



## Environmental Assessment

FEDERAL AVIATION ADMINISTRATION  
MEMPHIS AIRPORTS DISTRICT OFFICE

CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT  
CHARLOTTE, NORTH CAROLINA

Airport Name: Charlotte-Douglas International Airport

Proposed Project: Concourse A Phase II

This Environmental Assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official.

Tim Alexander  
Responsible FAA Official

10/04/2019  
Date

FINAL

# Environmental Assessment for Concourse A Phase II

Charlotte Douglas International Airport  
Charlotte, North Carolina

PREPARED FOR  
CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT  
U.S. DEPARTMENT OF TRANSPORTATION  
FEDERAL AVIATION ADMINISTRATION

As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

PREPARED BY  
Landrum & Brown, Incorporated

September 2019

This environmental assessment becomes a Federal document when evaluated, signed, and dated by the Responsible FAA Official.

Responsible FAA Official

Date



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## Acronyms

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The following is a list of acronyms used in the EA:

AC	Advisory Circular
ACEP	Airport Capacity Enhancement Plan
ALP	Airport Layout Plan
APE	Area of Potential Effect
ASR	Airport Surveillance Radar
AST	Above-ground Storage Tank
BMP	Best Management Practices
CAA	Clean Air Act (as amended in 1990)
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CH <sub>4</sub>	Methane
CLT	Charlotte Douglas International Airport
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
C&D	Construction and Demolition
dB(A)	Decibel - A weighted
DOT	Department of Transportation
EA	Environmental Assessment
ESA	Environmental Site Assessment
FAA	Federal Aviation Administration
FIRM	Flood Insurance Rate Map
FONSI	Finding of No Significant Impact
GAO	General Accounting Office
GHG	Greenhouse Gases
GSE	Ground Support Equipment
HFC	Hydrofluorocarbon
H <sub>2</sub> O	Water Vapor
HUC	Hydraulic Unit Codes
ICAO	International Civil Aviation Organization
ILS	Instrument Landing System
LWCA	Land and Water Conservation Act
NAAQS	National Ambient Air Quality Standards
NCAC	North Carolina Administrative Code
NCDEQ	North Carolina Department of Environmental Quality
NEPA	National Environmental Policy Act of 1969, as amended
NEM	Noise Exposure Map
NHPA	National Historic Preservation Act

NMFS	National Marine Fisheries Service
NPDES	National Pollution Discharge Elimination System
N <sub>2</sub> O	Nitrogen Oxide
NPS	National Park Service
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
O <sub>3</sub>	Ozone
PM <sub>2.5</sub>	inhalable particulate matter less than 2.5 microns in diameter
PM <sub>10</sub>	inhalable particulate matter less than 10 microns in diameter
RCRA	Resource Conservation and Recovery Act of 1976
REC	Recognized Environmental Conditions
SF <sub>6</sub>	Sulfur Hexafluoride
SHPO	State Historic Preservation Officer
SIP	State Implementation Plan
TSCA	Toxic Substances Control Act of 1976
U.S.C.	U.S. Code
USEPA	United States Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	Underground Storage Tanks
VOC	Volatile Organic Compound
VSR	Vehicle Service Road



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# Chapter One

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# 1 INTRODUCTION AND BACKGROUND

This Environmental Assessment (EA), required by the National Environmental Policy Act of 1969 (NEPA), as amended (40 Code of Federal Regulations [CFR] 1500-1508) and prepared in accordance with Federal Aviation Administration (FAA) Orders 1050.1F, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, analyzes the potential environmental effects of a Proposed Action involving improvements to the passenger terminal area at Charlotte Douglas International Airport (CLT or Airport). The EA is required under NEPA because the project will require FAA to approve a change to the Airport Layout Plan (ALP) for CLT, which is a Federal action, and because Federal funds may be used to implement the Proposed Action.

## 1.1 BACKGROUND

CLT is a publicly-owned airport operated by the City of Charlotte and managed by the Aviation Department. CLT is located on approximately 6,000 acres of land in the City of Charlotte, in west Mecklenburg County, North Carolina. The Airport is bounded to the north by parallel transportation corridors, I-85 and 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 with South Charlotte. To the south, there is no single boundary feature, but Douglas Drive and Pine Oaks Drive serve as road boundaries for the Airport. To the west, CLT is bounded by the I-485 Outer Beltway. **Exhibit 1-1, *Airport Location Map*** shows the general Airport location and surroundings.

The airfield system consists of four runways, of which include three parallel runways and a crosswind runway. The three parallel runways (18R/36L, 18C/36C, and 18L/36R) are oriented in a north-south direction. Runway 05/23, the crosswind runway is oriented in a northeast to southwest direction and intersects Runway 18L/36R. All eight runway ends have Instrument Landing System (ILS) approaches.

The passenger terminal at CLT is located at the center of the airfield, between Runway 18L/36R and Runway 18C/36C, and north of Runway 05/23. The Airport's terminal consists of one main building with five passenger concourses designated Concourses A through E. Concourse A and Concourse E are composed of two piers.

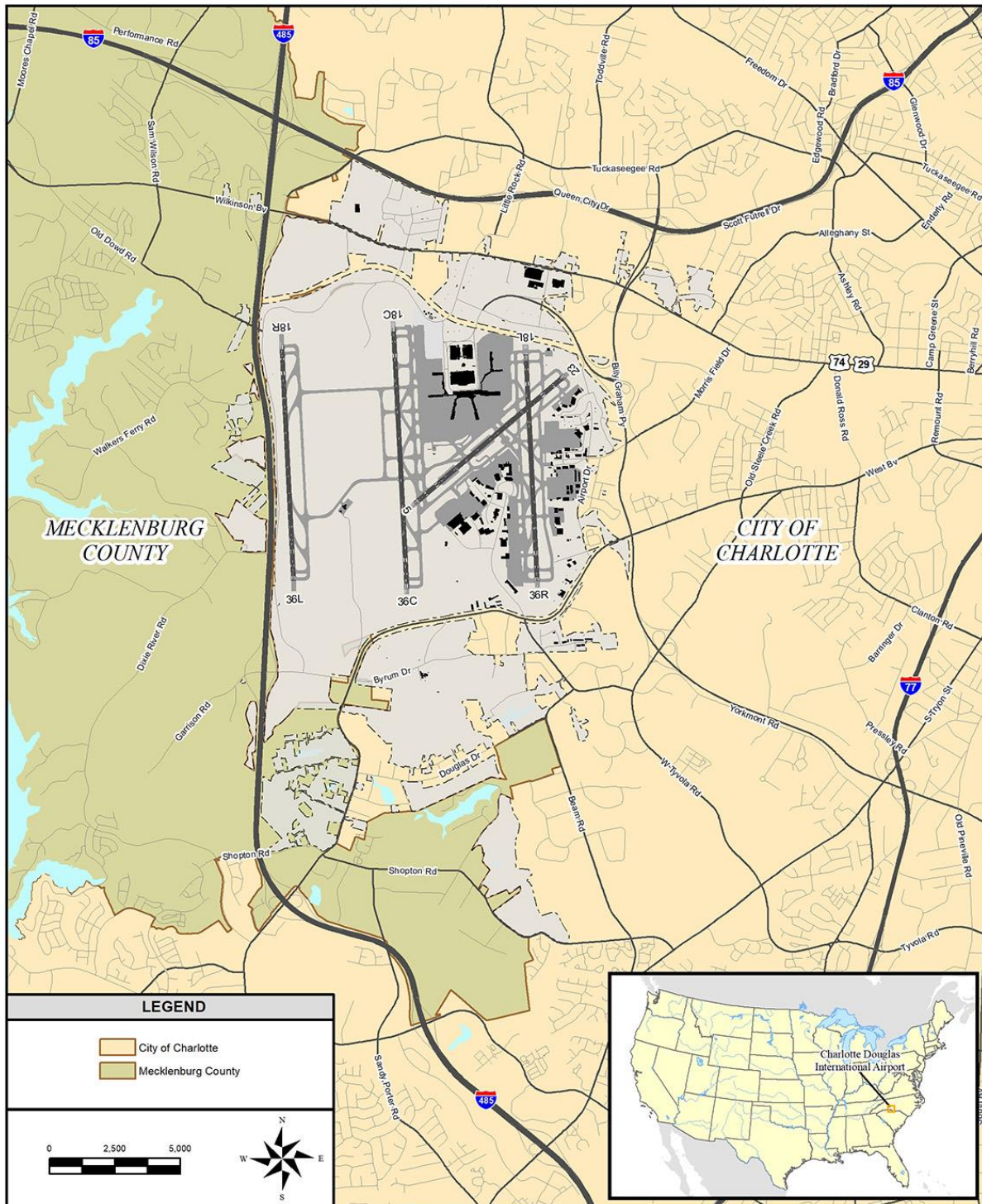
## 1.2 DESCRIPTION OF THE PROPOSED ACTION

The Proposed Action involves three major elements, which include the construction of a new pier on Concourse A, the pavement of 361,000 square feet of ramp area to the north of Concourse A, and the construction of a ground-support equipment (GSE) and lavatory station north of Concourse A. These major project elements (underlined) and their connected actions are described in detail in the following section and are shown in **Exhibit 1-2, *Proposed Action*** and **Exhibit 1-3, *Proposed Action – Detailed***.



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**EXHIBIT 1-1, AIRPORT LOCATION MAP**

