AUGUST 2011

Environmental Assessment for Terminal Area Improvements

Charleston International Airport

PREPARED BY

RICONDO & ASSOCIATES

PREPARED FOR THE CHARLESTON COUNTY AVIATION AUTHORITY

IN ASSOCIATION WITH S&ME, INC.

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

Responsible FAA Official

10/17/11

Date

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DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Finding of No Significant Impact/Record of Decision

I. INTRODUCTION/BACKGROUND

This Finding of No Significant Impact (FONSI)/Record of Decision (ROD) announces final agency determinations and approvals for those Federal actions by the Federal Aviation Administration (FAA) that are necessary to support the construction and operation of proposed improvements at Charleston International Airport (CHS) and Charleston Air Force Base Joint Use Airfield requested by the Charleston County Aviation Authority (CCAA).

This FONSI/ROD provides the FAA's final determinations and approvals based on analysis described in detail in the CHS Environmental Assessment for Terminal Area Improvements dated August 2011. The agency decision is based on information contained in the Environmental Assessment (EA), incorporated by reference, and all other applicable documents available to the agency.

This FONSI/ROD is issued in accordance with the requirements of the Council on Environmental Quality (CEQ), 40 Code of Federal Regulations (CFR) 1505.2.

II. PROPOSED FEDERAL ACTION

The proposed action includes an expansion of the passenger terminal by approximately 100,000 square feet, expansion of the passenger terminal apron area, and expansion of the passenger terminal parking garage and surface vehicle parking at CHS. Specific elements include:

- Expansion of Concourse A from 5 aircraft gates to 9 aircraft gates
- Expansion of Concourse B from 5 aircraft gates to 9 aircraft gates
- Ticket lobby renovations
- Bag claim expansion and renovations
- Center atrium renovation
- Upgrades to mechanical, electrical, plumbing, and fire and life safety systems
- Expansion of the passenger terminal apron to accommodate new aircraft gates
- Expansion of terminal parking garage
- Expansion of surface vehicle parking lot

III. PURPOSE AND NEED

The purposes of the proposed improvements are to accommodate FAA and Department of Homeland Security programs, support passenger and air carrier growth, improve space efficiency, and achieve compliance with State adopted building and life safety codes. The need for the proposed improvements are based on inefficiencies and deficiencies in the existing terminal layout and building systems, inadequate number of passenger boarding gates for existing and forecast future conditions, noncompliance with the Americans with Disabilities Act (ADA), and projected shortfalls in parking spaces based on forecasted passenger activity.

IV. ALTERNATIVES

Federal guidelines concerning the environmental review process require that all reasonable and practicable alternatives that might accomplish the objectives of a proposed project be identified and evaluated. Such an examination ensures that an alternative that addresses the project's purpose and that

might enhance environmental quality, or have a less detrimental effect, has not been prematurely dismissed from consideration.

In the Final EA, eight different passenger terminal expansion alternatives and one passenger terminal relocation alternative were considered. The alternatives were evaluated based on ability to maintain a high level of customer service, project implementation considerations, flexibility to adapt to changing conditions, and cost. The preferred passenger terminal alternative was selected based on having the lowest cost, the least amount of new construction, and ability to be implemented incrementally. Because the preferred terminal alternative would not have any unresolved conflicts concerning alternative uses of available resources, all other passenger terminal alternatives were eliminated from further consideration.

To resolve the need for additional public parking facilities, one alternative was identified for expansion of the existing passenger terminal parking garage and one alternative was identified for expanding the existing surface public parking facilities. These were combined with the preferred passenger terminal alternative to form the Proposed Action. Thus, based on the evaluation of alternatives, two alternatives were retained for evaluation in the EA:

- No Action alternative
- Proposed Action alternative - expansion of existing passenger terminal and apron facilities (Terminal Concept A), expansion of the passenger terminal parking garage facilities, and expansion of the surface parking lots.

Of these two alternatives, only the alternative to expand the existing passenger terminal and public parking facilities meets the purpose and need for the proposed project.

V. ENVIRONMENTAL IMPACTS

The Proposed Action and the alternatives were evaluated for their potential impacts on various environmental factors, such as compatible land uses in the surrounding community to include but not limited to, noise, water quality, air quality, traffic and natural and cultural resources. The potential impacts to the environment outlined in the attached Final EA document, though not considered significant, include temporary construction related impacts to construction noise, air quality, water quality, solid and hazardous waste and construction traffic. Compliance with required permits and the implementation of best management practices would be used to reduce the impacts due to the construction work.

Therefore based upon a study of the impacts resulting from the proposed action as documented in the attached Final EA, and upon comment by Federal, State, and local agencies, no significant impacts on the human environment have been identified.

VI. PUBLIC PARTICIPATION / PUBLIC COMMENT

The interagency review process began on February 18, 2011 when project introduction letters were sent to 25 individuals representing federal, State, and local agencies with jurisdiction over resources either known to be in the vicinity of CHS or for resources that could potentially be present in the area. Letters were also sent to surrounding communities. A list of the agencies and individuals the letters were submitted to is included in the attached EA. Comments were received from the following four agencies: U.S. Army Corps Engineers; South Carolina Department of Health and Environmental Control, Bureau of Land and Waste Management; Catawba Indian Nation, Tribal Historic Preservation Office; and South Carolina Archives & History Center, State Historic Preservation Office. Comments received were addressed in the subsequent Draft EA, which was transmitted on June 12, 2011 to the same individuals and agencies for review. The Draft EA was also placed in local libraries and publicly advertised as available to the general public for review and comment for a period of 30 days – from June 12, 2011

through July 12, 2011. Two comment letters were received on the Draft EA, one from the U.S. Air Force and one from the SHPO. Responses to the U.S. Air Force comments were prepared and transmitted back to the U.S. Air Force. A copy of both letters is provided in the attached EA. The SHPO reiterated that their concerns had been addressed; no response was required.

VII. MITIGATION MEASURES

This finding is contingent upon the airport sponsor's implementation of the following mitigation measures:

1. The airport sponsor shall obtain all permits required by Federal, state and local laws and regulations.
2. The airport sponsor shall obtain a Minor Source permit per Standard No. 2 of South Carolina Regulation 61-62.5, if a temporary concrete batch plant is constructed for this project.
3. The airport sponsor shall obtain a land disturbance or storm water discharge permit (National Pollutant Discharge Elimination System or NPDES) from the SCDHEC, Ocean & Coastal Resource Management and modify existing Storm Water Pollution Prevention Plan to reflect post-construction conditions.
4. Construction activity shall conform to requirements of FAA Advisory Circular 150/5370-10A, Standards for Specifying Construction of Airports and FAA Advisory Circular 150/5200-33 Hazardous Wildlife Attractants on or Near Airports.
5. Should unanticipated discovery of archaeological materials occurs during construction or excavation, construction activities are to be halted and the Catawba Indian Nation Tribal Historic Preservation Office and the South Carolina State Historic Preservation Office are to be notified in accordance with the provisions of 36 CFR 800.13.
6. Should any protected species be encountered at the time of construction; construction would stop in the immediate vicinity until the issue is resolved with the South Carolina Department of Natural Resources and/or USFWS.
7. An erosion and sedimentation control plan that includes the use of construction controls to prevent degradation of water quality and associated impacts on aquatic ecology shall be approved by the appropriate agency and shall be implemented during construction.
8. Utilize best management practices (BMPs) to reduce effect of construction activities on air and water quality.

VIII. AGENCY FINDINGS

In accordance with applicable law, the FAA makes the following findings/determinations for the Proposed Project, based upon the appropriate information and data contained in the Final EA.

- Certification under 49 U.S.C. 44502(b) (formerly Section 308 of the Federal Aviation Act of 1958, as amended). I certify that the proposed improvement project is reasonably necessary for use in air commerce or for national defense.
- Based on the Final EA, no significant environmental impacts would be incurred as a result of the Federal Action.

IX. DECISION AND ORDER

The FAA has determined that environmental and other relevant concerns presented by interested agencies and private citizens have been addressed sufficiently in the Final EA, hereby acknowledged and fully and properly considered in the decision-making resulting in this FONSI/ROD. The Federal Aviation

Administration concludes there are no outstanding environmental issues to be resolved by it with respect to the proposed project.

The No-Action Alternative fails to meet the purpose and need for the proposed project. For reasons summarized earlier in this FONSI/ROD, and supported by disclosures and analysis detailed in the Final EA, the FAA has determined that the Sponsor's proposed project is a reasonable, feasible, practicable and prudent alternative for a Federal decision in light of the established goals and objectives. An FAA decision to take the actions and approvals required by the Sponsor is consistent with its statutory mission and policies supported by the findings and conclusions reflected in the environmental documentation and this FONSI/ROD.

After reviewing the Final EA and all of its related materials, I have carefully considered the FAA's goals and objectives in relation to various aeronautical aspects of the proposed development actions discussed in the Final EA, including the purpose and need to be met by this project, the alternative means of achieving them, the environmental impacts of these alternatives, the mitigation necessary to preserve and enhance the environment, and the costs and benefits of achieving the purpose and need.

While this decision does not approve Federal funding for the proposed airport development and does not constitute a Federal funding commitment, it does provide the environmental findings and approval for proceeding to funding actions in accordance with established procedures and applicable requirements.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with the national environmental policies and objectives as set forth in Section 101(a) of the National Environmental Policy Act of 1969 (NEPA) and that with the mitigation that is a part of the project it will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 101 (2) (C) of NEPA.

This FONSI/ROD presents the Federal Aviation Administration's final decision and approvals for the actions identified, including those taken under the provisions of Title 49 of the United States Code, Subtitle VII, Parts A and B. These actions constitute a final order of the Administrator subject to review by the Court of Appeals of the United States in accordance with the provisions of 49 U.S.C. Section 46110.

Issued in College Park, Georgia

Scott L. Seritt

10/13/11

Scott L. Seritt
Manager
Atlanta Airports District Office

Date

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I. Purpose and Need

Charleston International Airport (CHS or the Airport) is operated by the Charleston County Aviation Authority (CCAA or the Authority) under a Joint Use Agreement with the U.S. Air Force. The U.S. Air Force owns and operates the airfield as part of the Charleston Air Force Base and the CCAA owns approximately 1,300 acres for civilian aviation use, including passenger, cargo, general aviation, and aircraft manufacturing uses. The Joint Use Agreement, executed on February 21, 2008, allows civilian aircraft access to the airfield with certain restrictions related to U.S. Air Force operations.

The Authority, on behalf of the Federal Aviation Administration (FAA), initiated the preparation of an Environmental Assessment (EA) of the expansion of the existing passenger terminal, apron area, passenger terminal parking garage, and surface vehicle parking at CHS. In compliance with the National Environmental Policy Act of 1969 (NEPA, 42 United States Code [U.S.C.] 4321-4347), the FAA must review the potential environmental effects of a proposed project before taking any action to approve the proposed project. The FAA has established a process to ensure compliance with the provisions of NEPA through FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*[1] and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*[2]. FAA Order 1050.1E identifies projects that are typically categorically excluded from environmental review (provided extraordinary circumstances[3] are not present), which includes "...the construction or expansion of facilities, such as terminal passenger handling and parking facilities or cargo buildings, at existing airports and launch facilities that do not substantially expand those facilities."[4] No extraordinary circumstances are known to exist in regards to the Authority's proposed projects, but the FAA requested that an EA be prepared.

NEPA requires federal agencies to prepare environmental documentation that discloses to decision makers and the interested public a clear, accurate description of potential environmental effects resulting from proposed federal actions and reasonable alternatives to those actions. Through NEPA, the U.S. Congress directed federal agencies to integrate environmental factors in their planning and decision-making processes and to encourage and facilitate public involvement in decisions that affect the quality of the human environment. Federal agencies are required to consider the environmental effects of a proposed action, alternatives to the proposed action, and a no action alternative (assessing the potential environmental effects of not undertaking the proposed action).

