

Chapter 1 Introduction and Background

The City of Charlotte Aviation Department (Airport Sponsor) is updating the Part 150 Noise Compatibility Study for the Charlotte Douglas International Airport (Airport or CLT) in accordance with the requirements defined in Title 14 Code of Federal Regulations (CFR) Part 150, *Airport Noise Compatibility Planning*. The purpose for conducting an update to the Noise Compatibility Study is to identify noise noncompatible land uses surrounding an airport, and to recommend measures to both mitigate existing noncompatible land uses and to prevent future noncompatible land uses. This chapter provides an introduction and background under which the Part 150 Noise Compatibility Study Update was prepared.

1.1 CLT Noise Compatibility History

The City of Charlotte began the original Part 150 Noise Compatibility Study in 1987, which included Noise Exposure Maps (NEMs) and a Noise Compatibility Program (NCP). Both the NEMs and NCP were approved in 1990, updated in 1996 and further amended in 1998. In 2015, the NEMs were updated to identify noise noncompatible land uses surrounding the Airport and to evaluate if the NCP should also be updated.¹ Based on the results of the 2015 NEM update, no updates to the NCP were determined to be necessary. As such, the currently approved Part 150 Noise Compatibility Program consists of the 2015 NEMs and the 1996 NCP (as amended in 1998).

In March 2022, the Federal Aviation Administration (FAA) issued a Finding of No Significant Impact and Record of Decision (FONSI/ROD) on the Capacity Enhancement Projects Environmental Assessment (Capacity EA) at CLT. The EA evaluated the construction of a new fourth parallel runway among other terminal and airfield capacity enhancement projects. As presented in the Capacity EA, the City of Charlotte has committed to conducting a Part 150 Noise Compatibility Study Update that would update the NEMs and NCP following the Capacity EA. As such, this Part 150 Study is aimed to identify noise noncompatible land uses and evaluate a variety of strategies to reduce noise in communities surrounding CLT given the airfield improvements that are currently under design and construction (decommissioning of Runway 5/23 and construction of the new fourth parallel runway) which are anticipated to be operational by 2028.

1.2 14 CFR Part 150 Process Summary

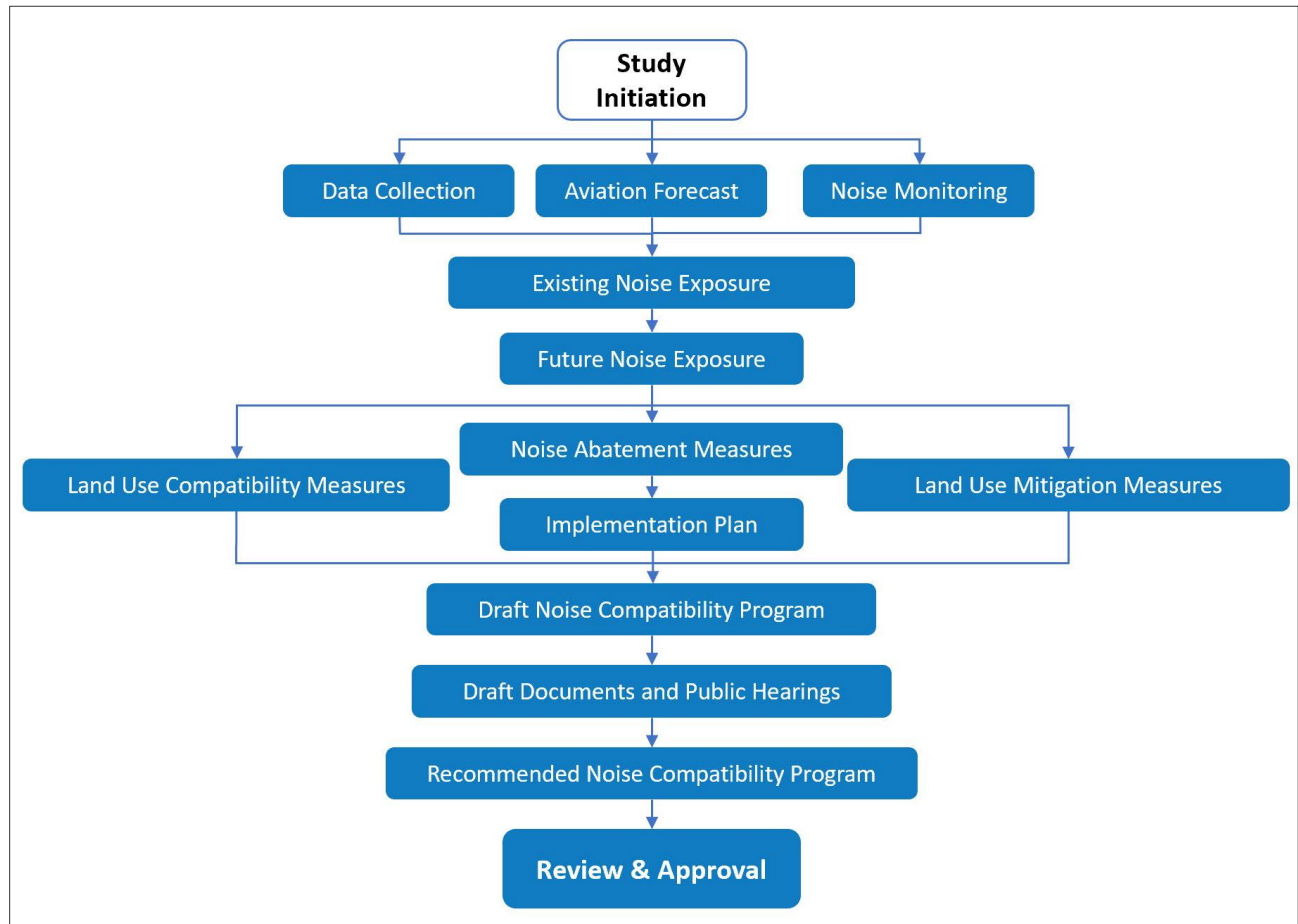
The Noise Compatibility Planning process, herein referred to as the Part 150 process, provides a structured approach for airport sponsors, airlines, pilots, neighboring communities, Federal, state, and local agencies, and other stakeholders to collaborate on efforts to reduce noncompatible land uses. Title 14 CFR Part 150 is the regulation that prescribes the procedures, standards, and methodology governing the development, submission, and review of airport NEMs and NCPs. Airport sponsors prepare two primary elements of the Part 150 Noise Compatibility Study, the NEMs and NCP. Once prepared, the airport sponsor and the FAA analyze the NEMs to identify noncompatible land uses, and prepare the NCP that proposes solutions to mitigate those uses. The Part 150 process concludes with an FAA Record of Approval (ROA) at which time steps may be undertaken to approve the NCP measures for implementation. See **Exhibit 1-1, Part 150 Study Process**, for a detailed flowchart of the planning process consistent with 14 CFR Part 150.

