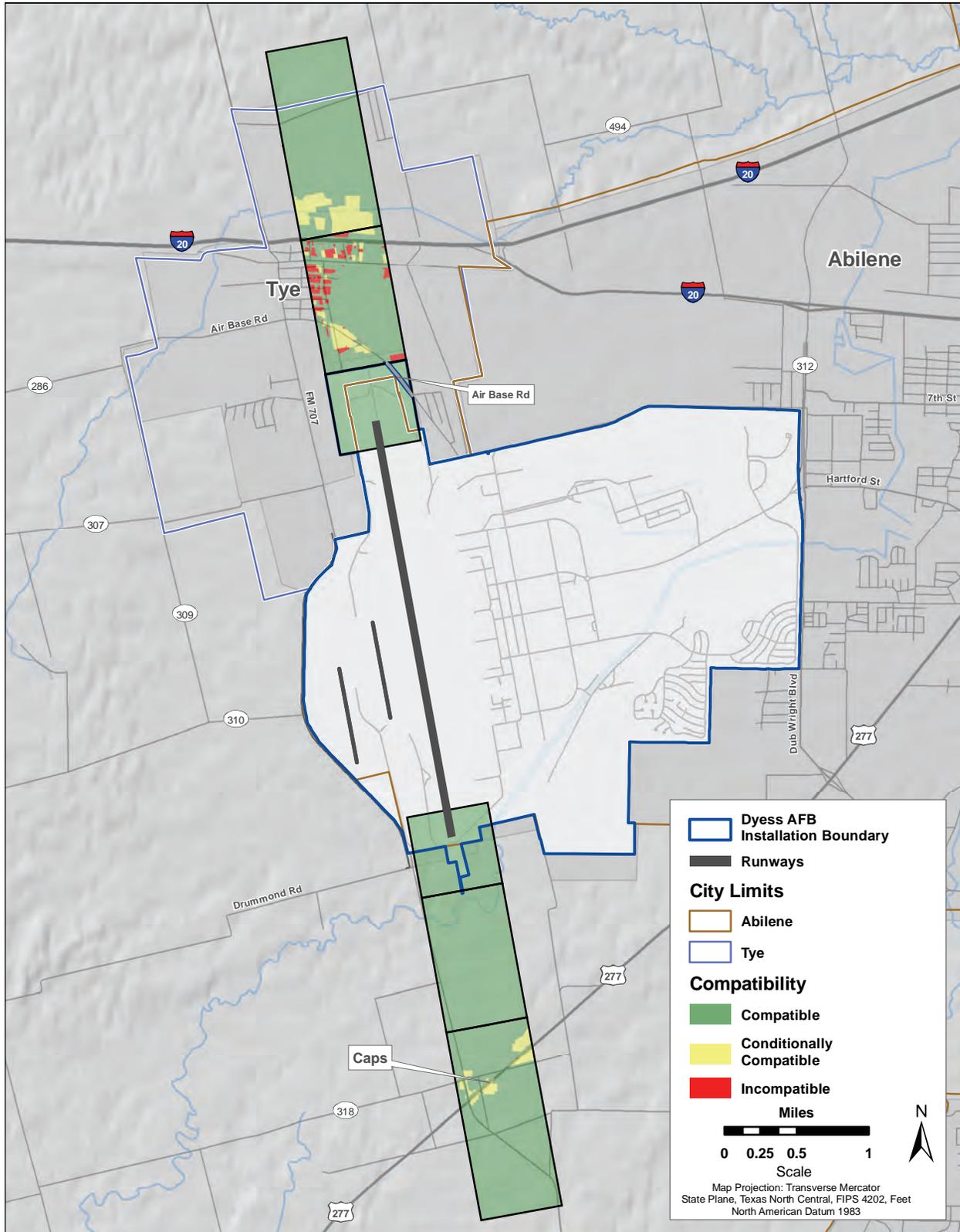
4.5.3 Overall Land Use Compatibility within the Noise Zones and APZs

Land that is within the Dyess AFB 65–80+ dBA noise zones and within the APZs was evaluated to determine the combined land use compatibility. For example, a single family home would be considered a conditionally compatible use within the 70–74 dBA noise zone. Within APZ I, a single family home represents an incompatible use. Therefore, if a single family home was within both the 70–74 dBA noise zone and APZ I, it would represent an incompatible use.