The Charleston County Aviation Authority is preparing this EA on behalf of the FAA in compliance with FAA Orders 1050.1E and 5050.4B to evaluate the potential environmental impacts of expanding the existing passenger terminal, apron area, passenger terminal parking garage, and surface vehicle parking at CHS, which is the "Proposed Action" evaluated in this EA.

The purpose of and need for the Proposed Action are described in this chapter, along with background information and a description of the Proposed Action.

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1 U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, *Environmental Impacts: Policies and Procedures*, June 8, 2004, Change 1, effective March 20, 2006.

2 U.S. Department of Transportation, Federal Aviation Administration, Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, effective April 28, 2006.

3 FAA Order 1050.1E defines extraordinary circumstances as impacts to resources protected by laws such as the Endangered Species Act, National Historic Preservation Act, Clean Water Act, or would otherwise cause a significant effect (para. 304).

4 U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, *Environmental Impacts: Policies and Procedures*, June 8, 2004, Change 1, effective March 20, 2006, para. 310h.

1.1 Background

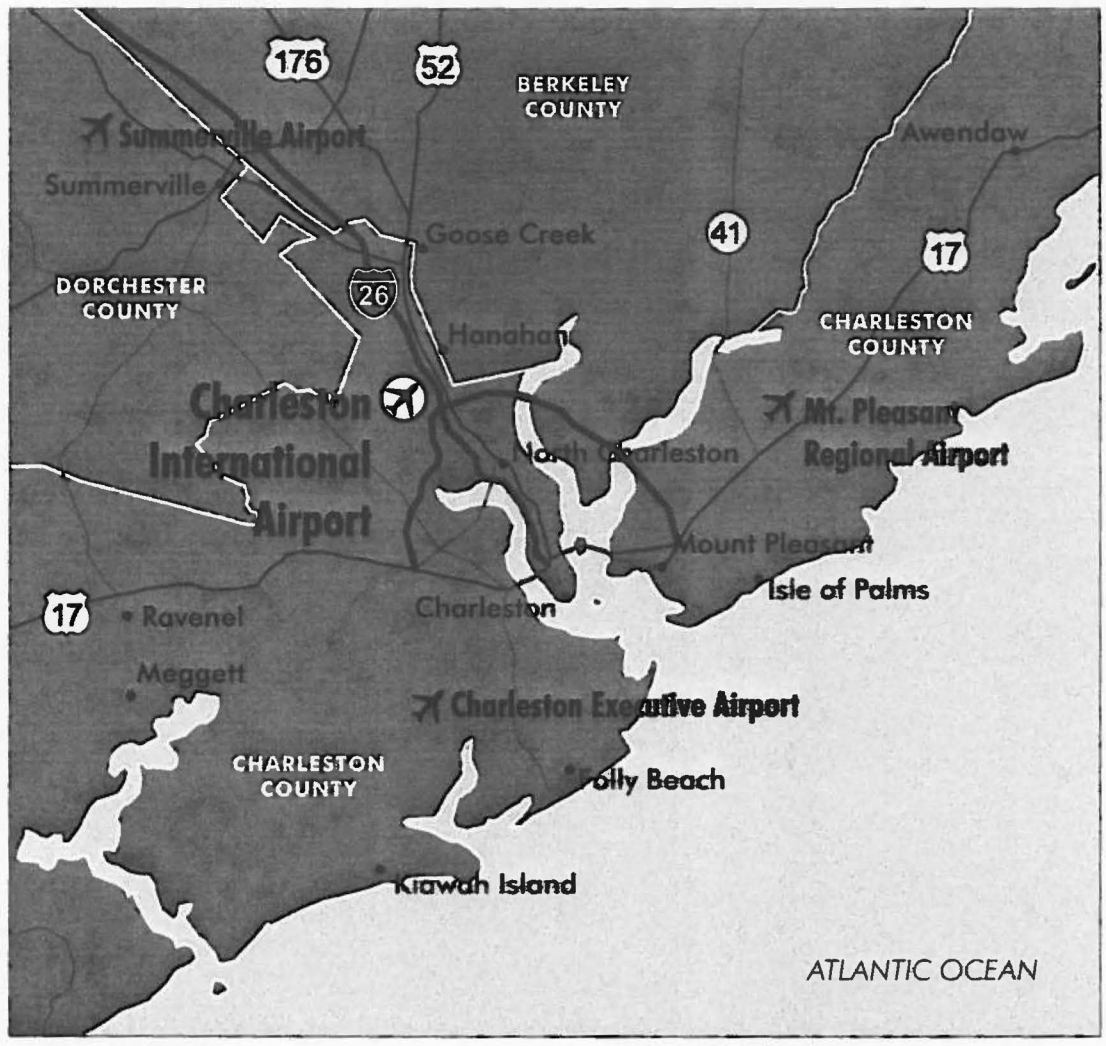
The Charleston International Airport is located in Charleston County, South Carolina, in the City of North Charleston and just west of I-26 (see **Exhibit I-1**). The Airport is classified as a small hub by the FAA. In 2010, 1.0 million passengers were enplaned at the Airport on the airlines serving Charleston. Of the 101,407 total aircraft operations (takeoffs or landings) at the Airport in 2010, 74,793 were by civilian aircraft (passenger, cargo, general aviation) and the remaining 26,614 were by the military. The Airport provides air service to approximately 650,000 people who reside within the Charleston metropolitan area. At the end of 2010, five airlines offered an average of 113 daily non-stop flights between the Airport and 12 primary markets. In 2009, the Boeing Company selected the Airport as a site for a final assembly plant for the Boeing 787 Dreamliner; the plant officially opened in June 2011.

The existing Airport passenger terminal building opened on April 10, 1985. The terminal building has three levels (the apron, concourse, and administration levels) and totals approximately 330,000 square feet of enclosed and covered unenclosed space. The terminal building consists of two concourses (piers) connected to a terminal building with ticketing, baggage claim, and concessions. The two-level east pier is referred to as Concourse A and the two-level west pier is referred to as Concourse B (see **Exhibit I-2**). The lower (apron) level is within the Secure Identification Display Area (post-security) and generally contains airline operations offices, storage space, utility space, workshops, and covered unenclosed space. The second (concourse) level principally contains the secure areas (post security screening checkpoints), including boarding holdrooms, concession spaces, restrooms, and miscellaneous spaces.

The main part of the passenger terminal building contains airline and Airport operational areas on the lower (apron) level; passenger ticketing, bag claim, rental car counters, and concessions at the concourse level; and CCAA offices and boardroom occupy the third (administration) level. Federal Inspection Services (FIS) facilities occupy a large separate section on Concourse B (see **Exhibit I-3**). A summary of terminal space by functional area is provided in **Table I-1**.

The 25-year-old terminal, while well maintained and structurally sound, faces challenges attributable to obsolete design parameters and building systems:

- Similar to many U.S. passenger terminal buildings designed prior to enactment of the Aviation and Transportation Security Act (ATSA, November 19, 2001), screening requirements for passengers, baggage, and employees mandated by ATSA were accommodated by displacing facilities designed for other purposes or in constrained spaces that reduce efficiency and constrain the flexibility to implement new screening technologies. Passenger screening has had a significant effect on the way in which passengers, meeters/greeters, well-wishers, and other Airport visitors patronize terminal services and concessions. Passengers arrive earlier, but are anxious to clear security and only ticketed passengers can enter boarding areas.
- Changes occurring in the aviation industry, including capacity reductions, consolidation, hub and spoke operations, and regional air service, have resulted in a dynamic air service market that presents challenges to CCAA's management of gate and passenger processing resources.
- Obsolete building system infrastructure, including heating, ventilating, and air conditioning (HVAC) systems; lighting systems; fire protection; energy efficiency; and
- Compliance with the Americans with Disabilities Act (ADA) (1990).



Source: Map Resources, 2007.
Prepared by: Ricondo & Associates, Inc., October 2010.

Exhibit I-1

Not to Scale north

Project Location

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Source: Charleston International Airport Aerial Imagery May 2010; Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc. May 2010

Exhibit I-2

0 600 ft. north

Passenger Terminal Area

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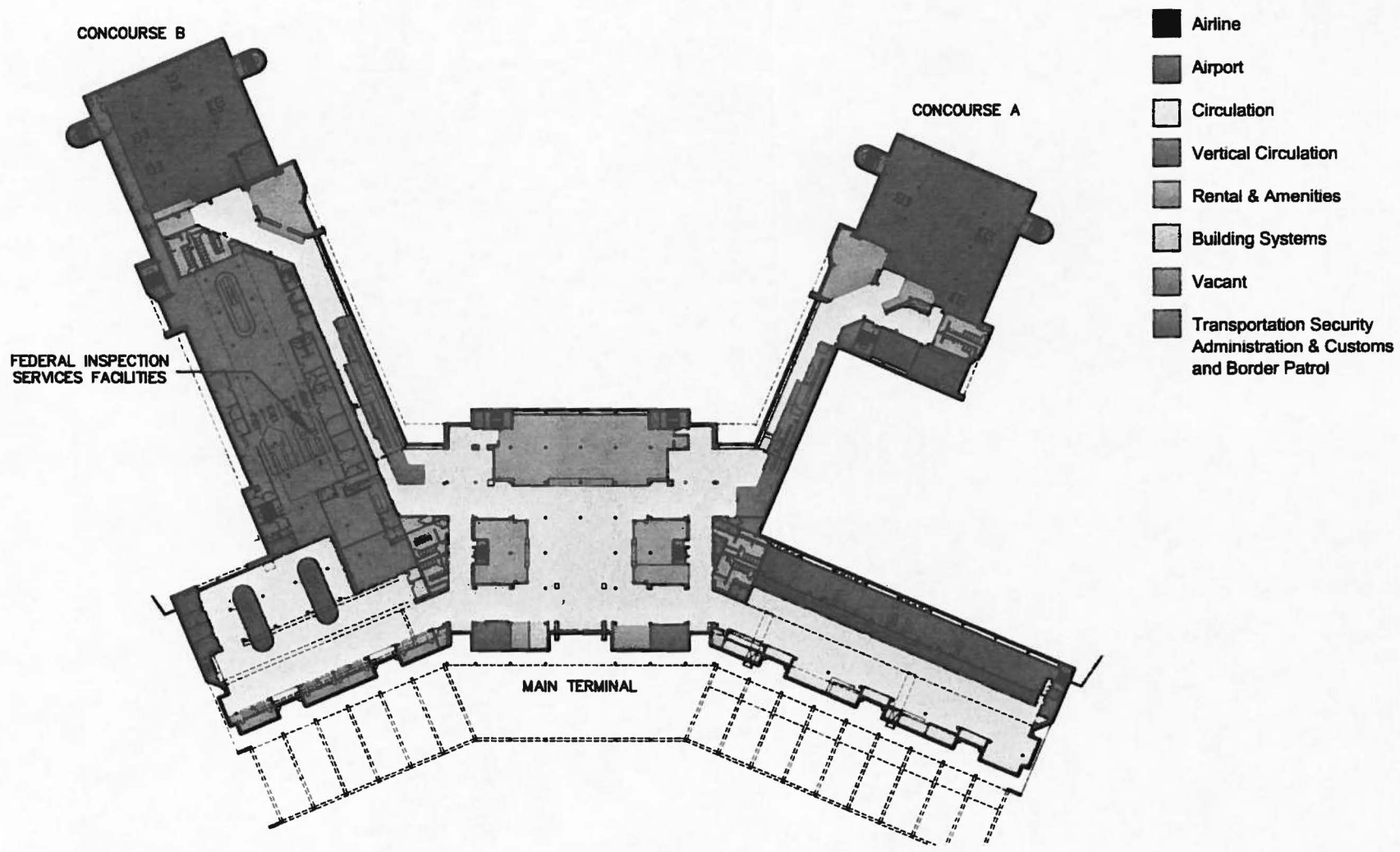

Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit I-3

0 125 ft.

north

Existing Passenger Terminal Concourse Level Plan

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Table I-1
Passenger Terminal Space Summary

Functional Area	Area Subtotal (sf)	Total Area (sf)
Airline		106,276
Check-in	8,059	
Baggage Handling	47,577	
Boarding Areas	22,662	
Airline Support	22,131	
International Arrivals	5,847	
Transportation Security Administration		17,537
Passenger Checkpoint	5,710	
Baggage Screening	8,760	
Offices, Other	3,067	
Customs and Border Protection		25,020
Primary Inspection	10,081	
International Baggage Claim	6,590	
Offices, Other	8,349	
Retail, Food and Beverage, Specialties		28,417
Rental Car		2,241
Amenities		9,978
Airport		35,107
Other Agencies and Contractors		1,204
Circulation		63,128
Non-Secure	44,026	
Secured	19,102	
Restrooms		7,011
Building Systems		23,301
Other Spaces		5,255
Total Area (Gross Area)		324,475

Source: McKellar and Associates, Inc., August 2010.
Prepared by: Ricondo & Associates, Inc. February 2011.