Through 14 CFR Part 150, the FAA established regulations governing the public participation process for airports choosing to conduct a Part 150 Study. Public participation is required during the Part 150 Study process, which requires the airport sponsor to afford adequate opportunity for

¹ The 2015 NEMs include the Existing (2015) NEM and Future (2020) NEM.

airlines, pilots, neighboring communities, Federal, state, local agencies, and other stakeholders to submit their views, data, and comments on the development of the NEMs and NCP. Specifically, consultation is to be sought out by land use authorities and agencies that may have jurisdiction over any area depicted on the NEM that is within the Day-Night Average Sound Level (DNL) 65 dB and greater contours. Input from the general public includes those that have indicated their interest in the Part 150 Study or are located within the NEMs and may be affected by the outcome of the Part 150 Study.

Exhibit 1-1 Part 150 Study Process



While the decision to undertake Noise Compatibility Planning is typically voluntary on the part of the airport sponsor, the airport sponsor must comply with all applicable statutory and regulatory requirements of 14 CFR Part 150. As an encouragement to undertake the Part 150 process, an airport sponsor becomes eligible for Federal funding assistance from the Airport Improvement Program (AIP) for the implementation of the NCP if the regulations of 14 CFR Part 150 are followed and the NEMs and NCP measures are approved by the FAA.

1.3 Preparation of Noise Exposure Maps (NEMs)

The NEM component of a Part 150 Study provides local communities an opportunity to visualize aircraft noise exposure levels in order to make better informed decisions regarding proposed noise-sensitive development in the vicinity of an Airport. The NEMs present airport noise exposure contours for the existing condition and a forecast condition five years from the date of submission of

the documentation for FAA review. This Part 150 Study Update will update the NEMs to reflect the current conditions and future conditions for the Airport.

The year representing the current conditions is 2023; as such, the current conditions are depicted in the Existing (2023) NEM. The data collection and analysis for this Part 150 Study Update began in 2021 and continued through 2022. The Existing (2023) NEM is based on data from April 2021 through March 2022, which was the most recent 12 months of data available at the time the noise modeling began for the purpose of this analysis. The development of the Existing (2023) NEM is described in Chapter 3, Section 3.1.