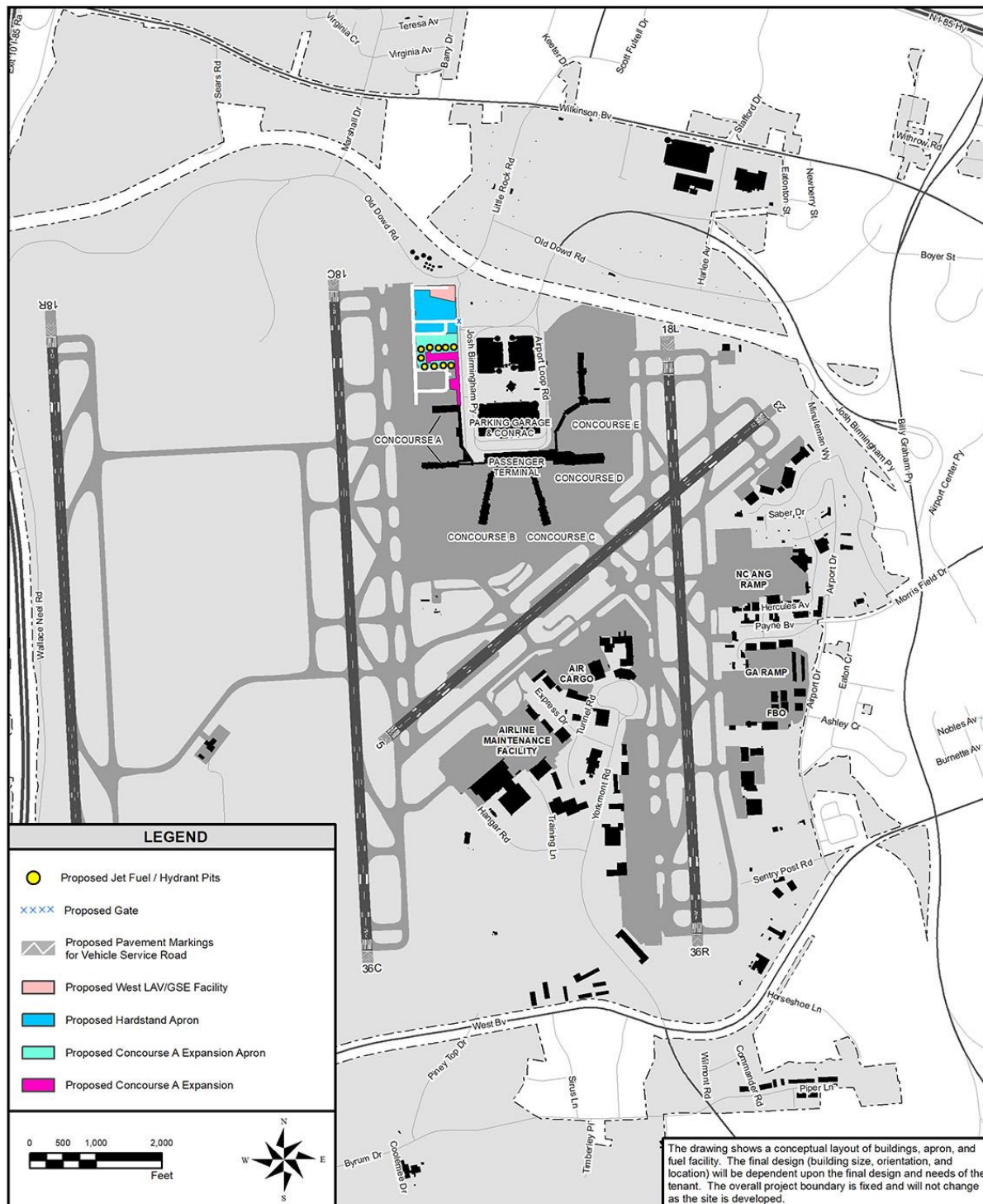






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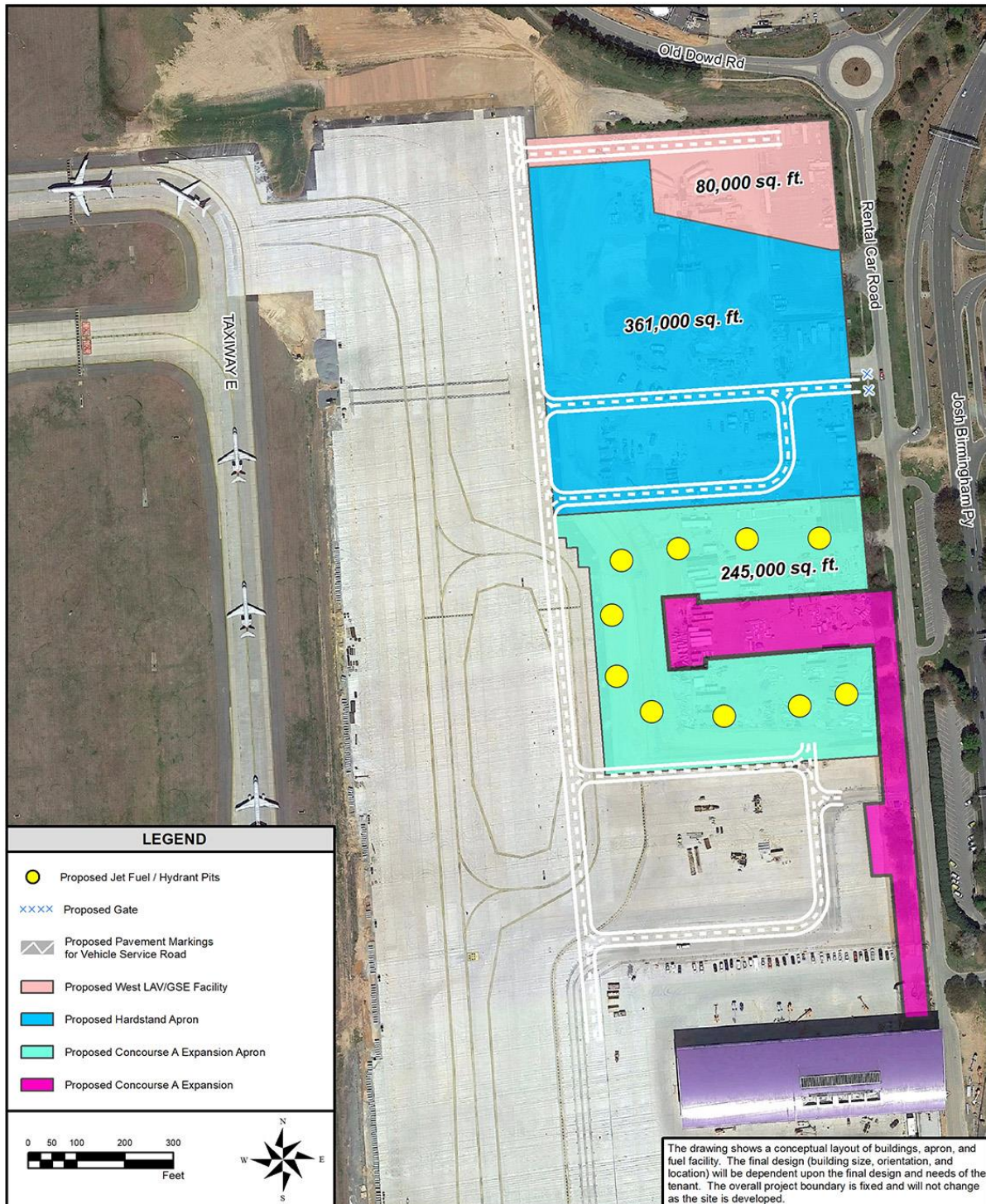
## EXHIBIT 1-2, PROPOSED ACTION





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**EXHIBIT 1-3, PROPOSED ACTION – DETAILED**





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Construct one new pier on Concourse A (approximately 195,000 square feet footprint) to the north of the second Concourse A pier

This project element includes the construction of one new ten-gate pier at Concourse A. The Concourse A expansion would have an approximately 195,000 square feet footprint with up to three levels and include the development of additional terminal space, aircraft gates, holdrooms, concession space, restrooms, and corridors with moving sidewalks. Up to ten gates configured to accommodate Group III aircraft would be allotted on the Concourse A expansion.

The following are connected actions of the Concourse A pier project:

- Paving of approximately 245,000 square feet of ramp pavement to accommodate aircraft movement around the new gates
- Install hydrant fueling system with new jet fuel and hydrant pits within the ramp area at each of the proposed gates

Pave approximately 361,000 square feet of ramp to the north of the new Concourse A pier

This project element includes the pavement of approximately 361,000 square feet north of the new pier at Concourse A. The majority of this area is already paved, but the current pavement will be removed and replaced with aircraft-grade pavement that is consistent with FAA design standards. See Section 5.14.3, *Surface Waters*, for additional details regarding the impervious surface area. This area would serve as a hardstand<sup>1</sup> area used to park a maximum of six Group III aircraft at one time.

The following are connected actions of the north ramp project:

- Mark and install lighting for a vehicle service road to provide access to the north ramp project
- Install gate to provide access to the vehicle service road from Rental Car Road
- Reconfigure utilities to connect to existing electric utilities to serve the north ramp project

Construct and operate a GSE fueling facility and lavatory station on the west side of the terminal complex north of the new Concourse A pier

This project element includes the construction and operation of a GSE fueling facility and lavatory station on the west side of the terminal complex north of the new Concourse A pier in an approximately 80,000 square foot undeveloped area adjacent to terminal ramp pavement.

The following are connected actions of the GSE and lavatory project:

- Paving of approximately 80,000 square feet of pavement to accommodate and provide access to the GSE fueling facility and lavatory station

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<sup>1</sup> Hardstands are only for aircraft parking. No passenger loading/unloading would occur at hardstands.



- Mark and install lighting for a vehicle service road to provide access to the GSE fueling facility and lavatory station
- Reconfigure utilities to connect the GSE facility to the existing electric and sewer systems

### 1.3 DOCUMENT CONTENT AND ORGANIZATION

This document is organized as follows:

- Chapter 2.0 describes the purpose and need for the Proposed Action
- Chapter 3.0 describes alternatives to the Proposed Action
- Chapter 4.0 describes the affected environment
- Chapter 5.0 describes the environmental impacts of the Proposed Action and of the No Action Alternative

An EA is a disclosure document prepared for the Federal agency (in this case the FAA) responsible for approving a proposed Federal or Federally-funded action, in compliance with the requirements set forth by the Council on Environmental Quality (CEQ) in its regulations implementing NEPA. The purpose of this EA is to investigate, analyze, and disclose the potential impacts of the Proposed Action and its reasonable alternatives. In this case, the FAA is responsible for reviewing and approving actions that pertain to airports and their operation. As such, this EA has been prepared in accordance with FAA Orders 1050.1F Change 1, *Environmental Impacts: Policies and Procedures* and 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, and took into consideration guidance included in the *FAA Environmental Desk Reference for Airport Actions*.

This EA was also prepared pursuant to other laws relating to the quality of the natural and human environments, including:

- The Department of Transportation Act, 49 U.S.C., § 303 (formerly Section 4(f))
- 49 U.S.C., §40114, as amended
- 49 U.S.C., §§47101, et seq.
- Executive Order 11990, Protection of Wetlands
- Executive Order 11988, Floodplain Management
- Executive Order 11593, Protection and Enhancement of the Cultural Environment
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Federal Aviation Act of 1958 recodified as 49 U.S.C. §§40101, et seq.

- The Airport and Airway Improvement Act of 1982, 49 U.S.C. §47108, as amended
- National Historic Preservation Act, 16 U.S.C. §470(f), as amended
- 36 CFR Part 800, Advisory Council on Historic Preservation
- Archaeological and Historic Preservation Act, 16 U.S.C. §469(a)
- Archaeological Resource Protection Act, 16 U.S.C. §470(aa)
- Farmland Protection Policy Act, 7 U.S.C. §73, and implementing regulations at 7 CFR §658
- Clean Air Act, 42 U.S.C. §§7401, et seq., and implementing regulations at 40 CFR. Parts 51 and 93
- Clean Water Act, 33 U.S.C. §§121, et seq., and implementing regulations at 33 CFR §§325 and 33 CFR §336
- 33 CFR Parts 320-330, Regulatory Programs of the Corps of Engineers
- Endangered Species Act, 16 U.S.C. §661, et seq., as amended
- Other laws, regulations, and policies as applicable

Notice about the subject project was published in the Charlotte Observer. Copies of this document are available at the CLT Center and online at <https://www.airportprojects.net/clt-concourse-a-phase-ii-ea/>.





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## Chapter Two

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## 2 PURPOSE AND NEED

In the preparation of the Airport Capacity Enhancement Plan (ACEP), the City of Charlotte Aviation Department identified a number of deficiencies (needs) that exist within the existing terminal area, including insufficient gate capacity and ramp space to accommodate arriving aircraft waiting for a gate. This was verified through airfield simulation modeling<sup>2</sup> and gating analysis<sup>3</sup> prepared using the most recent aviation activity forecasts approved by the Federal Aviation Administration.<sup>4</sup> This Environmental Assessment (EA) analyzes the proposed solutions (purpose) to meet the needs of the identified deficiencies.

### 2.1 PURPOSE

The purpose of the Proposed Action is to:

- Minimize arrival taxi-in delays by expanding the ramp space within the terminal envelope while meeting Federal Aviation Administration (FAA) design standards
- Accommodate the forecasted demand through the year 2022 by providing sufficient aircraft gates to provide an increased level of service to passengers and airlines while meeting FAA design standards
- Decrease ramp congestion on the west ramp for Ground Support Equipment (GSE) vehicles by providing a fueling facility and lavatory on the west ramp while complying with FAA design standards

### 2.2 NEED

The following three primary needs have been identified and are described in more detail in the following pages:

1. Insufficient ramp space within the terminal envelope to accommodate arriving aircraft waiting for a gate
2. Insufficient gate capacity to accommodate forecasted demand through the year 2022
3. Lack of GSE fueling and lavatory facilities on the west ramp

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<sup>2</sup> Capacity/Delay Analysis and Airfield Modeling Technical Memorandum, Charlotte Douglas International Airport Environmental Impact Statement, prepared by VHB Engineering NC, P.C. in association with TransSolutions, LLC, July 16, 2018.

<sup>3</sup> Gating Analysis, Charlotte Douglas International Airport Environmental Impact Statement, prepared by VHB Engineering NC, P.C. in association with TransSolutions, LLC, May 8, 2019.

<sup>4</sup> Forecast Technical Memorandum, Charlotte Douglas International Airport Environmental Impact Statement, prepared by VHB Engineering NC, P.C. in association with InterVISTAS, April 18, 2018.



### Insufficient ramp space to accommodate arriving aircraft waiting for a gate

Airfield simulations, prepared for 2016 conditions, found that with the current number of gates (including the recently constructed Concourse A Phase I), there is insufficient ramp space for arriving aircraft to wait for an open gate.<sup>5</sup> If the ramp is full of aircraft waiting for a gate at any concourse, additional arriving flights have to wait on the taxiways, which results in aircraft lining up back to the runways. The simulations tracked arrival aircraft waiting for a gate to become available after landing and found in 2016, an average of 258 arrivals per day waited for an available gate. The total time spent waiting for a gate each day was estimated to be approximately 533 minutes. As operations continue to grow, as forecasted, this condition will worsen.

### Insufficient gate capacity to accommodate forecasted demand through the year 2022

A gating analysis was prepared, using the most recent FAA approved aviation activity forecasts, to determine gating needs for multiple future years at Charlotte Douglas International Airport (CLT or Airport).<sup>6</sup> Assumptions used in the gating analysis include:

- No adjacency constraints between nearby gates;
- International flights must arrive at an international-capable gate, while international departure flights may depart from any gate;
- To maximize utilization of each gate, flights with longer than three (3) hours of ground time were assumed to be towed to a hardstand as necessary;
- Dedicated gate use for American Airlines and common use gates were assumed for the remaining airlines; and
- Minimum of 15 minutes between the departure from a gate and the subsequent arrival to the gate.

Because the gating analysis only calculated the gate requirements for the years 2028 and 2033, a regression analysis was used to calculate the number of gates required to accommodate demand in the year 2022. The results of the regression analysis concluded 123 gates are needed by the year 2022, compared to the existing 113 gates currently at CLT. Therefore, there is a need for an additional ten gates at CLT to accommodate short-term demand.

It is important to note, the ten additional gates are needed by 2022 whether or not the Proposed Action is constructed. The Proposed Action does not add gate capacity to CLT, but serves to accommodate

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<sup>5</sup> Capacity/Delay Analysis and Airfield Modeling Technical Memorandum, Charlotte Douglas International Airport Environmental Impact Statement, prepared by VHB Engineering NC, P.C. in association with TransSolutions, LLC, July 16, 2018.