1.1.1 Terminal Gates and Aircraft Parking

The terminal has 10 gates, each equipped with passenger boarding bridges (PBBs), as shown on **Exhibit I-4**. Existing passenger gate numbers and current airline leases by gate are identified in **Table I-2**. Of the 10 gates listed in the table, eight are leased on a monthly basis. Gate A1 is not leased and airlines have had difficulties parking at the gate when a B-757 is at Gate A2 or A3 because the apron area is reduced by the Taxiway M Object Free Area (OFA). Over the years, airlines have restriped the apron to adjust to the changes in aircraft to match their needs. All apron pavement is striped for different aircraft and many gates have multiple lead-in lines to accommodate different aircraft types. In 2010, the aircraft parking area was striped for 17 terminal aircraft parking positions and 7 remain overnight (RON) aircraft, not including any aircraft parking positions on the cargo ramp.

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Source: Charleston International Airport Aerial Imagery May 2010; Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc. February 2011

Exhibit I-4

0 600 ft.

north

Existing Aircraft Gates and Remain Overnight Parking

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Table I-2
Passenger Terminal Gates

Gate Number	Airline
A1	None
A2	Delta Air Lines
A3	Delta Air Lines
A4	None
A5	United Airlines
B1	US Airways
B2	US Airways
B3	Continental Airlines
B4	American Airlines
B5	Southwest Airlines (effective March 13, 2011)

Source: CCAA Records July 2010.
Prepared by: Ricondo & Associates, Inc. July 2010.

1.1.2 Automobile Parking Facilities

Four public parking lots provide a total of 4,463 parking spaces for Airport patrons. As depicted on **Exhibit I-5**, the passenger terminal parking garage, also known as the parking deck, located across the terminal roadway from the terminal building, provides 1,267 spaces on three levels. The surface parking lot is located south of the parking deck and provides 1,896 parking spaces. Entrances with ticket dispensers to each lot are provided off International Boulevard. A second entrance to the surface parking lot is provided on the south side of the lot off International Boulevard. A combined exit plaza for the parking deck and surface parking lot is provided west of the surface parking lot.

Two overflow parking lots are located south of the surface parking lot. These lots accommodate the additional parking demands that are traditionally experienced during peak holiday travel times, such as Thanksgiving and Christmas. The westernmost lot has a capacity of 516 spaces and the eastern lot has a capacity of 784 spaces. Since 2007, demand has not required the opening of either overflow lot. The eastern lot is currently being used by Boeing as an employee parking lot.

Two dedicated employee parking lots are located east of the passenger terminal. The lots accommodate Airport tenants and staff and Transportation Security Administration (TSA) staff. Employee Lot A, located immediately east of the terminal building, accommodates 158 parking spaces, 7 handicap spaces, and 1 motorcycle space, for a total of 166 spaces. As the result of security regulations, five of the seven handicap spaces are not available for use because of their close proximity to the terminal building. Employee Lot B, located just east of Employee Lot A, accommodates 199 parking spaces. **Table I-3** summarizes the capacities of public and employee parking facilities at the Airport.

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Source: Charleston County Aviation Authority, May 2010; Ricondo & Associates, Inc. May 2010
Prepared by: Ricondo & Associates, Inc. October 2010

Exhibit I-5

0 600 ft.

north

Automobile Parking Areas

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Table I-3

Automobile Parking Facilities

Public Parking	Capacity (number of spaces)
Parking Deck	1,267
Surface Parking	1,896
Subtotal	3,163
Overflow	
West	516
East[1/]	784
Total Public Parking	4,463
Employee Parking	
Lot A	166
Lot B	199
Total Employee Parking	365

Note:
1/ Currently used by Boeing employees.

Sources: Charleston County Aviation Authority, May 2010; Ricondo & Associates, Inc., May 2010.
Prepared by: Ricondo & Associates, Inc., May 2010.

1.2 Aviation Activity Forecasts

Aviation activity forecasts were prepared for CHS through 2030 as part of the ongoing Master Plan Update. Below are key conclusions of the aviation activity forecasts prepared for the period 2010-2030.[5]

- Southwest has announced the initiation of new service at the Airport starting in March 2011. As a result, additional demand stimulated from lower fares is projected to increase 2011 enplanements by 9.9 percent to approximately 1.2 million.
- Air carrier/mainline enplanements are projected to increase at a greater rate than regional/commuter enplanements over the planning period. Air carrier enplanements are projected to increase from approximately 313,800 in 2010 to 953,200 in 2030, or at a compounded annual growth rate of 5.7 percent (see **Table I-4**). Over the same period regional/commuter enplanements are projected to increase from approximately 714,000 to nearly 1.3 million, representing a compounded annual growth rate of 2.9 percent.
- Total Airport enplanements are projected to more than double from approximately 1.0 million in 2010 to 2.2 million by 2030.
- Total Airport operations are projected to increase from approximately 101,400 in 2010 to 136,700 in 2030, representing a compounded annual growth rate of 1.3 percent (see **Table I-5**).

[5] Ricondo & Associates, Inc., *Charleston International Airport Master Plan Update*, January 2011.

Table I-4

Historical and Projected Enplanements

Federal Fiscal Year [1/]	Enplanements: Mainline Air Carrier	Enplanements: Regional/ Commuter	Enplanements: Total	Annual Growth Rate
Historical				
2005	415,017	663,953	1,078,970	-
2006	334,336	624,608	958,944	-11.1%
2007	411,328	668,345	1,079,673	12.6%
2008	497,831	699,213	1,197,044	10.9%
2009	377,547	723,946	1,101,493	-8.0%
2010	313,846	713,957	1,027,803	-6.7%
Projected				
2011	463,500	738,400	1,201,900	
2012	617,300	741,400	1,358,700	
2013	631,100	761,900	1,393,000	
2014	682,000	782,600	1,464,600	
2015	697,100	803,600	1,500,700	
2016	717,000	809,200	1,526,200	
2021	838,100	891,200	1,729,300	
2030	953,200	1,257,500	2,210,700	
Compounded Annual Rate				
2005 - 2010	-5.4%	1.5%	-1.0%	
2010 - 2011	47.7%	3.4%	16.9%	
2011 - 2016	9.1%	1.8%	4.9%	
2011 - 2021	6.1%	1.9%	3.7%	
2010 - 2030	5.7%	2.9%	3.9%	
2011 - 2030	3.9%	2.8%	3.3%	

Note:
1/ Based on Federal Fiscal Year (October 1 – September 30).

Sources: Charleston International Airport (historical), Ricondo & Associates, Inc. (projected 2011 - 2021), FAA TAF (projected 2022 – 2030).
Prepared by: Ricondo & Associates, Inc., January 2011.

Table I-5

Historical and Projected Aircraft Operations

Federal Fiscal Year [1/]	Operations: Air Carrier	Aircraft Manufacturing [2/]	Total Air Carrier	Air Taxi / Commuter	General Aviation	Military	Total	Annual Growth Rate
Historical								
2005	12,864		12,864	45,994	33,248	33,337	125,443	
2006	14,350		14,350	35,267	33,004	27,721	110,342	-12.0%
2007	20,698		22,621	29,569	32,747	25,951	110,888	0.5%
2008	20,937		20,937	33,191	30,150	27,020	111,298	0.4%
2009	19,475	466	19,941	28,522	27,149	24,974	100,586	-9.6%
2010	19,155	544	19,699	27,822	27,272	26,614	101,407	0.8%
Projected								
2011	24,623	660	25,283	27,379	26,818	26,614	106,094	
2016	30,351	1,010	31,361	30,155	27,996	26,614	116,126	
2021	33,178	1,090	34,268	33,211	29,228	26,614	123,321	
2030	37,769	1,250	39,019	39,516	31,597	26,614	136,746	
Compounded Annual Rate								
2005 - 2010	8.3%	-	8.9%	-9.6%	-3.9%	-4.4%	-4.2%	
2010 - 2011	28.5%	21.4%	28.3%	-1.6%	-1.7%	0.0%	4.6%	
2011 - 2016	4.3%	8.9%	4.4%	2.0%	0.9%	0.0%	1.8%	
2011 - 2021	3.0%	5.1%	3.1%	1.9%	0.9%	0.0%	1.5%	
2011 - 2030	2.3%	3.4%	2.3%	1.9%	0.9%	0.0%	1.3%	

Note:
1/ Based on Federal Fiscal Year (October 1 – September 30).
2/ Based on data provided by Boeing. All operations are Air Carrier (Boeing 747 Dreamlifter and 787 Dreamliner productions).

Sources: Charleston International Airport (historical), Boeing (projected), FAA TAF (projected), Ricondo & Associates, Inc. (projected).
Prepared by: Ricondo & Associates, Inc., January 2011.

- Despite a decline in general aviation aircraft operations in recent years, it is anticipated that general aviation (GA) operations will begin to rebound at an average annual growth rate of 0.7 percent over the planning period (2010-2030).
- Military operations are forecast to remain level over the planning period.

Air carrier operations increased from 12,864 in 2005 to 19,155 in 2010, or at a compounded annual growth rate of 8.3 percent. The addition of larger aircraft and new service by AirTran lead to the increase in air carrier operations in 2007. Air carrier operations have decreased from 2007 levels as AirTran discontinued service and mainline carriers converted some of their operations to regional affiliates. Air taxi/commuter operations have declined over the same period, from 45,994 in 2005 to 27,822 in 2010. From 2008 through 2010, air taxi/commuter operations have decreased year over year from 33,191 to 27,822; the reductions in air service by carriers are primarily due to the economic slowdown in the U.S.

As shown in Table I-5, air carrier aircraft operations are projected to increase from 19,699 in 2010 to approximately 25,283 in 2011, an approximate increase of 28 percent. This increase is attributed to the new service provided by Southwest (Boeing 737 aircraft) and additional deliveries by Boeing (747F & 787 aircraft). From 2011 through 2030, air carrier operations are projected to increase at a compounded annual growth rate of 2.3 percent. During that same period, aircraft manufacturing air carrier operations are projected to increase at a compounded annual growth rate of 3.4 percent, as assembly lines for the Boeing 787 Dreamliner are anticipated to be at full production. Aircraft manufacturing air carrier operations are projected to remain at approximately 3.2 percent of total air carrier operations over the 20-year planning period. After a decline in 2011 from 2010, air taxi/commuter operations are projected to increase at a compounded annual growth rate of 1.9 percent from 27,379 in 2011 to 39,516 in 2030.

1.3 Need for and Purpose of Project

Pursuant to NEPA and FAA Orders 1050.1E and 5050.4B, an EA must include a description of the purpose of a proposed action and why it is needed. Identification of the need for and purpose of a proposed action provides the rationale and forms the foundation for identification of reasonable alternatives that can meet the purpose for the action, and therefore, address the need or problem. The need for the proposed action and the purpose of the proposed action that addresses the need are discussed in this section.