The year representing the future conditions is 2028 because it is five years from the existing conditions and is the anticipated opening year of the proposed new fourth parallel runway (herein referred to as Runway 01/19) among other terminal and airfield capacity enhancement projects. The future condition also assumes the growth as forecasted in the Aviation Activity Forecast in **Appendix G, Forecast**.² Additionally, the future conditions assumes the implementation of the updated NCP (see Section 1.4 for more information). The future conditions are depicted in the Future (2028) NEM/NCP as defined in Chapter 4, Section 4.4.2.

The noise contours are superimposed on a land use map to show areas of noncompatible land use, as defined in 14 CFR Part 150 and presented in **Appendix A, Applicable Laws, Regulations, and Policies**. Chapters 3 and 4, and **Appendix C, Noise Methodology**, contains detailed information on the inputs and methodology for preparing the noise exposure contours, including use of the DNL noise metric. The official NEMs are located at the front of this document with the NEM and NCP checklists.

1.4 Preparation of the Noise Compatibility Program (NCP)

The NCP component of a Part 150 Study includes provisions for the abatement of aircraft noise through aircraft operating procedures, air traffic control procedures, or airport facility modifications. It also includes provisions for land use compatibility planning and may include actions to mitigate the impact of noise on noncompatible land uses.

The FAA establishes procedures and criteria for evaluation of the NCP in 14 CFR Part 150. Two criteria are of particular importance: (1) the airport sponsor may not take any action that imposes an undue burden on interstate or foreign commerce; (2) nor may the operator unjustly discriminate between different categories of airport users. The FAA also reviews changes in flight procedures proposed for noise abatement for potential effects on flight safety, safe and efficient use of the navigable airspace, management and control of the national airspace and traffic control systems, security and national defense, and compliance with applicable laws and regulations. Because the FAA has the ultimate authority for air traffic control and flight procedures related to air traffic control requirements, any measures relating to these subjects that are recommended in an NCP must be explicitly approved by the FAA and may not be implemented unilaterally by the airport sponsor.

FAA approval or disapproval of NCP measures is issued through a ROA. After issuance of a ROA, the FAA will perform environmental, safety, and other types of reviews for each approved noise abatement measure in the NCP prior to determining whether the measure can be implemented. After these reviews are completed, the airport sponsor will decide to pursue implementation of the measures identified in the NCP and is responsible for applying for FAA funds associated with FAA-approved eligible items included in the NCP.

² Forecast Technical Memorandum, Technical Memorandum – Final, Charlotte Douglas International Airport Environmental Impact Statement, VHB in association with InterVISTAS, April 18, 2018.

1.5 Consultation and Public Involvement

A key element in the Part 150 process is public involvement. As previously stated, public participation is required during this process to afford adequate opportunity for airlines, pilots, neighboring communities, Federal, state, local agencies, and other stakeholders to submit their views, data, and comments on the development of the NEMs and NCP. In order to inform and gather input from the public regarding the findings of the Part 150 Study Update, the Airport Sponsor convened a Technical Advisory Committee (TAC) composed of airport stakeholders and members of the public that met to review the progress of the Part 150 Study Update process and provide input as necessary. Additionally, Public Information Meetings were held in the community at key points throughout the completion of the Part 150 process.

1.5.1 Technical Advisory Committee (TAC)

A TAC was convened early in the Part 150 process to provide feedback and advice to the CLT staff and consultant team on the contents and preparation of the Part 150 Study Update. The TAC provided members of the public through representatives of the Airport Community Roundtable (ACR), airport users, agencies, and local officials an opportunity to be involved in developing the NEMs and NCP. In refining the NEMs and NCP, staff from CLT, as well as the consultant team wanted to benefit from the TAC members' special viewpoints and the people and resources they represented. A process was therefore designed to encourage the open exchange of creative ideas to achieve results. The members of the TAC assisted the Part 150 Study process in several ways.

- **As a Sound Board** – The TAC provided a forum in which the consultant team and other TAC members could present information, findings, ideas, and recommendations. All benefited from listening to the diverse viewpoints and concerns of the wide range of interests represented on the committee.
- **As a Link to the Community** – Each member represented a key constituent interest – local neighborhoods, local governments, public agencies, or airport users. Committee members provided a link between the Study Team and the people they represented. They were asked to inform their constituents about the Study as it progressed, and to convey the views of others at committee meetings.
- **As a Critical Reviewer** – The consultant team wanted to have its work scrutinized closely for completeness of detail and clarity of thought. The committee membership was urged to review the consultant's work and provide any input to help improve it.
- **As an Aid to Implementation** – Each member has a unique role to play in implementing the plan, ranging from making changes in flight procedures to changes in local land use plans and regulations.

