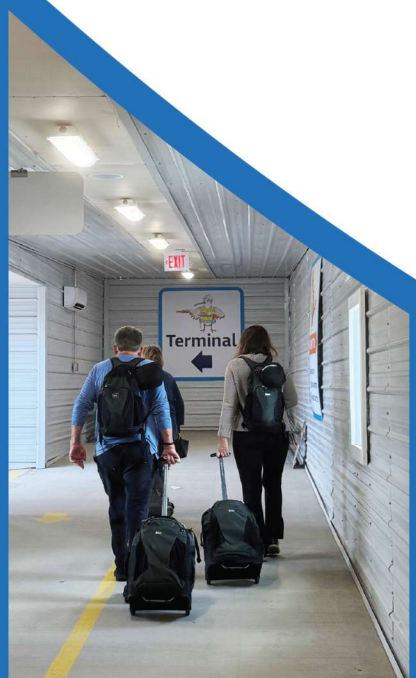
Chapter 6
Land Use Alternatives

The Wilmington International Airport (ILM) noise compatibility study requires a review of all potentially applicable land use alternatives to ensure land use compatibility between the airport's operations and the surrounding areas. To address these issues, alternative land use management techniques are evaluated to determine their effectiveness in the study area surrounding ILM. Finally, preliminary recommendations are presented. These recommendations will then be reviewed by the planning advisory committee (PAC) and local residents. The final land use management and noise abatement recommendations will be presented in Chapter Seven.

LAND USE ALTERNATIVES

The primary focus of a Title 14 Code of Federal Regulations (CFR) Part 150 (14 CFR Part 150 or Part 150) study is to address aircraft noise land use compatibility. The purpose of this chapter is to review land use compatibility specifically as it relates to noise compatibility between ILM and its surrounding environs. There are many tools that can be employed by the airport to ensure compatibility. This section outlines the land use management techniques that could be used to promote airport noise compatibility. These techniques are grouped into three categories: policy and regulatory techniques, both of which guide future development, and expenditure techniques, which involve payments for mitigation assistance.







A land use technical conference was held on March 12, 2026, to discuss the land use alternatives described in this chapter. The technical conference included members of city and county planning agencies, state land use regulatory agencies, the Federal Aviation Administration (FAA), community members, and airport staff. Further investigations regarding the effectiveness of each measure were conducted by the consultant and are presented as follows.

POLICY TECHNIQUES

Policy techniques that can be used to guide future development include the following:

- Comprehensive plans
- Project review guidelines

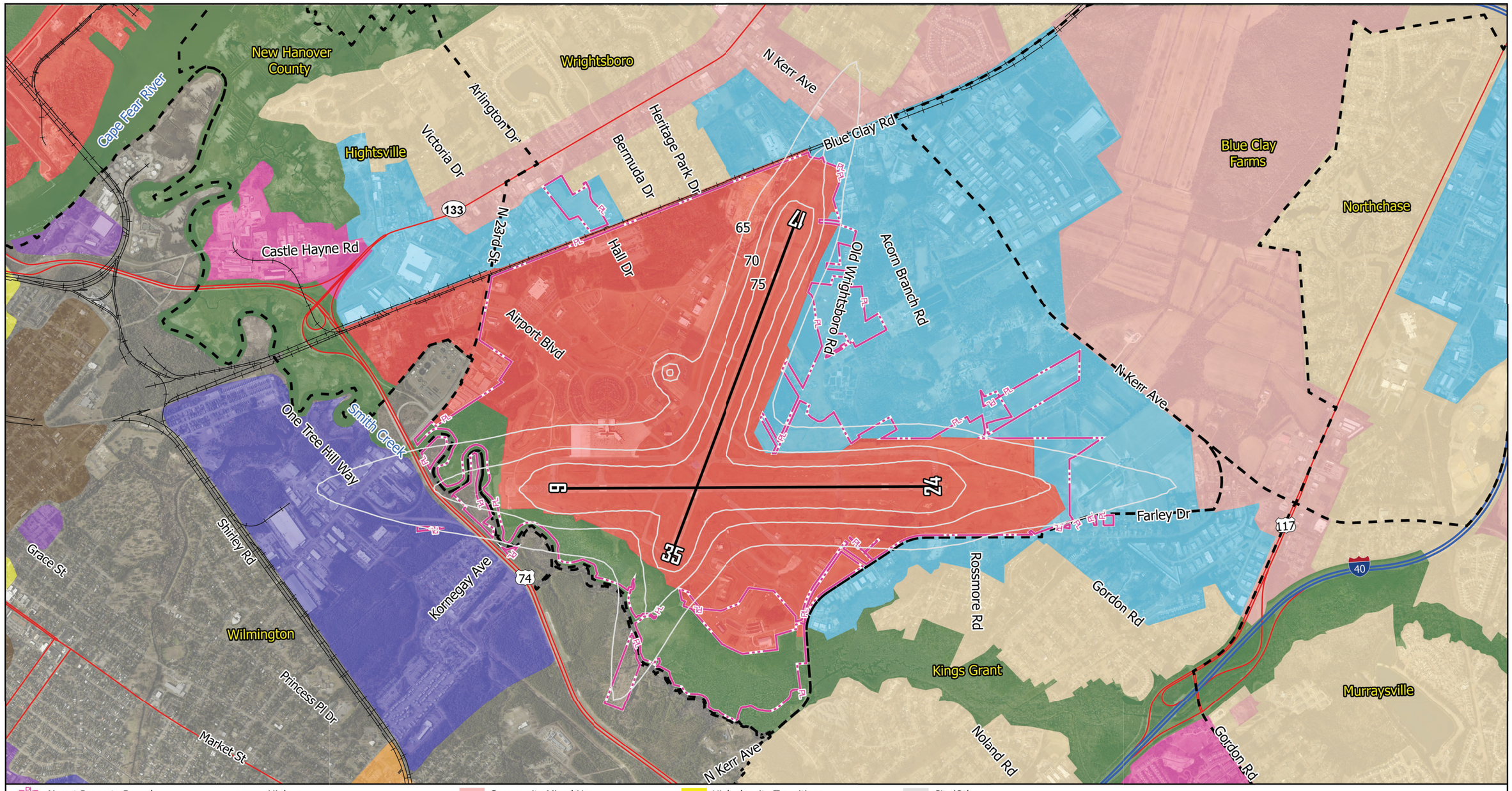
Comprehensive Plan

The City of Wilmington and New Hanover County comprehensive plans establish policies for the development and improvement of the community surrounding ILM in the future. Comprehensive plans serve as guides for decision-makers regarding land use and provide the foundation for land development regulations. Comprehensive plans have two components: text and map. The text of each plan outlines the policies guiding future development within the community, while the maps identify the type(s) and location(s) of existing and future development. Airport land use compatibility policies and noise exposure areas can be incorporated into comprehensive plans to document the community's approach to mitigating the effects of airport noise exposure.