1.3.1 Need for the Proposed Action

1.3.1.1 Boarding Gates and Aircraft Parking Positions

The existing passenger terminal concourses contain 10 gates with passenger boarding bridges and 7 striped positions with no passenger boarding bridges. The introduction of passenger service at CHS by Southwest Airlines in March 2011 has increased the number of scheduled daily flights from 113 to 128. On an average day in June 2010, the airlines required 15 total aircraft parking positions, including 12 active gates for boarding and 3 parking positions for RON aircraft.[6] Because of the current aircraft fleet size, several airlines are able to simultaneously park more than one aircraft at some gate positions, which temporarily mitigates the need for additional parking positions. However, the forecast is for most of the 50-seat regional jets currently in use to be gradually replaced by 90-seat and 150-seat jets. Thus, in the short-term, CHS will require 12 gates with passenger boarding bridges, increasing to 15 gates with passenger boarding bridges by 2030.

[6] Ricondo & Associates, Inc., *Charleston International Airport Master Plan Update*, January 2011.

1.3.1.2 Passenger Terminal Areas

Although the passenger terminal building is well-maintained and structurally sound, it exhibits finishes, furnishings and equipment that have reached or are nearing the end of their useful life. Changes in security, technology, and airline business strategies have fundamentally affected the manner in which passengers interface with terminal services, the manner in which airlines operate at the Airport, and the profitability of commercial tenants. For example, security screening requirements for airline passengers, baggage, and employees mandated by the ATSA have dramatically changed terminal facility requirements since its enactment. While the Airport complies with the requirements of the ATSA, it has done so by displacing facilities designed for other purposes, or by operating screening in constrained spaces that reduce efficiency and constrain the flexibility to implement new screening technologies.

Additionally, the existing passenger terminal consists of obsolete building system infrastructure, including HVAC systems; lighting systems; and fire protection systems. Its energy efficiency is low and many of the terminal areas do not comply with the Americans with Disabilities Act (ADA).

The introduction of passenger service at CHS by Southwest Airlines in March 2011 has increased the number of scheduled daily flights from 113 to 128, and is expected to increase annual enplanements by nearly 200,000 when compared to 2010 activity at the Airport. By 2016, annual enplanements are projected to increase to 1.5 million, an increase of 500,000 enplanements over 2010.

Table I-6 summarizes the total gross terminal space requirements at CHS for terminal development based on passenger activity levels. In general, terminal facility space requirements were derived as follows:

- Facilities used to process passengers were analyzed using computer modeling programs that simulate the physical arrangement, air service patterns, and passenger behavior representative of the Airport's operating environment. Performance data from the model were used to quantify improvements to these facilities so that they will be able to serve current and future demand at the prescribed levels of service.
- Space templates incorporating guidelines, equipment characteristics, and similar physical characteristics needed to achieve operating efficiencies and prescribed levels of passenger comfort were used to translate processor units and passenger volumes into space requirements.
- Boarding areas (holdrooms) were sized to accommodate passengers boarding 150-seat aircraft using standard International Air Transport Association (IATA) space allowances for passengers in boarding areas.
- Other airports with comparable enplaned passenger levels were analyzed to determine the amount of supportable space required for food and beverage, news and gift, and specialty retail concessions. Comparative analysis in airport concession planning is an accepted industry tool, and many airport operators regularly conduct similar analyses. Reasonable efforts were made to establish comparisons that resemble CHS's air service market.
- Stakeholder-identified space requirements were used.
- Building system (mechanical, electrical, data, and plumbing) equipment space, storage space, and other miscellaneous areas were calculated using factors equivalent to appropriate percentages of the total functional terminal area. Factors applied to facilities that are currently undersized or inadequate were increased to adjust for deficiencies.

Table I-6

Summary of Terminal Facility Requirements (in square feet)

Functional Area	Existing Total Area	Area required by activity level (number of enplanements) 1.2 million	1.4 million	2.0 million
Airlines	106,276	122,871	142,148	157,128
Transportation Security Administration	17,537	24,500	25,200	25,500
Customs and Border Protection	25,020	25,807	25,807	25,807
Retail, Food and Beverage, Specialties	28,417	18,702	20,945	27,565
Rental Cars	2,241	2,241	2,241	2,241
Amenities	9,978	9,500	11,000	11,800
Airport Administration	35,107	40,000	48,100	52,400
Other Agencies and Contractors	1,204	1,300	1,500	2,000
Circulation	63,128	61,200	74,000	80,600
Restrooms	7,011	8,000	9,700	10,200
Building Systems	23,301	21,200	25,600	27,900
Other Spaces	5,255	16,600	19,100	21,000
TOTAL AREA (GROSS AREA)	324,475	351,921	405,341	444,141

Source: Ricondo & Associates, Inc. June 2010.
Prepared by: Ricondo & Associates, Inc., June 2010.

1.3.1.3 Public Parking

As passenger activity increases at CHS, the demand for public parking will also increase. To determine future public parking facility requirements at an airport, an understanding of parking demand is required. Historical parking data, such as customer transactions, overnight parking counts, and vehicle occupancy reports were analyzed to ensure a thorough understanding of parking demand at CHS. **Table I-7** summarizes existing (2009) public parking demands and requirements.

For design day purposes, the parking deck and surface parking lot requirements were determined to be 1,020 and 1,330 spaces, respectively, totaling 2,350 when the buffer was considered. Under the peak day scenario in 2009, the parking requirement for both the parking deck and the surface parking lot totaled 2,780.

Once existing requirements were established, the estimated number of on-Airport spaces that would be required to accommodate demand at different activity levels was analyzed. This approach allows the Authority to add capacity or adjust parking projects as Airport passenger activity changes. On the design day, the parking deck is expected to consistently reach capacity when activity levels reach approximately 1.4 million annual enplanements (projected to occur around the end of 2013), while the surface parking lot is expected to consistently reach capacity when activity levels reach 1.6 million annual enplanements (as shown in Table I-5, this level of annual enplanements is projected to occur between 2016 and 2021).

Table I-7

Existing Public Parking Requirements

	2009			
	Capacity	Demand[1/]	Buffer[2/]	Required[3/]
Design Day[4/]				
Parking Deck	1,267	930	10%	1,020
Surface Parking Lot	1,896	1,211	10%	1,330
Overflow Lots A and B[5/]	1,300	0	10%	0
Total	4,463	2,141	10%	2,350
Peak Day[6/]				
Parking Deck	1,267	894	-	900
Surface Parking Lot	1,896	1,880	-	1,880
Overflow Lots A and B[5/]	1,300	0	-	0
Total	4,463	2,774	-	2,780

Notes:
1/ Maximum daily occupancy.
2/ The buffer provides additional spaces to meet level of service standards.
3/ Rounded up to nearest 10 spaces.
4/ Parking demand on June 24, 2009, represented average parking demand in 2009.
5/ No demand was recorded for the overflow lots in 2009.
6/ Parking demand on November 27, 2009, exceeded the peak demand on all other days in 2009.

Sources: Parking data from Charleston County Aviation Authority; Ricondo & Associates, Inc., March 2010.
Prepared by: Ricondo & Associates, Inc., May 2010.

1.3.2 Purpose of the Proposed Action

To address the needs identified above, the Charleston County Aviation Authority has identified the purpose of the Proposed Action (or the solution to the need) as the provision of expanded terminal, apron, and public parking facilities at CHS that:

- Support passenger and air carrier growth while maintaining desired level-of-service;
- Improve space efficiency and maintain competitive cost structure for airlines and tenants;
- Achieve compliance with current State adopted building and life safety codes;
- Accommodate changing FAA and Department of Homeland Security (DHS) programs; and
- Improve Airport initiatives to gain revenue from non-airline sources.

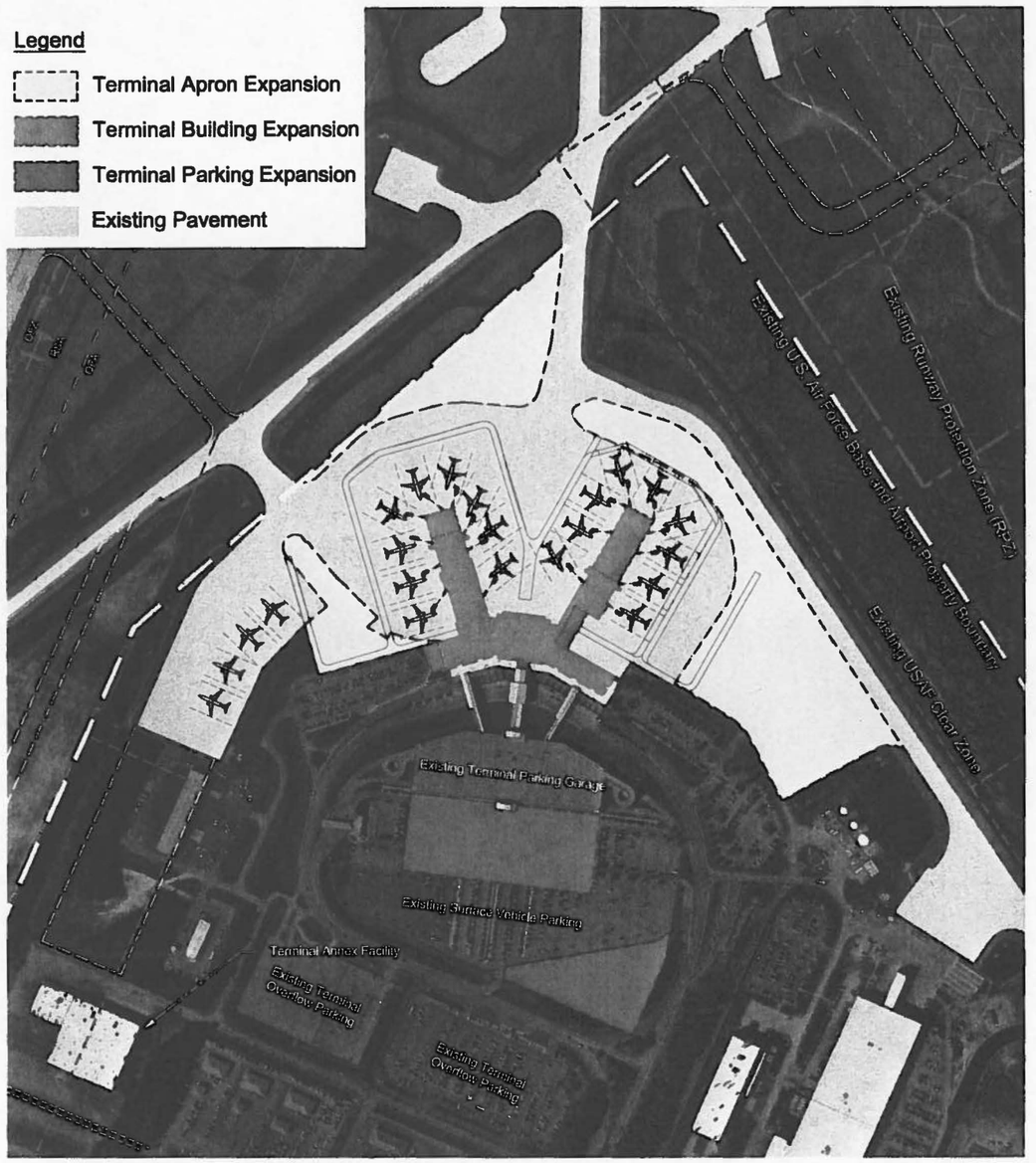
While meeting the purpose, alternatives considered for the Proposed Action should also maximize the use of existing facilities and operational efficiency and minimize disruption to existing facilities.