The TAC operated informally, with no compulsory attendance, no voting, and no officers. The final decision on which measures to include in the NCP rests with the Airport Sponsor. The TAC meetings were conducted by the consultant team and were conducted at key points in the Study when committee input was especially needed throughout the Part 150 process. Three meetings have taken place to date to review and receive comments on the development of the Existing (2023) Baseline and Future (2028) Baseline conditions, the alternative noise abatement measures, and the alternative screening process and preliminary NCP scenario development.

A fourth meeting is scheduled in conjunction with the release of this Draft Part 150 Study Update that will offer the TAC to review and discuss the draft NEMs and recommended NCP. Members were urged to attend the general Public Information Meetings held during the Study to listen firsthand to the concerns that were raised and to speak with members of the consultant team and

representatives of the City of Charlotte Aviation Department. Many organizations were contacted and invited to designate a representative to serve on the TAC. The resulting membership represents a broad range of interests that includes airlines, commerce, community, air traffic controllers, government and planning, as well as interested and affected citizens through representatives of the ACR. A roster of the membership of the TAC is provided in **Appendix F, Public Involvement**.

1.5.2 Public Information Meetings

During the course of the Part 150 Study Update, two sets of Public Information Meetings were held at convenient locations within the local community, and a third set of meetings is scheduled in conjunction with the release of this Draft Part 150 Study Update. Meeting dates and times are noted below. The Public Information Meetings were attended by interested citizens and local media representatives. Appendix F includes copies of meeting notices, sign-in sheets, comments received, and meeting handouts.

Public outreach efforts for each Public Information Meeting included the publishing of notifications through print media, social media, direct emails, and the project website. A legal advertisement and display advertisement were published in the Charlotte Observer 30 days prior to each meeting. Spanish language ads were also published in the *Que Pasa Mi Gente* and *La Noticia* publications. Additionally, a social media campaign using Facebook and Instagram was implemented to promote each meeting. The social media campaign was launched 15 days prior to each meeting, using geographic targeting methods to reach zip codes in the area surrounding the Airport. Notifications were also distributed through email 30 days prior to each meeting to individuals who requested additional information about the Study. A notification was also published on the project website (<https://cltpart150.com/>) 30 days prior to each meeting. See Appendix F for more information.

Public Information Meeting #1 – March 22 & 23, 2023

The first set of Public Information Meetings were held on Wednesday, March 22, 2023, and Thursday, March 23, 2023, from 6:00 p.m. to 8:00 p.m. Meetings were open-house style during which boards identifying the status of the Part 150, the work completed to date, and the next steps for the Part 150 process were displayed. The information presented at this meeting included an overview of Part 150 studies, history of Noise Compatibility Planning at CLT, a review of the temporary noise monitoring program conducted for the Part 150 Study, an overview of the assumptions and results of the Existing (2023) Baseline and Future (2028) Baseline Noise Exposure Contours, and projected schedule. All meeting materials were posted on the project website and methods for submitting public questions and comments were advertised online on the project website.

Public Information Meeting #2 – November 14 & 16, 2023

The second set of Public Information Meetings were held on Tuesday, November 14, 2023, and Thursday, November 16, 2023, from 6:00 p.m. to 8:00 p.m. Meetings were open-house style during which boards identifying the status of the Part 150, the work completed to date, and the next steps for the Part 150 process were displayed. The information presented at this meeting included the Airport Environs, a review of the assumptions and results of the Existing (2023) Baseline and Future (2028) Baseline Noise Exposure Contours, an introduction of the noise abatement alternative screening process, and the preliminary evaluation of the noise abatement alternatives developed to date. All meeting materials were posted on the project website and methods for submitting public questions and comments were advertised online on the project website.

Public Information Meeting #3 – September 18 & 19, 2024

The third and final set of Public Information Meetings are scheduled to be held on September 18, 2024 and September 19, 2024 from 6:00 p.m. to 8:00 p.m. and will be conducted concurrently with a Public Hearing to make it as easy as possible for the public to comment on the Draft Part 150 Study Update. This meeting will offer the public the chance to review the draft NEMs and recommended NCP, and ask technical experts any questions they may have.

1.5.3 Public Hearing and Comment Period

14 CFR Part 150 requires that the Draft Part 150 Study Update documents be made available to the public prior to conducting a Public Hearing. The Draft Part 150 Study Update document was made available to the public at local libraries, the Airport, and online at <https://cltpart150.com/documents-reports/>. A Public Hearing will be conducted concurrently as a Public Information Meeting, which are both scheduled to be held on September 18, 2024 and September 19, 2024 from 6:00 p.m. to 8:00 p.m. The Public Hearing will offer the public the opportunity to provide oral comments on the Draft Part 150 Study Update which will be documented by a stenographer. Comments will also be accepted through email, mail, and comment form. All comments received by October 4, 2024 will be responded to by the City of Charlotte Aviation Department and incorporated into the Final Part 150 Study Update document. As such, all public comments will be considered by FAA in their decision-making process. A list of document locations, a summary of the Public Information Meeting / Hearing, meeting materials, comments received, and response to those comments will also be included in the Final Part 150 Study Update document.

