

Chapter 4

Noise Impacts

The Federal Aviation Administration (FAA) has established guidelines, codified within Title 14, Code of Federal Regulations, Part 150 (14 CFR Part 150 or Part 150), that identify suitable land uses for development near airport facilities in order to standardize the assessment of airport land use compatibility. The Part 150 compatibility guidelines (summarized on **Exhibit 4A**) are based on previous studies and recommendations by federal agencies. Additional efforts to evaluate potential options to reduce the effects of noise exposure will be considered as part of the noise abatement and land use alternatives sections of the airport's Part 150 Noise Compatibility Program, which will be discussed in subsequent chapters. As discussed in Chapter Three – Aviation Noise, Wilmington International Airport (ILM) recognizes that some community members are disturbed by noise at levels below the FAA guidelines for noise exposure.

Additional information regarding the FAA's Part 150 compatibility thresholds can be found in the Noise and Land Use Compatibility Guidelines section of **Appendix C – Resource Library**, and within §A150.101(a), §A150.101(d), and the explanatory note in Table 1 of 14 CFR Part 150. It should be noted that although the FAA provides the Part 150 land use compatibility guidelines, land use planning is a local decision made by the city or county with jurisdiction over a specific property; however, upon receipt of FAA grant funding, airport sponsors agree to take appropriate action – including the adoption of zoning laws – to the extent reasonable to restrict the use of land next to or near the airport to uses that are compatible with normal airport operations, in accordance with FAA Grant Assurance 21, *Compatible Land Use*. Wilmington International Airport is owned by New Hanover County and operated by the Wilmington Airport Authority.



LAND USE	Yearly Day-Night Average Sound Level (DNL) in Decibels					
	Below 65	65-70	70-75	75-80	80-85	Over 85
Residential						
 Residential, other than mobile homes and transient lodgings	Y	N ¹	N ¹	N	N	N
 Mobile home parks	Y	N	N	N	N	N
 Transient lodgings	Y	N ¹	N ¹	N ¹	N	N
Public Use						
 Schools	Y	N ¹	N ¹	N	N	N
 Hospitals and nursing homes	Y	25	30	N	N	N
 Churches, auditoriums, and concert halls	Y	25	30	N	N	N
 Government services	Y	Y	25	30	N	N
 Transportation	Y	Y	Y ²	Y ³	Y ⁴	Y ⁴
 Parking	Y	Y	Y ²	Y ³	Y ⁴	N
Commercial Use						
 Offices, business and professional	Y	Y	25	30	N	N
 Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y ²	Y ³	Y ⁴	N
 Retail trade-general	Y	Y	25	30	N	N
 Utilities	Y	Y	Y ²	Y ³	Y ⁴	N
 Communication	Y	Y	25	30	N	N
Manufacturing & Production						
 Manufacturing, general	Y	Y	Y ²	Y ³	Y ⁴	N
 Photographic and optical	Y	Y	25	30	N	N
 Agriculture (except livestock) and forestry	Y	Y ⁶	Y ⁷	Y ⁸	Y ⁸	Y ⁸
 Livestock farming and breeding	Y	Y ⁶	Y ⁷	N	N	N
 Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
Recreational						
 Outdoor sports arenas and spectator sports	Y	Y ⁵	Y ⁵	N	N	N
 Outdoor music shells, amphitheaters	Y	N	N	N	N	N
 Nature exhibits and zoos	Y	Y	N	N	N	N
 Amusements, parks, resorts, and camps	Y	Y	Y	N	N	N
 Golf courses, riding stables, and water recreation	Y	Y	25	30	N	N

The designations contained in this table do not constitute a federal determination that any use of land covered by the program is acceptable under federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally-determined land uses for those determined to be appropriate by local authorities in response to locally-determined needs and values in achieving noise compatible land uses.

KEY

Y (Yes)	Land Use and related structures compatible without restrictions.
N (No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor-to-indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30, 35	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structure.

NOTES

1. Where the community determines that residential or school uses must be allowed, measures to achieve outdoor-to-indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB, respectively, should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide an NLR of 20 dB; thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.
5. Land use compatible provided special sound reinforcement systems are installed.
6. Residential buildings require an NLR of 25.
7. Residential buildings require an NLR of 30.
8. Residential buildings not permitted.

Source: **14 CFR Part 150**, Appendix A, Table 1.

As discussed in Chapter One – Inventory, the City of Wilmington and the New Hanover County Planning and Land Use Department have land use planning jurisdictions over areas near the airport; therefore, the airport must coordinate with the City of Wilmington and the New Hanover County Planning and Land Use Department to maintain compatible land uses within the immediate vicinity of the airport in order to comply with this FAA grant provision. When incompatible land uses are identified within these areas, the airport should coordinate with the specific jurisdiction to resolve the issue.

14 CFR PART 150 GUIDELINES

The FAA guidelines summarized on **Exhibit 4A** indicate that all land uses are acceptable in areas below 65 DNL (day-night average sound level). Residential land uses without acoustic treatment, mobile homes, and transient lodging are all incompatible in areas of noise exposure above 65 DNL. The table notes that homes of standard construction and transient lodging may be considered compatible where local communities have determined these uses are permissible; however, acoustic treatment of these structures is recommended to meet noise level reduction thresholds when comparing the outdoor noise level to the indoor noise level. Schools and other public-use facilities are also generally considered to be incompatible with noise exposure above 65 DNL. As with residential development, communities can make policy decisions that these uses are acceptable with appropriate sound attenuation measures. Hospitals and nursing homes, places of worship, auditoriums, and concert halls are generally compatible structures if measures to achieve noise level reduction are incorporated into the design and construction of the structures. Outdoor music shells and amphitheaters are not compatible and should be prohibited within the 65 DNL noise contour. Additionally, agricultural uses and livestock farming are generally considered compatible, except for related residential components of these uses, which should incorporate sound attenuation measures.