1.4 Proposed Action

The Proposed Action includes an expansion of the passenger terminal by approximately 100,000 square feet, expansion of the passenger terminal apron area, and expansion of the passenger terminal parking garage and surface vehicle parking at CHS. Specific elements include:

1. Passenger Terminal Expansion
   - Nine Gate Concourse A
     - Expand from five gates to nine gates
     - Four lane passenger security screening checkpoint
   - Nine Gate Concourse B
     - Expand from five gates to nine gates
     - Four lane passenger security screening checkpoint
   - Ticket Lobby Renovations
     - New architectural finishes, furnishings and equipment
     - Replace in-kind outbound baggage conveyor systems
   - Bag Claim Renovations
     - New architectural finishes, furnishings and equipment
     - In-kind replacement of two inbound baggage conveyor systems and claim carousels
   - Bag Claim Expansion
     - New inbound baggage conveyor system and claim carousel
     - Relocated airline bag service offices
   - Center Atrium Renovation
     - New architectural finishes, furnishings and equipment
     - In-kind renovation of existing commercial concession areas
   - Main mechanical, electrical, plumbing and fire and life safety system upgrades
2. Apron Expansion
   - Apron expansion to accommodate new aircraft gates and RON parking
   - Relocate Air Operations Area fence
3. Expansion of Terminal Parking Garage
4. Expansion of Surface Vehicle Parking Lot

The main elements of the Proposed Action are shown on **Exhibit I-6**.



Source: U.S. Air Force and Charleston International Airport base files received June 2010; Ricondo & Associates, Inc. March 2011
Prepared by: Ricondo & Associates, Inc.

Exhibit I-6

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north

Proposed Action

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1.5 Requested Federal Action

The federal actions being requested of the FAA by the Authority include:

- Unconditional approval of the expansion of passenger terminal, apron, and parking facilities as depicted on the updated Airport Layout Plan (ALP) pursuant to Title 49 U.S.C. Sections 40103(b), 44718, and 47107(a)(16); Title 14 Code of Federal Regulations (CFR) Part 77, *Objects Affecting Navigable Airspace*; and Title 14 CFR Part 157, *Notice of Construction, Alternation, Activation, and Deactivation of Airports.*
- Determinations under Title 49 U.S.C. Sections 47106 and 47107 relating to the eligibility of the Proposed Action for federal funding under the Airport Improvement Program (AIP) and under Title 49 U.S.C. Section 40117, as implemented by Title 14 CFR 158.25, to impose and use passenger facility charges (PFCs) collected at Charleston International Airport for the proposed project to assist with construction of potentially eligible development items shown on the ALP.
- Determination under Title 49 U.S.C. Section 44502(b) that the Proposed Action is reasonably necessary for use in air commerce or in the interest of national defense.
- Continued close coordination with the Charleston County Aviation Authority and appropriate FAA program offices, as required, for safety during construction pursuant to Title 14 CFR Part 139 *Certification of Airports* under Title 49 U.S.C. Section 44706.
- Approval of the appropriate amendments to the *Airport Certification Manual* pursuant to 14 CFR Part 139.

1.6 Timeframe of the Proposed Action

The Charleston County Aviation Authority plans to begin construction on elements of the Proposed Action in 2012 and estimates that construction of all elements would be completed in 2015.

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Each alternative was developed to include a 16-gate facility, concourse and apron level floor plans, phasing strategy, and potential terminal development beyond the long range planning horizon.

Each alternative concept had to include the following elements:

- A minimum of 12 gate positions with passenger boarding bridges (PBB) for the near term; increasing to a minimum of 16 gate positions with PBBs over the long range planning horizon.
- An increase of 8.5 percent (approximately 27,500 square feet) in terminal space to accommodate immediate needs for airline passengers, TSA requirements, and baggage handling requirements.
- An increase of 37 percent, or approximately 120,000 square feet, in terminal space to accommodate the long-term needs for airline passengers, TSA requirements, baggage handling requirements, and comply with State building and life safety codes.

2.2 Evaluation of Alternatives

The ability of each alternative considered to meet the stated purpose and need for the Proposed Action is documented in this section, along with a conclusion regarding whether or not each alternative would be retained for further analysis of potential environmental consequences in this EA.

2.2.1 No Action

The No Action alternative would result in no upgrades to or expansion of the existing passenger terminal, apron facilities, and parking facilities at the Airport. The No Action alternative would not meet the purpose and need for accommodating existing and future airline and passenger growth, improve space efficiency, achieve compliance with State adopted building and life safety codes, accommodate changing FAA and DHS programs and requirements, or improve Airport initiatives to gain revenue from non-airline sources. Although the No Action alternative does not meet the stated purpose and need for the Proposed Action, CEQ regulations implementing NEPA require evaluation of the No Action alternative compared to the Proposed Action as a basis to determine the extent of potential impacts. Thus, the No Action alternative was retained for further analysis in this EA.

2.2.2 Expansion or Relocation of Passenger Terminal and Apron Facilities

The eight alternative concepts identified to expand the existing passenger terminal and the single alternative concept to relocate the existing passenger terminal were evaluated together. Each alternative concept was initially evaluated based on:

- Ability to maintain a high level of customer service (simplify wayfinding, maximize concessions opportunities, and minimize walking distances)
- Project implementation considerations (constructability of the alternative)
- Flexibility to adapt to changing conditions (ability to accommodate different aircraft types, operational flexibility, expandability of gates)
- Ability to maintain a competitive cost structure (operational costs, construction costs, commercial land use development).

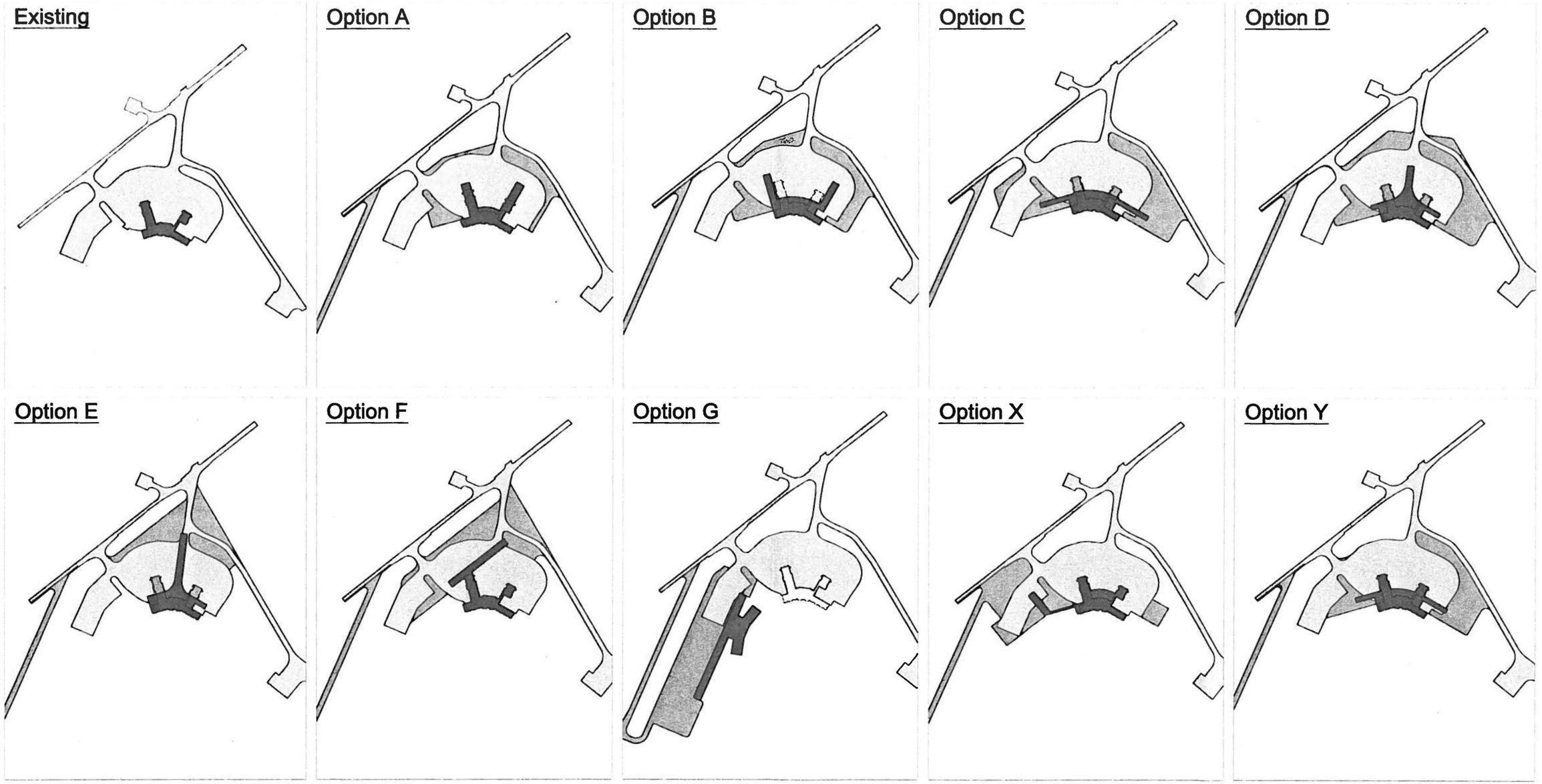
Table II-1 summarizes the results of the initial evaluation. Five of the nine alternative concepts were eliminated from further consideration after the initial evaluation was completed. Concepts A, D, F, and Y were retained for further consideration (see **Exhibit II-2**). These concepts were refined and comparative program costs were developed as additional evaluation criteria.

Table II-1

Initial Evaluation Results

Concept	Customer Service Considerations	Project Implementation Considerations	Flexibility Considerations	Cost Considerations	Retained for Further Consideration
A	- Concessions would be centralized (far from some holdrooms)	- Minimizes impacts to existing apron grades	- Two concourses (less flexible)	- Construction footprint and cost minimized	YES
B	- Concessions would be centralized (far from some holdrooms)	- Simplifies construction phasing and impacts	- Two concourses (less flexible)	- Costs higher (requires reconstruction of both concourses)	NO
C	- Simpler wayfinding - Longer walking distances	- Simplifies construction phasing and impacts	- Greater flexibility for use of gates	- Costs higher (requires reconstruction of concourses)	NO
D	- Concessions more accessible - Minimizes walking distances	- Complex construction phasing	- Greater flexibility for use of gates - Could be expanded incrementally	- Construction costs higher (requires reconstruction of concourses) - Operational costs lower	YES
E	- Simpler wayfinding - Longer walking distances	- Complex construction phasing	- Greater flexibility for use of gates	- Costs higher (requires reconstruction of concourses)	NO
F	- Longer walking distances	- Simplifies construction phasing and impacts	- Two concourses (less flexible)	- Requires reconstruction of Concourse B - Operational costs lower	YES
G	- Longer walking distances	- Simplifies construction phasing and impacts	- Limited to a single-loaded concourse	- Costs higher (requires construction of new terminal)	NO
X	- Longer walking distances - Complex wayfinding	- Simplifies construction phasing and impacts	- Limits flexibility to assign gates	- Costs higher (requires construction of new concourse)	NO
Y	- Longer walking distances - Complex wayfinding	- Minimizes impacts to existing apron grades	- Four concourses (less flexible)	- Construction footprint and cost minimized	YES

Source: Ricondo & Associates, Inc. *Master Plan Update, Charleston International Airport*, January 2011.
Prepared by: Ricondo & Associates, Inc., March 2011.



Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit II-1

0 1,500 ft. north

---------- Existing Passenger Terminal Footprint

Existing Apron Pavement

Proposed Future Passenger Terminal Footprint

Proposed Future Apron Pavement

Passenger Terminal Concepts Examined

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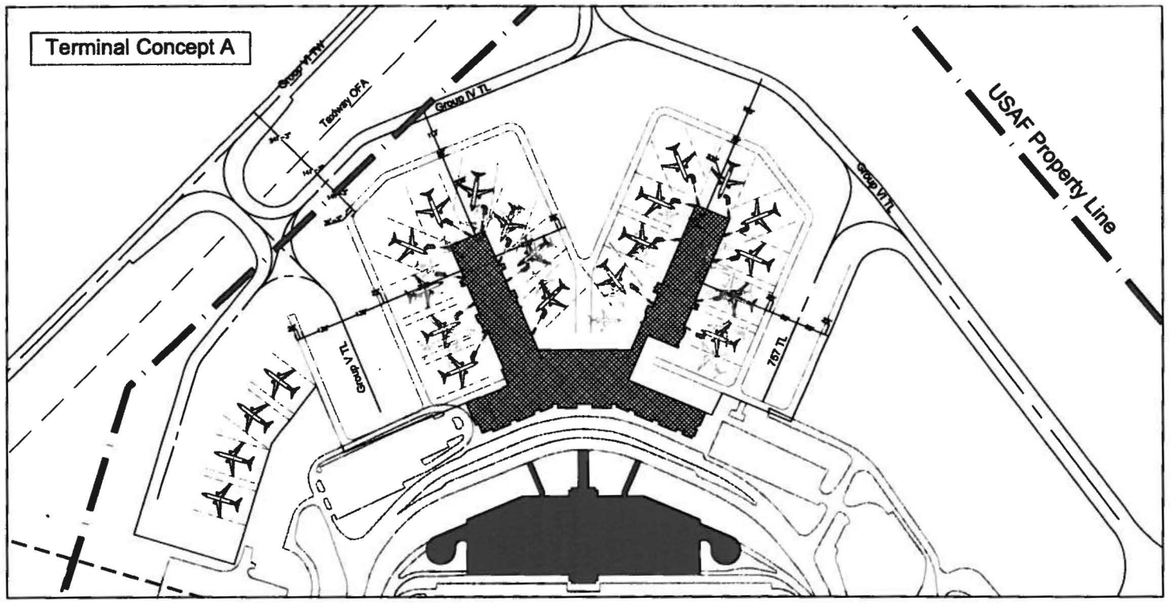

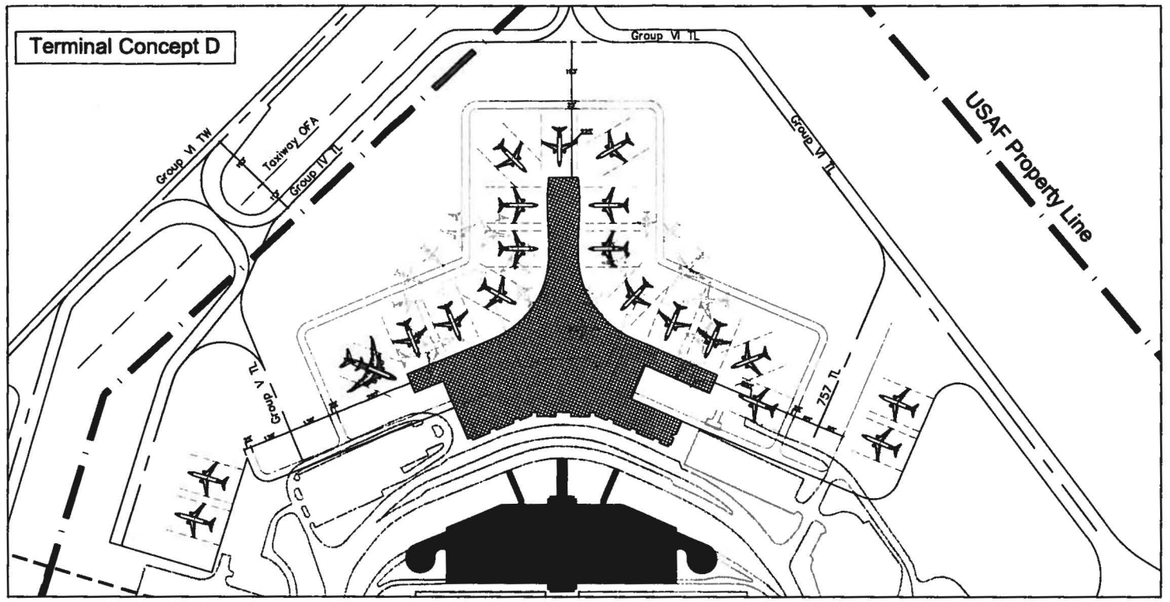

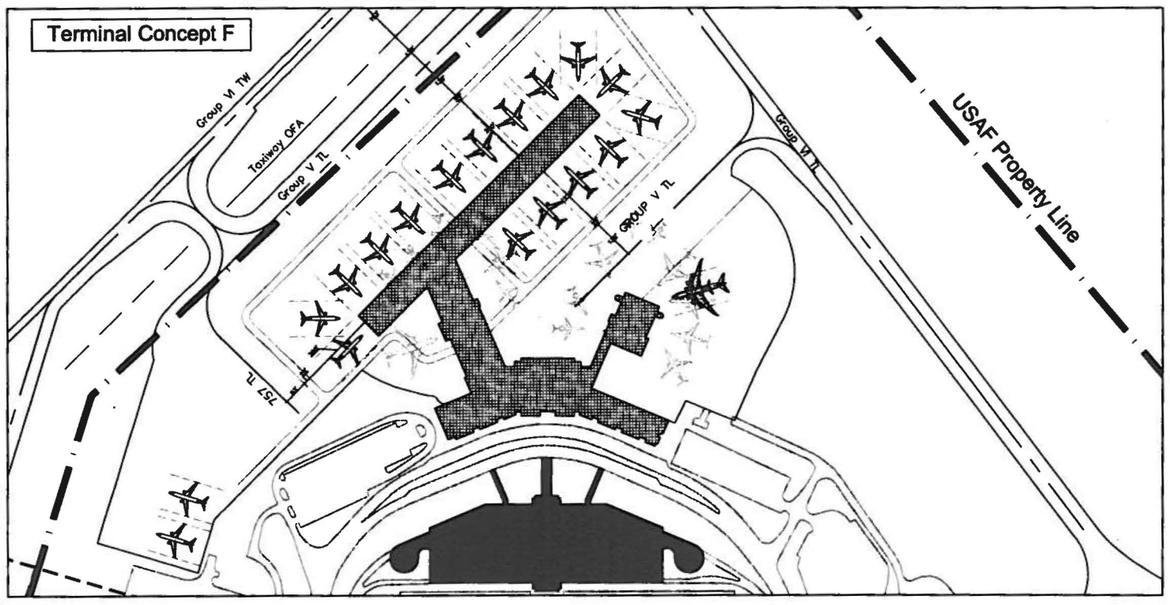

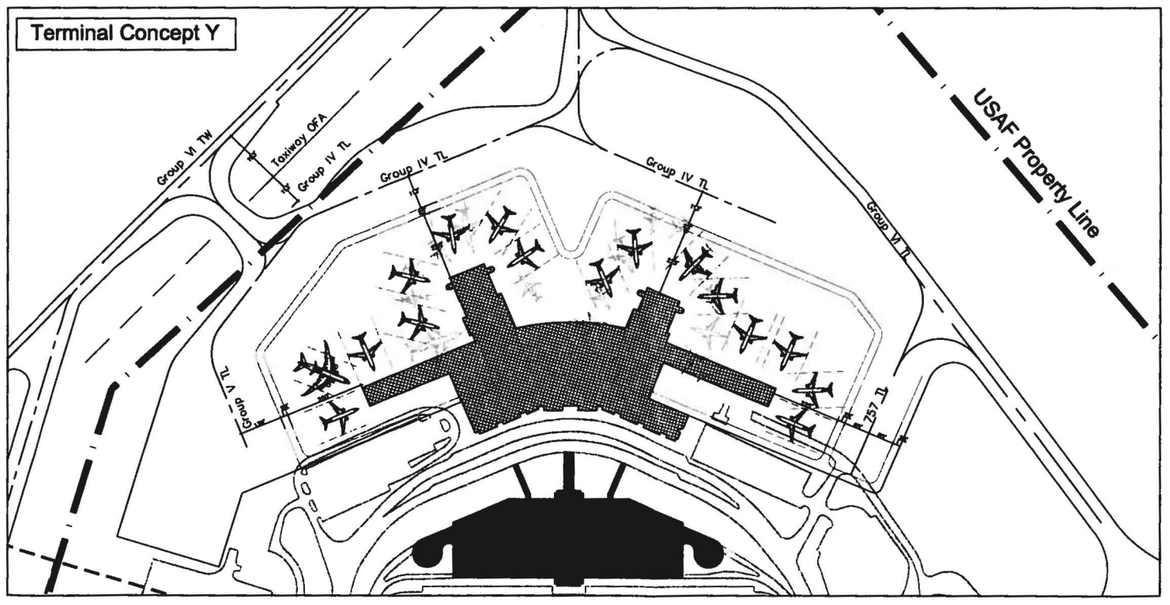

Source: USAF and Charleston International Airport Base files June 2010; Ricondo & Associates, Inc. February 2011
Prepared by: Ricondo & Associates, Inc.

Exhibit II-2

0 500 ft. north

EXISTING AIRCRAFT PROPOSED AIRCRAFT PROPOSED BUILDING EXISTING BUILDING

Comparison of Passenger Terminal Concepts A,D,F, and Y

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Table II-2 summarizes the preliminary comparative cost estimates reflecting building (expansion and renovation areas) and site development (apron and landside) improvements for the four terminal concepts that passed the initial evaluation: Concepts A, D, F, and Y.

Table II-2

Comparative Program Costs (millions of dollars)

	Concept			
	A	D	F	Y
Terminal Building Improvements	$ 156.5	$ 180.8	$ 167.9	$ 177.0
Apron Improvements	$ 46.4	$ 69.9	$ 73.0	$ 52.5
Sitework	$ 9.1	$ 11.7	$ 11.4	$ 11.2
Estimated Program Costs ($ Millions)	$ 212.0	$ 262.4	$ 248.0	$ 240.7

Note: Cost estimates developed for comparison of alternatives and do not represent the refined cost estimate of the recommended alternative.

Source: CONNICO Inc., *Preliminary Rough Order of Magnitude Estimate*, September 15, 2010.
Prepared by: Ricondo & Associates, Inc., December 2010.

A secondary screening analysis was conducted, which compared the four passenger terminal concepts that passed the initial screening evaluation against each other. The secondary screening analysis considered the following three criteria, as summarized in **Table II-3**:

- Construction and Implementation Phasing—Concept Y received the top rank considering its potential to minimize impact on existing aircraft gate and concourse operations.
- Risk—Concept A received the top rank considering it supports incremental development towards the long range terminal development plan, and would involve the least amount of new construction.
- Cost—Concept A received the top rank considering its high level of re-use of existing facilities and having the least impact on existing apron pavement.

Table II-3

Comparative Ranking of Concept Alternatives

	Concept Ranking			
Categories Ranked	A	D	F	Y
Phasing	2	4	3	1
Risk	1	4	3	2
Cost	1	4	3	2

Note: 1 = Top Ranked

Source: Ricondo & Associates, Inc., December 2010.
Prepared by: Ricondo & Associates, Inc., December 2010.

Concept A would meet the stated purpose and need for the project by accommodating existing and future airline and passenger growth while maintaining a desired level-of-service, improving space efficiency and maintaining a competitive cost structure for airlines and tenants, achieving compliance

with State adopted building and life safety codes, accommodating changing FAA and DHS programs and requirements, and improving Airport initiatives to gain revenue from non-airline sources. As stated in Chapter I, no extraordinary circumstances or protected resources are known to be present within the vicinity of the existing passenger terminal area, thus Terminal Concept A was selected as the preferred passenger terminal and apron concept.

2.3 Identification of Public Parking Alternatives

Two main categories of alternatives—expanding the existing public parking garage and expanding the existing surface parking lots—were identified as the range of alternatives potentially able to meet the purpose and need defined for this portion of the Proposed Action, which would be to provide public parking facilities to support passenger and air carrier growth while maintaining the Authority's desired level-of-service. Because different segments of airline customers utilize the parking deck versus the surface parking lot, the Authority decided during the Master Plan Update process that demand for these facilities should be treated separately; i.e., alternatives to satisfy demand for the passenger terminal parking garage were limited to expansion of the garage and alternatives to satisfy demand for surface parking were limited to expansion of the surface parking lots.