<sup>6</sup> Gating Analysis, Charlotte Douglas International Airport Environmental Impact Statement, prepared by VHB Engineering NC, P.C. in association with TransSolutions, LLC, May 8, 2019

the forecasted demand in 2022. If the Proposed Action is not constructed, aircraft would experience increased delays and passengers would experience a reduction in the level of service.

#### Lack of GSE fueling and lavatory facilities on the west ramp

GSE fueling facilities and lavatory stations are currently located on the east side of the terminal complex and in the midfield area. As a result, the GSE on the west ramp must cross the ramp to fuel and access the lavatory station. This causes congestion on the ramp, particularly during peak operating periods when aircraft pushing back and/or taxiing around Concourse B and C may prevent the movement of vehicular traffic on the aircraft ramp. Therefore, there is a need to construct a GSE facility and lavatory station on the west ramp area that is equivalent in size (approximately 80,000 square feet) to the facility on the east side of the terminal complex and that of the midfield area.

## **2.3 IMPLEMENTATION**

Construction of the Proposed Action is planned to occur between April 2020 and August 2022.

## **2.4 REQUIRED LAND USE/ENVIRONMENTAL PERMITS**

### **2.4.1 Federal**

- FAA approval of modification of the Airport Layout Plan
- Federal environmental approval pursuant to National Environmental Policy Act (NEPA)

### **2.4.2 State**

- Approval per State Environmental Policy Act
- National Pollution Discharge Elimination System Permit (NPDES) administered by the North Carolina Division of Water Resources

### **2.4.3 Local**

- Building permits



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## Chapter Three

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### 3 ALTERNATIVES

The Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) requires that the Federal decision-makers perform the following tasks when preparing an Environmental Assessment (EA):

- Evaluate all reasonable alternatives, including alternatives not within the jurisdiction of the Federal agency, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated
- Devote substantial treatment to each alternative considered in detail, including the No-Build/No-Action Alternative and the Proposed Action, so that reviewers may evaluate their comparative merits

This section describes the Proposed Action and alternatives to the Proposed Action, including the No Action Alternative, and evaluates the ability of each to meet the Purpose and Need described in Chapter 2, *Purpose and Need*. The Proposed Action, described later in this section, would fulfill the Purpose and Need for the project. The No Action Alternative would not meet the Purpose and Need; however, it is analyzed in the EA, pursuant to the requirements of the CEQ, Federal Aviation Administration (FAA) Orders 1050.1F, 5050.4B, and NEPA.

Federal and state guidelines concerning the environmental review process require that all prudent, feasible, reasonable, and practicable alternatives that might accomplish the objectives of a project be identified and evaluated. Federal agencies may consider the applicant's purposes and needs and common sense realities of a given situation in the development of alternatives.<sup>7</sup> Federal agencies may also afford substantial weight to the alternative preferred by the applicant, provided there is no substantially superior alternative from an environmental standpoint.

#### 3.1 ALTERNATIVES CONSIDERED FOR FURTHER ENVIRONMENTAL EVALUATION

Various alternatives were considered for further detailed environmental review. If the alternative did not meet the stated needs in Chapter 2, the alternative was eliminated and will not be evaluated in Chapter 5, *Environmental Consequences*. The following summarizes the alternatives considered. Development alternatives are shown in **Exhibit 3-1, *Development Alternatives***.

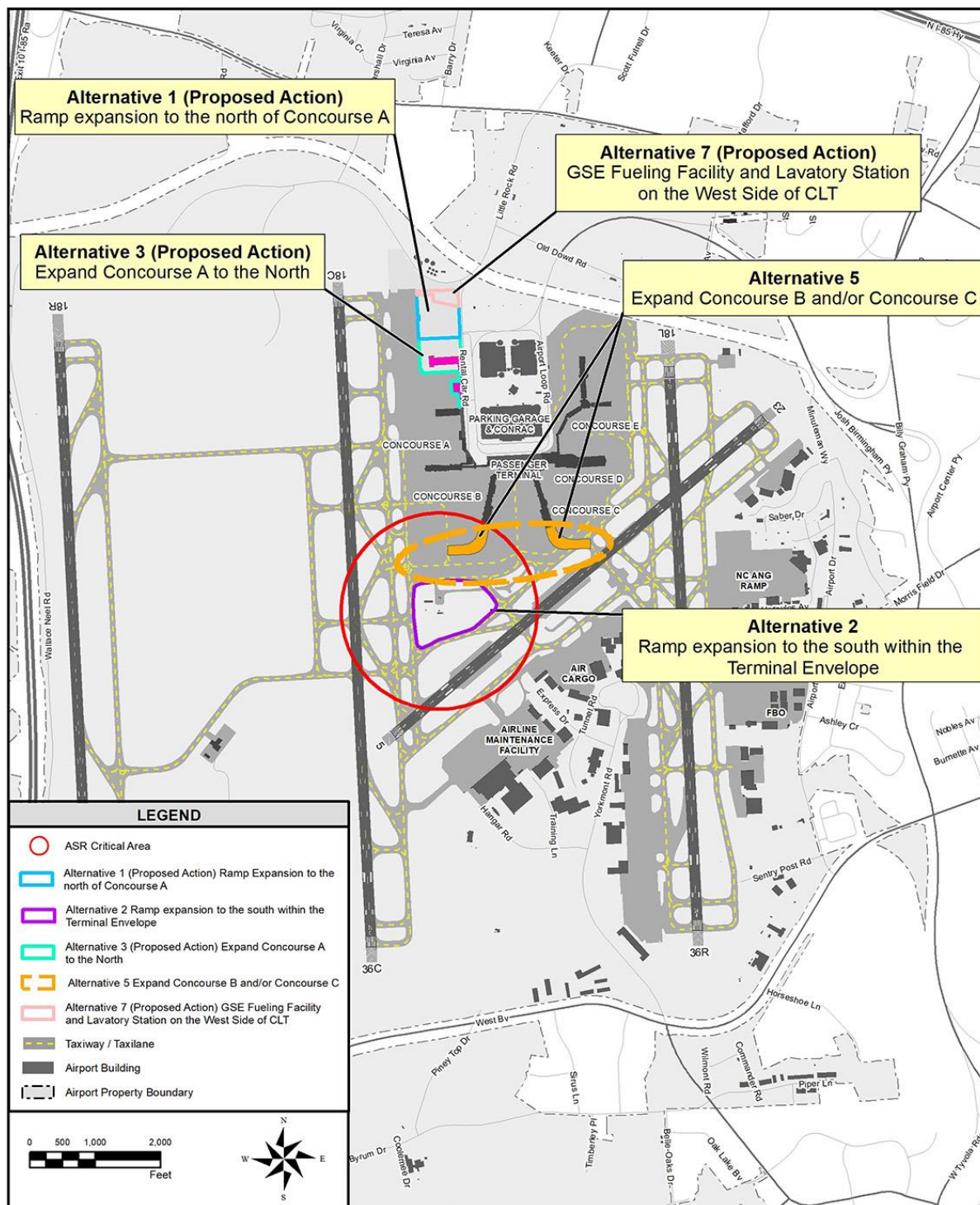
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<sup>7</sup> Guidance Regarding NEPA Regulations, CEQ, 48 Federal Register 34263 (July 28, 1983).



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## EXHIBIT 3-1, DEVELOPMENT ALTERNATIVES





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### **3.1.1 Ramp Alternatives**

#### **Alternative 1 (Proposed Action): Ramp expansion to the north of Concourse A**

This alternative would expand the ramp area to the north of Concourse A, south of the Norfolk Southern Rail line in the terminal envelope, to accommodate hardstands for arriving aircraft waiting for a gate. This area provides sufficient space for ramp expansion and complies with FAA design standards. Therefore, this alternative is being carried forward for detailed environmental review.

#### **Alternative 2: Ramp expansion to the south within the Terminal Envelope**

This alternative would expand the ramp area south of Concourse B and/or Concourse C and accommodate hardstands for arriving aircraft waiting for a gate. Expansion of Concourse B to the south would penetrate the Airport Surveillance Radar (ASR) clear area. An expansion of Concourse C to the south would eliminate the ability for aircraft to taxi around the terminal ramp without crossing Runway 05/23. Therefore, due to the penetration of multiple safety surfaces and not complying with FAA design standards, this alternative was eliminated from further review. See Exhibit 3-1, *Development Alternatives* for reference.

### **3.1.2 Gate Alternatives**

#### **Alternative 3 (Proposed Action): Expand Concourse A to the North**

This alternative would construct a new pier at Concourse A, north of the recently constructed Concourse A Phase I pier. This area can accommodate a new pier with ten gates and complies with FAA design standards. Therefore, this alternative is being carried forward for detailed environmental review.

#### **Alternative 4: Adjust Flight Schedules to Gate Usage during Peak Operating Periods**

This alternative would require airlines operating at Charlotte Douglas International Airport (CLT or Airport) to adjust flight schedules by reducing the number of flights scheduled to and from CLT during peak operating periods, resulting in a reduction in the number of gates required to accommodate demand during peak periods. This alternative was eliminated from further review as it is the airlines, not the Airport, that determines flight schedules of arrivals and departures operating at CLT. The Airport does not have the ability to require the airlines to adjust the flight schedules.

#### **Alternative 5: Expand Concourse B and/or Concourse C**

This alternative would expand Concourse B and/or Concourse C to allow the addition of new gates to accommodate the need for additional gates at CLT. Expansion of Concourse B to the south would penetrate the ASR clear area. An expansion of Concourse C to the south would eliminate the ability for aircraft to taxi around the terminal ramp without crossing Runway 05/23. Therefore, due to the penetration of multiple safety surfaces and not complying with FAA design standards, this alternative was eliminated from further review. See Exhibit 3-1, *Development Alternatives* for reference.



#### Alternative 6: Terminal Development at an Alternate Site at CLT

This alternative would include the construction of a new terminal facility at another location at the Airport. This alternative is not feasible because no vacant or under-utilized area of suitable size to accommodate a passenger terminal exists at the Airport without decommissioning runways or removing other essential facilities. Therefore, this alternative was eliminated from further review.

### **3.1.3 Ground Support Equipment (GSE) Fueling and Lavatory Alternatives**

#### Alternative 7: (Proposed Action): GSE Fueling Facility and Lavatory Station on the West Side of CLT

This alternative includes the construction of a GSE fueling facility and lavatory station on the west side of the terminal complex, north of the new Concourse A pier. This site is a sufficient size and would comply with FAA design standards. Therefore, this alternative is being carried forward for detailed environmental review.

#### Alternative 8: Alternate Site for the GSE Fueling Facility and Lavatory Station at CLT

This alternative would include the construction of a new GSE fueling facility and lavatory station at another location on the west side of the terminal complex. There is currently a GSE fueling facility and lavatory station located east of the terminal complex and in the midfield area. However, no alternative locations exist on the west side of the terminal complex. The proposed site is the only vacant area located on the west side of the terminal complex that would comply with FAA design standards and not penetrate safety areas for Runway 18C/36C. Therefore, this alternative was eliminated from further review.

**TABLE 3-1: ALTERNATIVES EVALUATION SUMMARY**

ALTERNATIVE		PROPOSED ACTION NEEDS			CARRIED FORWARD FOR FURTHER ENVIRONMENTAL REVIEW?
		WOULD THE ALTERNATIVE PROVIDE SUFFICIENT RAMP SPACE WITHIN THE TERMINAL ENVELOPE TO ACCOMMODATE ARRIVING AIRCRAFT WAITING FOR A GATE	WOULD THE ALTERNATIVE PROVIDE SUFFICIENT GATE CAPACITY TO ACCOMMODATE FORECASTED DEMAND THROUGH THE YEAR 2022	WOULD THE ALTERNATIVE PROVIDE GSE FUELING AND LAVATORY FACILITIES ON THE WEST RAMP TO REDUCE CONGESTION	
No Action Alternative		No	No	No	Yes
Ramp Alternatives	Alternative 1 (Proposed Action) - Ramp expansion to the north of Concourse A	Yes	Not Applicable	Not Applicable	Yes
	Alternative 2 – Ramp expansion to the south within the Terminal Envelope	No	No	No	No
Gate Alternatives	Alternative 3 (Proposed Action) – Expand Concourse A to the North	Not Applicable	Yes	Not Applicable	Yes
	Alternative 4 – Adjust Flight Schedules to Gate Usage during Peak Operating Periods	No	No	No	No
	Alternative 5 – Expand Concourse B and/or Concourse C	No	No	No	No
	Alternative 6 – Terminal Development at an Alternate Site at CLT	No	No	No	No





**TABLE 3-1: ALTERNATIVES EVALUATION SUMMARY (CONTINUED)**

ALTERNATIVE		PROPOSED ACTION NEEDS			CARRIED FORWARD FOR FURTHER ENVIRONMENTAL REVIEW?
		WOULD THE ALTERNATIVE PROVIDE SUFFICIENT RAMP SPACE WITHIN THE TERMINAL ENVELOPE TO ACCOMMODATE ARRIVING AIRCRAFT WAITING FOR A GATE	WOULD THE ALTERNATIVE PROVIDE SUFFICIENT GATE CAPACITY TO ACCOMMODATE FORECASTED DEMAND THROUGH THE YEAR 2022	WOULD THE ALTERNATIVE PROVIDE GSE FUELING AND LAVATORY FACILITIES ON THE WEST RAMP TO REDUCE CONGESTION	
GSE/LAV Alternatives	Alternative 7 (Proposed Action) – GSE Fueling Facility and Lavatory Station on the West Side of CLT	Not Applicable	Not Applicable	Yes	Yes
	Alternative 8 – Alternate Site for the GSE Fueling Facility and Lavatory Station at CLT	No	No	No	No

## Chapter Four

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## 4 AFFECTED ENVIRONMENT

Federal Aviation Administration (FAA) Order 5050.4B states the affected environment section of an Environmental Assessment (EA) should succinctly describe only those environmental resources the Proposed Action and its reasonable alternatives are likely to affect. The amount of information on potentially affected resources should be based on the expected impact and be commensurate with the impact's importance. The following provides a description of the existing environmental conditions in and around the vicinity of the Charlotte Douglas International Airport (CLT or Airport).

