

APPENDIX E

DOT Section 4(f)

There were two Department of Transportation (DOT) Section 4(f) properties that were evaluated for impacts that would occur as a result of the Proposed Action. One property was identified as having a physical use, the Old Terminal Building, which is listed eligible for listing in the National Register of Historic Places. Therefore, this EA includes evaluation and agency coordination related to this property. Additional information on the Old Terminal Building is included in Chapter 3, Sections 3.3.5 and 3.3.7; and Chapter 4, Sections 4.6 and 4.8. This appendix contains the DOT Section 4(f) Evaluation prepared for the Old Terminal Building.

Department of Transportation Section 4(f) Evaluation

1 Section 4(f) Requirements

Section 4(f) of the Department of Transportation (DOT) Act of 1966 prevents the transportation use of land, including significant publicly-owned parks, recreation areas, or wildlife and waterfowl refuges. Historic structures are also included if they are on or are eligible for the National Register of Historic Places (NRHP). The Secretary of Transportation may approve a transportation project requiring the use of such land if, after a full evaluation, it is evident that there is no feasible and prudent alternative to using that land and the project includes all possible planning to minimize harm resulting from the use.

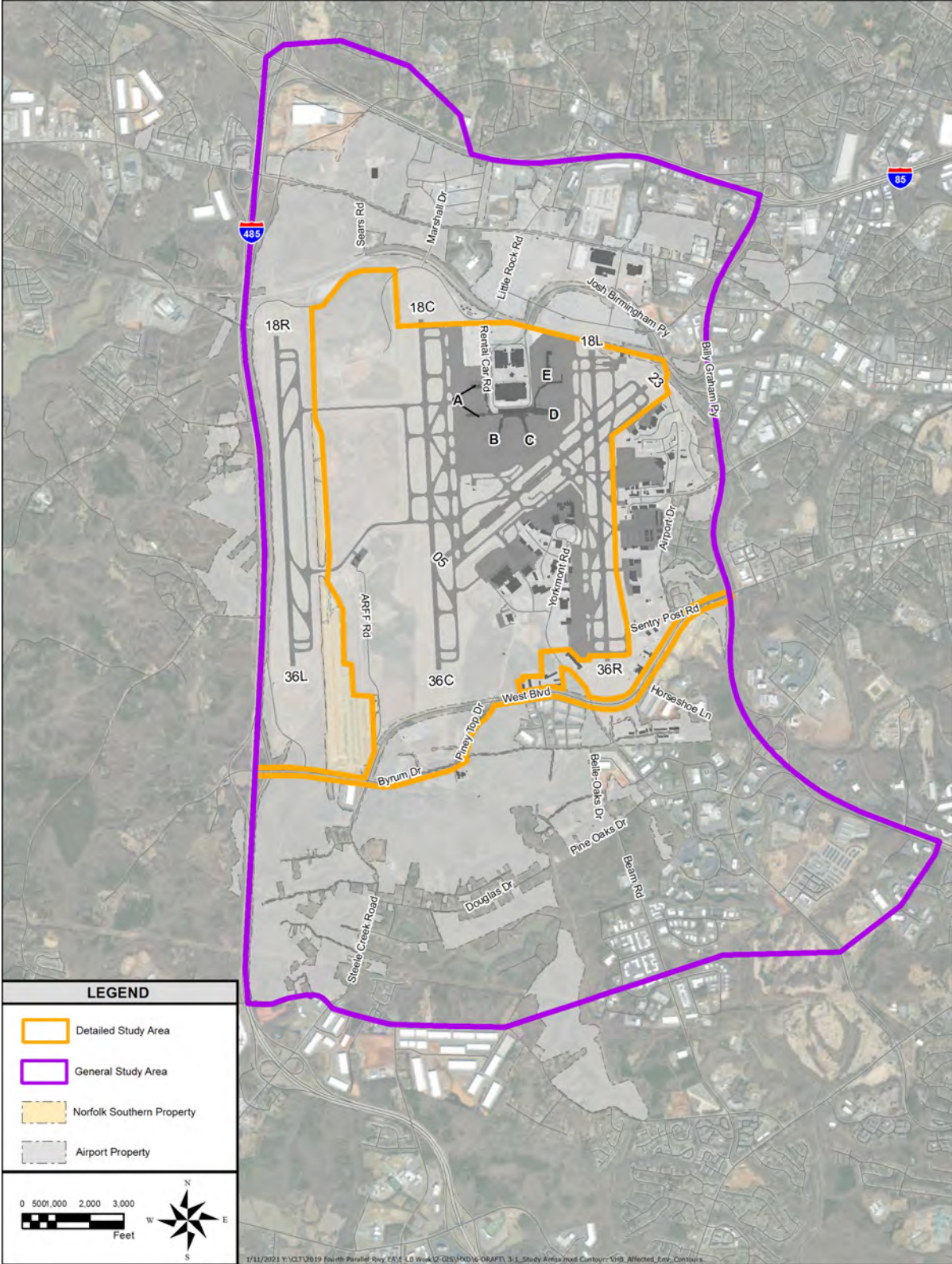
This Section 4(f) Evaluation addresses the proposed Capacity Enhancements and enabling projects (the Proposed Action) at the Charlotte Douglas International Airport (CLT or Airport) in Mecklenburg County, North Carolina. The Airport is owned and operated by the City of Charlotte Aviation Department. The implementation of the Proposed Action would result in the use and impact of a Section 4(f) property. The following sections discuss the Proposed Action, purpose and need for the project, the Section 4(f) property, the prudent and feasible alternatives that were considered throughout the planning process, and the planning involved to minimize or mitigate adverse impacts due to the Proposed Action.