Therefore, the alternatives considered in this EA include:

- **No Action**—Under the No Action alternative, the existing public parking facilities at the Airport would not be expanded. Although the No Action alternative would not meet the purpose and need for accommodating future parking needs at the Airport, it was retained in accordance with CEQ regulations as a basis to determine the extent of potential impacts.
- **Expand Existing Passenger Terminal Parking Garage Facilities**—One alternative was identified to expand the existing passenger terminal parking garage to accommodate future growth in passenger traffic. The passenger terminal parking garage is anticipated to consistently reach capacity when activity levels approach 1.4 million annual enplanements (anticipated to occur around the end of 2013).
- **Expand Existing Surface Public Parking Facilities**—One alternative was identified to expand the existing surface parking lots to accommodate future growth in passenger traffic. The surface parking lots are anticipated to consistently reach capacity when activity levels approach 1.6 million annual enplanements (anticipated to occur between 2016 and 2021).

As discussed in Chapter I, no extraordinary circumstances or protected resources are known to be present within the vicinity of the existing public parking facilities, thus no other alternatives for public parking were identified beyond the expansion of existing facilities, as shown on Exhibit I-6.

2.4 Alternatives Retained for Analysis and Identification of the Proposed Action

Based on the evaluation of alternatives, two alternatives are retained for evaluation in the EA:

- No Action alternative
- Expansion of existing passenger terminal and apron facilities (Terminal Concept A), expansion of the passenger terminal parking garage facilities, and expansion of the surface parking lots.

Of these two alternatives, only the alternative to expand the existing passenger terminal and public parking facilities meets the purpose and need for the Proposed Action; thus, this alternative was identified as the Proposed Action.

FAA guidance states that, "If there are no unresolved conflicts concerning alternative uses of available resources, the range of alternatives may be limited to the no action and proposed action alternatives."[4] All of the actions would occur on developed Airport property and no unresolved conflicts concerning alternative uses of available resources have been identified. Although the No Action alternative would not meet the stated purpose and need for the Proposed Action, it was retained for analysis in this EA to fulfill CEQ regulations implementing NEPA and to comply with FAA Orders 1050.1E and 5050.4B. Thus, only the No Action and Proposed Action alternatives are analyzed in detail in this EA.

2.5 Sponsor's Preferred Alternative

The Proposed Action, as identified in Section 1.4, is the Sponsor's preferred alternative. Because the Proposed Action would meet the purpose and need and would not result in any permanent environmental effects, it is also the environmentally preferred alternative.

2.6 Federal Laws and Regulations Considered

In accordance with FAA Order 1050.1E, Paragraph 405(d)(4), the relevant executive orders, federal laws and statutes, and other regulations considered during preparation of this EA are listed in **Tables II-4**, **II-5**, and **II-6**, respectively.

Table II-4

Executive Orders Considered

	Citation
Executive Order 11593, *Protection and Enhancement of the Cultural Environment*	36 Federal Register (FR) 8921
Executive Order 11988, *Floodplain Management*	43 FR 6030
Executive Order 11990, *Protection of Wetlands*	42 FR 26961
Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*	59 FR 7629
Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*	62 FR 19883

Source: Ricondo & Associates, Inc., March 2011.
Prepared by: Ricondo & Associates, Inc., March 2011.

[4] Federal Aviation Administration, Order 1050.1E, *Environmental Impacts: Policies and Procedures,* Change 1, paragraph 405d, March 20, 2006.

Table II-5

Federal Laws Considered

	Citation
National Environmental Policy Act of 1969	42 United States Code (U.S.C.) 4321 *et seq.*
Clean Air Act of 1970, as amended	42 U.S.C. 7401 *et seq.*
Department of Transportation Act of 1966, Section 4(f)	49 U.S.C. 303(c)
Aviation Safety and Noise Abatement Act of 1979	49 U.S.C. 47501 *et seq.*
Federal Aviation Act	49 U.S.C. 40101 *et seq.*
Endangered Species Act of 1973	16 U.S.C. 1531 *et seq.*
Fish and Wildlife Coordination Act of 1958	16 U.S.C. 661 *et seq.*
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Community Environmental Response Facilitation Act of 1992	42 U.S.C. 6901 *et seq.*
Resource Conservation and Recovery Act of 1976, as amended by the Solid Waste Disposal Act of 1980	42 U.S.C. 6901 *et seq.*
National Historic Preservation Act of 1966, as amended	16 U.S.C. 470 *et seq.*
Archaeological and Historic Preservation Act of 1974, as amended	16 U.S.C. 469 *et seq.*
Federal Water Pollution Control Act of 1972, as amended (commonly referred as the Clean Water Act)	33 U.S.C. 1251 *et seq.*
Rivers and Harbors Act of 1899, Section 10	33 U.S.C. 403 *et seq.*
Farmland Protection Policy Act	7 U.S.C. 4201 *et seq.*
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970	42 U.S.C. 4601 *et seq.*
Wild and Scenic Rivers Act of 1968	16 U.S.C. 1271 *et seq.*

Source: Ricondo & Associates, Inc., March 2011.
Prepared by: Ricondo & Associates, Inc., March 2011.

Table II-6

FAA Orders, Advisory Circulars, and Federal Regulations Considered

U.S. Department of Transportation and FAA Orders

- U.S. Department of Transportation (DOT), FAA Order 1050.1E: *Environmental Impacts: Policies and Procedures*
- U.S. Department of Transportation (DOT), FAA Order 5050.5B: *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*
- U.S. DOT Order 5680.1: *Final Order to Address Environmental Justice in Low-Income and Minority Populations*
- U.S. DOT Order 5650.2: *Floodplain Management and Protection*
- U.S. DOT Order 5660.1A: *Preservation of the Nation's Wetlands*

FAA Advisory Circulars

- U.S. DOT, FAA Advisory Circular 150/5020-1: *Noise Control and Compatibility Planning for Airports*
- U.S. DOT, FAA Advisory Circular 150/5200-33A: *Hazardous Wildlife Attractants on or near Airports*
- U.S. DOT, FAA Advisory Circular 36-3H: *Estimated Airplane Noise Levels in A-Weighted Decibels*
- U.S. DOT, FAA Advisory Circular 150/5300-13, *Airport Design*
- U.S. DOT, FAA Advisory Circular 150/5370-10A: *Standards for Specifying Construction of Airports*

Federal Regulations

- Title 14, Code of Federal Regulations (CFR) Part 71: *Designation of Class A, Class B, Class C, Class D, and Class E Airspace Areas; Airways; Routes; and Reporting Points*
- Title 14 CFR Part 77: *Objects Affecting Navigable Airspace*
- Title 14 CFR Part 135: *Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons on Board Such Aircraft*

Source: Ricondo & Associates, Inc., March 2011.
Prepared by: Ricondo & Associates, Inc., March 2011.

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II. Alternatives

FAA Order 1050.1E[1] and FAA Order 5050.4B[2] set forth FAA policies and procedures to be followed in assessing the environmental impacts of aviation-related projects in compliance with NEPA and the implementing regulations issued by the Council on Environmental Quality (CEQ)[3]. These Orders and regulations require a thorough and objective assessment of the Proposed Action, the No Action alternative, and all "reasonable" alternatives that would achieve the stated purpose and need for the Proposed Action. For an alternative to be reasonable, it must be both "feasible" and "prudent." An alternative may be feasible if, as a matter of sound engineering principles, it can be built; however, it may not be practicable because of safety, jurisdiction, financial, or other potential conflicts (e.g., access to the site). The alternatives analysis in this EA is consistent with the requirements of FAA Orders 1050.1E and 5050.4B.

The process followed to identify the range of alternatives to be considered and the screening process used to determine which alternatives would reasonably satisfy the purpose of and need for the Proposed Action are described in this chapter. Those alternatives that would satisfy the purpose and need for the Proposed Action were carried forward for analysis of environmental consequences. Lists of applicable federal laws and regulations considered during the analysis are provided at the end of this chapter.

2.1 Identification of Passenger Terminal and Apron Alternatives

Two main categories of alternatives—expanding the existing passenger terminal and apron facilities and relocating the passenger terminal facilities—were identified as the range of alternatives potentially able to meet the purpose and need defined for the Proposed Action. The Proposed Action would (1) provide adequate passenger terminal and parking facilities to support passenger and air carrier growth while maintaining a desired level-of-service; (2) improve space efficiency and maintain a competitive cost structure for airlines and tenants; (3) achieve compliance with current State adopted building and life safety codes; (4) accommodate changing FAA and TSA programs and requirements; and (5) improve Airport initiatives to gain revenue from non-airline sources.

Therefore, the alternatives considered in this EA include:

- **No Action**—Under the No Action alternative, the existing passenger terminal facilities at the Airport would not be expanded.
- **Expand Existing Passenger Terminal and Apron Facilities**—Several alternatives were identified to expand the existing passenger terminal and apron facilities to meet future needs, as identified in Table I-6 (terminal facility requirements).
- **Relocate Existing Passenger Terminal**—One alternative was identified that would construct a new passenger terminal in a new location.

A total of nine alternative concepts (see **Exhibit II-1**) were developed representing different terminal apron and building configurations that achieve the aircraft parking and terminal requirements for the long range planning horizon (2 million annual enplaned passengers).

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1 U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, *Environmental Impacts: Policies and Procedures,* Change 1, effective March 20, 2006.

2 U.S. Department of Transportation, Federal Aviation Administration, Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, effective April 28, 2006.

3 Council on Environmental Quality, *Regulations for Implementing the Procedural Provision of the National Environmental Policy Act*, 40 CFR Parts 1500-1508.

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III. Affected Environment

This chapter provides information on the baseline environmental conditions from which to identify and evaluate the consequences likely to result from implementation of the Proposed Action. The affected environment for the proposed project encompasses those areas that would be directly or indirectly affected by the project if it is implemented. This chapter identifies the potentially affected geographic areas and documents existing conditions within those areas, as well as resources that could be affected by the Proposed Action.

3.1 Description and Identification of Study Area

Charleston International Airport is located in Charleston County, South Carolina, in the City of North Charleston and just west of I-26. Exhibit I-1 in Chapter I depicts the location of the Airport in the general Charleston area. The Airport is operated by CCAA, under the Joint Use Agreement with the U.S. Air Force. The U.S. Air Force owns and operates the airfield as part of the Charleston Air Force Base and the CCAA owns approximately 1,300 acres for civilian aviation use, including passenger, cargo, and general aviation facilities, along with adjacent aircraft manufacturing operations.

The CCAA property and surrounding lands were historically used for phosphate fertilizer mining. Prior to the development of this property as an airport, the phosphate lodes were becoming less economically viable. There are no other known natural or mineral resources present on the property.

An Area of Potential Effect (APE) was defined based on the area that would be potentially disturbed during construction or needed for construction staging (see **Exhibit III-1**). The direct APE consists of the footprint of the proposed additions to the existing terminal, the areas that will be modified to expand the aircraft apron, and the footprint of the proposed expansion of the existing multilevel parking garage and surface parking areas. Existing conditions within the direct APE consist of paved areas, grassed and landscaped areas, and isolated stands of trees (see **Exhibit III-2**). The indirect APE was defined as a 0.5-mile radius surrounding the terminal, and lies on Airport and U.S. Air Force (USAF) property. Existing land uses within the indirect APE are similar to the direct APE, with additional grassed and landscaped areas on the airfield and additional forested areas, but also includes the Boeing manufacturing facility. No residences are located within the direct or indirect APE.

3.2 Existing Land Use and Zoning

Land use is defined as a system of property classification to describe the current or proposed use of a parcel of land. The use can be one or a combination of many types, including but not limited to industrial, commercial, residential, silvicultural, agricultural, conservation, etc. In many cases, land uses are defined with zoning laws – with specific terms and variations set forth in the rules adopted by the community. In the context of this project, the surrounding land uses include primarily developed properties (other than the vacant portions of the CCAA and USAF properties). The developed properties surrounding the Airport consist of a mix of residential, commercial, and industrial properties.