### 4.1 PROPOSED ACTION SETTING

CLT is an international airport located on approximately 6,000 acres of land within Mecklenburg County, North Carolina. The Proposed Action site is located on mostly paved land on the west side of the terminal complex to the northwest of the Airport. The Proposed Action would occur on property currently owned by the City of Charlotte. Exhibit 1-2, *Proposed Action*, shows the location of the Proposed Action site.

### 4.2 RESOURCES POTENTIALLY AFFECTED

#### 4.2.1 Air Quality

The Airport is located within the Metropolitan Charlotte Interstate Air Quality Region.<sup>8</sup> In the past, Mecklenburg County was designated as nonattainment for carbon monoxide (CO) and nonattainment for 8-Hour ozone; however, on September 18, 1995, the U.S. Environmental Protection Agency (USEPA) determined the area had attained the CO standard and on August 27, 2015, the USEPA determined the area had attained the ozone standard and the region was redesignated to attainment for these pollutants. The area now operates under a maintenance plan for 8-Hour ozone and for CO. Mecklenburg County was determined to be compliant with all other Federally-regulated air quality standards in effect at the time of the preparation of this document (see **Appendix A, Air Quality**).

#### 4.2.2 Biological Resources

The Proposed Action site is located within the terminal complex and contains mowed grass, vegetation, and approximately 10-15 decorative trees. A walkover of the site on October 22, 2018 confirmed that no federal or state listed species are located on the site. See **Appendix B, Biological Resources** for pictures of the vegetation.

##### 4.2.2.1 THREATENED AND ENDANGERED SPECIES

According to the US Fish and Wildlife Service (USFWS), the following Federal listed species of plants and animals, shown in **Table 4-1**, are found in Mecklenburg County.

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<sup>8</sup> Title 40 Protection of the Environment. Code of Federal Regulations (C.F.R.) Chapter 1, Subchapter C, Part 81 Subpart B §81.75 Metropolitan Charlotte Interstate Air Quality Control Region (2012).



**TABLE 4-1: FEDERAL THREATENED AND ENDANGERED SPECIES**

TAXONOMIC GROUP	COMMON NAME	SCIENTIFIC NAME	FEDERAL STATUS
Mammal	Northern long-eared bat	<i>Myotis septentrionalis</i>	<i>Threatened</i>
Fish	Carolina darter	<i>Etheostoma collis</i>	<i>Species of Concern</i>
Freshwater Bivalve	Carolina creekshell	<i>Villosa vauhaniana</i>	<i>Species of Concern</i>
Freshwater Bivalve	Carolina Heelsplitter	<i>Lasmigona decorata</i>	<i>Endangered</i>
Insect	Rusty-patched bumble bee	<i>Bombus affinis</i>	<i>Endangered</i>
Vascular Plant	Carolina Hemlock	<i>Tsuga caroliniana</i>	<i>At Risk</i>
Vascular Plant	Georgia Aster	<i>Symphyotrichum georgianum</i>	<i>Candidate</i>
Vascular Plant	Michaux's Sumac	<i>Rhus michauxii</i>	<i>Endangered</i>
Vascular Plant	Piedmont aster	<i>Eurybia mirabilis</i>	<i>Species of Concern</i>
Vascular Plant	Schweinitz's Sunflower	<i>Helianthus schweinitzii</i>	<i>Endangered</i>
Vascular Plant	Smooth Coneflower	<i>Echinacea laevigata</i>	<i>Endangered</i>

Source: <https://www.fws.gov/raleigh/species/cntylist/mecklenburg.html>, Accessed June 27, 2018.

#### **4.2.2.2 STATE DESIGNATED THREATENED, ENDANGERED, OR SPECIAL STATUS SPECIES**

In addition to the USFWS information, the North Carolina Department of Environment Quality (NCDEQ) database was reviewed. The list of the North Carolina state designated threatened, endangered or special concern species that are found in Mecklenburg County is provided in Appendix B.

#### **4.2.3 Climate**

Greenhouse gases (GHG) are gases that trap heat in the earth's atmosphere. Both naturally occurring and man-made GHGs primarily include water vapor (H<sub>2</sub>O), carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O), hydrofluorocarbons (HFCs), perfluorocarbons, and sulfur hexafluoride (SF<sub>6</sub>). Sources that require fuel or power at an airport are the primary sources that would generate GHGs.

Research has shown there is a direct correlation between fuel combustion and GHG emissions. In terms of U.S. contributions, the General Accounting Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide emissions, according to EPA data," compared with other industrial sources, including the remainder of the transportation sector (20 percent) and power generation (41 percent).<sup>9</sup> The International Civil Aviation Organization (ICAO) estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions

<sup>9</sup> Aviation and Climate Change. GAO Report to Congressional Committees, (2009).

globally.<sup>10</sup> Climate change due to GHG emissions is a global phenomenon, so the affected environment is the global climate.<sup>11</sup>

#### **4.2.4 Coastal Resources**

The Airport is not located within a coastal zone and therefore no discussion of coastal resources is included in this EA.

#### **4.2.5 Department of Transportation Act (DOT) Section 4(f)**

The U.S. Department of Transportation Act of 1966 (DOT Act) protects publicly owned parks, recreation areas, wildlife and waterfowl refuge areas, or public and private historic sites. Section 4(f) of the DOT Act provides that "...the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from an historic site of national, state, or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use."

A review of records maintained by the National Park Service (NPS), the North Carolina State Historic Preservation Office (SHPO), and the City of Charlotte Mecklenburg County was conducted to identify known Section 4(f) resources near the Proposed Action site. There are no parks, recreation areas, or wildlife/waterfowl refuges within or adjacent to the Proposed Action site. Historic resources are discussed in Section 4.2.8.

#### **4.2.6 Farmlands**

No farmlands are located within the Proposed Action site, therefore no discussion of farmlands is included in this EA.

#### **4.2.7 Hazardous Materials and Solid Waste**

##### **4.2.7.1 HAZARDOUS MATERIALS**

A Phase I Environmental Site Assessment (ESA) was conducted for the Proposed Action site in June 2015 (see **Appendix C, Hazardous Materials**). The purpose of the ESA was to determine whether Recognized Environmental Conditions (REC) are likely to be present on a property prior to the implementation of the Proposed Action. The results of the Phase I ESA revealed the presence of REC on the site. The former rental car company service areas, including the former Advantage, Alamo-National, Avis, and Hertz facilities, previously contained above-ground storage tanks (AST) and

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<sup>10</sup> Alan Melrose, "European ATM and Climate Adaptation: A Scoping Study," in ICAO Environmental Report. (2010).

<sup>11</sup> As explained by the U.S. Environmental Protection Agency, "greenhouse gases, once emitted, become well mixed in the atmosphere, meaning U.S. emissions can affect not only the U.S. population and environment but other regions of the world as well; likewise, emissions in other countries can affect the United States." Climate Change Division, Office of Atmospheric Programs, U.S. Environmental Protection Agency, Technical Support Document for Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act 2-3 (2009).



underground storage tanks (UST) that were historically used for vehicle refueling. The AST and USTs at these sites were closed and removed in February and March 2016. During the closure of the ASTs and USTs, soil and groundwater contamination was detected and further assessed. Mitigation measures were conducted in coordination with the NCDEQ and the existing conditions of the sites are outlined in **Table 4-2**. Coordination with the NCDEQ is available in Appendix C.

**TABLE 4-2: EXISTING CONDITIONS OF FORMER RENTAL CAR COMPANY SERVICE AREAS**

LOCATION	STATUS
Advantage Car Rental	No groundwater or soil contamination is present at this site. No further action is warranted. <sup>a</sup>
Alamo/National Car Rental	Groundwater contamination meets the cleanup requirements for an intermediate-risk site but exceeds the groundwater quality standards established in Title 15A North Carolina Administrative Code (NCAC) 2L .0202. A conditional No Further Action determination will become valid when public notice requirements are completed. <sup>b</sup>
Avis Car Rental	Groundwater contamination meets the cleanup requirements for an intermediate-risk site but exceeds the groundwater quality standards established in Title 15A NCAC 2L .0202. No further action is warranted for this incident. <sup>c</sup>
Hertz Car Rental	Groundwater contamination meets the cleanup requirements for a low-risk site but exceeds the groundwater quality standards established for dissolved benzene in Title 15A NCAC 2L .0202. No further action is warranted for this incident. <sup>d</sup>

Note: Title 15A NCAC 2L .0202 groundwater standards establish a maximum allowable concentration resulting from any discharge of contaminants to the land or waters of the state, which may be tolerated without creating a threat to human health or which would otherwise render the groundwater unsuitable for its intended best usage.

Source: <sup>a</sup> Re: Notice of No Further Action 15A NCAC 2L .0407(d) Risk-based Assessment and Corrective Action for Petroleum Underground Storage Tanks, Advantage CDIA, 4200 Rental Car Rd, Charlotte, NC, Incident Number: 40651, NCDEQ, September 23, 2016.

<sup>b</sup> Re: Conditional Notice of No Further Action 15A NCAC 2L .0407(d) Risk-based Assessment and Corrective Action for Petroleum Underground Storage Tanks, Alamo CDIA, 4108 Rental Car Rd, Charlotte, Mecklenburg County, Incident Number: 40650, Risk Classification: Low, Ranking: 125D, NCDEQ, March 6, 2019.

<sup>c</sup> Re: Notice of No Further Action 15A NCAC 2L .0407(d) Risk-based Assessment and Corrective Action for Petroleum Underground Storage Tanks, Avis CDIA, 4000 Rental Car Rd, Charlotte, NC, Incident Number: 40653 & 40663, Risk Classification: Low, NCDEQ, August 22, 2019.

<sup>d</sup> Re: Notice of No Further Action 15A NCAC 2L .0407(d) Risk-based Assessment and Corrective Action for Petroleum Underground Storage Tanks, Hertz-Douglas Airport, 4102 Car Rental Road, Charlotte, Mecklenburg County, Incident Number: 5694, Risk Classification: Low, Ranking: 115D, NCDEQ, June 6, 2019.

#### **4.2.7.2 SOLID WASTE AND POLLUTION PREVENTION**

Solid waste, in the form of construction and demolition (C&D) debris, is a common by-product of airport development. There are several waste management landfills in Mecklenburg County that can accept solid waste and C&D debris. These include: Foxhole Recycling/Yard Waste Center, Hickory Grove Recycling/Yard Waste Center, N. Mecklenburg Recycling/Yard Waste Center, and Compost Central & Recycling Center.

#### **4.2.8 Historic, Architectural, Archaeological, and Cultural Resources**

The National Historic Preservation Act (NHPA) is the primary Federal law governing the preservation of historic and prehistoric resources, encompassing art, architecture, archaeological, and other cultural resources. Section 106 of the NHPA requires that, prior to approval of a Federal or Federally-assisted project, or before the issuance of a license, permit, or other similar approval, Federal agencies take into account the effect of the project on properties that are on or eligible for listing on the National Register of Historic Places (NRHP). The NRHP is maintained by the NPS. The North Carolina SHPO maintains records of other sites of local significance.

A review of NPS and SHPO records indicated there are no known historic, architectural, archaeological, and cultural resources within or adjacent to the Proposed Action site. Moreover, the Proposed Action site has been extensively disturbed during the construction of the former rental car company service areas and Old Dowd Road. Furthermore, no structures are present on the property where the expansion would occur. Therefore, it is unlikely the Proposed Action site contains historic, architectural, archeological, or cultural resources.

#### **4.2.9 Land Use**

Land use refers to the types of activities or development that occurs on the land. **Exhibit 4-1, Land Use**, depicts the land uses surrounding the Proposed Action in terms of the generalized use categories. The Proposed Action site is located entirely on Airport property.

#### **4.2.10 Natural Resources and Energy Supply**

Buildings and other structures at the Airport require electricity and natural gas for lighting, cooling, and heating. Electricity is used for cooling and lighting for buildings, lighting for aircraft and vehicle parking areas, airfield lighting systems, roadway lighting, and other facilities. CLT is located within a highly urbanized area with adequate access to natural resources for Airport operations, aircraft operations, and construction projects.

#### **4.2.11 Noise and Noise Compatible Land Use**

Forecasted future growth in operations (i.e., need for ten gates) would occur with or without the Proposed Action. Therefore, the Proposed Action would not result in a change in the noise environment at the Airport. The existing noise condition is consistent with the Airport's Noise Exposure Maps (NEM) developed in 2016.<sup>12</sup> As a result, an existing contour is not presented in this EA.