Table 4-3. Land Use Compatibility Status in Relation to APZs based on USAF Recommended Land Use Compatibility Guidelines

APZ	USAF Recommended Land Use Compatibility Status	Acres
North End		
CZ	Dyess AFB	202
	Compatible	4
	Conditionally Compatible	0
	Incompatible	0
	<i>Subtotal</i>	206
APZ I	Dyess AFB	0
	Compatible	278
	Conditionally Compatible (commercial and public/semi public)	31
	Incompatible (residential)	36
	<i>Subtotal</i>	345
APZ II	Dyess AFB	0
	Compatible	423
	Conditionally Compatible (residential, commercial, and industrial)	58
	Incompatible	0
	<i>Subtotal</i>	481
Total		1,032
South End		
CZ	Dyess AFB	98
	Compatible	108
	Conditionally Compatible	0
	Incompatible	0
	<i>Subtotal</i>	206
APZ I	Dyess AFB	0
	Compatible	345
	Conditionally Compatible	0
	Incompatible	0
	<i>Subtotal</i>	345
APZ II	Dyess AFB	0
	Compatible	454
	Conditionally Compatible (residential and industrial)	27
	Incompatible	0
	<i>Subtotal</i>	481
Total		1,032



Source of Compatibility: eM, Inc 2008

Figure 4-6. Land Use Compatibility in Relation to APZs