2 Proposed Action

The Proposed Action consists of two main project elements: construction of a new fourth parallel runway and associated taxiways and expansion of the terminal (Concourse B and C) building and ramp. **Exhibit 1** shows the general project area at CLT. The complete Proposed Action is shown on **Exhibit 2**.

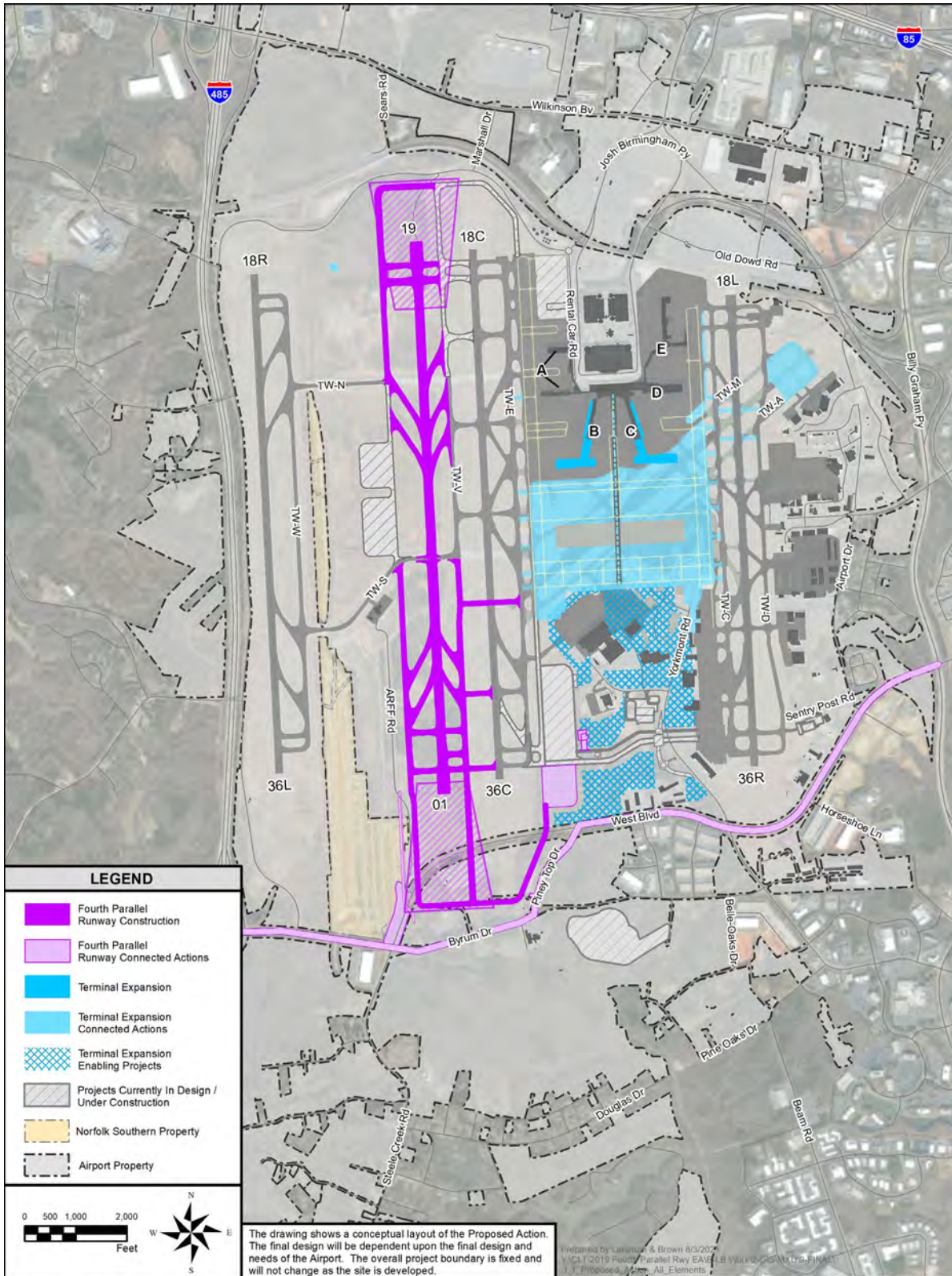
As part of the expansion of the ramp, additional taxiways would be constructed to provide aircraft access to the southern portion of the airfield. The additional taxiways would require demolition of the Old Terminal Building as shown on **Exhibit 3**. As shown in Exhibit 3, the ramp area (shown in blue) would be expanded south. As part of that expansion taxiways (shown in yellow lines) would be constructed to allow dual taxiways to Runway 18L/36R.