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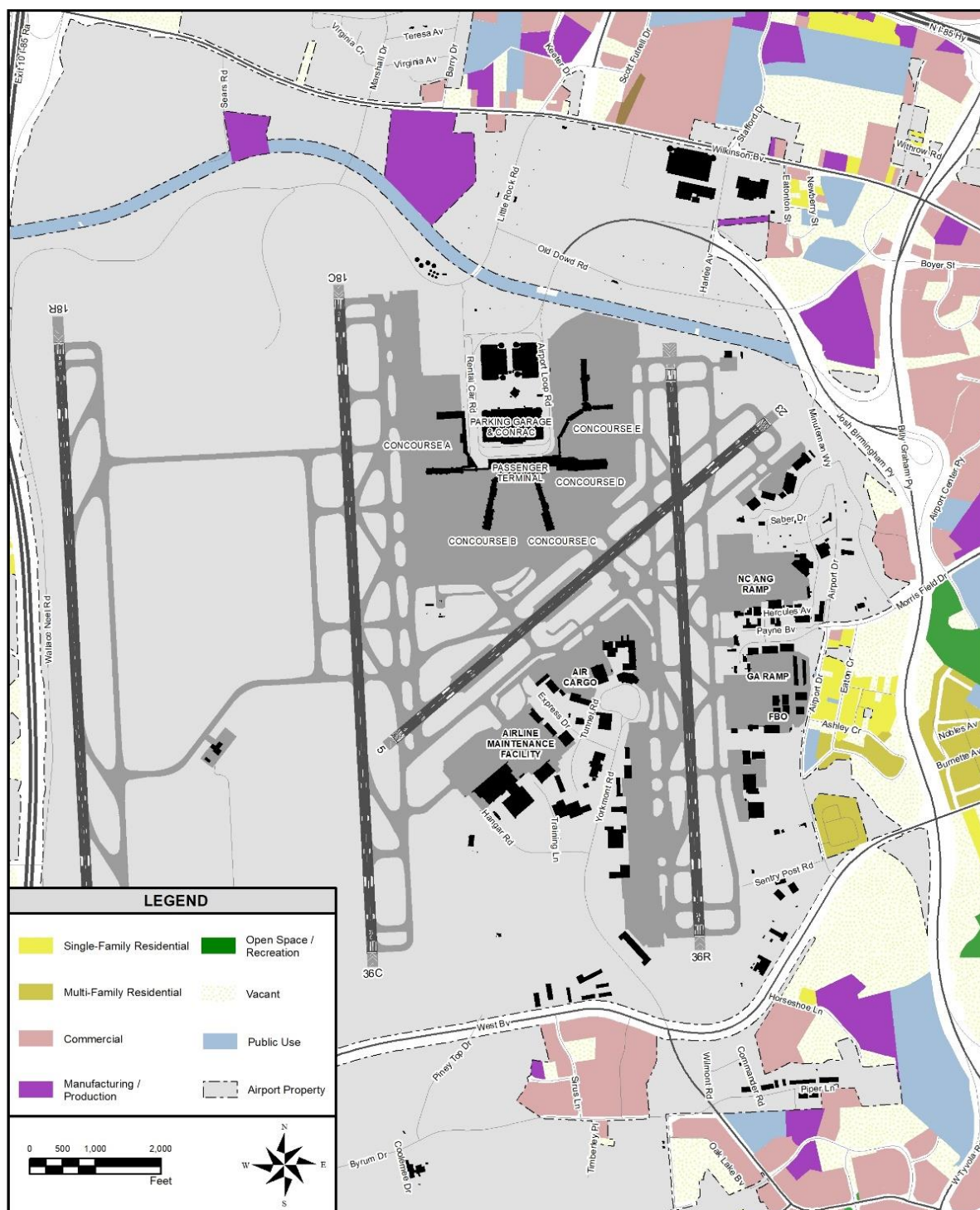
<sup>12</sup> *Noise Exposure and Contour Maps*, Noise, Charlotte Douglas International Airport, 2019, Available on-line: <https://www.cltairport.com/community/noise/maps/> Accessed July 26, 2019.





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**EXHIBIT 4-1, LAND USE**





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#### 4.2.12 Socioeconomic Conditions

Socioeconomic conditions describe the elements of the human environment such as population, employment, housing, public services, and transportation.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, requires all Federal agencies to identify and address disproportionate and adverse human health or environmental effects of their programs, policies, and activities on minority and low-income populations. The Executive Order also directs Federal agencies to incorporate environmental justice into their overall missions by conducting their programs and activities in a manner that provides minority and low-income populations an opportunity to participate in agency programs and activities.

U.S. Department of Transportation (DOT) Order 5610.2, *Environmental Justice in Minority Populations and Low-Income Populations*, was issued to implement Executive Order 12898 and updated in DOT Order 5610.2(a).<sup>13</sup> DOT Order 5610.2(a) defines minorities as people who are Black, Hispanic or Latino, Asian American, American Indian, Alaskan Native, Native Hawaiian, or other Pacific Islander. Minority populations are defined as “any readily identifiable groups of minority persons who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity.”<sup>14</sup> The DOT Order defines a low-income population as “any readily identifiable group” of persons whose median household income is at or below the poverty guidelines of the U.S. Department of Health and Human Services, “who live in geographic proximity, and if circumstances warrant, geographically dispersed/transient persons (such as migrant workers or Native Americans) who will be similarly affected by a proposed DOT program, policy or activity.”<sup>15</sup>

CLT is located in the city of Charlotte within Mecklenburg County, North Carolina. As shown in Exhibit 1-2, *Proposed Action*, the Proposed Action site is entirely on Airport property. **Table 4-3** presents a comparison of the socioeconomic characteristics of the City of Charlotte and Mecklenburg County.

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<sup>13</sup> U.S. Department of Transportation (DOT) Order 5610.2, *Environmental Justice in Minority Populations and Low-Income Populations*, was issued on April 15, 1997. Order 5610.2(a), Department of Transportation Updated Environmental Justice Order, was issued on May 2, 2012.

<sup>14</sup> Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, February 11, 1994.

<sup>15</sup> Ibid.

**TABLE 4-3: EXISTING POPULATION AND DEMOGRAPHICS**

	CITY OF CHARLOTTE	MECKLENBURG COUNTY
<b>Population</b>	826,060	1,034,290
Not Hispanic	710,681	901,341
White	348,789	495,078
Black / African American	285,294	318,010
Native American / Alaskan Native	1,763	2,162
Asian	51,259	56,769
Native Hawaiian or Pacific Islander	454	484
Other	2,616	2,984
Hispanic	115,379	132,949
<b>Percent Hispanic</b>	<b>14.0%</b>	<b>12.9%</b>
<b>Percent Total Minority</b>	<b>57.8%</b>	<b>52.1%</b>
<b>Percent Below Poverty Level*</b>	<b>14.9%</b>	<b>13.4%</b>

Note: In 2017, the U.S. Census Bureau determined the poverty threshold to be an income of \$12,488 for an individual and \$25,094 for a family of four.

Source: U.S. Census Bureau, 2013-2017 American Community Survey 5-Year Estimates; Landrum & Brown, 2019.

CLT ranks as the world's seventh busiest airport in operations and provides service to 171 destinations throughout the world. CLT is also a major employment center. Employers who maintain staff on-site have nearly 30,000 workers, including airlines, tenants, other businesses and the City of Charlotte's Aviation Department. The economic activity that CLT generates is a major contributor to the region's economy. The Airport also contributes nearly \$1.5 billion in annual total economic impact to the region. Additionally, more than 224,000 jobs in the region are directly or indirectly related to the Airport and its services. Those workers earn \$12 billion in wages and salaries. CLT's state and local tax contribution is approximately \$620 million.<sup>16</sup>

## 4.2.13 Visual Effects

### 4.2.13.1 LIGHT EMISSIONS

CLT is currently illuminated by various types of lighting on the airfield and landside facilities. Lighting that emanates from the airfield includes runway, ramp, and navigational lighting such as, hold position lights, stop-bar lights, and runway and taxiway signage. Airfield lighting is located along taxiways and ramps for guidance during periods of low visibility, and to assist aircraft movement on the airfield. Aircraft lighting, such as landing lights, position and navigation lights, beacon lights, and vehicle lighting are other types of light sources on the airfield. Lights for landside facilities include buildings, roadways, and parking facilities. CLT is located in an urbanized area, which is comprised of other development that is also lighted and contributes to the overall light emissions in the area.

<sup>16</sup> Annual Economic Impact, CLT Powers Region's Economy, Center for Transportation Policy Studies at University of North Carolina. Available online: <http://www.cltairport.com/AboutCLT/Documents/Economic%20Impact/CLT%20Economic%20Impact%20Brochure.pdf> Accessed June 2018.

#### **4.2.13.2 VISUAL RESOURCES/VISUAL CHARACTER**

As previously mentioned, the Proposed Action site is located on the Airport and surrounded by similar uses.

#### **4.2.14 Water Resources**

##### **4.2.14.1 WETLANDS**

Based on the National Wetland Inventory (NWI), there is a stream (Riverine) within the Proposed Action site. However, a walkover on October 25, 2018 verified no wetlands or streams are located on the Proposed Action site. This area is dry and does not contain an exposed flowing stream. The stream pathway shown on the NWI maps resembles a dry ditch and is likely a wet-weather conveyance.

##### **4.2.14.2 FLOODPLAINS**

Floodplains are defined as the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one-percent or greater chance of flooding in any given year (i.e., area inundated by a 100-year flood).<sup>17</sup> Based on the Federal Emergency Management Agency Flood Insurance Rate Map (FIRM) Panel 3710451400K, dated September 2, 2015, the project site is not located within the limits of, or on land adjacent to, a floodplain.

##### **4.2.14.3 SURFACE WATERS**

The Airport lies within the Catawba River Drainage Basin. Surface drainage flows from the Airport by numerous conveyances, such as ditches, creeks, and streams, and eventually enters the Catawba River or one of its impoundments. Most of the existing Airport drains southeast into Taggart Creek and south into Coffey Creek. Ticer Branch drains the northwest corner, Little Paw Creek drains the west side, and Beaverdam Creek drains the southwest corner of the Airport.

The primary source of drinking water in Mecklenburg County is the Catawba River. Water is pumped from the river either at Mountain Island Lake or Lake Norman intakes, to one of three treatment plants where the water is cleaned, tested, and pumped into the distribution system. The Catawba River is located to the west of CLT and several tributaries flow from CLT property into the Catawba River.

CLT property is situated within two watersheds as denoted by the 8-digit hydrologic unit codes (HUC) 03050101 (Upper Catawba) and 03050103 (Lower Catawba). The boundary between the two watersheds runs roughly northeast to southwest through CLT property between Runway 18C/36C and Runway 18R/36L. The HUC 03050101 which is located on the western side of CLT property is designated by Mecklenburg County as a drinking water protection watershed.

In North Carolina, stormwater discharges are regulated by the National Pollutant Discharge Elimination System (NPDES) as administered by the North Carolina Division of Water Resources. CLT currently holds an individual NPDES Permit (Permit No. NC0083887) for industrial/commercial activity. The

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<sup>17</sup> FAA Order 5050.4B, NEPA Implementing Instructions for Airport Actions, April 28, 2006.



Proposed Action site is not in an area designated by Mecklenburg County as a drinking water protection watershed.

#### **4.2.14.4 GROUNDWATER**

Approximately 15 percent of the water supply in Mecklenburg County comes from groundwater. Groundwater is obtained via wells that extract water from aquifers for drinking, irrigation, and industrial uses. There are no public drinking water wells located within the Proposed Action site.

A total of ten monitoring wells are located within the Proposed Action site. Many of the wells are groundwater monitoring wells associated with groundwater contamination detected on the former rental car company service areas. Depth to the groundwater ranges from 11 to 82 feet below ground surface in the wells.

#### **4.2.14.5 WILD AND SCENIC RIVERS**

No wild and scenic rivers are present in Mecklenburg County.

## Chapter Five

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## 5 ENVIRONMENTAL CONSEQUENCES

This chapter presents the assessment of environmental impacts addressed in considering reasonably foreseeable environmental consequences of the Proposed Action and the No Action Alternative.

As required by the Federal Aviation Administration (FAA) Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Projects*, and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, the environmental categories listed below are addressed in this Environmental Assessment (EA). Construction activities could result in potential impacts to multiple categories. Per FAA Order 1050.1F, the assessment of potential construction related impacts is discussed where applicable for each of the categories listed.