1.5.4 Additional Public Coordination

Additional efforts to provide information and opportunity for public involvement in this Part 150 process included the following:

- Media briefing at the beginning of the Part 150 Study Update
- Airline briefings at the beginning of the Part 150 and at key milestones
- ACR briefings throughout the process and at key milestones
- Local community group meeting at the beginning of the Part 150 and subsequent outreach at key milestones

Additionally, a project website containing information about the Part 150 Study Update, including general information, upcoming and past meetings, and a method to contact the Study Team, is available online at the following address: <https://cltpart150.com/>. The project website has built-in translation and accessibility options available to the public as needed.

1.6 Airport Overview

CLT is a publicly-owned airport operated by the City of Charlotte and managed by the Aviation Department under the leadership of the Aviation Director. The Aviation Director provides oversight to the Aviation Department and the Airport's Executive Leadership Team. The Airport is operated financially on a fully self-sustaining basis – no general fund revenues have ever been or are appropriated to the cost of the facilities or operations.

1.6.1 Airport History

Early History

CLT was originally constructed in 1935 with three runways on 500 acres. In 1941, the Federal government took control of the Airport to establish Morris Field Air Base, which was used for bomber training during World War II. At that time, additional land was acquired and two of the

runways were lengthened to 5,000 feet. In 1946, the City of Charlotte took back control of the Airport and has managed and operated the Airport since then.

Airfield

In 1951, the City extended Runway 5/23 to 7,502 feet, and in 1965 Runway 18L/36R was extended to 7,846 feet. In 1979, a new 10,000-foot parallel north/south runway (Runway 18C/36C) was opened. Runway 18L/36R was extended to 8,676 feet in 1994. The third parallel runway (Runway 18R/36L), which is 9,000 feet in length, opened in February 2010. Runway 5/23 was closed as a runway in 2022 and is no longer used for departure and arrival operations.³

Terminals

A 70,000 square-foot passenger terminal was opened in 1954 when the Airport was named Douglas Municipal Airport after former Charlotte Mayor Ben E. Douglas, Sr. A new 325,000 square-foot passenger terminal building with 25 gates was constructed in 1982 and the Airport was renamed Charlotte Douglas International Airport. In the late 1970s and early 1980s, the Airport completed improvements to the general aviation facilities and new buildings were constructed for Thurston Aviation and Butler Aviation. In 1990, a new 80,000 square-foot international and commuter concourse opened along with the US Airways maintenance base and two automobile parking decks. In 1994, a 194,000 square-foot passenger terminal expansion was completed.

Airlines

Air carrier service was initiated in 1937 with two daily flights; 3,500 passengers were served that year. United Airlines began service as Capital Airlines in 1946 and by 1952, the Airport had a total of 50 daily flights. In 1962, Eastern Airlines established a connecting hub introducing jet service to Charlotte and became the dominant carrier until the early 1980s. Piedmont Airlines established its main hub at CLT following the Airline Deregulation Act of 1978 and experienced rapid growth to eventually replace Eastern Airlines as the largest carrier serving the Airport.

Between 1983 and 1985, five new airlines, Ozark, Pan Am, American, People Express, and Trans World Airlines (TWA), began service at CLT. In 1989, US Airways merged with Piedmont and continued to operate the CLT hub. Lufthansa began service to Charlotte under an “open skies” agreement in 1990 and Northwest initiated service in 1994. Between 2008 and 2014, several large air carriers merged, including American Airlines/US Airways, Delta Air Lines/Northwest Airlines, Southwest Airlines/AirTran, and United Airlines/Continental Airlines. CLT continues to be a hub for American Airlines following the merger with US Airways.

Recent and Upcoming Development

From 2018 through 2023, the Airport has completed multiple expansion projects that have provided additional passenger space and gates at the Airport through the following projects: Concourse A Phase I Expansion; Concourse E Expansion Phases VIII and IX; and the East Terminal Expansion. In 2022, Runway 5/23 was closed as a runway and is no longer used for departure and arrival operations. Formal decommissioning for the closed Runway 5/23 is anticipated for Autumn 2024.⁴ The runway is currently used for taxiing and is planned for rehabilitation and conversion into a taxiway. To date, CLT continues to grow and succeed with airfield construction projects and additional concourse and terminal renovation and expansion projects that are planned to be completed by 2025. As previously stated, a new fourth parallel runway among other terminal and

³ CLT issued a NOTAM on May 1, 2022 permanently closing Runway 5/23 except for taxiing. Formal decommissioning for the closed Runway 5/23 is anticipated for Autumn 2024.