EXHIBIT 1, PROJECT LOCATION



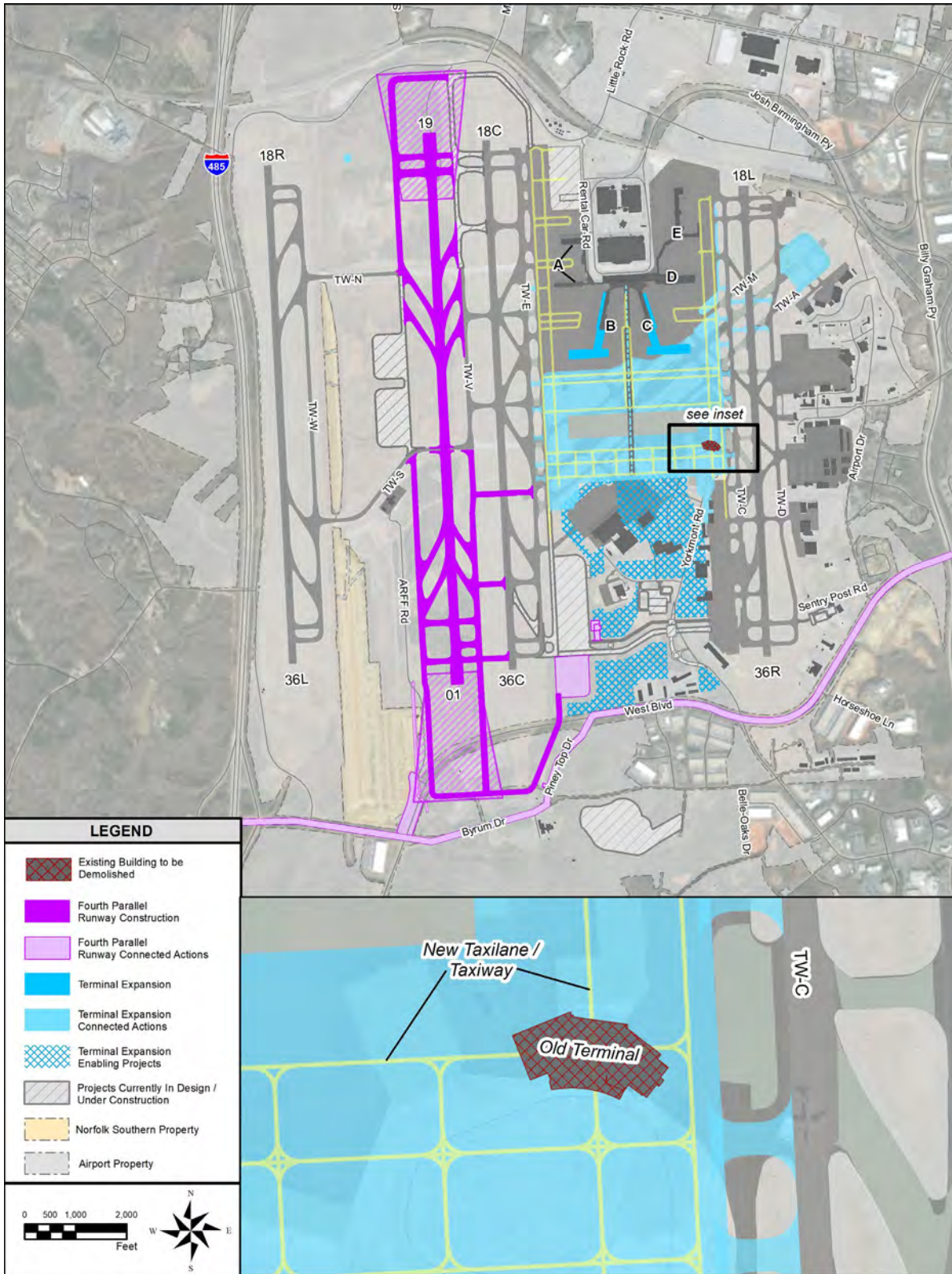
Source: Landrum & Brown, 2021

EXHIBIT 2, PROPOSED ACTION



Source: Landrum & Brown, 2021

EXHIBIT 3, OLD TERMINAL BUILDING DEMOLITION



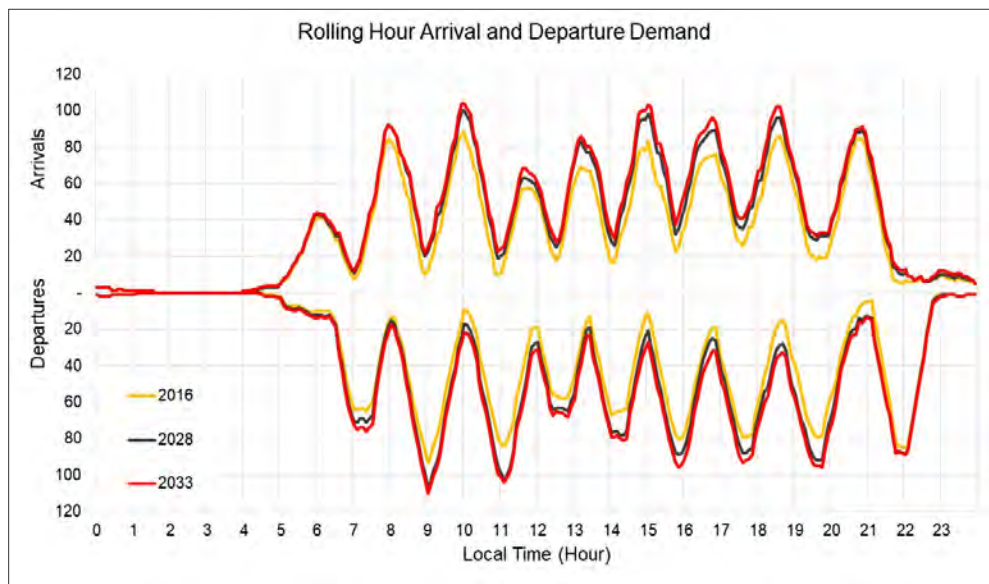
Source: Landrum & Brown, 2021

3 Purpose and Need

CLT was the sixth busiest airport in the U.S. in terms of aircraft operations and the tenth busiest in terms of passenger enplanements in 2017,¹ making it an integral part of the National Airspace System (NAS). CLT is one of the primary commercial service airports in North Carolina and an essential transportation resource for the City of Charlotte (17th largest city in the U.S.) and the Charlotte Metropolitan Area (21st largest combined statistical area in the U.S.). In addition, many communities around the U.S. depend on efficient air service to and from CLT to connect to other, longer-haul flights to destinations worldwide, which is demonstrated by the fact that 41 small hubs² and 28 non-hubs³ were served via CLT in 2016.

CLT is the second busiest hub operation for American Airlines. Approximately 70 percent of the total passengers at CLT in 2016 were connecting⁴ passengers. In this year, the airline connected approximately 58,000 passengers per day through CLT on a normal day; 67,000 passengers on a typical busy day, and even more during peak travel days.⁵ In order to connect this volume of passengers through CLT, American’s schedule consists of nine arrival banks⁶ and nine departure banks throughout the day as shown on **Exhibit 4**. Given the level of connecting passengers and the high number of banks per day, American Airlines personnel have indicated that schedule reliability is critical to maintaining minimum domestic connection times for passengers that range from 25 to 35 minutes.

EXHIBIT 4, CLT HOURLY OPERATIONS



Source: 2016, 2028, and 2033 Design Day Flight Schedules

¹ 2017 Airports Council International-North America Traffic Report.
² The FAA defines a “small hub” as an airport that receives 0.05 to 0.25 percent of the annual U.S. commercial enplanements.