Figure 4-7 illustrates the combined land use compatibilities for land that is within the Dyess AFB 2007 noise zones and APZs. As shown, in the City of Tye, the existing residential, public/semi-public, and commercial land in the 80+dBa noise zone and the northern APZ I represents incompatible uses. The existing commercial land is considered conditionally compatible within APZ I, but incompatible within 80+ dBA noise zone. The existing residential land represents an incompatible use in both APZ I and the 80+ dBA noise zone.

In the Caps community, there is existing residential land that represents a conditionally compatible use within the southern APZ II but incompatible in the 80+ dBA noise zone. Therefore, as shown in **Figure 4-7**, this residential land is considered incompatible.

4.6 Incompatible Zoning Uses

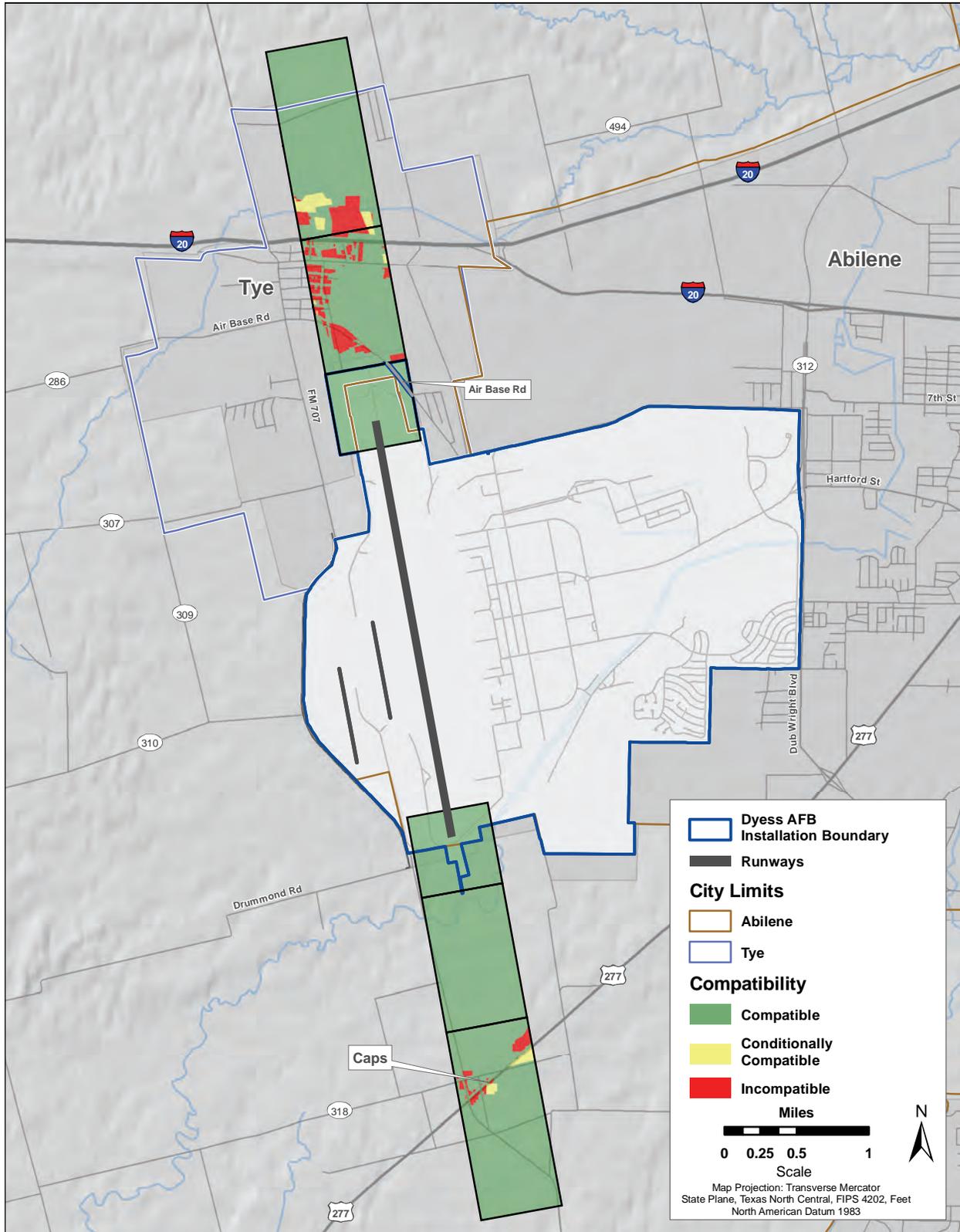
Zoning compatibility should be taken into consideration when the cities of Tye and Abilene make zoning decisions. The zoning designation determines the future land use of a parcel, so land in the vicinity of Dyess AFB should be zoned in accordance with land use guidelines (as shown in **Table 3-2**) within the noise zones, CZs, and APZs. Zoning surrounding Dyess AFB is classified as compatible, conditionally compatible, or incompatible. Please see **Section 4.5** for definitions of these classifications.