- Air Quality
- Biological Resources
- Climate
- Coastal Resources
- Department of Transportation (DOT) Section 4(f)
- Farmlands
- Hazardous Materials, Solid Waste, and Pollution Prevention
- Historical, Architectural, Archeological, and Cultural Resources
- Land Use
- Natural Resources and Energy Supply
- Noise and Noise Compatible Land Use
- Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks
- Visual Effects
  - Light Emissions
  - Visual Resources and Visual Character
- Water Resources
  - Wetlands
  - Floodplains
  - Surface Waters
  - Groundwater
  - Wild and Scenic Rivers



## 5.1 AIR QUALITY

The Proposed Action would be implemented in Mecklenburg County, North Carolina, which the U.S. Environmental Protection Agency (USEPA) has designated as maintenance for ozone (O<sub>3</sub>) and carbon monoxide (CO). At the time of the preparation of this EA, the County was designated attainment for all the other Federally-regulated pollutants. Therefore, the net emissions of the Proposed Action are limited to less than 100 tons per year, each, of CO and the ozone precursor pollutants nitrogen oxides (NO<sub>x</sub>) and volatile organic compounds (VOC).

The impacts to air quality due to the Proposed Action were determined in accordance with the guidelines provided in FAA, *Aviation Emissions and Air Quality Handbook Version 3, Update 1*,<sup>18</sup> and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, which together with the guidelines of FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, constitute compliance with all the relevant provisions of NEPA and the Clean Air Act (CAA), as amended in 1990.

### No Action

The No Action Alternative does not involve any construction activities and therefore would not cause any impacts to air quality from construction activity. For more information, see **Appendix A, Air Quality**.

### Proposed Action

**Table 5-1** shows that the estimated net emissions from construction of the Proposed Action would be less than the applicable *de minimis* thresholds. Because construction of the Proposed Action would not result in increased emissions above the applicable *de minimis* thresholds, no further analysis is required under the General Conformity Rule and the Proposed Action is determined to conform to the State Implementation Plan (SIP). For more information see Appendix A.

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<sup>18</sup> FAA, *Aviation Emissions and Air Quality Handbook Version 3, Update 1*, January 2015.

**TABLE 5-1: CONSTRUCTION EMISSIONS INVENTORY – PROPOSED ACTION**

EMISSION SOURCES	CRITERIA AND PRECURSOR POLLUTANTS (short tons per year)					
	CO	VOC	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	CAA DE MINIMIS THRESHOLDS					
	100	100	100	NA	NA	NA
<b>CONSTRUCTION YEAR 1</b>						
Pavement Construction	4.3	0.9	4.0	0.0	1.0	0.2
Building Construction	2.8	0.5	2.1	0.0	0.2	0.1
<i>Construction Year 1 Total</i>	<i>7.1</i>	<i>1.4</i>	<i>6.1</i>	<i>0.0</i>	<i>1.2</i>	<i>0.3</i>
<b>CONSTRUCTION YEAR 2</b>						
Pavement Construction	2.0	0.4	1.8	0.0	0.5	0.1
Building Construction	7.5	0.8	2.2	0.0	0.2	0.1
<i>Construction Year 2 Total</i>	<i>9.5</i>	<i>1.2</i>	<i>4.0</i>	<i>0.0</i>	<i>0.7</i>	<i>0.2</i>
<b>CONSTRUCTION YEAR 3</b>						
Building Construction	7.3	0.7	2.0	0.0	0.2	0.1
<i>Construction Year 3 Total</i>	<i>7.3</i>	<i>0.7</i>	<i>2.0</i>	<i>0.0</i>	<i>0.2</i>	<i>0.1</i>

NA = Not Applicable.

Note: Total emissions may not sum exactly due to rounding.

Source: Landrum & Brown analysis, 2019.

While the construction of the Proposed Action would be expected to contribute to fugitive dust in and around the construction site, the Sponsor would ensure that all possible measures would be taken to reduce fugitive dust emissions by adhering to guidelines included in FAA Advisory Circular, *Standard Specifications for Construction of Airports*.<sup>19</sup> Methods of controlling dust and other airborne particles would be implemented to the maximum possible extent and may include, but not limited to, the following:

- Exposing the minimum area of erodible earth
- Applying temporary mulch with or without seeding
- Using water sprinkler trucks
- Using covered haul trucks
- Using dust palliatives or penetration asphalt on haul roads
- Using plastic sheet coverings

<sup>19</sup> FAA Advisory Circular, Standard Specifications for Construction of Airports, Item C-102, Temporary Air and Water Pollution, Soil Erosion, and Siltation Control, AC 150/5370-10H (December 21, 2018).

## 5.2 BIOLOGICAL RESOURCES

FAA Order 1050.1F states that a significant impact to biological resources (including fish, wildlife, and plants) would occur when the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) determines that the action would be likely to jeopardize the continued existence of a Federally-listed threatened or endangered species, or would result in the destruction or adverse modification of federally-designated critical habitat. The FAA has not established a threshold of significance for species of concern or non-listed species; however, the following factors should be considered, as noted in Order 1050.1F:

- A long-term or permanent loss of unlisted plant or wildlife species (i.e., extirpation of the species from a large project area);
- Adverse impacts to special status species (e.g., state species of concern, species proposed for listing, migratory birds, bald and golden eagles) or their habitats;
- Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or
- Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance.

### No Action

The No Action Alternative does not involve any development and therefore would not cause any impacts to biological resources.

### Proposed Action

As discussed in Chapter Four, *Affected Environment*, the Proposed Action site contains mowed grass, vegetation, and decorative trees slated for removal during the implementation of the Proposed Action. A walkover of the site on October 22, 2018 confirmed that no federal or state listed species are located on the site. Vegetation and decorative trees slated to be removed are not potential habitat for any special status species. See **Appendix B, Biological Resources** for pictures of the vegetation. As such, the Proposed Action would not cause impacts to large areas of vegetation, impacts to migratory birds or their critical habitat, substantial loss or fragmentation of native species populations or habitat, or adverse impacts on a species reproductive success or mortality rates.

## 5.3 CLIMATE

Although there are no federal standards for aviation-related Green House Gas (GHG) emissions, it is well-established that GHG emissions can affect climate.<sup>20</sup> The Council on Environmental Quality (CEQ) has indicated that climate should be considered in NEPA analyses.

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<sup>20</sup> See *Massachusetts v. E.P.A.*, 549 U.S. 497, 508-10, 521-23 (2007).

### No Action

Under the No Action Alternative, there would be no increase in project specific GHG emissions. For more information see Appendix A.

### Proposed Action

**Table 5-2** provides an estimate of the annual GHG emissions inventory. These estimates are provided for information only as no Federal NEPA standard for the significance of GHG emissions from individual projects on the environment has been established.

**TABLE 5-2: ANNUAL GHG EMISSIONS INVENTORY – PROPOSED ACTION**

Metrics	Annual Metric tons		
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
CONSTRUCTION YEAR 1			
Construction	3,785.1	0.1	0.0
GWP100	1	28	265
CO <sub>2e</sub>	3,785.1	3.1	4.6
CO <sub>2e</sub> Net Emissions	3,792.8		
CONSTRUCTION YEAR 2			
Construction	2,937.5	0.1	0.0
GWP100	1	28	265
CO <sub>2e</sub>	2,937.5	3.9	4.0
CO <sub>2e</sub> Net Emissions	2,945.3		
CONSTRUCTION YEAR 3			
Construction	1,667.3	0.1	0.01
GWP100	1	28	265
CO <sub>2e</sub>	1,667.3	2.7	2.1
CO <sub>2e</sub> Net Emissions	1,672.1		

CO<sub>2</sub>: Carbon Dioxide

CO<sub>2e</sub>: Carbon Dioxide equivalent

CH<sub>4</sub>: Methane

N<sub>2</sub>O: Nitrous oxide

GWP: Global Warming Potential

Total emissions may not sum exactly due to rounding.

Note: CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O emissions are multiplied by the GWP and summed to obtain the CO<sub>2e</sub> net emissions, reported in metric tons

Source: Landrum & Brown Analysis, 2019



## 5.4 COASTAL RESOURCES

The Airport is not located within a coastal zone therefore no impacts to coastal resources would occur with implementation of the Proposed Action.

## 5.5 DEPARTMENT OF TRANSPORTATION (DOT) ACT: SECTION 4(F) RESOURCES

The Federal statute that governs impacts in this category is commonly known as the Department of Transportation (DOT) Act of 1966, Section 4(f) provisions. Section 4(f) of the DOT Act was recodified and renumbered as Section 303(c) of U.S. Code Title 49 (49 U.S.C.). FAA Orders 5050.4B and 1050.1F continue to refer to this statute as Section 4(f) to avoid confusion. Section 4(f) provides that the “Secretary of Transportation may approve a transportation program or project requiring the use of publicly-owned land of a park, recreational area, or wildlife and waterfowl refuge of national, state, or local significance or land of a historic site of national, state, or local significance as determined by the official having jurisdiction over those resources only if: there is no prudent and feasible alternative that would avoid using those resources, and the program or project includes all possible planning to minimize harm resulting from the use.”<sup>21</sup> Two types of impacts to a Section 4(f) resource, physical or constructive use, can occur from a Proposed Action. A physical use would occur if the Proposed Action or alternative(s) would involve an actual physical taking of Section 4(f) property through purchase of land or a permanent easement, physical occupation of a portion or all of the property, or alteration of structures or facilities on the property. Constructive use occurs when the impacts of a project on a Section 4(f) property are so severe that the activities, features, or attributes that qualify the property for protection under Section 4(f) are substantially impaired. The FAA may also make a de minimis impact determination with respect to a physical use of Section 4(f) property if, after taking into account any measures to minimize harm, the result is either:

- A determination that the project would not adversely affect the activities, features, or attributes qualifying a park, recreation area, or wildlife or waterfowl refuge for protection under Section 4(f); or
- A Section 106 finding of no adverse effect or no historic properties affected.
- Section 6(f) of the Land and Water Conservation Act (LWCA) is also pertinent to Section 4(f) lands. Section 6(f) prohibits recreational facilities funded under the LWCA from being converted to non-recreational use unless approval is received from the director of the grantor agency.

### No Action

The No Action Alternative would not cause any impacts to Section 4(f) resources.

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<sup>21</sup> FAA Environmental Desk Reference for Airport Actions, Section 7.1(b), Section 4(f) Resources, October 2007.

### Proposed Action

Section 4.2.5 and Section 4.2.8 of Chapter 4, *Affected Environment*, did not identify Section 4(f) resources in the vicinity of the Proposed Action site. Therefore, no impacts to Section 4(f) resources would result from the Proposed Action.

## **5.6 FARMLANDS**

No farmlands are located in the Proposed Action area, therefore no impacts to farmlands would occur with the implementation of the Proposed Action.

## **5.7 HAZARDOUS MATERIALS, SOLID WASTE, AND POLLUTION PREVENTION**

The potential impacts resulting from hazardous materials, solid waste collection, control, and disposal due to airport projects are assessed under four primary laws that govern the handling and disposal of hazardous materials, chemicals, substances, and wastes:

- Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), (as amended by the Superfund Amendments and Reauthorization Act of 1986 and the Community Environmental Response Facilitation Act of 1992);<sup>22</sup>
- Pollution Prevention Act of 1990;<sup>23</sup>
- Toxic Substances Control Act of 1976, as amended (TSCA);<sup>24</sup> and
- Resource Conservation and Recovery Act of 1976 (RCRA), (as amended by the Superfund Amendments and Reauthorization Act of 1986 and the Community Environmental Response Facilitation Act of 1992).<sup>25</sup>

The two statutes that are of most pertinent to FAA actions to construct and operate airport facilities and navigational aids are RCRA and CERCLA. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources' trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

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<sup>22</sup> 42 U.S.C. 9601-9675.

<sup>23</sup> 42 U.S.C. 1310-1319.

<sup>24</sup> 15 U.S.C. 2601-2692

<sup>25</sup> 42 U.S.C. 6901-6992(k)





### No Action

With the No Action Alternative, the existing conditions at Charlotte Douglas International Airport (CLT) would remain in place. Therefore, no change in hazardous materials or solid waste impacts would occur or be expected to occur.

### Proposed Action

#### *Hazardous Materials*

Recent investigatory findings in conjunction with historical soil and groundwater data suggest that released substances and contaminated soil at the former Alamo-National site are a potential continuing source of contaminants.

The Alamo-National site contains groundwater contamination that meets the cleanup requirements for an intermediate-risk site but exceeds the groundwater quality standards established in Title 15A North Carolina Administrative Code (NCAC) 2L .0202.<sup>26</sup> The conditional No Further Action determinations outlined in Table 4-2 will become valid when the UST Section of the North Carolina Department of Environmental Quality (NCDEQ) receives a certified copy of the notice of Residual Petroleum which is filed with the Register of Deeds, and public notice requirements are completed. Therefore, the Airport would gain approval from the NCDEQ prior to the construction and implementation of the Proposed Action. Remediation to acceptable levels will need to be met in order for the Proposed Action to be approved.

#### *Solid Waste*

The Proposed Action would create a temporary increase in solid waste generated during construction. It is estimated that approximately 200,000 cubic yards of construction waste would be removed and recycled to the extent practical. The implementation of the Proposed Action would increase the amount of solid waste at the Airport due to the increase in concessions and facilities located within Concourse A. However, the Proposed Action would not generate an unmanageable volume of solid waste. The increase in solid waste produced by the Proposed Action would not exceed the capacity of the existing solid waste facilities.

Based on the findings above, the Proposed Action would not result in unique or significant impacts to hazardous materials, solid waste management, or pollution prevention plans. However, the current soil and groundwater contamination will require approval from the NCDEQ prior to the implementation of the Proposed Action.