³ The FAA defines a “non-hub” as an airport that receives less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements.
⁴ Passengers that stop at the hub airport to connect with another flight to their destination.
⁵ *Purpose and Need Working Paper*, Charlotte Douglas International Airport, Environmental Impact Statement, prepared by VHB Engineering NC, P.C. in association with Parish and Partners, Inc. and TransSolutions, July 31, 2018.
⁶ Banks are peaks of either arrival or departure operations within a period of time.

One way to measure schedule reliability is to look at on-time performance. A flight is defined as “on-time” if it arrived or departed the gate less than 15 minutes later than the scheduled time. The simulation analysis conducted for CLT showed that on-time performance is expected to deteriorate in the future as demand grows. In 2016, 27 percent of arrivals and 22 percent of departures were delayed by 15 minutes or more according to the 2016 simulations. In 2028, 31 percent of arrivals and 22 percent of departures are expected to be delayed by 15 minutes or more. By 2033, 39 percent of arrivals and 28 percent of departures would be delayed by 15 minutes or more. This level of schedule unreliability would make it difficult to maintain 25 to 35-minute minimum connection times in the future.

Another way of evaluating airport performance is to consider all-weather average delay and peak period delay. All-weather average delay reflects all times of the day, from times when there are a low number of operations (and low delays) to peak periods with high delays. It also reflects both good weather (when delays are typically lower) and poor weather (when delays tend to increase). **Table 1** shows that all-weather average delays are expected to grow at CLT by approximately 10 percent from 2016 to 2028, and by approximately 27 percent from 2028 to 2033.

TABLE 1, CLT ALL-WEATHER AVERAGE DELAYS

Year	Delay (minutes per operation)
2016	10.2
2028	11.2
2033	14.2

Source: AirTOp simulations, L&B 2020.