4.6.1 Noise Zones

The compatibility status of existing zoning in the vicinity of Dyess AFB in relation to the 2007 noise zones is shown in **Figure 4-8**. This zoning compatibility was developed by taking the zoning categories presented in **Figure 4-2**, choosing the respective land use classifications from **Table 3-2**, and applying the recommended compatibility. The majority of the land encompassed by the 2007 noise zone is unzoned; therefore, compatibility cannot be determined for these areas. The area surrounding Dyess AFB should be zoned to ensure that future development will be compatible with the noise levels and accident potential generated by Dyess AFB operations. Only zoned land within the City of Abilene and the City of Tye can be determined for compatibility. All of the land south of the installation encompassed by the 2007 noise zones is within Taylor County, which does not have zoning.

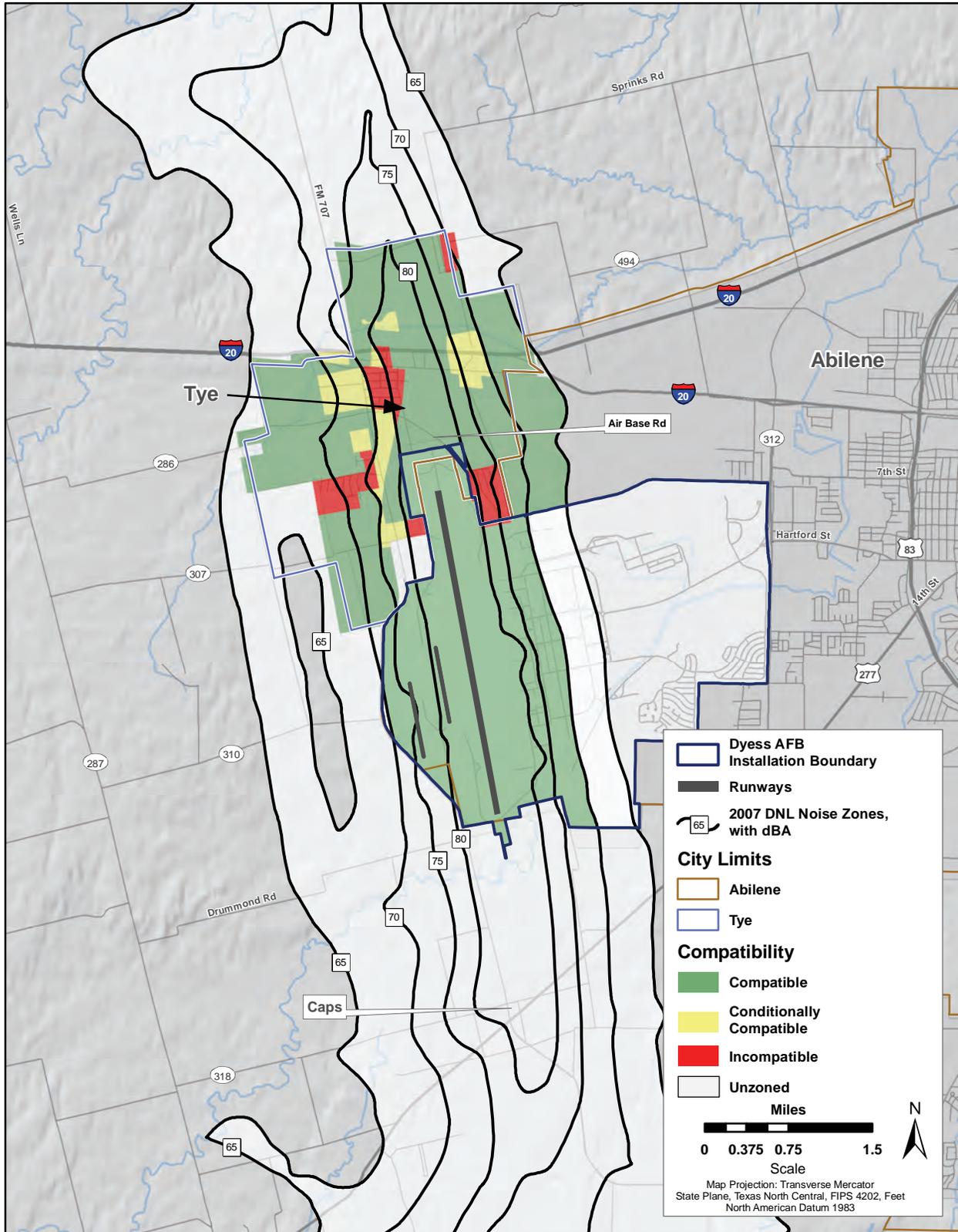
Only a small amount of the zoned land encompassed by the 2007 noise zones is within the Abilene city limits. This area is northeast of the installation and within the 65–74 dBA noise zones. The land in this area is zoned for agricultural and industrial use, which is considered compatible.

The majority of the zoned land encompassed by the 2007 noise zones is within the City of Tye. The majority of this land is zoned agricultural/open space, which is a compatible use. However, within the City of Tye, land is zoned with conditionally compatible or incompatible uses in every noise zone. Land zoned light industrial, heavy industrial, and general business



Source of Compatibility: ePM, Inc 2008

Figure 4-7. Combined Land Use Compatibility



Source of Compatibility: e2M, Inc 2008

Figure 4-8. Zoning Compatibility in Relation to 2007 DNL Noise Zones



districts are present north of the installation within the 70–80+ dBA noise zones and are considered a conditionally compatible use.

As shown on **Table 3-2**, mobile home parks or courts (SLUCM number 14) are incompatible in every noise zone; therefore, all three mobile/modular home districts within the City of Tye are considered an incompatible use. The mobile/modular home zoning exists northwest of the installation within the 65–79 dBA noise zones, northeast of the installation within the 65–74 dBA noise zones, and directly east of the CZ within the 70–80+ dBA noise zones. Single family homes (as shown on **Table 3-2** SLUCM number 11.11) are considered a conditionally compatible use in the 65–74 dBA noise zones, but incompatible in the 75–80+ dBA noise zones. Therefore, the western portion of the single family residence district that is within the 65–74 dBA noise zone northwest of the installation is considered conditionally compatible, and the eastern portion within the 75–80+ dBA noise zone is considered an incompatible use.