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<sup>26</sup> Title 15A NCAC 2L .0202 establishes a maximum allowable concentration resulting from any discharge of contaminants to the land or waters of the state, which may be tolerated without creating a threat to human health or which would otherwise render the groundwater unsuitable for its intended best usage.

## 5.8 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

The *National Historic Preservation Act of 1966* (NHPA)<sup>27</sup> and the *Archeological and Historic Preservation Act of 1974*<sup>28</sup> are primary Federal laws governing the preservation of historic and prehistoric resources, encompassing art, architecture, archeological, and other cultural resources. Section 106 of the NHPA requires that, prior to approval of a Federal or Federally-assisted project, or before the issuance of a license, permit, or other similar approval, Federal agencies take into account the effect of the project on properties that are on or eligible for listing on the National Register of Historic Places (NRHP).

### No Action

The No Action Alternative would not cause any impacts to historic or archeological resources.

### Proposed Action

The Proposed Action site has been extensively disturbed during the construction of the former rental car service areas and Old Dowd Road. Furthermore, no structures are present on the property where the expansion would occur. Therefore, it is unlikely the Proposed Action would result in impacts to historic, architectural, archeological, and cultural resources.

## 5.9 LAND USE

The FAA has not established a significance threshold for land use impacts, other than those related to noise impacts. However, CEQ Regulations require that NEPA documents discuss any inconsistency with approved state and/or local plan(s) and law(s). Furthermore, the NEPA document should discuss potential hazards to aviation such as landfills, wildlife refuges, or wetland mitigation that may attract wildlife species that could be hazardous to aviation and could result in potential structure-height impacts.

### No Action

The No Action Alternative would not cause any changes to existing land use; therefore, no adverse land use compatibility impacts would occur.

### Proposed Action

The Proposed Action site would be located on land owned by the City of Charlotte and surrounded by Airport-owned land. The Proposed Action is consistent with local plans or laws related to land use and development. Therefore, no adverse impacts to land use would occur with implementation of the Proposed Action.

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<sup>27</sup> Public Law 89-665; 16 U.S.C. 470 et seq.

<sup>28</sup> Public Law 86-523, 16 U.S.C. 469-469c-2

## 5.10 NATURAL RESOURCES AND ENERGY SUPPLY

Sections 1502.16(e) and (f) of the CEQ Regulations require that Federal agencies consider energy requirements, natural resource requirements, and potential conservation measures for a Proposed Action and its alternatives.

### No Action

The No Action Alternative would not cause any impacts to natural resources or the supply of energy.

### Proposed Action

The Proposed Action would include the expansion of existing facilities and construction of new facilities, including a 195,000 square foot expansion of Concourse A, construction of approximately 245,000 square feet of ramp pavement in support of the Concourse A expansion, construction of approximately 361,000 square feet of ramp pavement for the proposed hardstand area, and construction and operation of a Ground Support Equipment (GSE) fueling facility and lavatory station. In addition, a hydrant fueling system with new jet fuel and hydrant pits would be installed. Furthermore, lighting would also be incorporated into the construction of these facilities.

Construction of the proposed expanded and new facilities would require natural resources such as steel, gravel, sand, aggregate, concrete, asphalt, water, and other construction materials. These materials are not in short supply in the Charlotte area and consumption of these materials is not expected to deplete existing supplies. Operation of these proposed facilities would require the use of electricity, natural gas, and water. Electricity is used to power and light the buildings and to light the parking areas. Natural gas is used for gas-fired water heaters, kitchen equipment, and other gas-fired appliances. Water would be used for cooking, cleaning, vehicle washing, sewer, and other activities. The Proposed Action would increase the amount of electricity, natural gas, and water consumed at CLT. Energy and water conservation features would be incorporated into the design of the proposed projects where feasible. CLT is located in an urban area with a sufficient supply of electricity, natural gas, and water. Therefore, the Proposed Action is not expected to result in adverse impacts to the local supply of energy or natural resources.

## 5.11 NOISE AND NOISE-COMPATIBLE LAND USE

As previously stated, forecasted future growth in operations (i.e., need for ten gates) would occur with or without the Proposed Action. Therefore, the Proposed Action would not result in a change in the noise environment at the Airport and the Proposed Action would be consistent with the Airport's Noise Exposure Maps (NEM) developed in 2016.<sup>29</sup>

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<sup>29</sup> *Noise Exposure and Contour Maps*, Noise, Charlotte Douglas International Airport, 2019, Available on-line: <https://www.cltairport.com/community/noise/maps/> Accessed July 26, 2019.

Furthermore, based on FAA guidance, noise due to construction of a Proposed Action should be assessed in an environmental document. Therefore, the following section addresses potential noise impacts related to the construction of the Proposed Action.

### No Action

The No Action Alternative would not include construction; therefore, no noise impacts would occur due to the construction of the Proposed Action.

### Proposed Action

**Table 5-3** depicts an estimate of the typical maximum sound level energy from various types of construction equipment that is likely to be used during construction of the Proposed Action. The total sound energy would be a product of a machine's sound level, the number of such machines in service, and the average time they operate.

Construction activities associated with the Proposed Action are not expected to result in noise impacts to residential or other public land uses due to the limited amount of time the construction activity would occur. Major construction activities would be limited to daylight hours. Additionally, noise from construction equipment would likely not be discernible from other background noise sources such as aircraft and roadway noise in most locations.

**TABLE 5-3: CONSTRUCTION EQUIPMENT NOISE**

CONSTRUCTION EQUIPMENT	TYPICAL MAXIMUM SOUND LEVEL (LMAX) IN DB(A) AT 50 FEET
Dump Truck	76
Concrete Mixer Truck	79
Jackhammer	89
Scraper	84
Dozer	82
Paver	77
Generator	81
Impact Pile Driver	101
Rock Drill	81
Pump	81
Pneumatic Tools	85
Backhoe	78

Source: Federal Highway Administration, *Construction Noise Handbook, 9.0 Construction Equipment Noise Levels and Ranges*. Online at [http://www.fhwa.dot.gov/environment/noise/construction\\_noise/handbook/handbook09.cfm](http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm), Accessed October 2018.



## 5.12 SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

### 5.12.1 Socioeconomics

The FAA has not established a significance threshold for socioeconomics; however, in general, the significance of socioeconomic impacts is determined by the magnitude and duration of the impacts, whether beneficial or adverse. According to FAA Order 1050.1F, potential impacts to consider include:

- inducing substantial economic growth,
- dividing or disrupting an established community,
- extensive relocation of housing when sufficient replacement housing is unavailable,
- extensive relocation of businesses that would cause economic hardship,
- disruption of local traffic patterns, or
- substantial loss of the community tax base.

#### No Action

The No Action Alternative would not change any of the physical characteristics of the Airport and would have no impact on or off the Airport.

#### Proposed Action

The Proposed Action would not cause the disruption of an existing community, the relocation of housing, or the relocation of business.

Temporary construction impacts could include increased commercial traffic, increased traffic congestion, increased travel distances, and increased travel times for drivers. A construction management plan would be prepared which, based on the selected contractor(s) haul plan, would specify hours of operation, haul routes, and similar controls. It is expected that such a plan would be consistent with normal contracting practices, because it is not likely that a contractor would schedule haul activities during extreme congestion periods or weather conditions because it could increase costs to the contractor and affect the schedule.

### 5.12.2 Environmental Justice

A specific significance threshold for Environmental Justice has not been defined by the FAA. However, potential impacts would occur if disproportionately high environmental impacts in one or more environmental categories were to occur to minority or low-income populations. In addition, unique impacts to a minority or low-income population should also be considered even if there is no significant impact from other environmental categories.

### No Action

Under the No Action Alternative, no changes would occur that would cause impacts to minority or low-income populations.

### Proposed Action

Under the Proposed Action, no significant or disproportionate impacts would occur to minority or low-income populations. Therefore, potential indirect impacts from the Proposed Action would not disproportionately affect any one area and no significant environmental justice impacts would occur.

## **5.12.3 Children's Health and Safety Risks**

Executive Order 13045 directs Federal agencies to analyze their policies, programs, activities, and standards for any environmental health or safety risks that may disproportionately affect children. The FAA has not established a significance threshold for Children's Environmental Health and Safety Risks. However, according to FAA Order 1050.1F, potential impacts from other environmental categories should be assessed to determine if they have the potential to lead to a disproportionate health or safety risk to children.

### No Action

Under the No Action Alternative, no changes would occur and thus create environmental health risks or safety risks for any persons, regardless of age.

### Proposed Action

Implementation of the Proposed Action would not create environmental health risks or safety risks for any persons, regardless of age. Therefore, no potential or significant adverse impacts to children's health and safety would occur with implementation of the Proposed Action.

## **5.13 VISUAL EFFECTS**

According to FAA Order 1050.1F, visual effects include light emissions and visual resources/visual character. These factors should be considered in an environmental review.

### **5.13.1 Light Emissions**

#### No Action

Under the No Action Alternative, no changes would occur that would cause impacts from light emissions.

#### Proposed Action

The potential lighting sources that could impact the closest residential area, which is located at the intersection of Little Rock Road and Wilkinson approximately one mile away, would be located in the



ramp area and security lighting on the new pier. The lighting would illuminate the immediate area surrounding the building and ramp and would also be shielded or directed at angles that would not cause lighting impacts to the residences. Light emissions during the construction of the Proposed Action are not anticipated to cause any impact to the surrounding areas as most of the construction would occur during daytime hours. No significant increase in light intensity is expected to occur within residential areas due to parking facilities and Wilkinson Boulevard separating the proposed development from residences and the existing light emissions in the vicinity of the Proposed Action site. Therefore, no significant impacts from light emissions would occur.

### **5.13.2 Visual Resources/Visual Character**

#### No Action

Under the No Action Alternative, no changes would occur that would cause visual impacts.

#### Proposed Action

The Proposed Action would occur on a site surrounded by CLT property and visibility of the site from residential areas would be limited. Therefore, the Proposed Action would not significantly alter the views from these areas and no significant visual impacts are expected to occur.

## **5.14 WATER RESOURCES**

In FAA Order 1050.1F, water resources include wetlands, floodplains, surface waters, groundwater, and wild and scenic rivers, which function as a single, integrated natural system. Disruption of any one part of this system can have consequences to the functioning of the entire system.

### **5.14.1 Wetlands**

The U.S. Army Corp of Engineers and the USEPA define wetlands as: "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

#### No Action

Under the No Action Alternative, no development would occur that would cause impacts to wetlands or streams.

#### Proposed Action

As discussed in Section 4.2.14.1 in Chapter 4, no wetlands or streams are located on the Proposed Action site. Therefore, no wetlands or streams would be impacted by the Proposed Action.



### **5.14.2 Floodplains**

Floodplains are defined by Executive Order 11988, Floodplain Management, as “the lowland and relatively flat areas adjoining inland and coastal waters including flood-prone areas of offshore islands, including at a minimum, that area subject to a one percent or greater chance of flooding in any given year” (i.e., area inundated by a 100-year flood). DOT Order 5650.2 defines the values served by floodplains to include “natural moderation of floods, water quality maintenance, groundwater recharge, fish, wildlife, plants, open space, natural beauty, scientific study, outdoor recreation, agriculture, aquaculture, and forestry.”

#### No Action

Under the No Action Alternative, no development would occur that would cause impacts to floodplains.

#### Proposed Action

The Proposed Action site is not located within a 100-year floodplain and no proposed development would encroach on a floodplain. Therefore, no impacts to floodplains would occur under the Proposed Action.

### **5.14.3 Surface Waters**

#### No Action

Under the No Action Alternative, no development would occur and no additional impervious surface area would be created. Stormwater runoff would continue to occur from existing impervious surface areas and would be subject to the limits outlined in the existing National Pollutant Discharge Elimination System (NPDES) permit. Therefore, the No Action would not cause impacts to surface waters.

#### Proposed Action

The Proposed Action would be constructed mostly on paved land at the former rental car facility site. The total impervious surface associated with the Proposed Action is approximately 686,000 square feet. As noted, the majority of this area (641,000 square feet) is currently paved surface area that was used for the former rental car company service areas. Therefore, construction of the Proposed Action would result in only an increase of approximately 45,000 square feet of impervious surface area. However, the Proposed Action site would occur away from water bodies and would not require alteration to any surface waters. Therefore, no direct impacts to surface waters would occur. Indirect impacts to surface water quality could occur from stormwater runoff as a result of construction. Stormwater runoff during construction is regulated by the NCDEQ and City of Charlotte land development ordinances.

CLT has prepared a Storm Water Master Plan to manage the impacts of runoff as a result of new development and redevelopment. Stormwater runoff would be managed according state and local regulations. Discharges would comply with the terms of the North Carolina NPDES program and a new or modified NPDES permit would be obtained. Best Management Practices (BMPs) would be incorporated into the construction. Contractors would be required to comply with all applicable Federal,





state, and local laws and regulations, including FAA guidance contained in AC 150/5370-10H, *Standard Specifications for Construction of Airports*, including Item C-102, *Temporary Air and Water Pollution, Soil Erosion and Siltation Control*; AC 150/5320-15A *Management of Airport Industrial Waste*; and AC 150/5320-5D, *Airport Drainage Design*. Implementation of stormwater management programs, adherence to the NPDES program requirements, and implementation of BMPs would prevent any significant water quality impacts to surface waters under the Proposed Action.