Within the 70-75 DNL noise contour range, residences, transient lodging, and schools have the same sound attenuation recommendations as uses within the 65-70 DNL range. Additionally, as the noise levels increase, the following land uses identified in the table are recommended to have sound attenuation:

- Governmental services
- Transportation
- Parking
- Offices
- Wholesale and retail
- Utilities
- Communication
- Manufacturing
- Photographic and optical
- Golf courses
- Riding stables
- Water recreation

In addition to the land uses identified within the 65-70 DNL contour range, the table recommends prohibiting nature exhibits and zoos as land uses within the 70-75 DNL contour range. Beyond the 75 DNL contour, the land use recommendations are increasingly stringent as the noise levels increase.

In addition to the land uses outlined in Table 1 of 14 CFR Part 150, historic properties must be considered within a Part 150 study. Historic properties are generally no more sensitive to noise than other properties of similar uses; however, federal regulations require that noise effects on these uses be considered when evaluating the effects of an action, such as a noise abatement or land use management procedure.

The strictest of these requirements is the *U.S. Department of Transportation Act of 1966 (DOT Act)*. Section 4(f) of the *DOT Act* provides that the U.S. Secretary of Transportation shall not approve any program (such as a Part 150 noise compatibility program) or project that requires the use of any historic site of national, state, or local significance unless there is no feasible and prudent alternative to the use of such land. The FAA is required to consider the direct physical taking of eligible property (such as acquisition and demolition of historic structures), as well as the indirect use of or adverse impact to eligible properties (such as noise exposure within the 65 DNL noise contour). When evaluating the effects of the noise abatement and land use management alternatives later in this report, it will be necessary to identify whether the proposed action conflicts with or is compatible with the normal activity or aesthetic value of any historic property not already significantly affected by noise. The FAA's review and acceptance of an airport's noise exposure map (NEM) contours are not evaluated under Section 4(f).

As shown on **Exhibit 4A**, which is reproduced from Table 1 of 14 CFR Part 150, an airport's corresponding noise contours are used as the basis for identifying areas within which certain mitigation measures aimed at achieving compatibility within an area exposed to sound levels in excess of 65 decibels (dB) DNL may be eligible for federal funding. Following the completion of a Part 150 study, projects that may qualify are recommended by the airport sponsor for funding from the noise set-aside portion of the FAA's Airport Improvement Program (AIP).

In general, noise compatibility projects must be within the 65 DNL noise contour to be eligible for federal funding. According to the FAA's *AIP Handbook*, "Noise compatibility projects usually are in areas where aircraft noise exposure is significant, as measured in day-night average sound level (DNL) (or Community Noise Equivalent Level [DNL] in California) of 65 decibels (dB) or greater"; however, projects may also be approved and may be eligible in areas exposed to noise of less than 65 DNL if certain criteria are met. This concept will be examined further in the noise compatibility program of this Part 150 noise compatibility study.

LAND USE GUIDELINES AT WILMINGTON INTERNATIONAL AIRPORT

For the purposes of the Part 150 noise compatibility study at Wilmington International Airport, the FAA's land use compatibility guidelines (established in 14 CFR Part 150) will be used to make determinations about land use compatibility in the airport area.

AIRPORT NOISE LAND USE ANALYSIS

To evaluate the impact of noise within the vicinity of Wilmington International Airport, the 2023 and 2028 contours discussed in Chapter Three – Aviation Noise will be compared to the existing land use patterns and areas of incompatibility will be identified, based on the previously discussed Part 150 land use compatibility recommendations. Additionally, consideration will be given to the potential for growth of noise-sensitive land uses within the 2028 noise contours.

LAND USES AND POPULATION EXPOSED TO 2023 NOISE

The 2023 condition noise exposure contours were depicted previously on **Exhibit 3H. Table 4A** summarizes the acreages of each existing land use type encompassed by the noise contours, based on the generalized land use types described in Chapter One – Inventory. As indicated on the exhibit and in the table, portions of the 65-70 DNL and 70-75 DNL ranges extend off airport property. The 75 DNL contour remains on airport property.

TABLE 4A | ILM Land Uses Exposed to 2023 Aircraft Noise Above 65 DNL

	AREA (ACRES)		
	65-70 DNL	70-75 DNL	75+ DNL
Compatible Land Uses			
Airport Property	394.37	292.82	331.20
Agricultural	33.30	-	-
Commercial	61.33	-	-
Governmental Services	3.12	0.02	-
Industrial	0.16	-	-
Mixed Use	-	-	-
Parks and Open Space	6.94	-	-
Right-of-Way, Bodies of Water, Parking & Utilities	0.61	0.77	-
Undeveloped ¹	30.46	2.54	-
Noise-Sensitive Land Uses			
Single-Family Residential	46.96	-	-
Multi-Family Residential	-	-	-
Non-Residential – Place of Worship	1.97	-	-
Non-Residential – School	-	-	-
Total	579.22	296.15	331.20

¹ Undeveloped land consists of portions of multiple parcels.

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

Most of the property (93 percent or 1,127.18 acres) within the contours is developed with compatible land uses. Airport property comprises 1,018.39 acres of compatible land use within the contours. Other compatible land uses within the 65 and higher DNL noise contours include agricultural, commercial, governmental services, industrial, parks and open space, and right-of-way uses.

The remaining land within the 65 and higher DNL contours is either vacant (2.5 percent) or developed with noise-sensitive land uses (4 percent), including single-family residences (46.96 acres) and places of worship (1.97 acres). There are no noise-sensitive land uses within the 70-75 or 75+ DNL contours.

For the residential land uses that are within the noise contours, the number of dwelling units is determined using digital mapping of the parcels. **Table 4B** summarizes the number of dwelling units within the 2023 noise exposure contours. As indicated in the table, there are 14 dwelling units within the 65-70 DNL contour range. According to the most recent U.S. Census Bureau 2018-2022 American Community Survey, the average number of persons per household in New Hanover County is 2.21; therefore, the population residing within the 65-70 DNL contours is estimated to be 31.

TABLE 4B | ILM Residential Parcels and Estimated Population Exposed to 2023 Aircraft Noise

	AREA (ACRES)		
	65-70 DNL	70-75 DNL	75+ DNL
Land Use Classification	Number of Dwelling Units (d.u.) ¹		
Single-Family Residential	14	–	–
Multi-Family Residential	–	–	–
Total	14	–	–
Land Use Classification	Estimated Population ²		
Single-Family Residential	31	–	–
Multi-Family Residential	–	–	–
Total	31	–	–

¹ Number of dwelling units is estimated based on New Hanover County Tax Department property assessment data for each parcel and confirmed by analysis of aerial imagery.