Evaluation

- Comprehensive Plan Policies: As discussed in Chapter One, local governments are required by North Carolina state law to adopt and maintain comprehensive plans as a prerequisite for applying zoning regulations; however, the comprehensive plans do not recommend that the airport update its Part 150 study as needed and there are no aircraft noise thresholds identified for noise-sensitive development. Adopting policies that encourage periodic updates to the Part 150 study and identifying a threshold for airport noise would allow the cities and county to establish long-range airport noise compatibility policies in their comprehensive plans, ensuring consistency with the Part 150 noise compatibility program.

- Comprehensive Plan Map: **Exhibit 6A** depicts the consolidated comprehensive plan map with the future (2028) condition noise contours included. The 65 DNL contour extends off airport property to encompass areas planned for various land uses, including commercial, employment center, residential, mixed-use, conservation, high-density transitional, live/work innovation, infill development, and revitalization; however, the commercial and mixed-use land use designations are inconsistent with the existing land uses surrounding the airport, which include existing residential land uses within the 65 DNL noise contour to the north of the airport near the end of Runway 17, as discussed in Chapter Four.



- Airport Property Boundary
- Runway Centerline
- Jurisdictional Boundaries
- Railroads
- Interstate
- Highway
- 2028 Future Noise Contours Combined

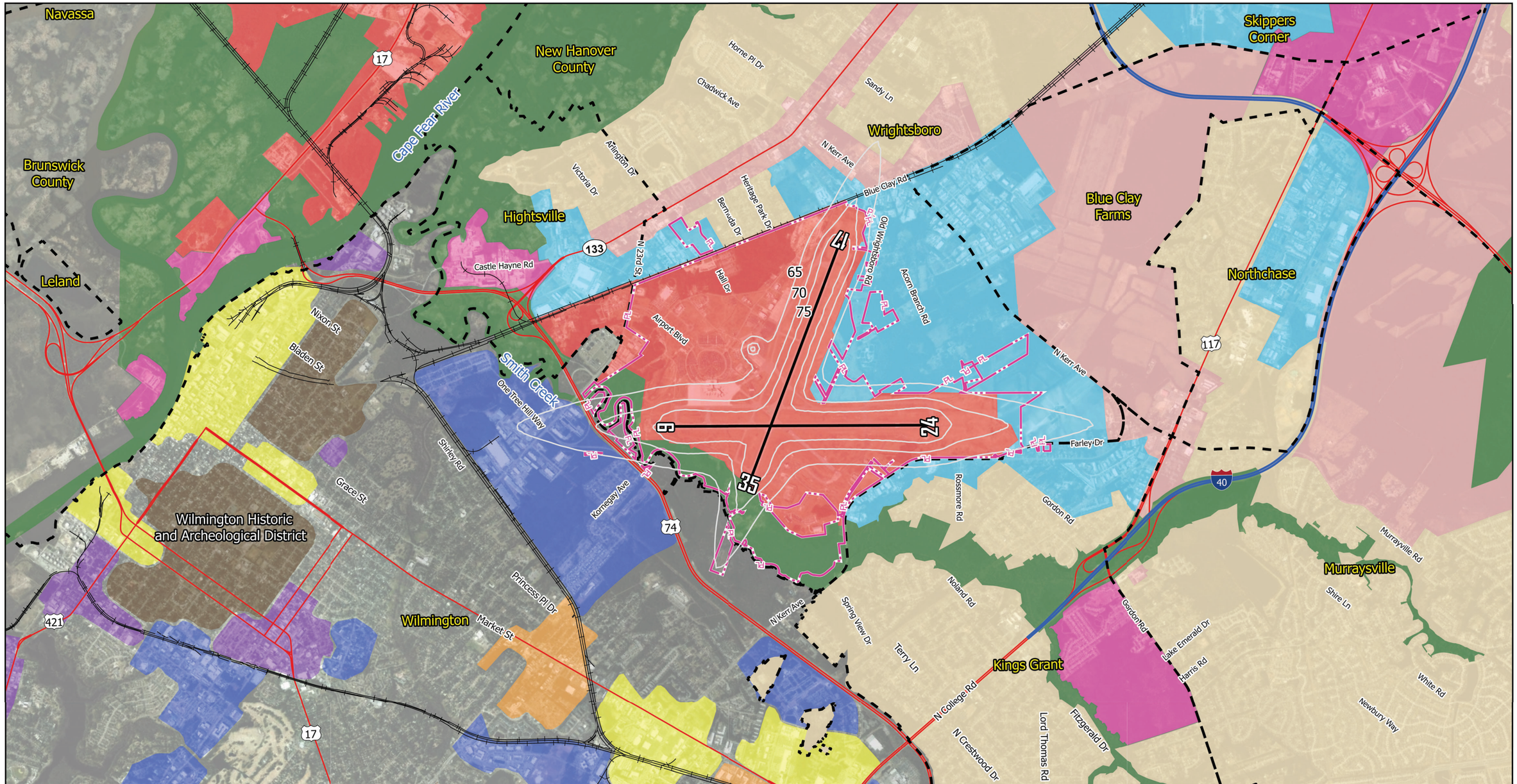
Comprehensive Plan

- Commerce Zone
- Community Mixed Use
- Postindustrial & Inner-city Revitalization
- Urban Mixed Use
- Employment Center
- Live/Work Innovation Zones
- High-density Transitions
- General Residential
- Suburban Commercial Retrofit
- Neighborhood-scale Infill Development
- Conservation
- City/Other

0 2,000
1" = 2,000'