⁴ The FAA issued a NOTAM on April 1, 2024, permanently closing Runway 5/23 except for taxiing.

airfield capacity enhancement projects are under design and construction, which are anticipated to be completed by 2028.

1.6.2 Airport Location

CLT is located on approximately 6,000 acres of land in the City of Charlotte, in west Mecklenburg County, North Carolina. CLT is approximately five miles west of downtown Charlotte. The Airport is bounded to the north by parallel transportation corridors, Interstate 85 (I-85), US 74 (Wilkinson Boulevard) and the Norfolk Southern Railroad. To the east, the Airport is bounded by Billy Graham Parkway (a limited access parkway) which connects the Airport to the north to US 74 and I-85, and to South Charlotte. To the south, the Airport is bounded by West Boulevard, with a future planned east-west corridor. To the west, CLT is bounded by the Interstate 485 (I-485) Outer Beltway.

CLT is located within the Charlotte-Concord-Gastonia, North Carolina-South Carolina Metropolitan Statistical Area (MSA). The MSA includes Anson, Cabarrus, Gaston, Iredell, Lincoln, Mecklenburg, Rowan, and Union counties in North Carolina, and Chester, Lancaster, and York counties in South Carolina. **Exhibit 1-2, Airport Location**, shows the location of CLT in relation to the Charlotte Area.

1.6.3 Airport Runways

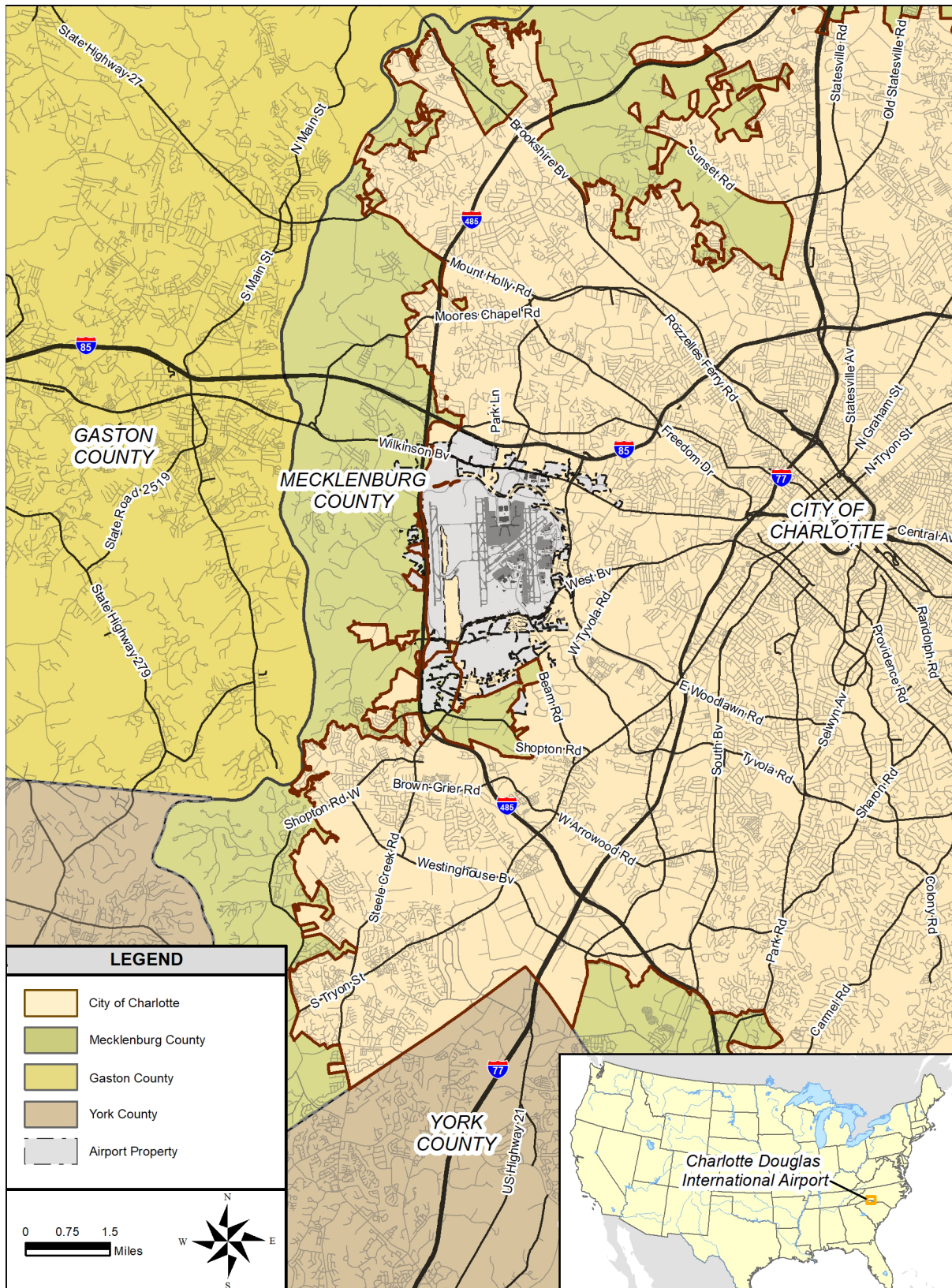
The airfield at CLT consists of three parallel, north/south runways. Runway 18C/36C, the center of the three parallels, is the longest runway on the airfield at 10,000 feet. Runway 18R/36L, the western runway, is 9,000 feet in length. Runway 18L/36R, the eastern runway, is 8,676 feet in length. As previously discussed, Runway 5/23 was closed as a runway and is no longer used for departure and arrival operations; as such, it was not considered an active runway for the purpose of this analysis.