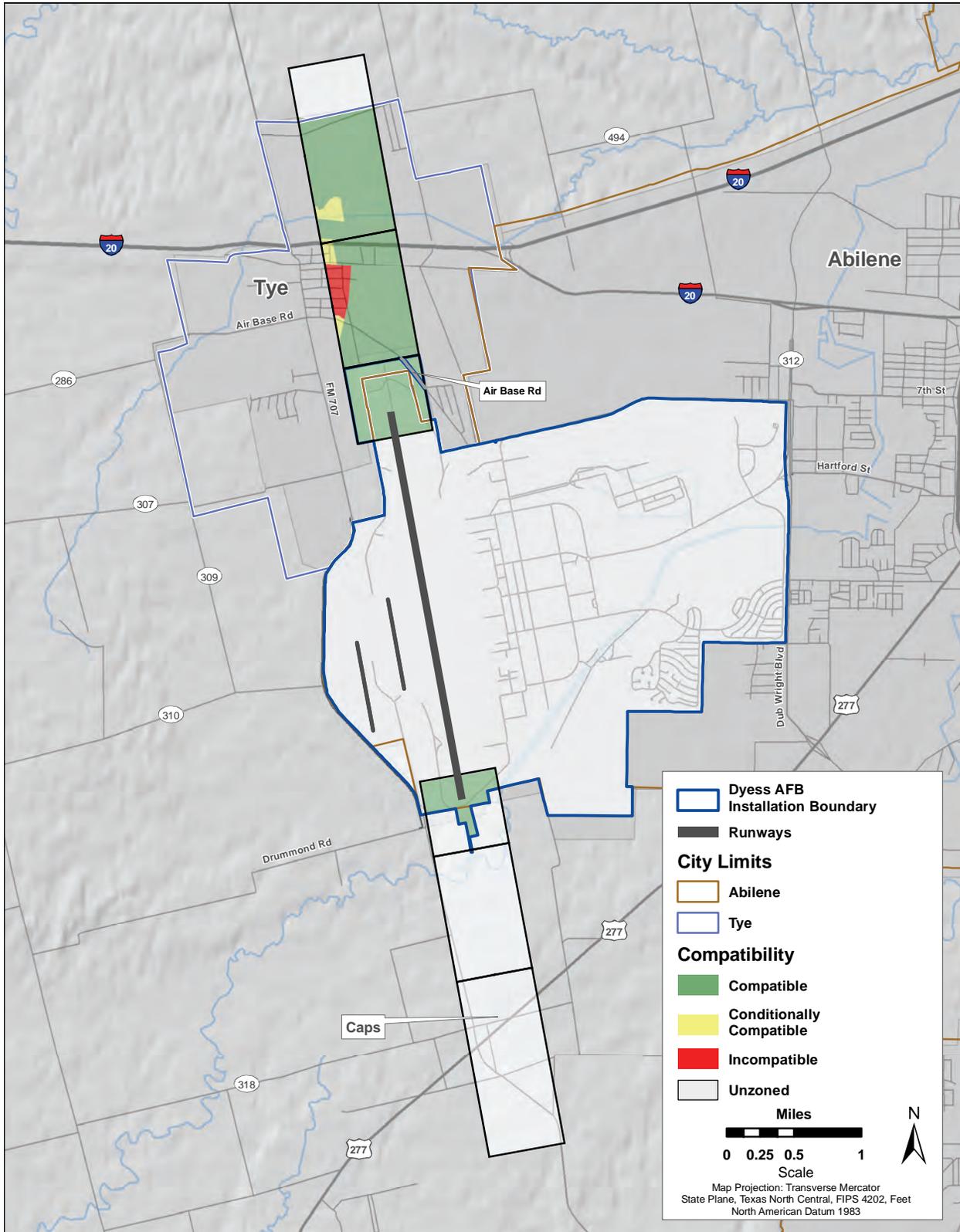
4.6.2 Accident Potential Zones

The same methodology as described in **Section 4.6.1** was applied to zoning compatibility within the Dyess AFB CZs and APZs. As shown on **Figure 4-9**, the northern CZ is entirely within the installation boundary with the exception of Air Base Road. All land uses within this area are compatible. Roads are compatible in CZs as long as they are two lanes (or less) and have no sidewalks; therefore, the Air Base Road in the northern CZ is considered a compatible use. Approximately half of the land in the southern CZ is also within the installation boundary. However, the remaining land in the southern CZ, the southern APZ I and II, and approximately 30 percent of land in the northern APZ II is unzoned and therefore, zoning compatibility cannot be determined. Incompatible and conditionally compatible zoning exists in northern APZ I, and conditionally compatible zoning exists in the zoned portion of northern APZ II.

As shown on **Table 3-2** (SLUCM number 11.11) single family zoning is considered an incompatible use in the CZ and APZ I. Therefore, the City of Tye single family residence district within the northern CZ and APZ I is incompatible. Businesses are considered a conditionally compatible use within APZ I; therefore, the local business districts within northern APZ I are conditionally compatible. Most of the land in the northern APZ II is zoned agricultural/open space, which is considered compatible. However, some of this land is zoned light industrial, which is considered a conditionally compatible use.