Source: New Hanover County Aerial (2023), New Hanover County ERA Plan, New Hanover County Areas of Opportunity Plan, County Gov. Land Use, TIGER/Line, Coffman Associates Analysis

Exhibit 6A
COMPREHENSIVE PLAN WITH 2028 NOISE CONTOURS



Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads
Interstate
Highway
2028 Future Noise Contours Combined

Comprehensive Plan

Commerce Zone
Community Mixed Use
Postindustrial & Inner-city Revitalization
Urban Mixed Use
Employment Center
Live/Work Innovation Zones
High-density Transitions
General Residential
Suburban Commercial Retrofit
Neighborhood-scale Infill Development
Conservation
City/Other

0 3,000
1" = 3,000'

Source: New Hanover County Aerial (2023), New Hanover County ERA Plan, New Hanover County Areas of Opportunity Plan, County Gov. Land Use, TIGER/Line, Coffman Associates Analysis

As also discussed in Chapter Four, there is potential for growth risk on undeveloped parcels encompassed by the noise contours because incompatible uses are allowed to some degree in each of the vacant parcel zoning designations. It is estimated that up to 1.17 acres within the noise contours could be developed as residential land uses and 19.30 acres within the noise contours could be developed as noise-sensitive institutions.

An improvement would be to consider incorporating noise contours for ILM into the city and county comprehensive plan maps. This information may be useful to decisionmakers when considering potential comprehensive plan map revisions.

Conclusion

- Comprehensive Plan Policies: To ensure that airport land use compatibility is given consideration within the City of Wilmington and New Hanover County comprehensive plan documents, the city and county could consider amending their existing comprehensive plans or incorporating the ILM noise contours into the next comprehensive plan update. Additionally, to provide uniform consideration for potential development or redevelopment proposals, policies could be amended to specify a noise compatibility threshold expressed in DNL. This threshold would be consistent with the guidelines presented in 14 CFR Part 150.

  This alternative should be considered for inclusion in the Noise Compatibility Program (NCP).

- Comprehensive Plan Maps: The City of Wilmington and New Hanover County could consider incorporating the airport noise contours as part of their comprehensive plan maps. The benefit of this revision would be to identify areas of significant noise exposure as an aid for decisionmakers when considering potential comprehensive plan map revisions and future zoning changes. For example, airport noise may be a factor in proposals that aim to convert areas that are currently planned and developed with compatible land uses into non-compatible uses, such as single-family or multi-family residential land uses.

  This alternative should be considered for inclusion in the NCP.

Project Review Guidelines

Planning commissions and local governing bodies are often required to use their own discretion and judgment when making recommendations and decisions regarding community development issues. These actions include comprehensive plan amendments, rezonings, variances, special use applications, subdivision applications, and proposed public improvement projects. The exercise of this discretion is constrained by the legal requirements of the applicable ordinances. Where opportunities remain for planning commissions and governing bodies to use their own discretion in the review of development proposals, it may be appropriate to adopt procedures that ensure consideration of noise compatibility issues in their deliberations.

Evaluation

As discussed in Chapter One, the State of North Carolina legislates the authority of land use regulation to local governments, such as cities and counties. Municipalities control land use through regulatory measures, such as zoning ordinances and development codes. The following criteria could be applied to proposed projects within the airport vicinity:

- Advise the airport management of and seek input from the New Hanover County Airport Authority on development proposals that include noise-sensitive uses within the airport vicinity.
- Determine the sensitivity of the subject land use to aircraft noise based on its location within the noise exposure contours.
- Locate noise-sensitive public facilities outside the 65 DNL (65-decibel day-night average sound level) noise contour and away from approach paths whenever possible.
- Discourage the approval of rezonings, exceptions, variances, and special uses that introduce noise-sensitive development into noise-impacted areas.

Conclusion

The City of Wilmington and New Hanover County presently evaluate land use compatibility criteria for local agency review of development projects within the airport vicinity.

This alternative should be considered for inclusion in the NCP.

REGULATORY TECHNIQUES

Regulatory techniques are land use and development controls established through local legislation. These techniques include the following:

- Compatible use zoning
- Zoning changes/residential density
- Subdivision regulations
- Building codes
- Transfer of development rights
- Environmental zoning
- Fair disclosure regulations
- Capital improvement programming
- Airport compatibility overlay zoning

Compatible Use Zoning

The most common land use control method is zoning. Zoning is an exercise of the local government's authority that enables that body to decide what uses are permitted for each parcel of land. Zoning usually consists of an ordinance, which specifies land development and use constraints, and a map, which identifies zoning classifications for each parcel. One of the primary advantages of compatible use zoning is that it can promote land use compatibility while maintaining private ownership, tax roll revenue, and economic productivity.

A frequently used zoning technique for airport noise compatibility planning is to eliminate noise-sensitive land use zoning from the noise-impacted area and replace it with commercial, industrial, open space, or other compatible zoning designations.

Zoning is not without limitations; however, and most importantly, it is not necessarily permanent. In most jurisdictions, the current legislative body is not bound by prior zoning actions and may change that zoning.

Evaluation

Similar to the earlier discussion regarding the City of Wilmington and New Hanover County comprehensive plan maps, the 2028 65 DNL noise exposure contours extend off airport property onto areas identified as airport commerce, airport industrial, airport residential, and residential. The zoning designations and comprehensive plan designations for each undeveloped parcel within the noise contours are presented in **Table 6A**.

TABLE 6A | 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**

[1]Six parcels are excluded from the growth risk analysis because less than 10 percent of each parcel is located within the noise contour.
[2]Vacant 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

As previously discussed, there is potential for growth risk on undeveloped parcels encompassed by the noise contours because incompatible uses are allowed to some degree in each of the vacant parcel zoning designations. It is estimated that up to 1.17 acres within the noise contours could be developed as residential land uses within the City of Wilmington, based on the existing R-7 and R-20 zoning designations. Up to 19.30 acres within the noise contours could be developed as noise-sensitive institutions, based on the AC and AR zoning designations in unincorporated New Hanover County.

A benefit to amending the zoning is that any potential redevelopment of these areas would likely be compatible with airport operations; however, a disadvantage is that property owners may interpret changes to the zoning as a move to redevelop the area, which could affect property values and be considered taking without compensation.