² Estimated population is calculated by multiplying the number of dwelling units for residential land uses by the number of persons per household (2.21) and rounding up to the nearest whole number. Persons per household information is based on U.S. Census Bureau 2018-2022 American Community Survey information for New Hanover County, as of July 1, 2023. (Retrieved from: <https://www.census.gov/quickfacts/fact/table/newhanovercountynorthcarolina,US/HSD310222>)

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

Table 4C summarizes the area of non-residential noise sensitive land uses within the 65 DNL and higher noise contours. Non-residential noise-sensitive land uses include one place of worship within the 65-70 DNL contour. Noise-sensitive land uses within the contours are shown on **Exhibit 4B**.

TABLE 4C | ILM Non-Residential Noise Sensitive Land Uses Exposed to 2023 Aircraft Noise

	65-70 DNL	70-75 DNL	75+ DNL
Land Use Classification	Number of Parcels within Contours		
Places of Worship	1	–	–
Hospitals	–	–	–
Schools	–	–	–
Total	1	–	–

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

LAND USES AND POPULATION EXPOSED TO 2028 NOISE

The 2028 condition noise exposure contours were depicted previously on **Exhibit 3J**. As indicated on the exhibit, portions of the 65-70 DNL and 70-75 DNL contours extend off airport property and the 75+ DNL contours remain on airport property. As shown on **Exhibit 3K**, the noise contours for the future (2028) condition are generally the same shape as the existing (2023) condition, with a slight increase in size due to the projected increase in number of aircraft operations (discussed in Chapter Two – Forecasts). Because there are no planned configuration changes to the airfield, the locations and classifications of land uses exposed to 2028 noise largely resemble those discussed previously for the existing condition.

Table 4D summarizes the acreages of each existing land use type within the noise contours, based on the generalized land uses described in Chapter One – Inventory.

TABLE 4D | ILM Land Uses Exposed to 2028 Aircraft Noise Above 65 DNL

	AREA (ACRES)		
	65-70 DNL	70-75 DNL	75+ DNL
Compatible Land Uses			
Airport Property	402.30	273.44	295.45
Agricultural	23.95	–	–
Commercial	47.95	–	–
Governmental Services	2.79	–	–
Industrial	–	–	–
Mixed Use	–	–	–
Parks and Open Space	5.00	–	–
Right-of-Way, Bodies of Water, Parking & Utilities	3.69	–	–
Undeveloped ¹	21.97	0.82	–
Noise-Sensitive Land Uses			
Single-Family Residential	37.14	–	–
Multi-Family Residential	–	–	–
Non-Residential – Place of Worship	1.44	–	–
Non-Residential – School	–	–	–
Total	546.23	274.26	295.45

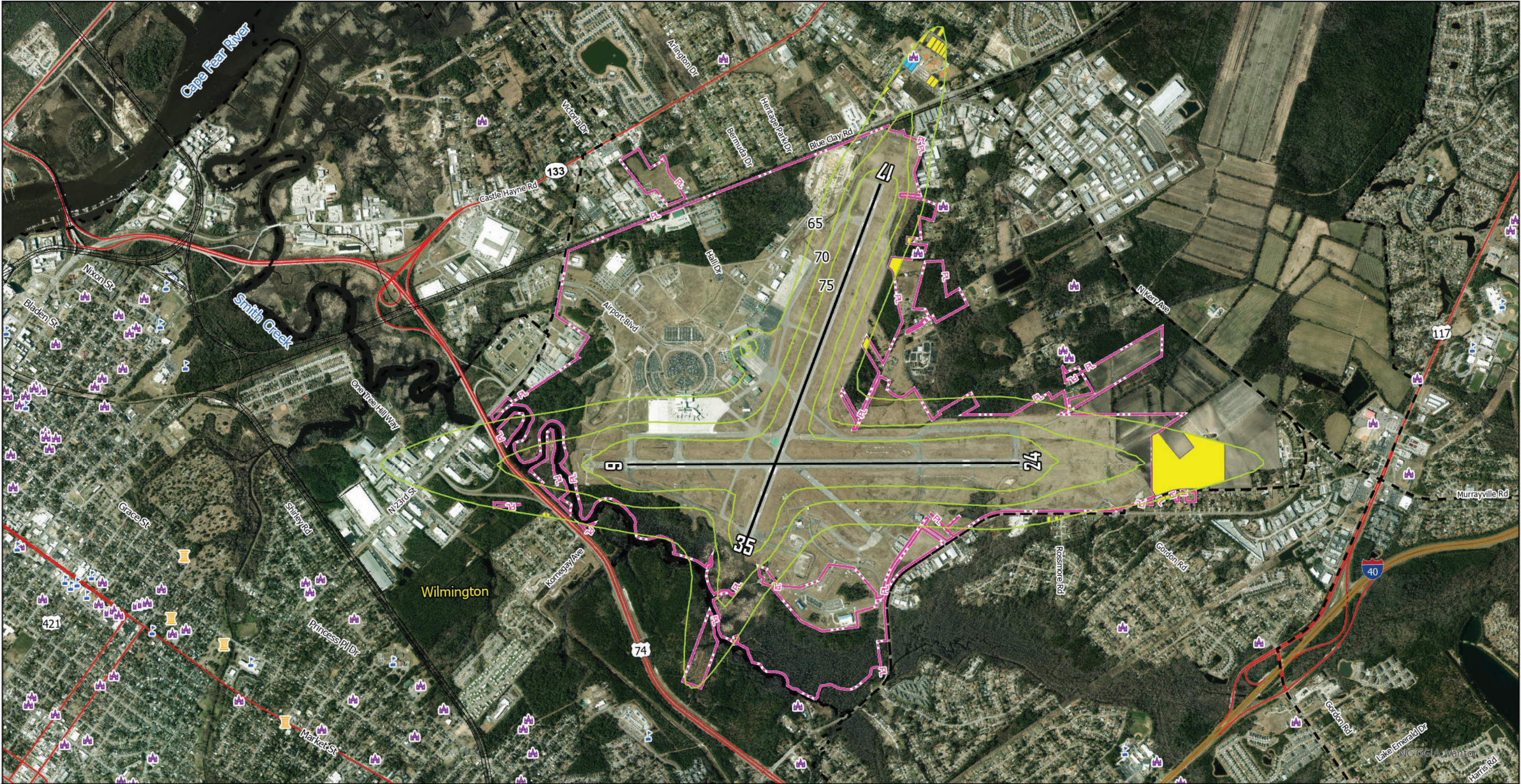
¹ Undeveloped land consists of portions of multiple parcels.