In 2028 when average all-weather delays reach approximately 11 minutes per operation, peak period delays in several of the banks reach 18 to 20 minutes per operation in Visual Meteorological Conditions (VMC)⁷ and regularly exceed 20 minutes per operation in Instrument Meteorological Conditions (IMC)⁸. At this level of delay, the banking structure is disrupted, making it problematic to maintain the schedule integrity needed for the connecting bank structure.

The projected increase in average delays and decrease in on-time performance is a result of insufficient gates, ramp capacity/congestion, and runway capacity. If these deficiencies are not addressed, CLT’s ability to maintain its critical transportation function, both now and in the near future, would be diminished. These issues must be addressed to ensure that CLT remains an efficient major airline hub in the future. The following relates specifically to the need that would result in the removal of the Old Terminal Building.

3.1 INSUFFICIENT TERMINAL GATE CAPACITY AND RAMP CONGESTION

Simulation analysis conducted as part of this project, indicates that a lack of available gates and congestion on the terminal ramp, taxilanes, and taxiways generates delays. These delays are projected to increase as demand increases. These delays are primarily due to the existing terminal configuration and the constraints of the existing ramp areas and taxilane system.

⁷ An aviation flight category in which visual flight rules (VFR) flight is permitted—that is, conditions in which pilots have sufficient visibility to fly the aircraft maintaining visual separation from terrain and other aircraft.

⁸ An aviation flight category that describes weather conditions that require pilots to fly primarily by reference to instruments, and therefore under instrument flight rules (IFR), rather than by outside visual references under VFR. Typically, this means flying in cloudy or bad weather.

Aircraft Gates

A gating analysis was conducted using the design day flight schedule (DDFS) developed from the latest FAA-approved forecast. Based on the gating analysis conducted for CLT, a total of 140 gates would be needed in 2028, a shortfall of 20 gates. The future gate shortage would result in an increasing number of arrivals that must wait for a gate, and an increase in the amount of time spent waiting for an available gate. The growing number of aircraft that must wait for a gate would result in increased ramp congestion. Excessive waiting for gates during the arrival peaks can adversely affect the hub airline's schedule integrity. In other words, the hub airline's on-time performance would be expected to degrade, and it may not be able to keep a banked schedule intact.

Ramp Movement Area (including Taxilanes)

Complicating the gate shortage is the ramp movement area serving the concourses at CLT, which creates an airside operating constraint. There are currently five concourses which are served by a series of taxilanes. The existing ramp area provides a combination of single taxilane capacity and dual taxilane capacity. One of the main causes of congestion in the ramp is the presence of the single bidirectional taxilane from Concourse D, north to Concourse E.

Lack of staging areas also contributes to the ramp congestion at CLT as there is not enough ramp space for arrival flights to wait for an open gate. When the ramp is full of waiting aircraft, additional arriving flights wait on taxilanes, taxiways, or arrival hold pads (currently observed daily at CLT), which in turn affects arrival taxi-in times, initiating a domino effect resulting in an increase in delay over time until the next arrival peak begins.

Taxiways

Runways at busy airports are typically served by a single or dual parallel taxiway system. Dual parallel taxiways provide more efficiency and flexibility than single parallel taxiways for aircraft to taxi and queue. Dual parallel taxiways reduce congestion in the terminal area by keeping the departure queues closer to the runway end and away from the terminal. In addition, dual parallel taxiways provide added flexibility for Air Traffic Control in sequencing aircraft for departure, and they reduce potential conflicts by allowing for single direction flows on each taxiway. Arriving aircraft taxiing to the terminal can be segregated from departing aircraft traveling in the opposite direction to the departure queues.