Conclusion

Because there is minimal risk for development of new noise-sensitive land uses within the 2028 noise contours due to the relatively small amount of vacant land (20.47 acres), amendments to the city and countywide zoning designations are not considered a feasible alternative for limiting development of noise-sensitive land uses; however, an airport overlay zone may be a more feasible alternative and is discussed later in this chapter.

This alternative should not be considered for inclusion in the NCP.

Change in Residential Density

Conventional zoning may be used to promote land use compatibility by reducing the number of future impacts within high-noise areas, rather than preventing residential development altogether. This can be achieved by reducing the permitted housing density in noise-impacted areas.

Evaluation/Conclusion

As indicated by the growth risk analysis presented in Chapter Four, there is potential for the development of noise-sensitive land uses on the undeveloped parcels within the 2028 noise exposure contours; however, the current designations of AR, R-7, and R-20 presently limit development of the vacant parcels to low-density residential and recreational development, so a change in residential density is not warranted.

This alternative should not be considered for inclusion in the NCP.

Subdivision Regulations

A city or county's subdivision regulations establish the standards for site planning, lot layout, and design of public improvements. Subdivision regulations can encourage compatible development around an airport by requiring the consideration of aircraft noise during the plan review by public officials. Requirements could include noise attenuation features in the site plan or a decrease or shift in the density of portions of the development.

Subdivision regulations require sound insulation standards for new developments by enforcing compliance with building codes. Additionally, they can be used to inform prospective future property owners of aircraft noise. In some communities, noise levels are shown on the final subdivision plats by drawing the noise contours on the plats or assigning noise levels to the lots. This makes the noise information a matter of public record. It is important to note that while these levels are recorded with the lot, the noise exposure level can change over time.

Evaluation/Conclusion

Subdivision regulations are typically most useful as a means for providing land use compatibility protection in undeveloped areas. There is limited potential for growth risk in the area because the majority of land within the 65 DNL contour is already developed. Additionally, the residential zoning and comprehensive plan designations within the 65 DNL contours are limited to 1.17 acres in the City of Wilmington and 7.96 acres in New Hanover County, as presented in **Table 6A**; therefore, additional subdivision regulations for the city and the county would have limited protective value for development of the vacant parcels.

This alternative should not be considered for inclusion in the NCP.

Building Codes

Building codes regulate the construction of buildings by establishing standards for materials and construction techniques to protect the health, safety, and welfare of residents. Additionally, building codes address structural concerns, ventilation, and insulation, each of which influences the noise attenuation capabilities of a structure. Building codes commonly apply to both new construction and major alterations to existing structures.

Building codes can require sound insulation in the construction of noise-sensitive uses in areas subject to high aircraft noise levels. Requirements for sound insulation vary with noise exposure and are typically more stringent in areas with higher noise levels. Most sound insulation code standards describe in detail the required improvements needed to achieve a given level of noise reduction.

Evaluation

The *North Carolina State Building Code* has been adopted by both the City of Wilmington and New Hanover County, but as discussed in Chapter One, this code does not contain additional airport-related noise guidelines.

The *North Carolina State Building Code* establishes standards for interior room noise levels in single-family and multi-family residential dwelling units, which are accomplished through airborne sound insulation. The minimum noise insulation performance standards require a structure to meet a sound transmission class (STC) rating of not less than 45. It is important to note that this requirement applies only to construction of new noise-sensitive land uses.

As outlined in FAA Order 5100-38D, *Airport Improvement Program Handbook*, Appendix R, Paragraph R-8 (effective September 30, 2014), a 45-decibel (dB) DNL interior noise level threshold has also been adopted by the FAA for interior use. Additionally, use of the 45-dB DNL threshold was further clarified in 1992 by the Federal Interagency Committee on Noise (FICON) findings, which state that a DNL of 45 dB is the interior noise level that will accommodate indoor conversation or sleep.

As previously discussed, land surrounding the airport is largely developed or designated for compatible land uses. In cases where additions of new residential habitable spaces (defined as living, sleeping, eating, or cooking areas) are proposed by a property owner, the city and/or county could impose an amended building code that would require any new habitable space to achieve the 45-dB DNL interior noise level.

Conclusion

This measure is already in place for new construction. A revised building code requiring attainment of a 45-dB DNL interior noise level for construction of new habitable spaces as an addition to an existing property within the noise contours could be effective; however, the benefits would be limited to the two dwelling units and one place of worship that are within the 2028 65 DNL contours and would likely not outweigh the costs of such a broad approach.

This alternative should not be considered for inclusion in the NCP.

Transfer of Development Rights

Land ownership includes a bundle of rights to the use of the land. These rights include access rights, mineral rights, limited rights to airspace above the land, and land development rights. Transfer of development rights (TDR) is based on the idea that each right has a market value that can be separated and sold without selling the entire property.

TDR was developed to preserve environmentally important areas without having to buy them with public funds. The technique involves dividing the municipality into sending and receiving zones. The sending zones are areas where environmental preservation and minimal development are desired and the receiving zones are areas where additional development is preferred.

Development rights, which are measured in terms of development density, are assigned through the zoning ordinance. If developers in the receiving areas can secure additional development rights, they are allowed to build at greater densities than normally allowed by the zoning ordinance. Interested developers could purchase these rights from landowners in the sending zones and apply them to projects within receiving zones. In this way, the public can benefit from preserving environmentally valuable land, the owner of that land can be paid for preserving it, and the potential return on the investment for the developer increases.

Evaluation/Conclusion

TDR is difficult to justify solely for airport land use compatibility purposes. It involves substantial start-up costs and significant staff time for management. If a local jurisdiction is already using or considering TDR, airport compatibility criteria could be included with other environmental criteria in the design of the program. Presently, no jurisdictions in New Hanover County use TDR programs. In addition to potential revisions to conventional land use regulations, current land use planning can adequately address airport noise compatibility issues at Wilmington International Airport.

This alternative does not merit further consideration.

Environmental Zoning

Special zoning regulations to preserve environmentally sensitive areas or protect developments from environmental hazards can be used to promote land use compatibility near airports. Floodplain overlay zoning, which restricts or prohibits development in all or part of a floodplain, is the most common form of environmental zoning. Other environmental zoning regulations may include steep slope zoning, requiring low development densities and special construction standards, and wetland preservation zoning. All of these can be used to restrict the development of noise-sensitive uses in environmentally sensitive areas that are also impacted by aircraft noise.