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

Similar to the existing (2023) noise contours, most of the property within the 2028 noise contours is developed with compatible land uses (94.5 percent). Airport property comprises 971.16 acres of compatible land use within the 2028 contours, or 87 percent of the total area. Other compatible land uses within the 65+ DNL noise contours include agricultural, commercial, governmental services, industrial, parks and open space, and right-of-way uses.

The remaining land within the 65+ DNL contours is either vacant (2 percent) or developed with noise-sensitive land uses (3.5 percent) in proportions similar to the existing (2023) contours. The noise-sensitive land uses in the 65+ DNL contours for 2028 include single-family residences (37.14 acres) and places of worship (1.44 acres). There are no noise-sensitive institutions within the 70-75 or 75+ DNL contours.

For the residential land uses that are within the noise contours, the number of dwelling units is determined using digital mapping of the parcels. **Table 4E** summarizes the number of dwelling units within the 2028 noise exposure contours. As indicated in the table, there are 2 dwelling units within the 65-70 DNL contour range. According to the most recent U.S. Census Bureau 2018-2022 American Community Survey, the average number of persons per household in New Hanover County is 2.21; therefore, the population residing within the 65-70 DNL contours is estimated to be 5. As previously discussed, noise exposure in the ultimate condition is expected to decrease due to changes to the military fleet mix as noted in **Appendix H**.



Airport Property Boundary

Jurisdictional Boundaries

Runway Centerline

Interstate

Highway

Railroads

Noise Sensitive Points

Place of Worship and Associated

Historic Sites

School

2023 Noise Contour

2023 Noise Contour: Residential and Noise Sensitive Land Use

Single Family Residential

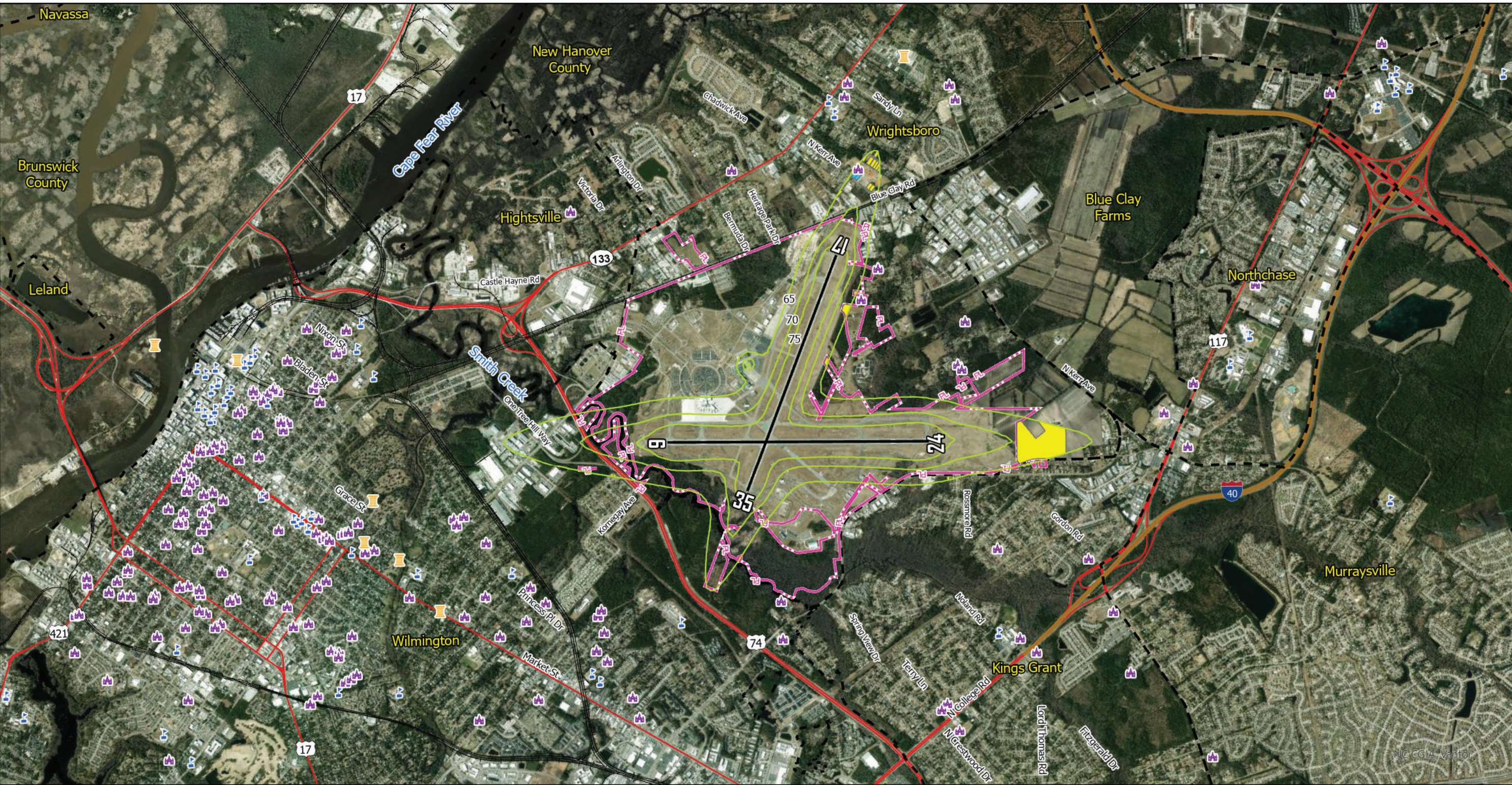
Multifamily Residential

Non-Residential Noise Sensitive



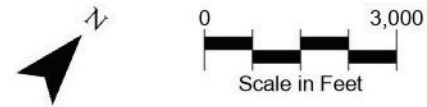
02,000
Scale in Feet

Source: New Hanover County Aerial (2023), New Hanover County Gov. Parcels, New Hanover County Tax Department Assessment and Dwelling Data (2023), TIGER/Line, Coffman Associates Analysis