4.6.3 Overall Zoning Compatibility within the Noise Zones and APZs

Land that is zoned within the Dyess AFB 65–80+ dBA noise zones and within the APZs was evaluated to determine the combined zoning compatibility. The methodology that was used to determine the combined land use compatibility, discussed in **Section 4.5.3**, was also used to determine the combined zoning compatibility.



Source of Compatibility: e*M, Inc 2008

Figure 4-9. Zoning Compatibility in Relation to APZs



Figure 4-8 illustrates the zoning compatibility for land that is zoned within the Dyess AFB noise zones and **Figure 4-9** illustrates the zoning compatibility for land within the APZs. There are only four parcels (both are in the City of Tye) that need to be evaluated for combined zoning compatibility.

Two of the existing parcels in the City of Tye that were evaluated for combined zoning compatibility are within the northern APZ I and the 80+ dBA noise zone and are zoned light business. Light business represents a conditionally compatible use in APZ I and an incompatible use within the 80+ dBA noise zone. Therefore, these parcels are considered incompatible. A small portion of one of these parcels is within APZ II; this portion also represents an incompatible use since it is within the 80+ dBA noise zone.

There is one parcel within the northern APZ I and the 80+ dBA noise zone that is currently zoned single family residence. Single family residence represents an incompatible use in APZ I and an incompatible use within the 80+ dBA noise zone. Therefore, this parcel is considered incompatible.

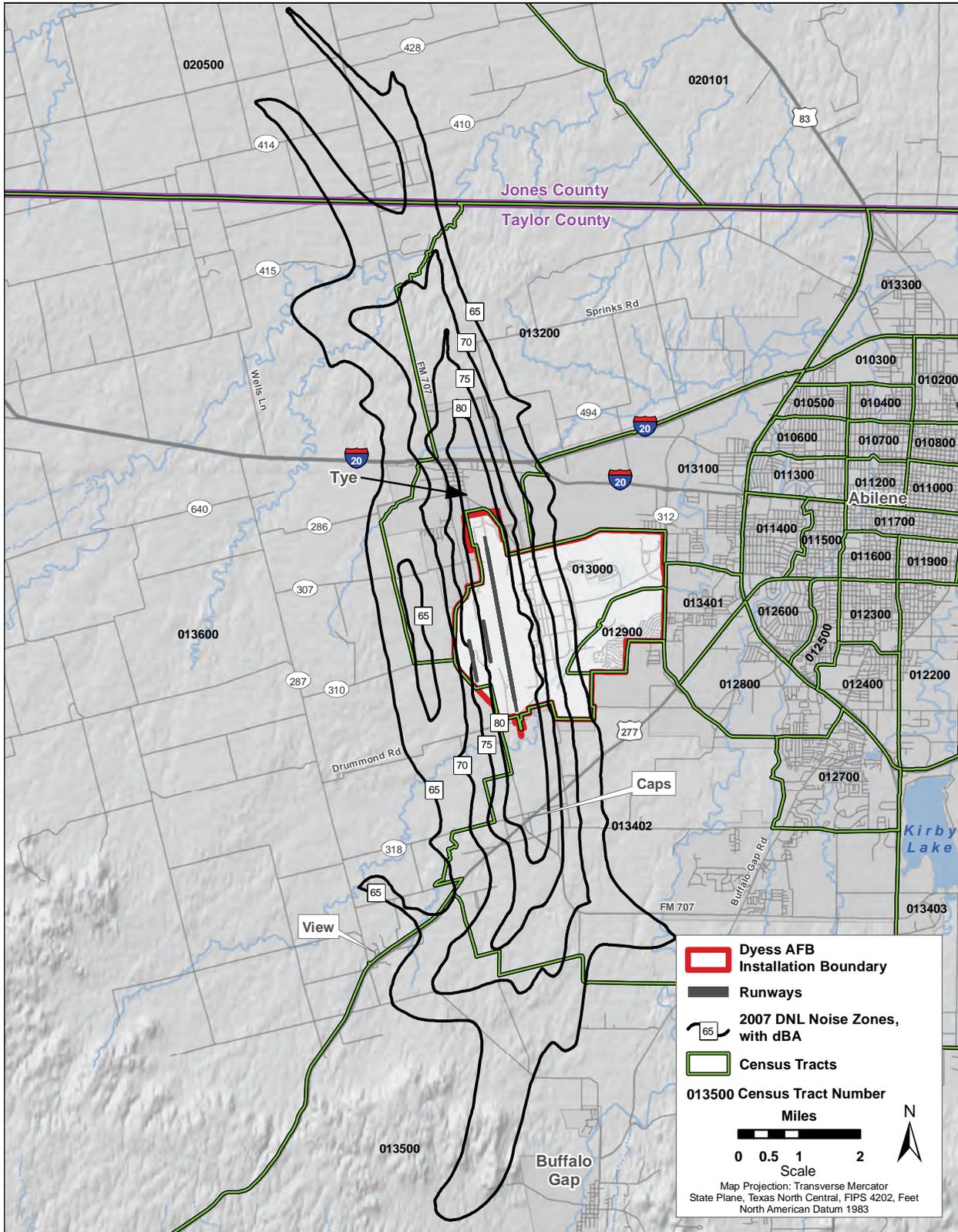
There is one parcel within the northern APZ II and the 80+ dBA noise zone that is currently zoned light industrial. Light industrial represents a conditionally compatible use in APZ II and a conditionally compatible use within the 80+ dBA noise zone. Therefore, this parcel represents a conditionally compatible use.