Evaluation/Conclusion

There are no areas suitable for environmental zoning near the airport that are significantly impacted by aircraft operations; therefore, environmental zoning is not a viable means of promoting land use compatibility.

This alternative does not merit further consideration.

Fair Disclosure Regulations

Fair disclosure regulations are intended to ensure that prospective buyers of property are informed that a property is or will be exposed to potentially disruptive aircraft noise. Even near the busiest airports, it is not uncommon for newcomers to report having bought property without having been informed about airport noise levels.

At the most formal level, fair disclosure can be implemented through regulations that require the seller and agent to provide a notice of aircraft noise exposure on the real estate listing sheet and at the time a sales contract is executed. In addition, any easements should be revealed at the time of closing.

Fair disclosure regulations can place a serious responsibility on real estate agents and lenders; however, if the regulations are properly drafted, the responsibilities of real estate agents and sellers are clearly defined and should be limited to disclosing the airport noise levels or overlay districts that affect the property and directing buyers to airport officials for more information.

Evaluation

The *North Carolina Residential Property Disclosure Act* (N.C. Gen. Stat § 47E) mandates disclosure by sellers of residential property impacted by airport noise. For example, in the areas surrounding Raleigh-Durham International Airport, a 55-dB DNL is used as the standard for noise disclosure and is implemented at the county level by Durham County and Wake County. In practice, the New Hanover County Airport Authority would issue a notice to affected property owners that prompts the required disclosure to prospective purchasers. It is important to note that developers of new property in noise-impacted areas are exempt from the disclosure requirement.

Conclusion

For property owners within the ILM noise contours to be compliant with state disclosure laws, a mechanism for disclosure should be considered.

This alternative deserves further consideration.

Capital Improvement Programming

Major projects, such as roadway improvements or the extension of sanitary and storm sewers, can indirectly promote development. In the context of airport land use compatibility planning, this could result in additional incompatible development near an airport.

Evaluation

Coordination between local public works departments and the airport to identify capital improvement projects that could promote development near the airport would inform airport staff of these projects and ensure they are planned in a way that promotes compatible growth. Airport staff could provide input on the proposed projects and possibly identify alternative solutions that would decrease the likelihood of noise-sensitive development occurring near the airport.

Conclusion

Coordination would ensure that airport and planning staff would have the opportunity to comment on projects and their potential impact on compatible land use development.

This alternative should be considered for inclusion in the NCP.

Airport Compatibility Overlay Zoning

Airport compatibility overlay zoning is intended to provide an additional layer of special-purpose regulations to address specific environmental conditions or problems by setting performance standards to protect the public. Overlay zoning involves the creation of one or more zoning districts that supplement the regulations of the general-purpose zoning districts. Within the context of airport compatibility planning, these controls are often used to regulate the heights of structures within runway approach areas or promote compatible development with aircraft noise levels. Airport compatibility overlay zoning is used around many airports to establish land use controls to protect public health, safety, and welfare from conflicts that may arise between aviation and urban development.

Airport compatibility overlay zoning is generally established where the underlying zoning (i.e., residential, commercial, industrial, etc.) remains in place and is supplemented with additional regulations by the overlay zone. The land within the overlay zone is subject to the requirements of both zoning ordinances: the underlying zone and the overlay zone. The strictest requirements of both zones apply to the affected parcel.

The intent of airport compatibility overlay zoning is to avoid the problems associated with incompatible development in high-noise areas. Regulations in airport compatibility overlay zones can prohibit noise-sensitive land uses, provided the underlying zone permits land uses that are economically viable.

Among the advantages of airport compatibility overlay zoning are the simplicity of the required amendments, ease of administration, clear relationship of the regulations to their purpose, and minimal impact of the regulations on the application of the zoning ordinance in other parts of the community.

Evaluation

As discussed in Chapter One, neither the City of Wilmington nor New Hanover County have adopted an overlay ordinance specially related to the ILM noise contours; however, New Hanover County's *Unified Development Ordinance* defines airport zones in Section 5.6, which applies height restrictions in areas surrounding the airport, and specific zoning designations for those areas in Section 5.10. The City of Wilmington and New Hanover County could each adopt a consistent overlay zone for uniform implementation of noise standards and fair disclosure to achieve an approach to land use compatibility that is uniform and consistent with state law and local policies.

Determining the geographic extent and requirements of the overlay zone is a crucial decision, as it has long-term implications and may be difficult to adjust in the future. As discussed in Chapter Three, the 2023 noise exposure contours encompass a slightly larger area than the 2028 noise exposure contours; therefore, the 2023 contours would provide the largest area of protection for the airport. Additional alternatives for ILM could be developed that offer even more protection, such as 55 DNL contours and/or 20-year contours.

When considering the use of noise contours for land use planning boundaries, the irregular shapes of the contours become problematic, particularly when a contour encompasses only a portion of a parcel. Taking this into consideration, an alternative would be to adjust the overlay zones to a logical breakpoint. Similar to FAA policies regarding sound insulation, planning boundaries based on noise exposure contours are commonly adjusted to a logical breakpoint, such as a neighborhood boundary, significant arterial surface street, highway, river, or other physical or natural barrier or feature.

Conclusion

A uniform hazard zone consistent with the ILM noise contours could be implemented by both the City of Wilmington and New Hanover County to reduce noise-sensitive development near the airport, with an added benefit of continuing to limit the height of structures in a consistent manner. A separate noise overlay zone could also be used to implement sound insulation and fair disclosure requirements within the vicinity of the airport; however, due to the limited number of impacts in the future condition (two dwelling units and one place of worship), incorporating the noise contours into the local zoning ordinances would have limited benefit.

This alternative does not merit further consideration.

EXPENDITURE TECHNIQUES

Land use management techniques involving direct expenditures include the following:

- Voluntary property acquisition
- Voluntary sound insulation
- Noise and avigation easement purchase
- Sales assurance
- Development rights acquisition

These measures are usually considered as a last resort for controlling noise impacts because they are often disruptive, expensive, and sometimes controversial. These measures are potentially eligible for FAA funding assistance through the noise set-aside portion of the federal Airport Improvement Program (AIP) if they are approved within a Part 150 noise compatibility program.