The current taxiway configuration lacks sufficient bidirectional flow and consists of a single parallel Group V taxiway supporting each of the runways. Improving aircraft circulation requires a dual Group V parallel taxiway system in support of Runways 18C/36C and 18L/36R with the additional Group III taxilane at the perimeter of the terminal apron. Providing this dual taxiway and single taxilane system would substantially improve aircraft circulation and would be mandatory if additional gates are added to the terminal facility. Expanding the taxiway system south to support Runway 18L/36R is needed to allow departures to queue closer to the runway end and away from the terminal area, thus reducing ramp congestion.

4 Section 4(f) Property

4.1 Name of Owner and Type of Section 4(f) Property

The City of Charlotte has ownership of the Old Terminal Building, which is recommended eligible for listing on the NRHP. Construction on the original terminal for the Charlotte Douglas Airport was started in 1951 and opened in 1954. The two-story, steel-frame building has a flat roof and brick exterior. Its

footprint is a wide, shallow, U-shape. The front façade is blind apart from the glass central section. A flat canopy extends over the sidewalks. The interior has a full height lobby with a double staircase of terrazzo. Railings are aluminum. The second-floor balcony overlooks the lower waiting room. There is a fallout shelter in the building. After a new terminal was completed, the building was used as a cargo terminal. The building has seen little alteration and has a high degree of integrity under all its aspects.

The Old Terminal Building reflects the influence of the Mid-Century Modern style and much of its original historic fabric remains intact. The Modernist-inspired, covered breezeway and lobby are seemingly unchanged since their construction 67 years ago, as are the decorative brick façade and the fixed, multi-light, tinted glazing. Likewise, the tile floors are intact and the massive free-hanging stair, built of glazed concrete, chrome and terrazzo tile, is still intact. The former storefronts have been covered over but presumably are intact underneath. Some alterations have been made to the terminal: The old control tower has been removed and concourses that previously led to boarding gates have been demolished.

4.2 Size

The Old Terminal Building consists of approximately 70,000 square feet.

4.3 Visual Information

The Old Terminal Building is surrounded by other Airport uses, including cargo and airline ground support equipment facilities, parking lots, and the airfield. As such, the Old Terminal Building has direct views of these facilities as well as the airfield.

4.4 Uses And Access

The Old Terminal Building is owned by the City of Charlotte and is currently used as office space. The building access is not restricted and open to the public.

4.5 Associated Areas

The City of Charlotte is not aware of any other historic structures or property similar to the Old Terminal Building in the vicinity of the Airport.

4.6 Natural Features

The Old Terminal Building is located in a developed area of the Airport that is landscaped with decorative trees and bushes.

5 Prudent and Feasible Alternatives

The Proposed Action would result in the physical use of the Old Terminal Building, a Section 4(f) property. For the purpose of this Section 4(f) Evaluation, alternatives that would avoid use of the Old Terminal Building were considered. There are three alternatives: Alternative A – Relocate Dual Taxiways West of Runway 18L/36R, Alternative B – Reuse/Preservation Options, and the No Action Alternative. The alternatives are summarized in the following paragraphs.

5.1 Alternative A - Relocate Dual Taxiways West of Runway 18L/36R

Alternative A would relocate one or both of the dual taxiways west to avoid the Old Terminal Building. Relocating the taxiways to the west would place the taxiways on a site reserved for the future satellite terminal at CLT and therefore would ultimately require removal of the Old Terminal Building when the satellite is constructed. In addition, relocating the dual parallel taxiways would result in additional coordination between aircraft and Air Traffic Control resulting in the potential for increase delays and taxi times.

5.2 Alternative B – Reuse/Preservation Options

Alternative B includes three options that would reuse or preserve the Old Terminal Building.

- Alternative B1 would preserve the Old Terminal Building in its current location. However, this would not allow dual taxiways to be constructed in the location that conforms to standard airport design. Therefore, this alternative does not meet the purpose and need.
- Alternative B2 explores if the Old Terminal Building could be relocated to another Airport-owned site. At this time, it is undetermined if the structure could be physical relocated. Even if it is possible to relocate the structure, there is no non-aeronautical land available to relocate the structure to. Therefore, this alternative is not considered a feasible or reasonable option.
- Alternative B3 explores if the Old Terminal Building could be incorporated into the design of the dual taxiways. However, there is no way to incorporate a building into a taxiway. Therefore, this alternative is not feasible and does not meet the purpose and need.