4.7 Population Densities

The number of people potentially affected by aircraft noise in proximity to Dyess AFB was estimated using U.S. Census tract boundaries from 2005. **Figure 4-10** shows the census tracts that are impacted by the 2007 noise zones. **Table 4-4** shows the estimated population from 2004 U.S. Census data for each noise zone. The acreage percentage for the census tracts inside of each noise zone was estimated. This percentage was applied to the population of the census tract to determine approximately how many people reside within the Dyess AFB AICUZ environ. As shown in **Table 4-4**, there are an estimated 3,831 people residing within the noise zones of Dyess AFB. Of this amount, there are an estimated 1,746 people in 65–69 dBA noise zone, 938 in 70–74 dBA noise zone, 533 in the 75–79 dBA noise zone, and 614 in the 80+ dBA noise zone.

Table 4-4. Estimated Population Exposed to 2007 Noise Zones Utilizing 2004 Population Data

Noise Zone	Total Number of People
65–69 dBA	1,746
70–74 dBA	938
75–79 dBA	533
80+ dBA	614
Total	3,831



Source of Census Tracts: ESRI 2005

Figure 4-10. Census Tract Map with 2007 DNL Noise Zones



4.8 Planning Considerations

As shown in **Figure 3-3**, the number of acres in the noise zones has the capacity to change based on noise exposure from aircraft operations. Should a new mission be established at Dyess AFB, such as assigning additional aircraft or changing the model type, the number of acres impacted by noise levels above the specified threshold levels has the potential to increase. This possibility should be fully considered by local planning authorities before making land use decisions. Zoning and land use regulations should not be based on noise zones alone since the noise levels fluctuate depending on current aircraft operations. Local jurisdictions should explore the idea of creating zoning ordinances dependent on natural boundaries instead of a particular noise zone. Land use and zoning planning suggestions that could be implemented are as follows:

- The cities and counties should provide timely notification to Dyess AFB regarding new subdivisions and development plans within the noise zones or APZs.
- Provide for Real Estate disclosures in noise zones and APZs around Dyess AFB.
- The City of Tye is encouraged to complete its plans to establish a written procedure that will include an extra-territorial jurisdiction agreement with the City of Abilene and a development review process with Dyess AFB.
- Maintain a shared oversight between the City of Tye and the City of Abilene in the overlap areas of their extra-territorial jurisdictions.
- The City of Tye is encouraged to attempt to reduce land use incompatibilities through proper implementation of AICUZ recommendations.
- The cities of Abilene and Tye should ensure that new construction of noise-sensitive facilities inside of the 2007 65–80+ dBA noise zones will be built with the incorporation of NLR measures.
- Proposals for tall structures such as wind turbines and communication towers proximate to the installation should be monitored to ensure that new construction does not pose a hazard to navigable airspace at Dyess AFB. Potential developers should adhere to the regulations in the City of Abilene Zoning Ordinance titled “Airport Zoning” (Chapter 23, Article III, Section 23-319) regarding proposed structures in the vicinity of Dyess AFB.