1.6.4 Airport Operators

As of December 2023, CLT was served by the following commercial airline operators:

- Air Canada
- American Airlines
- Contour Airlines
- Delta Air Lines
- Frontier Airlines
- JetBlue Airways
- Lufthansa
- Southwest Airlines
- Spirit Airlines
- Swift Air
- Sun Country Airlines
- United Airlines
- Vacation Express
- Viva Aerobus
- Volaris

Exhibit 1-2 Airport Location



Source: Landrum & Brown, 2023

1.6.5 Terminal Facilities

The passenger terminal at CLT is located at the center of the airfield, between Runway 18L/36R and Runway 18C/36C. The terminal is located on Josh Birmingham Parkway, which connects the Airport to Billy Graham Parkway to the east, Little Rock Road which connects the Airport to Interstate 85 to the north, and Wilkinson Boulevard which connects the Airport to Interstate 485 to the west.

The airport layout at CLT is shown on **Exhibit 1-3, Existing Airport Layout**. The Airport's terminal consists of one main building with five passenger concourses designated Concourses A through E. The central core building is one million square feet in size and is divided into the following six levels:

- Basement Level: building maintenance equipment, vendor storage, and receiving areas
- Ground or Ramp Level: baggage claim, ground transportation, and ticket level for Concourse E
- Ticketing Area Level: restaurants, specialty and gift/news stores, lounge area for business travelers, and five security checkpoints at each Concourse provide access to all gates and concession areas
- Administrative Level: administrative offices and conference rooms
- Top two levels: the upper and lower ramp control tower

As of December 2023, the passenger terminal consisted of 114 total gates divided between the five separate concourses. Concourse A is occupied by Air Canada, American Airlines, Contour Airlines, Delta Air Lines, Frontier Airlines, JetBlue Airways, Southwest Airlines, Spirit Airlines, and United Airlines. American Airlines occupies most gates within Concourses B, C, D, and E. Lufthansa and Volaris also use gates within Concourse D. All international arrival gates are located on Concourse D.

1.6.6 Airside Facilities

The airfield system consists of three parallel runways (18R/36L, 18C/36C, and 18L/36R) oriented in a north-south direction. All six runway ends have Instrument Landing System (ILS) approaches. Aircraft can also utilize non-ground-based approach procedures that are based on Global Positioning System data.