5.3 No Action

The No Action Alternative assumes that the Proposed Action would not be constructed and the Airport would operate the same as current conditions. This alternative would avoid use of the Old Terminal Building, but would not address the purpose and need.

5.4 Conclusion

The Proposed Action was deemed the only reasonable and feasible alternative. This alternative is the only alternative that meets the purpose and need to provide gating requirements needed to increase terminal gate capacity and reduce ramp congestion and delays.

6 Mitigation

After a review of the identified alternatives, it was determined that there is no feasible and prudent alternative that would meet the purpose and need of the project and avoid the use and impact of the Section 4(f) property. As a result, the City of Charlotte, North Carolina State Historic Preservation Office (NC SHPO), and FAA have initiated negotiation of an agreement regarding the mitigation of the Old Terminal Building to be included in the project. This agreement will be documented in the Memorandum of Agreement (MOA) which is expected to be signed by FAA, SHPO, and the City of Charlotte. The draft MOA includes the stipulations listed, below:

- A Level II Historic America Building Survey (HABS) recordation of the Old Terminal Building property will be completed. The Level II documentation will contain architectural and historical narrative, measured drawings, and digital photographs in an archivally stable format. The photographic record will include at a minimum the general environment, front facade, front and

rear perspective views, typical windows, and exterior and interior. The submission will also include a CD of all printed images with the digital copy. The Level II HABS recordation will be submitted to SHPO for approval. SHPO will provide written acceptance of the Level II HABS recordation within 30 calendar days of their receipt.

- The City of Charlotte Aviation Department may proceed with demolition of the Old Terminal Building once the archival photography of the exterior and interior has been submitted and approved by the SHPO.
- SHPO will arrange for deposit of the Level II HABS recordation to the State Archives of North Carolina. A second set of images and final report shall be submitted to the City of Charlotte Aviation Department.
- If items which may contain historical significance or if additional historic properties or unanticipated effects on the historic property are discovered (36 C.F.R. § 800.6(c)(6)), the City shall notify the SHPO of the discovery and consult with the FAA and SHPO pursuant to 36 C.F.R. Part 800.

7 Consultation

The FAA has conducted coordination with the NC SHPO during the Capacity Enhancements EIS process and in the EA process to ensure appropriate analysis of potential historic and archaeological resources. Consultation per Section 106 of the National Historic Preservation Act was initiated in August 31, 2020. The following summarizes the consultation.

- FAA sent correspondence to the SHPO on August 31, 2020 coordinating the Area of Potential (APE), survey efforts, eligibility of resources.
- FAA sent correspondence on January 8, 2021 requesting a reduced APE based on changes to the project and additional noise analysis. A map of the reduced APE was provided to the SHPO on January 12, 2021.
- SHPO sent correspondence to the FAA on January 21, 2021 concurring with the reduced APE.
- FAA sent correspondent to the SHPO on February 23, 2021 with eligibility determinations for properties with the APE and a finding of adverse effect for the proposed undertaking.
- SHPO sent correspondence to the FAA on April 8, 2021 concurring with the eligibility determinations and adverse effect finding.
- FAA sent a letter to the Advisory Council on Historic Preservation (ACHP) on April 23, 2021 offering the agency the opportunity to participate in the Section 106 coordination process, including the development of the MOA. The ACHP did not request to participate in the development of the MOA.
- SHPO provided correspondence on May 17, 2021 stating the SHPO is prepared to enter into a Memorandum of Agreement between the FAA and City of Charlotte to mitigate the adverse effect of the undertaking on the Old Terminal Building.

The City of Charlotte, SHPO, and FAA initiated negotiation of an agreement regarding the mitigation of the Old Terminal Building described in Section 6. An MOA was signed and is included in Appendix G, *Historic, Architectural, Archaeological, and Cultural Resources*.