#### **5.14.4 Groundwater**

##### No Action

Under the No Action Alternative, no development would occur thus no potential new impacts to groundwater would occur.

##### Proposed Action

Stormwater runoff for the Proposed Action would be managed according to NPDES permit requirements. CLT and tenants would meet all spill prevention and control regulations to prevent spills from causing significant adverse impacts to groundwater.

As previously mentioned in Section 5.7, recent investigatory findings in conjunction with historical soil and groundwater data suggest that released substances and contaminated soil at the former rental car company service areas is a continuing source of contaminants. The Airport is coordinating with the NCDEQ to obtain deed restrictions in order to close the contamination sites prior to development. For more information, see Section 5.7, *Hazardous Materials, Solid Waste, and Pollution Prevention*.

According to records maintained by Mecklenburg County, there are ten wells located on the former rental car company service areas. If the Proposed Action is implemented, the wells would be abandoned according to state and local guidelines. Stormwater runoff for the Proposed Action would be managed according to NPDES permit requirements. CLT and tenants would meet all spill prevention and control regulations to prevent spills from causing significant adverse impacts to groundwater.

##### *Permitting*

The Land Quality Section of the NCDEQ is responsible for the review and inspection of erosion and sediment control permitting for construction projects. CLT would be required to submit a permit application for erosion and sediment control approval in the event that a new development or BMP disturbs greater than one acre of land. Additionally, an NPDES permit or modification to an existing permit would be required to be obtained through the North Carolina Division of Water Resources.

#### **5.14.5 Wild and Scenic Rivers**

No wild and scenic rivers are present in Mecklenburg County. Therefore, no impacts to wild and scenic rivers would occur with the implementation of the Proposed Action.

## 5.15 CUMULATIVE IMPACTS

The CEQ NEPA regulations (40 CFR 1508.7) define a cumulative impact as "...the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency, Federal or non-Federal, or person undertakes such other actions. Cumulative impacts can result from individually minor, but collectively significant, actions taking place over a period of time." This cumulative impact analysis was conducted to comply with the intent of FAA Order 1050.1F, DOT Order 5610.1C, and the January 1997 CEQ guidance.

The construction of the Proposed Action is planned to occur from 2020 to 2022, which would overlap with several other projects at CLT. With the exception of temporary construction-related impacts, the cumulative environmental impact of the Proposed Action is expected to be minimal. Extensive preventive procedures would be put into place to avoid and minimize any potential adverse impacts during construction. As described in the following sections, the Proposed Action is consistent with the overall planning mission of the City of Charlotte and would not result in adverse cumulative impacts.

### 5.15.1 Past Projects

Past projects are actions that occurred in the past five years and may warrant consideration in determining the environmental impacts of an action. Past projects at the Airport include property acquisition and demolition, taxiway rehabilitations, terminal expansions, and parking lot expansions. No significant environmental impacts were identified for any of the projects.

### 5.15.2 Present Projects

Present projects are any other actions that are occurring in the same general time frame as the Proposed Action. The following projects are currently under construction or construction is planned to begin in 2019.

#### On-Airport Projects

- Aviation Museum Project (pending NEPA approval) – This project includes the apron expansion of the Carolinas Aviation Museum in support of outdoor exhibits. If approved, this project would begin in the fourth quarter of 2019 and be completed within three months.
- EIS Land 2000 Demolition Project – This project includes the demolition of 56 single-family residences and their accessory structures on land south of Runway 18R/36L. This project will begin mid-2019.
- Upgrade of the Perimeter Fence – This project includes the upgrade of approximately 43,000 linear feet of the existing perimeter fencing on Airport property. This project will begin in August 2019 and be completed within 12 months.
- Pavement Rehabilitation of Runway 18L/36R and Closure of Taxiway Connector C7 – This project includes the rehabilitation of portions of Runway 18L/36R and associated taxiway stubs



as well as the removal of Taxiway C7. This project will begin May 2019 and be completed within five months.

- Replacement of the Runway 18L/36R High Intensity Runway Lighting System and Cable – This project includes the replacement of the Runway 18L/36R High Intensity Runway Lighting System and Cable. This project will begin May 2019 and be completed within two months.

Potential impacts from the aforementioned projects include an increase in stormwater runoff due to an increase in impervious surfaces, an increase in solid waste, and temporary construction impacts.

#### Off-Airport Projects

- Quattro Development – This project will construct an 855,000 square foot warehouse and distribution facility.
- Orr Road Extension – This project will provide a new street connection by extending Orr Road from North Tryon Street to Dawn Circle and to Austin Drive.
- Plaza Street Conversion – This project will convert Central Avenue to Mecklenburg Avenue to include provisions for pedestrians, bicyclists, and motor vehicles.
- Margaret Wallace Road – The City of Charlotte will install a 6-foot-wide sidewalk along Margaret Wallace to fill in missing gaps between Cedar Bark Drive and Idlewild Road.
- Interstate-77 (I-77) Express Lanes – The North Carolina Department of Transportation will develop express lanes on I-77, as well as on I-485 and U.S. 74, based on the Charlotte Regional Transportation Planning Organization's request.

### **5.15.3 Reasonably Foreseeable Future Projects**

Reasonably foreseeable future projects are actions that may affect projected impacts of a Proposed Action and are not remote or speculative.

- Capacity Enhancing Projects (Fourth Parallel Runway, Terminal Development, Support Facilities) – The City of Charlotte Aviation Department prepared an Airport Capacity Enhancement Plan (ACEP). The study identified long-term recommendations to improve the existing airfield, terminal, and support facilities to address deficiencies and meet forecasted demand, including the following major elements:
  - Construct 10,000 foot Fourth Parallel Runway 01/19 (including a partial North End-Around Taxiway (EAT) and a full South EAT)
  - Concourse B Expansion and Associated Ramp Expansion
  - Concourse C Expansion and Associated Ramp Expansion
  - Daily North Parking Garage

- Crossfield Taxiway and Deice Pad – The City of Charlotte Aviation Department has identified the need to improve airfield efficiency and to provide a dedicated aircraft deicing location. The project is expected to include construction of a new deice pad; extension of Taxiway F; construction of a new crossfield taxiway to connect Taxiway C and Taxiway E/F; construction of new ramp lighting, taxiway edge and centerline lighting, and additional roadway lighting; and construction of associated stormwater facilities.
- Joint Operations Center – The City of Charlotte Aviation Department has identified the need to relocate the routine operational control and monitoring functions of the Airport into the Joint Operations Center. The facility would provide space for Airport Operations (airside and landside), Homeland Security, Charlotte-Mecklenburg Police Department, Charlotte Fire Department, and facilities operations from various facilities throughout the Airport. The project is expected to include construction of one building, parking spaces, an access road to existing roadways, kennel spaces for working dogs, and a utility yard.
- Runway 18C/36C North End Around Taxiway, Hold Pads, and Associated Facilities – The City of Charlotte Aviation Department is proposing to provide a safe means of movement from one side of a runway to the other. This project includes the construction of an end-around taxiway on the north end of Runway 18C/36C, two hold pads, and associated facilities.
- Central Energy Plant – This project will construct a single-story 89,600 square foot Central Energy Plant on CLT property on a portion of the existing Daily North Parking Lot. The project is scheduled to begin in January 2020 and will be completed within six months.
- Replacement of the Joint Sealant of Runway 18C/36C and Associated Taxiway E Connectors – This project includes the replacement of the concrete pavement to include joint sealant on Runway 18C/36C and associated Taxiway E connectors. This project will begin March 2020 and be completed within four months.
- General Aviation Development – This project includes the development of a 40,000 square foot general aviation hangar and a charter terminal. This project is scheduled to begin in the first quarter of 2020 and be completed in two years.

Potential environmental impacts are unknown. However, for purposes of disclosing potential cumulative impacts it is assumed these projects would result in an increase in impervious surfaces at the Airport, which would increase stormwater runoff. In addition, it is assumed this project would require removal of solid waste.

#### **5.15.4 Cumulative Impacts by Environmental Category**

Even when impacts are determined to be individually insignificant, the impacts can be collectively significant when taking place over a period of time. Therefore, the cumulative effects of environmental impacts were considered only for those categories determined to have impacts due to the Proposed Action.



#### **5.15.4.1 AIR QUALITY**

The Proposed Action would cause a temporary change in the net emissions due to the operation of construction equipment (see Appendix A). However, the emissions were shown to be *de minimis* under the CAA General Conformity Rule. Furthermore, the *de minimis* emissions are assumed to comply with the SIP and are not expected to cause an exceedance of any of the National Ambient Air Quality Standards (NAAQS), delay the attainment of any NAAQS, or worsen an existing violation of any NAAQS.

Overall, the Proposed Action and other development projects are expected to improve air quality as a result of improved aircraft circulation on the ramps and increased operating efficiency. The other projects recently completed, under construction, or planned in the foreseeable future at the Airport, also have *de minimis* emissions. Therefore, no cumulative adverse air quality impacts are anticipated from the Proposed Action.

#### **5.15.4.2 CLIMATE**

The cumulative impact of this Proposed Action on the global climate when added to other past, present, and reasonably foreseeable future actions is not currently scientifically predictable. Aviation has been calculated to contribute approximately 3 percent of global carbon dioxide (CO<sub>2</sub>) emissions; this contribution may grow to 5 percent by 2050. Actions are underway within the U.S. and by other nations to reduce aviation's contribution through such measures as new aircraft technologies to reduce emissions and improve fuel efficiency, renewable alternative fuels with lower carbon footprints, more efficient air traffic management, market-based measures and environmental regulations including an aircraft CO<sub>2</sub> standard.

#### **5.15.4.3 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE**

The Proposed Action would not increase the quantity of hazardous materials present in the environment or exacerbate existing contamination. Because implementation of the Proposed Action would require the removal and remediation of hazardous materials from the former rental car facility sites, the existing levels of contamination would be reduced or eliminated. These hazardous materials would be properly disposed of at either the Republic Services Charlotte Motor Speedway Landfill or the Environmental Soils, Inc. landfarm. Based on the list of recent, ongoing, and future projects, there does not appear to be other projects that, when combined with the Proposed Action, would result in significant adverse cumulative impacts from hazardous materials. Therefore, the Proposed Action would not contribute to any cumulative impacts from future actions with respect to hazardous materials.

Solid waste would be generated from the Proposed Action in the form of soil resulting from the removal of pavement located on the former rental car facilities. Building materials and debris would be recycled to the greatest extent feasible. Materials that cannot be recycled would be disposed of in accordance with all Federal, state, and local regulations. There is sufficient disposal capacity in the area to handle the waste load. None of the other projects would result in significant amounts of solid waste. Therefore, the Proposed Action would not contribute to any cumulative impacts from future actions with respect to solid waste.

#### **5.15.4.4 SURFACE AND GROUND WATER**

The Proposed Action would increase the amount of impervious surfaces at the Airport. The other past, present, and future projects have the potential to increase stormwater runoff due to an increase in impervious surfaces. However, it is anticipated that any direct or cumulative impacts to surface water or groundwater quality resulting from these projects would be negligible, as it would be mandatory for all projects to comply with existing and future water quality permit requirements and regulations. In addition, CLT has prepared a Storm Water Master Plan to manage the impacts of runoff as a result of new development and redevelopment. Therefore, impacts to water quality, when combined with other past, present, and reasonably foreseeable future actions are not expected to cause significant impacts to water quality.

#### **5.15.5 Summary of Cumulative Impacts**

No potentially significant cumulative impacts are expected to result from implementation of the Proposed Action. It is unlikely that the incremental impact of the Proposed Action would cause or contribute to a significant impact on the environment when added to past, on-going, or reasonably foreseeable future projects or actions regardless of which Agency or person undertakes those actions. The Proposed Action is not expected to cause or contribute to a significant impact on the environment when considered with other past, present or future actions regardless of what agency or person undertakes such other actions.



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## Chapter Six

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## **6 LIST OF PREPARERS**

### **6.1 FEDERAL AVIATION ADMINISTRATION**

Tommy DuPree, Assistant ADO Manager, provided input on the Environmental Assessment.

Tim Alexander, Environmental Protection Specialist, provided input throughout the process and responsible for the review of the Environmental Assessment.

### **6.2 CHARLOTTE DOUGLAS INTERNATIONAL AIRPORT**

Lauren Scott, A.A.E., A.C.E., Planning and Environmental Manager, provided input and Airport information throughout the process and responsible for managing and review of the Environmental Assessment.

Amber Leathers, C.M., A.A.E., Senior Planner, provided input and Airport information throughout the preparation of the Environmental Assessment.

### **6.3 LANDRUM & BROWN**

Sarah Potter, Associate Vice President, responsible for project management, technical input, and principal author of the Environmental Assessment.

Chuck Lang, Senior Consultant, responsible for the preparation of the graphics for the Environmental Assessment.

Gaby Elizondo, AICP, Consultant, assisted with the preparation of the Environmental Assessment.



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## Chapter Seven

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