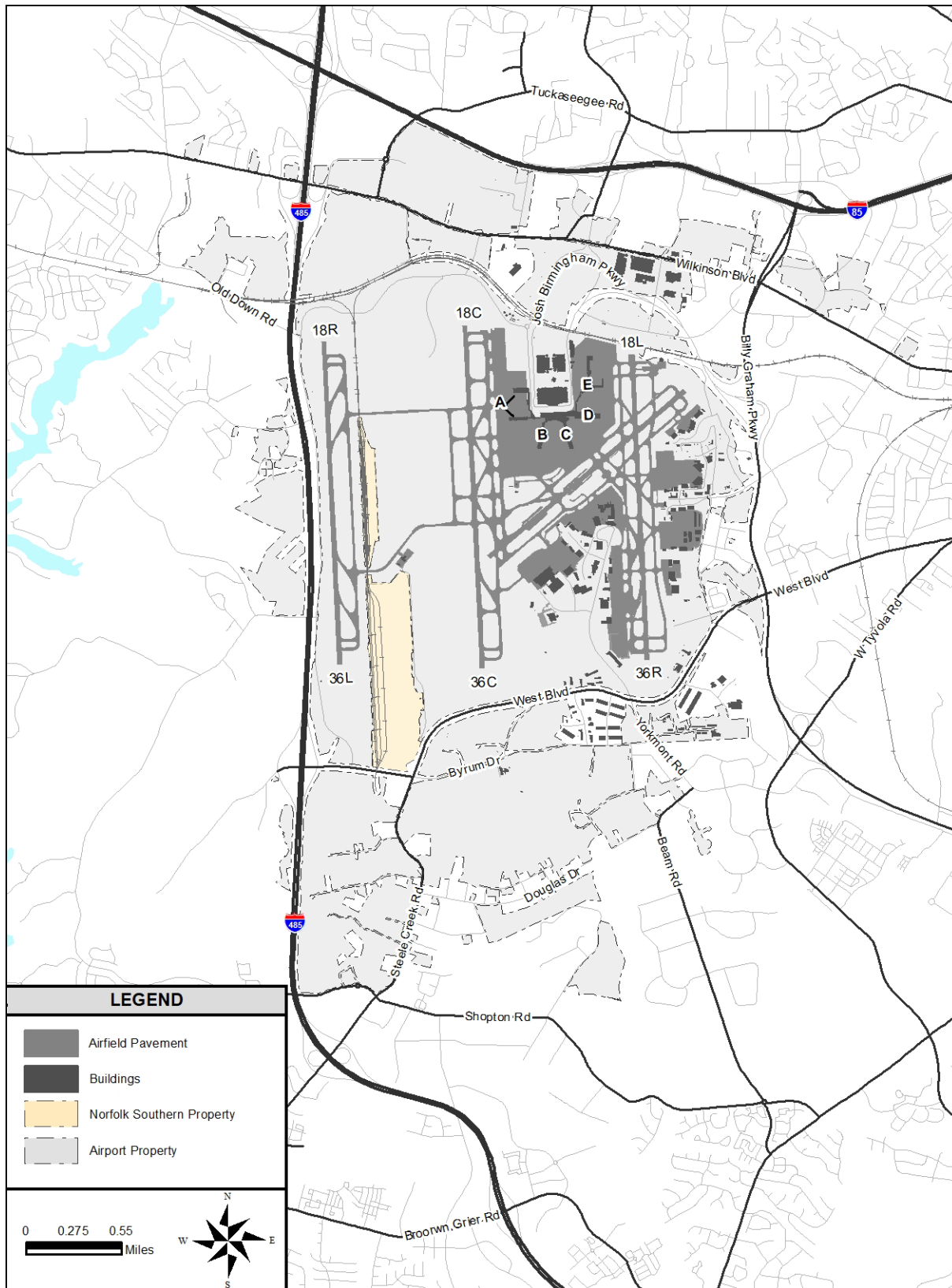
1.6.7 Cargo Facilities

The Air Cargo Center is located in the center of the airport campus to the south of the closed Runway 5/23 in between Runways 18C/36C and 18L/36R. The Air Cargo Center consists of approximately 570,000 square feet of facilities and more than 50 acres of aircraft ramp space. CLT is served by several dedicated cargo operators. The facility is also serviced by numerous freight forwarders, custom house brokers and professional international service providers.

1.6.8 North Carolina Air National Guard

CLT is home to the 145th Airlift Wing of the North Carolina Air National Guard (NCANG). The facility is located on the east side of the airfield. The 145th Airlift Wing maintains a fleet of C-17 aircraft and support assets for prompt mobilization.

Exhibit 1-3 Existing Airport Layout



Source: Landrum & Brown, 2023

1.6.9 General Aviation and Fixed-Base Operator (FBO)

The general aviation parking and fixed based operator (FBO) at CLT are located on the east side of the airfield. There is one FBO facility at CLT, the Wilson Air Center FBO, which provides aircraft services such as fueling services, ramp parking, hangar parking/storage, parts, and maintenance for general aviation aircraft at CLT. A total of 92 aircraft are based at CLT. **Table 1-1, Based Aircraft** provides the number of general aviation aircraft based at CLT by aircraft type.

Table 1-1 Based Aircraft

Aircraft Type	Number
Single engine airplanes	8
Multi-engine airplanes	6
Jet airplanes	66
Helicopters	4
Military aircraft	8
Total aircraft based on the field	92

Source: CLT FAA Form 5010-1 published January 25, 2024.

1.6.10 Norfolk Southern Property

The Norfolk Southern Railway's Charlotte Regional Intermodal Facility is located on approximately 200 acres of land between Runway 18C/36C and Runway 18R/36L at CLT. The land is owned by Norfolk Southern, and the facility is used to transfer trailers and containers between trucks and trains.