To be eligible for AIP funding, a noise compatibility project (also referred to as a noise mitigation project) must meet all requirements from Appendix R, *Noise Compatibility Planning/Projects*, of the *Airport Improvement Handbook*. FAA Order 5100.38D, Appendix R, Section R-6, Item a. stipulates that these project locations must be within the 65 DNL noise contour based on existing conditions or the five-year forecast conditions, whichever is greater. Historically, properties within noise contours exceeding 65 DNL have received much higher priority for mitigation funding than properties located within lesser contours (i.e., 55 and 60 DNL noise contours).

As discussed in Chapter Four, there are noise impacts to 14 residential dwelling units and one place of worship in the 2023 scenario and two dwelling units and one place of worship in the 2028 scenario. Additionally, ILM acknowledges that some community members are disturbed by noise and overflights outside the FAA guidelines for noise contours. The following sections present alternatives for addressing noise impacts.

Voluntary Property Acquisition

The intent of property acquisition as a mitigation measure is to remove residences from severely noise-impacted areas and prevent incompatible uses from being developed near the airport. This can be an effective way to ensure complete noise compatibility around an airport, although it has several important drawbacks, including potentially high costs, notable complexity, administrative effort, disruption of the lives of residents in the acquisition area, and the risk of significant damage to the character of established neighborhoods.

Under federal regulations (FAA Order 5100.38D, Appendix R, Table R-6, Item e.), land may be acquired for noise mitigation with funding through the noise set-aside of the AIP, provided it is within the 65 DNL contour and has been developed with noise-sensitive land uses. The FAA actively supports airport ownership of land impacted by noise levels above 75 DNL. While acquisition of areas impacted by noise down to 65 DNL is eligible for federal funding assistance, it can be difficult to establish a high priority with the FAA for funding the acquisition of property outside the 70 or 75 DNL contour.

Evaluation

As previously discussed, acquisition of areas impacted by noise within the 65 DNL contour may be eligible for federal funding assistance. There are 14 residential properties and one place of worship within the 65 DNL noise contours for the existing (2023) condition in the areas surrounding ILM that would be potentially eligible. There are no noise-sensitive land uses in the 70 DNL or greater contour.

Typically, property acquisition for noise mitigation is accomplished through voluntary programs. The purchasing agency (New Hanover County Airport Authority) notifies property owners in the area in question when it is ready to negotiate the purchase of their land and homes. Homeowners who choose to participate in the program are assured that the airport will buy their property, so long as a fair market appraised value is agreed upon. Under a purely voluntary program, property owners are under no obligation to participate and may decide to remain in their homes. In contrast, some airports utilize a comprehensive redevelopment approach to achieve property acquisition objectives. **Table 6B** summarizes the similarities and differences between the two program types.

TABLE 6B | Comparison of Voluntary and Comprehensive Programs

Voluntary Property Acquisition Program	Comprehensive Redevelopment Program
Property owners are under no obligation to participate and may remain in their homes	Involves phased acquisition of all parcels and the program boundary is delineated at logical breakpoints
Requires negotiation to achieve a fair purchase price	Requires proper care and maintenance of vacant lots
Sound insulation may be offered as an alternative to acquisition	Requires a residential relocation plan
Requires a residential relocation plan	Requires a visual buffer between the redevelopment site and remaining residential areas
Program boundary for eligible properties is delineated at logical breakpoints	May require traffic flow studies and design to avoid blighting influences

If federal funds are used for acquisition of residences, either program will be required to conform to the *Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970*. These regulations mandate that certain relocation assistance services be made available to homeowners/tenants of the properties to be acquired, including assistance in finding comparable and decent substitute housing for the same cost, moving expenses, and in some cases, loss of income.

The FAA allows for property acquisition boundaries to be delineated at logical breakpoints, such as a neighborhood boundary, significant arterial surface street, highway, river, or other physical or natural barrier or feature. Using this guidance, a program boundary was developed using the 2028 noise exposure contours as the basis. Based on this methodology, a total of 29 parcels are included in the potential program area in addition to the two dwelling units and one place of worship that fall within the 2028 65 DNL noise exposure contours. 14 of the program area parcels contain dwelling units, four parcels are associated with the existing place of worship, and five parcels are vacant. The remaining six parcels are developed with compatible land uses; therefore, there are 14 total dwelling units and one place of worship in the potential program area. Dwelling unit counts are based on information available from the New Hanover County parcel layer and assessor's tax roll data.

A preliminary estimate for acquiring the dwellings within the 65 DNL noise exposure contour was determined by comparative market analysis from multiple listing service (MLS) data. Purchase estimates are $350,000 per single family (totaling $4,900,000); relocation payments could be up to $22,500 per

household for owners ($315,000) per FAA Order 5100.37B, *Land Acquisition and Relocation Assistance for Airport Projects*; demolition and hazardous material abatement could cost $25,000 per structure ($350,000 for the area). A consultant may also be necessary to navigate the property inventory, appraisal, and acquisition process, at an estimated cost of $350,000. Additionally, the existing place of worship and associated improvements have an estimated value of $1,768,000. The total estimated cost for acquisition, rezoning, and preparing the approximate area for redevelopment with compatible land uses would be $7,683,000. At least part of these costs would be offset by revenues from the sale of the land for redevelopment. The potential program area and parcel numbers for potentially eligible properties are listed on **Exhibit 6B** and **Exhibit 6C**.

Conclusion

A voluntary residential acquisition and redevelopment program could promote airport compatibility north of the airport; however, due to the administrative cost, potential to create blight in an established residential area, and minimal interest from property owners, this alternative does not merit further consideration.

Voluntary Sound Insulation

Noise-sensitive land uses may be retrofitted to include sound insulation intended to reduce interior noise levels. Sound insulation can improve the outdoor-to-indoor noise level of a structure by five to 10 dB. Sound insulation strategies generally include incorporating thermal insulation and weatherproofing; baffling vents and mail slots; and installation of acoustical windows and solid-core or foam-core steel doors. Because the benefits of these improvements are only realized if the windows and doors are closed, ventilation systems may also be incorporated.