- Airport Property Boundary
- Jurisdictional Boundaries
- Runway Centerline
- Interstate
- Highway
- Railroads
- Noise Sensitive Points
- Place of Worship and Associated
- Historic Sites
- School
- 2023 Noise Contour

- 2023 Noise Contour: Residential and Noise Sensitive Land Use
- Single Family Residential
 - Multifamily Residential
 - Non-Residential Noise Sensitive



Source: New Hanover County Aerial (2023), New Hanover County Gov. Parcels, New Hanover County Tax Department Assessment and Dwelling Data (2023), TIGER/Line, Coffman Associates Analysis

TABLE 4E | ILM Residential Parcels and Estimated Population Exposed to 2028 Aircraft Noise

	AREA (ACRES)		
	65-70 DNL	70-75 DNL	75+ DNL
Land Use Classification	Number of Dwelling Units (d.u.) ¹		
Single-Family Residential	2	—	—
Multi-Family Residential	—	—	—
Total	2	—	—
Land Use Classification	Estimated Population ²		
Single-Family Residential	5	—	—
Multi-Family Residential	—	—	—
Total	5	—	—

¹ Number of dwelling units is estimated based on New Hanover County Tax Department property assessment data for each parcel and confirmed by analysis of aerial imagery.

² Estimated population is calculated by multiplying the number of dwelling units for residential land uses by the number of persons per household (2.21) and rounding up to the nearest whole number. Persons per household information is based on U.S. Census Bureau 2018-2022 American Community Survey information for New Hanover County, as of July 1, 2023. (Retrieved from: <https://www.census.gov/quickfacts/fact/table/newhanovercountynorthcarolina,US/HSD310222>)

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

Table 4F summarizes the area of non-residential noise sensitive land uses within the 65 DNL and higher noise contours. There is one place of worship within the 65-70 DNL contour and no non-residential noise sensitive land uses within the 70-75 DNL contour or 75+ DNL contour. Noise-sensitive land uses within the contours are shown on **Exhibit 4C**.

TABLE 4F | ILM Non-Residential Noise Sensitive Land Uses Exposed to 2028 Aircraft Noise

	65-70 DNL	70-75 DNL	75+ DNL
Land Use Classification	Number of Parcels within Contours		
Places of Worship	1	—	—
Hospitals	—	—	—
Schools	—	—	—
Total	1	—	—

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

GROWTH RISK ANALYSIS

For the 2028 scenario, consideration is given to the potential for noise-sensitive land uses to be developed on the land encompassed by the noise exposure contours. This is done by evaluating the locally adopted zoning (**Exhibit 1D**) and comprehensive plan (**Exhibit 1E**) designations for the parcels encompassed by the noise contours to determine if noise-sensitive land uses could be developed on these areas, given the current zoning or future land use plan designations, which typically specify the preferred density (or number of dwelling units per acre) for each classification. As discussed in Chapter One – Inventory, the comprehensive plan land use designation identifies the *projected* or *future* land use for a property, according to the locally adopted comprehensive plans. This document guides future development within the community planning area and provides the basis for zoning designations. The zoning ordinance identifies the type of land use *permitted* on a given piece of property and should be consistent with the comprehensive plan; however, in many communities, the zoning and future land use designations are not the same, so an evaluation of each is necessary for the growth risk analysis.

The following example describes the method for calculating the growth risk of an area:

If a 10-acre area encompassed by the 65 DNL noise contour is zoned for single-family residential development and the single-family residential zoning allows for development of one single-family residence per acre, the growth risk analysis would indicate the potential for 10 residences to be built within the 65 DNL noise contour, given the current zoning.

Similar calculations can be made based on the comprehensive plan land uses to determine if noise-sensitive land uses are planned for areas forecasted to be exposed to aircraft noise. This information can be used to guide land use planning decision efforts to maximize airport/land use compatibility.

This analysis assumes that on-airport property will not be developed with noise-sensitive land uses, in accordance with the sponsor's FAA grant assurances; therefore, only the off-airport properties classified as undeveloped within the 2028 noise contours are included in the growth risk calculations. As indicated previously in **Table 4D**, a total of 22.79 acres within the 2028 contours is classified as undeveloped, which are depicted on **Exhibit 4D**.

Table 4G summarizes the zoning and comprehensive plan designations for the undeveloped parcels located within the noise contours, based on a review of the zoning map and comprehensive plan land use data for the City of Wilmington and New Hanover County.

TABLE 4G | ILM Growth Risk Analysis for Undeveloped Parcels

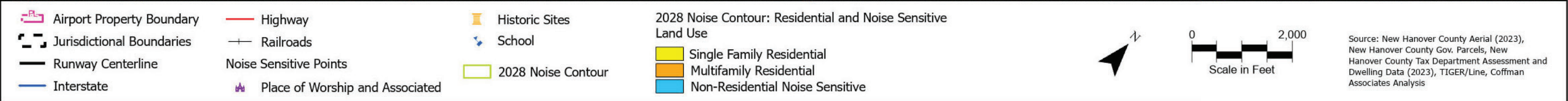
Zoning Designation	Comprehensive Plan Designation	Location	Area Within 2028 65-70 DNL Noise Contour		Area Within 2028 70-75 DNL Noise Contour	
			# of Parcels ¹	Acres	# of Parcels ¹	Acres
Airport Commerce (AC)	Commerce Zone	New Hanover County	6	6.67	1	0.82
Airport Industrial (AR)	Employment Center	New Hanover County	2	4.67	—	—
Airport Residential (AR)	Employment Center	New Hanover County	3	7.96	—	—
Residential (R-7)	N/A ²	City of Wilmington	1	0.19	—	—
Residential (R-20)	N/A ²	City of Wilmington	1	0.98	—	—
Total			13	20.47	1	0.82

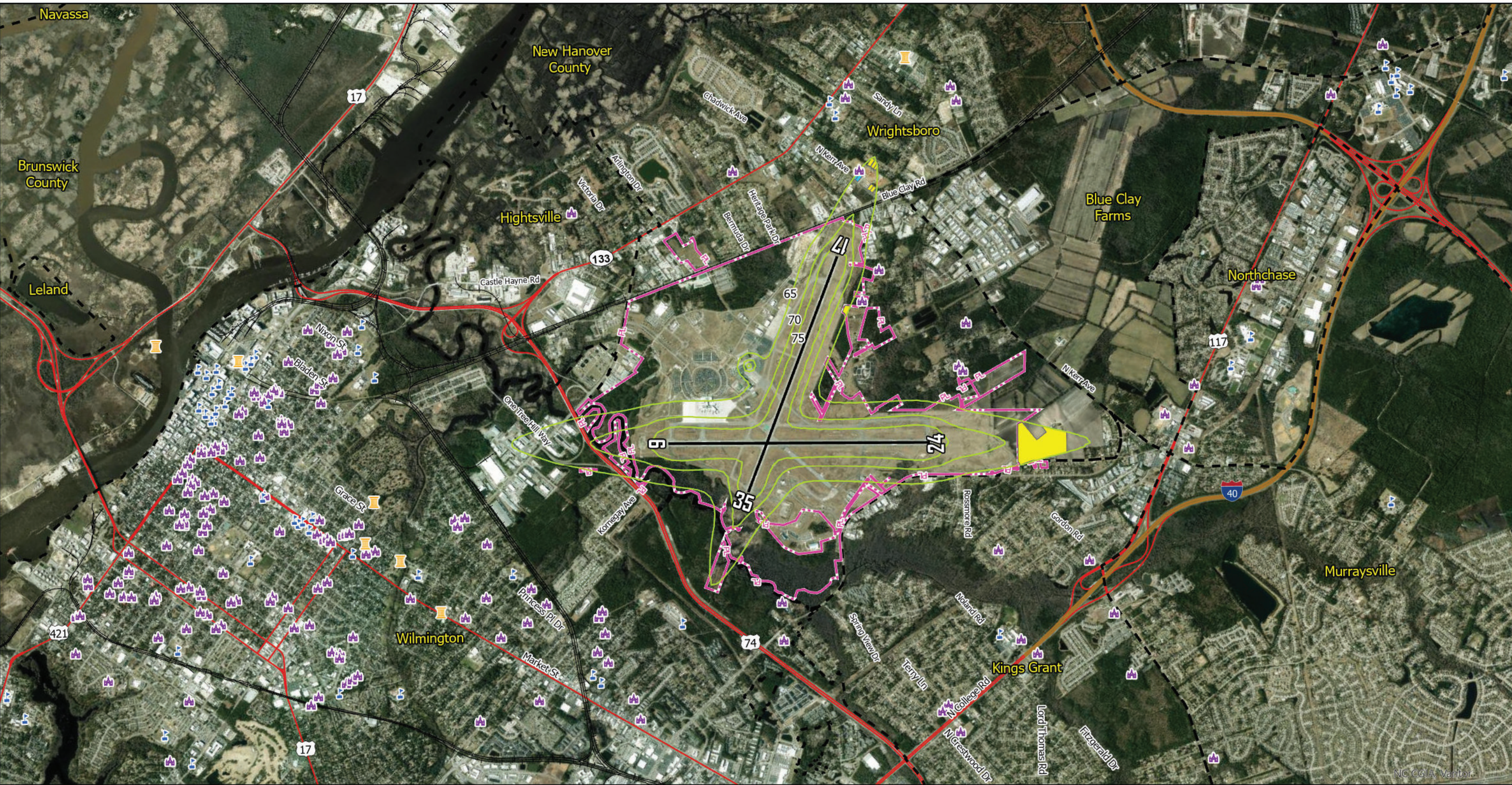
¹Six parcels are excluded from the growth risk analysis because less than 10% of each parcel is located within the noise contour.

²Vacant parcels are located between Smith Creek and U.S. Highway 74. The City of Wilmington comprehensive plan does not include designations for these parcels.

Sources: New Hanover County Tax Department (2024); New Hanover County Comprehensive Plan (2016); City of Wilmington Comprehensive Plan (2016); Coffman Associates analysis

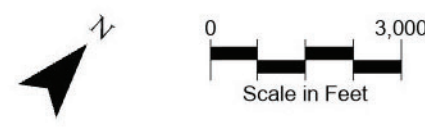
Table 4H summarizes the noise-sensitive land uses (as defined in 14 CFR Part 150) that would be permitted to be developed on vacant property within the noise contours, based on current zoning designations of the vacant parcels.