In addition to the previously discussed criteria, the FAA has provided specific guidance for sound insulation programs, as outlined in FAA Order 5100-38D (including Change 1), *Airport Improvement Program Handbook*, Appendix R (effective February 26, 2019). For sound insulation programs, a two-step eligibility requirement applies: first, the noise-impacted incompatible structures must be located within an airport's existing or future 65 DNL contour; and second, the structure must have an existing interior noise level of 45 DNL or greater, as measured with the windows closed.

Evaluation

In addition to the FAA requirements for implementation, a sound insulation program requires administrative support from the sponsoring agency (in this case, the New Hanover County Airport Authority). Prior to initiating the program, the following actions would need to be taken:

1. Establish a program boundary.
2. Create program guidelines.
3. Train technical staff or hire a qualified consultant to manage the program.
4. Develop a list of approved contractors to complete the sound insulation work.

Additionally, program phasing and prioritization would need to be established.

Program Area Parcels			
ID	Parcel ID	ID	Parcel ID
1	R03312-003-016-000	16	R03312-003-026-000
2	R03312-003-015-000	17	R03312-003-025-000
3	R03312-003-014-000	18	R03316-003-005-000
4	R03312-003-013-000	19	R03316-003-004-000
5	R03312-003-012-000	20	R03316-003-003-000
6	R03312-003-011-000	21	R03316-003-002-000
7	R03312-003-010-000	22	R03316-003-001-000
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11	R03312-003-006-000	26	R03316-002-003-000
12	R03312-003-006-001	27	R03316-002-002-000
13	R03312-003-029-000	28	R03316-002-001-000
14	R03312-003-028-000	29	R03312-003-024-000
15	R03312-003-027-000		

Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads
Interstate
Highway
2023 Existing Noise Contours Combined

Existing Land Use
Commercial
Industrial
Single Family Residential
Multifamily Residential
Vacant
Mixed Use
Governmental
Non-Residential Noise Sensitive
Parks & Open Space
Agricultural
Right of Way, Parking & Utilities,Water

0 2,000
1" = 2,000'

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

Exhibit 6B
EXISTING (2023) POTENTIAL PROGRAM AREA

Program Area Parcels			
ID	Parcel ID	ID	Parcel ID
1	R03312-003-016-000	16	R03312-003-026-000
2	R03312-003-015-000	17	R03312-003-025-000
3	R03312-003-014-000	18	R03316-003-005-000
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13	R03312-003-029-000	28	R03316-002-001-000
14	R03312-003-028-000	29	R03312-003-024-000
15	R03312-003-027-000		

Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads

Interstate
Highway
2023 Existing Noise Contours Combined

Existing Land Use
Commercial
Industrial
Single Family Residential
Multifamily Residential
Vacant
Mixed Use
Governmental
Non-Residential Noise Sensitive
Parks & Open Space
Agricultural
Right of Way, Parking & Utilities,Water

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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

Exhibit 6B
EXISTING (2023) POTENTIAL PROGRAM AREA

Program Area Parcels			
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1	R03312-003-016-000	16	R03312-003-026-000
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14	R03312-003-028-000	29	R03312-003-024-000
15	R03312-003-027-000		

Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads
Interstate
Highway
2028 Future Noise Contours Combined

Existing Land Use
Commercial
Industrial
Single Family Residential
Multifamily Residential
Vacant
Mixed Use
Governmental
Non-Residential Noise Sensitive
Parks & Open Space
Agricultural
Right of Way, Parking & Utilities,Water

0 2,000
1" = 2,000'

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

Program Area Parcels			
ID	Parcel ID	ID	Parcel ID
1	R03312-003-016-000	16	R03312-003-026-000
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12	R03312-003-006-001	27	R03316-002-002-000
13	R03312-003-029-000	28	R03316-002-001-000
14	R03312-003-028-000	29	R03312-003-024-000
15	R03312-003-027-000		

Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads
Interstate
Highway
2028 Future Noise Contours Combined

Existing Land Use
Commercial
Industrial
Single Family Residential
Multifamily Residential
Vacant
Mixed Use
Governmental
Non-Residential Noise Sensitive
Parks & Open Space
Agricultural
Right of Way, Parking & Utilities,Water

0 3,000
1" = 3,000'

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

Exhibit 6B
FUTURE (2028) POTENTIAL PROGRAM AREA

Program Area Parcels			
ID	Parcel ID	ID	Parcel ID
1	R03312-003-016-000	16	R03312-003-026-000
2	R03312-003-015-000	17	R03312-003-025-000
3	R03312-003-014-000	18	R03316-003-005-000
4	R03312-003-013-000	19	R03316-003-004-000
5	R03312-003-012-000	20	R03316-003-003-000
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11	R03312-003-006-000	26	R03316-002-003-000
12	R03312-003-006-001	27	R03316-002-002-000
13	R03312-003-029-000	28	R03316-002-001-000
14	R03312-003-028-000	29	R03312-003-024-000
15	R03312-003-027-000		

Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads
Interstate
Highway
2028 Future Noise Contours Combined

Existing Land Use
Commercial
Industrial
Single Family Residential
Multifamily Residential
Vacant
Mixed Use
Governmental
Non-Residential Noise Sensitive
Parks & Open Space
Agricultural
Right of Way, Parking & Utilities,Water

0 2,000
1" = 2,000'

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



Program Area Parcels

ID	Parcel ID	ID	Parcel ID
1	R03312-003-016-000	16	R03312-003-026-000
2	R03312-003-015-000	17	R03312-003-025-000
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13	R03312-003-029-000	28	R03316-002-001-000
14	R03312-003-028-000	29	R03312-003-024-000
15	R03312-003-027-000		

Airport Property Boundary
Runway Centerline
Jurisdictional Boundaries
Railroads

Interstate
Highway
2028 Future Noise Contours Combined

Existing Land Use
- Commercial
- Industrial
- Single Family Residential
- Multifamily Residential
- Vacant
- Mixed Use
- Governmental
- Non-Residential Noise Sensitive
- Parks & Open Space
- Agricultural
- Right of Way, Parking & Utilities,Water

0 3,000
1" = 3,000'

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

Exhibit 6C
FUTURE (2028) POTENTIAL PROGRAM AREA

Based on the 2023 noise exposure contours, the potential program area includes 14 single-family residential dwelling units and one place of worship, as depicted on **Exhibit 6B** and **Exhibit 6C**. The estimated cost of the program is $960,000, assuming costs of $50,000 per single-family unit ($700,000 total) and $100,000 for the place of worship, as well as a 20 percent contingency for a consultant to administer the program ($160,000). It is important to note that some residences may not qualify based on the previously discussed FAA sound insulation guidance; therefore, the cost estimates are likely greater than the expected costs.