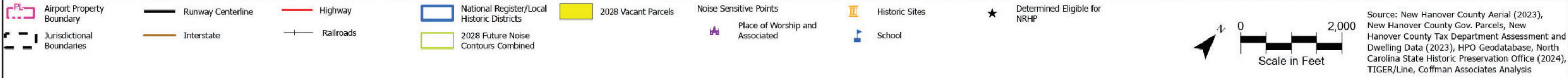
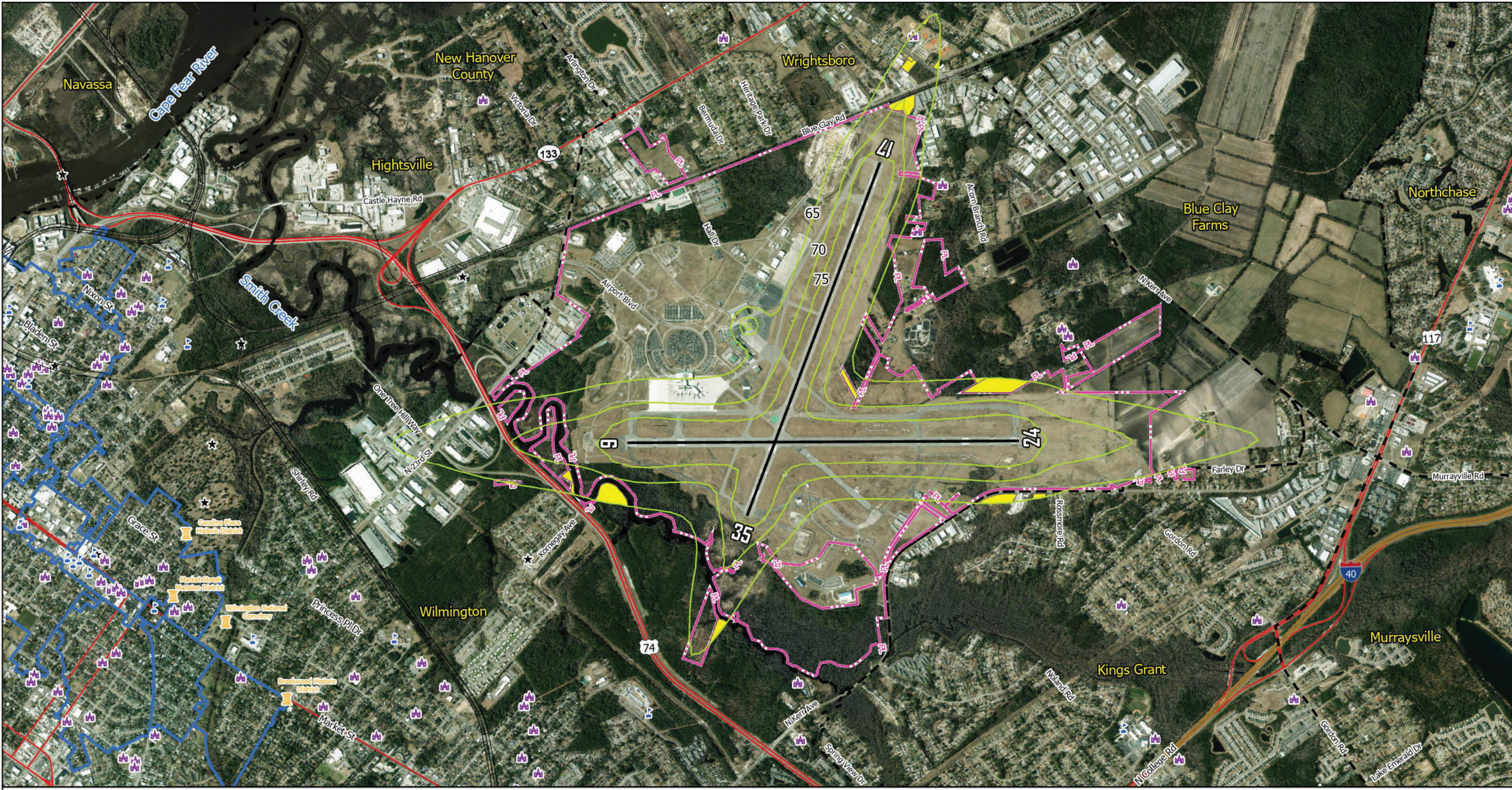


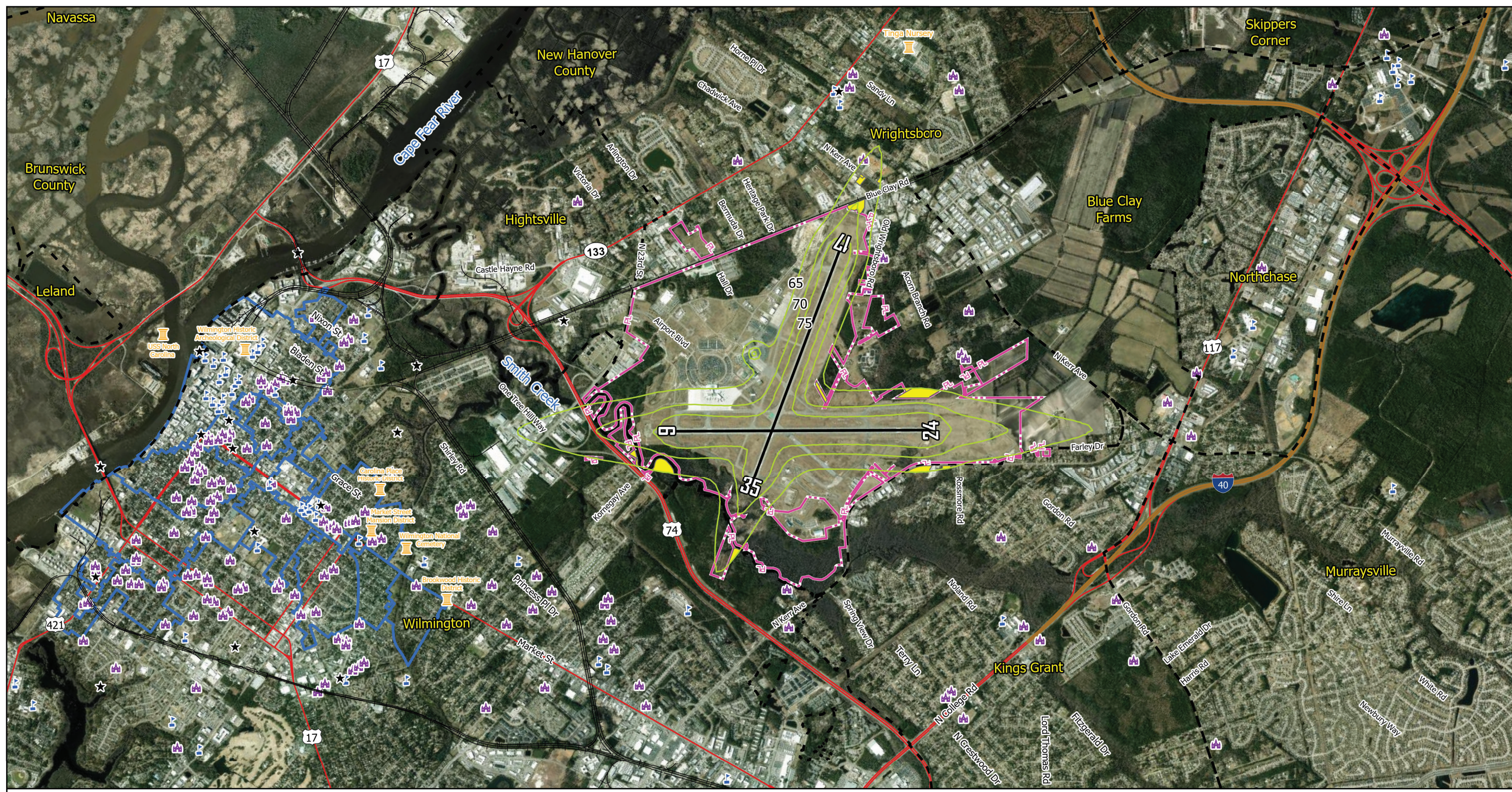
- Airport Property Boundary
- Jurisdictional Boundaries
- Runway Centerline
- Interstate
- Highway
- Railroads
- Noise Sensitive Points
- Place of Worship and Associated
- Historic Sites
- School
- 2028 Noise Contour

- 2028 Noise Contour: Residential and Noise Sensitive Land Use
- Single Family Residential
 - Multifamily Residential
 - Non-Residential Noise Sensitive



Source: New Hanover County Aerial (2023), New Hanover County Gov. Parcels, New Hanover County Tax Department Assessment and Dwelling Data (2023), TIGER/Line, Coffman Associates Analysis





Airport Property Boundary	Railroads	National Register/Local Historic Districts	Noise Sensitive Points Place of Worship and Associated Historic Sites	School
Runway Centerline	Interstate	2028 Future Noise Contours Combined		Determined Eligible for NRHP
Jurisdictional Boundaries	Highway	2028 Vacant Parcels		

Source: New Hanover County Aerial (2023), New Hanover County Gov. Parcels, New Hanover County Tax Department Assessment and Dwelling Data (2023), HPO Geodatabase, North Carolina State Historic Preservation Office (2024), TIGER/Line, Coffman Associates Analysis

TABLE 4H | ILM Summary of Zoning Provisions for Noise-Sensitive Land Uses

Zoning Designation	Noise-Sensitive Permitted Uses	Area Within 2028 65-70 DNL Noise Contour (acres)	Area Within 2028 70-75 DNL Noise Contour (acres)
Airport Commerce (AC)	- Dwelling, single-family, detached - Live/work or caretaker unit² - Religious assembly - Hospital - Nursing and rehabilitation center	6.67	0.82
Airport Industrial (AI)	- Manufactured housing - Residential unit contained within a primary use¹ - Religious institutions¹	5.85	—
Airport Residential (AR)	- Dwelling, single-family, detached - Mobile home - Mobile home, double-wide¹ - Mobile home subdivision² - Family care home¹ - Group home¹ - Religious assembly	7.96	—
Residential (R-7)	- Single-family, detached - Group home supportive, small¹ - Group home supportive, medium¹ - Religious institutions¹ - Family care home¹ - Domestic violence shelter¹ - Schools, primary and secondary² - Accessory apartment, attached³ - Accessory apartment, detached³	0.19	—
Residential (R-20)	- Single-family, detached - Group home supportive, small¹ - Group home supportive, medium¹ - Religious institutions¹ - Family care home¹ - Domestic violence shelter¹ - Schools, primary and secondary² - Accessory apartment, attached³ - Accessory apartment, detached³	0.98	—

¹ Specific use standards and/or prescribed conditions apply.

² Special use permit required.

³ Permitted as accessory uses/structures.

Sources: New Hanover County, North Carolina, Unified Development Ordinance (June 2023); Wilmington, NC, Land Development Code (August 2024); Coffman Associates analysis

The current zoning designations and proximity of vacant land near existing residential uses within the noise contours suggest incompatible development potential in the area. The Airport Commerce, Airport Industrial, and Airport Residential zoning designations are intended to promote uses and operations that are compatible with airport facilities; however, many noise-sensitive land uses, including residential use and religious assemblies, are permitted within each zoning designation.

Because incompatible uses are allowed, to some degree, for each vacant parcel's zoning designation, there is potential for growth risk for single-family residential uses and places of worship (up to 22.47 acres), hospitals (up to 7.49 acres), and schools (up to 1.17 acres) on currently undeveloped property within the 2028 noise contours above 65 DNL for ILM.

SUMMARY

Table 4J summarizes the noise impacts for the existing (2023) and future (2028) scenarios, based on current land use development patterns surrounding ILM. The table also summarizes potential growth risk for noise-sensitive land uses on undeveloped property within the noise contours.

As indicated in the table, in the existing (2023) condition 65-70 DNL contours, there are 14 dwelling units with an estimated 31 residents. In the future (2028) condition 65-70 DNL contours, there are 2 dwelling units with an estimated 5 residents. For both the existing (2023) and future (2028) conditions, there is one place of worship in the 65-70 DNL contour. The 75+ DNL contour remains on airport property for both the existing (2023) and future (2028) conditions; therefore, there are no residential or non-residential noise-sensitive land uses within the 75+ DNL contours for ILM.

TABLE 4J | ILM Noise-Sensitive Land Use Impact Summary

	65-70 DNL	70-75 DNL	75+ DNL
Noise-Sensitive Parcels/Dwelling Units (d.u.)			
Existing (2023)	46.96 acres/14 d.u.	–	–
Future (2028)	37.14 acres/2 d.u.	–	–
Estimated Population			
Existing (2023)	31 people	–	–
Future (2028)	5 people	–	–
Growth Risk for Noise-Sensitive Land Uses			
Single-Family Residential	22.47 acres	0.82 acres	–
Manufactured Housing	13.81 acres	–	–
Places of Worship	22.47 acres	0.82 acres	–
Hospitals	7.49 acres	0.82 acres	–
Schools	1.17 acres	–	–

Sources: New Hanover County Tax Department (2024); Coffman Associates analysis

The Noise Exposure Map information presented in Chapters One through Four will be used as a starting point to evaluate potential noise mitigation measures for noise-sensitive land uses identified within the 65 DNL noise contour. The land uses identified within the 65 DNL contour are potentially eligible for mitigation measures which will be discussed in more detail in Chapter 5 - Noise Abatement Alternatives, Chapter 6 - Land Use Alternatives, and Chapter 7 – Noise Compatibility Program.