Conclusion

A voluntary residential sound insulation program could reduce noise impacts north of the airport; therefore, this alternative merits further consideration.

Noise and Avigation Easement Purchase

An easement is a right held by one person to make use of another property owner's land for a limited purpose. In the context of airport noise compatibility planning, two types of easements are possible:

1. Positive easements, which allow someone to make noise over the land; and

2. Negative easements, which prevent the creation or continuation of unprotected noise-sensitive uses on the property.

An advantage of easements over zoning is that they can be permanent, whereas the zoning designation of a parcel may be changed. Acquisition of easements does not reduce the noise impacts on people or change the incompatible land uses to compatible uses. Locally, an important advantage of easements over acquisition is that the property remains on the tax rolls and available for compatible development by the landowners.

Noise and avigation easements give an airport the right to direct aircraft over the property, creating related annoyances, with legal protection provided to the airport. These easements run with the land and serve as a limited means of notifying prospective property owners of the impact of airport noise. The purchase of noise and avigation easements within the 65 DNL is eligible for federal funding assistance through the noise set-aside of the AIP. Purchase of noise and avigation easements over existing homes may be appropriate if noise substantially interferes with the full enjoyment of the property. The advantages and disadvantages of purchasing noise and avigation easements are outlined in **Table 6C**.

TABLE 6C | Advantages and Disadvantages of Noise and Avigation Easement Purchase

Advantages	Disadvantages
Legal protection for the airport	Does not mitigate noise, only compensates property owners for inconvenience
Limited fulfillment of fair disclosure objectives	Future owners do not receive similar compensation but are still exposed to aircraft noise
Neighbors who have diminished property enjoyment are compensated	Risk of airport becoming a target of complaints, controversy, political pressure, and possibly lawsuits

Evaluation

The purchase of noise and avigation easements is a viable option given the potential for legal protection for the airport and monetary compensation for homeowners.

Conclusion

This alternative should be considered for NCP inclusion as an alternative to voluntary sound insulation.

Sales Assurance

Under a sales assurance program, the airport would offer to supplement any bona fide purchase offer up to an amount equal to fair market value to homes within the 65 DNL noise exposure contour. The airport would guarantee the property owner receives the appraised value, or some increment thereof, regardless of the final sales price that is negotiated with a buyer. In order to prevent collusion between buyer and seller, to the detriment of the airport, the airport must approve the listing price for the home and any downward adjustments of that price. In return for participation in the program, the airport could require the property owners to give the airport an avigation easement.

Evaluation

The advantage of a sales assurance program is that the airport would never take title to the property, so it would remain on the county's tax rolls; however, this alternative is appropriate only if the voluntary acquisition program is not pursued.

Conclusion

This alternative may be considered for NCP inclusion if a voluntary acquisition program is not pursued.

Development Rights Acquisition

The ownership of land involves the ownership of a bundle of rights to use and develop that land to the extent permitted by government regulations, such as zoning, health and safety laws, and environmental laws. A property owner can sell some of these rights while retaining the title to the land. For example, a property owner surrenders some of the rights to their property when they grant someone an easement or sell the mineral rights to the property. One of the rights a property owner can sell is the right to develop the property for urban uses. The advantages and disadvantages of property rights acquisition are outlined in **Table 6D**.

TABLE 6D | Advantages & Disadvantages of Development Rights Acquisition

Advantages	Disadvantages
Protects from incompatible development	Cost can be nearly as much as the full fee title
Property owners receive compensation	Buyer obtains very limited interest in the property
Property kept in private ownership, in productive use, and on the tax rolls	Only effective in rural areas

The advantage of purchasing development rights is that complete protection from incompatible development can be assured, and the property owners can receive compensation for any perceived loss. In addition, the property can be kept in private ownership, in productive use, and on the tax rolls while protecting the airport from incompatible development. The main disadvantage is the potentially high cost of the development rights, in return for which the buyer receives only a very limited interest in the property. In urbanizing areas where property owners have a reasonable basis for development expectations, development rights can cost nearly as much as the full fee title. In rural areas, development rights can be an economical alternative to fee simple acquisition.

Evaluation

This alternative is appropriate only for undeveloped parcels.

Conclusion

This alternative should not be considered for inclusion in the NCP.

PRELIMINARY LAND USE ALTERNATIVES

Table 6E presents the preliminary list of land use management alternatives that deserve further consideration. The preliminary alternatives are to be reviewed by the planning advisory committee, airport staff, and the public. Refinements to these preliminary measures may be necessary before the final plan is developed. In addition, more detailed consideration for the implementation of these recommendations is necessary.

TABLE 6E | Land Use Management Alternatives for Further Consideration

Alternative	Description	Cost	Implementing Agency
Update Comprehensive Plan Policies	Add a policy to monitor and update the Part 150 Study and establish an aviation noise threshold for compatibility.	Administrative	City of Wilmington and New Hanover County
Update Comprehensive Plan Map	Incorporate noise exposure contours as part of the comprehensive plan map.	Administrative	City of Wilmington and New Hanover County
Capital Improvement Programming	Establish a communication process between local public works departments and airport staff to share information regarding major public improvements.	Administrative	City of Wilmington and New Hanover County
Update Project Review Guidelines	Revise project review guidelines for new development within the noise contours to encourage airport participation.	Administrative	City of Wilmington and New Hanover County
Implement Fair Disclosure Policy	Send a notice to property owners within the 65 DNL contour to compel fair disclosure for residential real estate transactions.	Administrative	New Hanover County Airport Authority
Voluntary Sound Insulation	Install sound insulation for 17 dwelling units northwest of the approach end of Runway 17.	$960,000	New Hanover County Airport Authority
Noise and Avigation Easement Purchase	Provide the option of avigation easement purchase to homeowners who decline participation in the voluntary sound insulation program.	$70,000	New Hanover County Airport Authority