The City of North Charleston has developed a number of zoning classifications which control land use within the city limits. The Airport is in an area zoned as "Light Industrial District" a classification that allows for the activities and operations that take place in an airport setting (**Exhibit III-3**).

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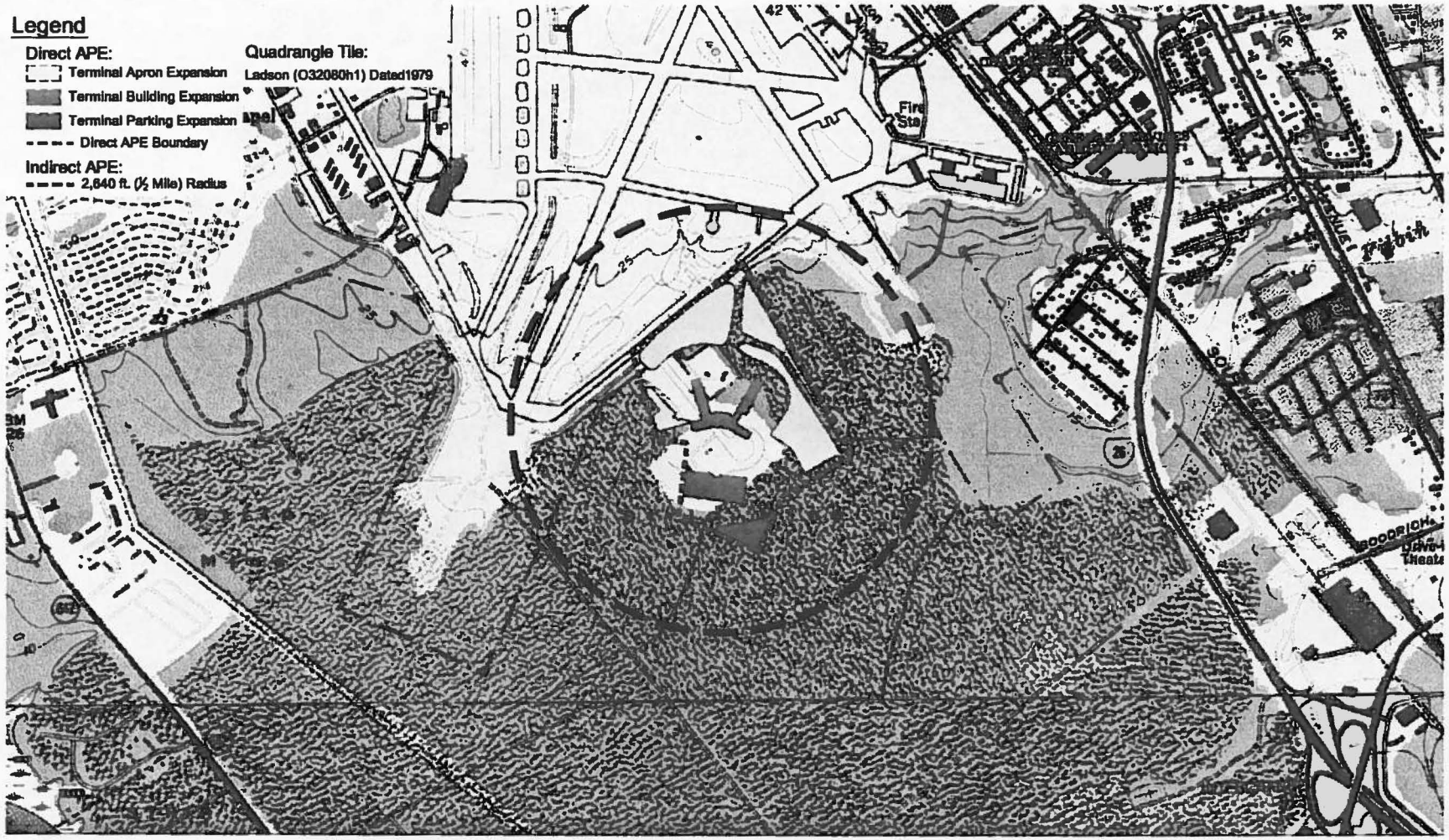

Source: USGS Base Map: Chartiff December 1, 2010; Ricondo & Associates, Inc. March 2011
Prepared by: Ricondo & Associates, Inc.

Exhibit III-1

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north

Area of Potential Effect (APE)

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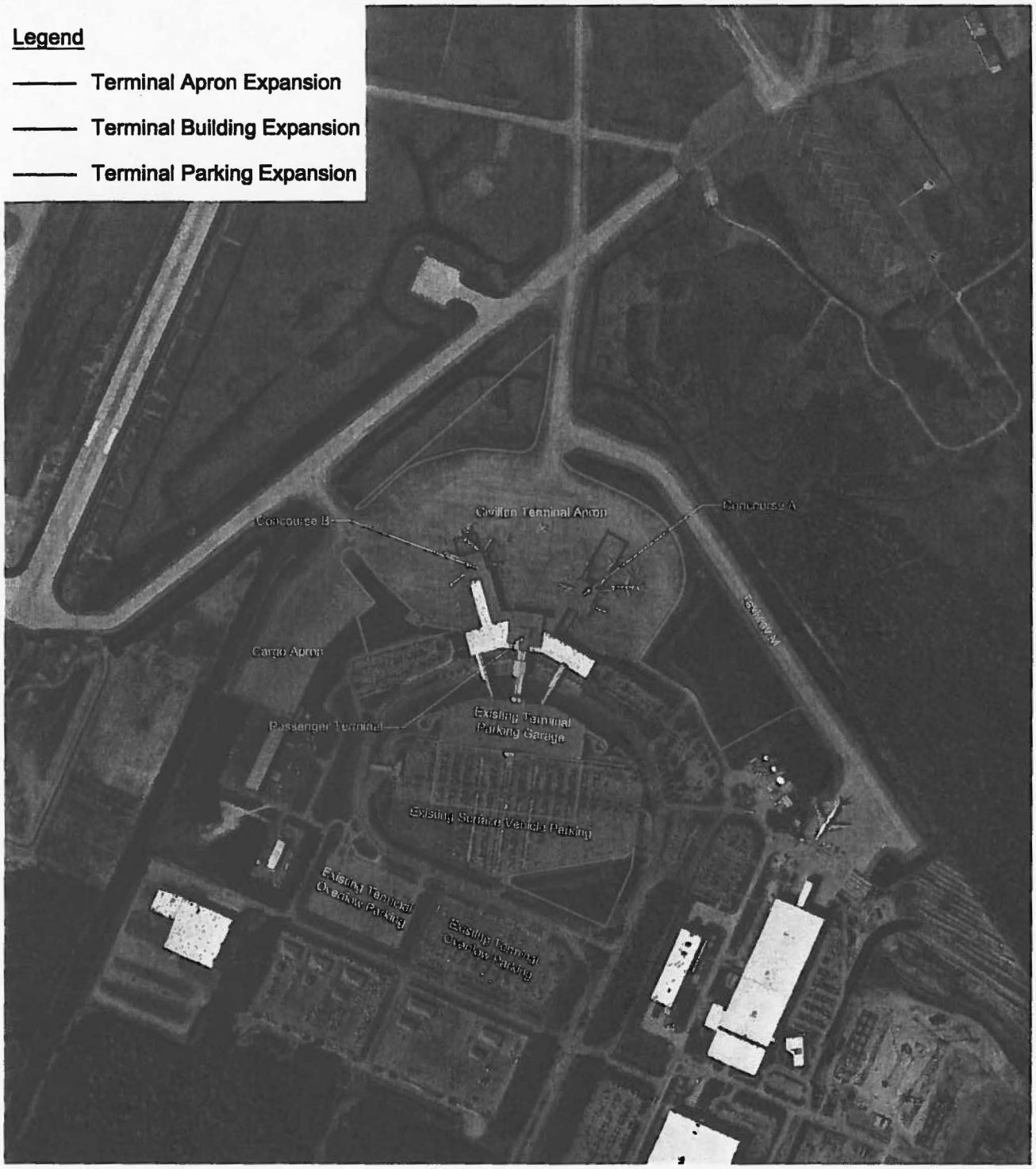

Source: U.S. Air Force and Charleston International Airport base files received June 2010; Ricondo & Associates, Inc. March 2011.
Prepared by: Ricondo & Associates, Inc.

Exhibit III-2

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north

Existing Conditions

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Exhibit III-3

Zoning Map, Vicinity of Charleston International Airport

Sources: City of North Charleston's Geographic Information System (GIS), http://www.northcharleston.org/business constructionDev/zoning/onlineMap.aspx, accessed March 7, 2011.
Prepared by: S&ME, Inc., March 2011.

3.3 Demographics and Socioeconomic Profile

Socioeconomics are the activities and resources associated with the everyday human environment, particularly with population centers, their demographics, and economic activities generated. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations,* was enacted in 1994. This order requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. This Executive Order was adopted to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, and local programs and policies. Consideration of environmental justice concerns must be given to populations in the vicinity of a proposed project.

Ethnicity, poverty, income, and employment status information is presented to provide an understanding of the existing socioeconomic conditions in the project area. When compared to the South Carolina and U.S. demographic distributions, the City of North Charleston has a higher than average African American population, and a Hispanic population somewhat higher than the State average (see **Table III-1**). According to the U.S. Census Bureau, the City of North Charleston was estimated to have approximately 97,471 people in 2010. The population of the city of North Charleston is comprised of 47.2 percent African American, 41.6 percent Caucasian, and 10.9 percent Hispanic. People that self-identify as being of Asian, Native American, Pacific Islander, other ethnic groups, or of more than one ethnic origin make up the remainder of the population. In contrast, the population of South Carolina is 27.9 percent African American, 66.2 percent Caucasian, and 5.1 percent Hispanic.[1]

Table III-1

Demographic Distribution for the City of North Charleston, Charleston County, and South Carolina (2010)

Ethnicity	City of North Charleston (percent/total)		Charleston County (percent/total)		South Carolina (percent/total)	
African American	47.2	45,964	29.8	104,239	27.9	1,290,684
Caucasian (not of Hispanic origin)	41.6	40,514	64.2	224,910	66.2	3,060,000
Hispanic or Latino	10.9	10,617	5.4	18,877	5.1	235,682
Other	>1	376	>1	2,183	>1	38,998

Sources: U.S. Census Bureau, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml, accessed April 19, 2011.
Prepared by: Ricondo & Associates, Inc., April, 2011.

Twenty-four percent of North Charleston's population, compared to thirteen percent of the U.S. population, was below the poverty level (**Table III-2**). The median household income in North Charleston (in 2009 inflation adjusted dollars) was $34,955, which is lower than the national average of $51,425.[2] In February 2011, North Charleston reported an unemployment rate of 10 percent.[3]

3.4 Biological and Natural Resources

3.4.1 Biotic Communities

Ecologically sensitive areas are ecosystems in which minor physical or chemical disturbance can result in disruption of ecosystem structure or function. Examples of such areas include certain types of estuarine habitats, shellfish beds, and reefs. In the coastal zone of South Carolina, the salt marshes (estuaries) are protected and regulated by the South Carolina Department of Health and Environmental Control (SCDHEC), Office of Ocean and Coastal Resource Management (OCRM). No areas within the boundary of an OCRM identified estuary (referred to as a "critical area") may be impacted without the coordination of a permit through that agency. Charleston County also requires minimal buffers adjacent to critical areas when issuing permits for construction.

[1] U.S. Census Bureau, http://quickfacts.census.gov/qfd/states/45000.html, accessed April 19, 2011.
[2] U.S. Census Bureau, http://quickfacts.census.gov/qfd/states/45000.html, accessed April 19, 2011.
[3] U.S. Bureau of Labor Statistics, http://www.bls.gov/data/, accessed April 19, 2011.

Table III-2

Demographic Distribution for the United States, South Carolina, and Charleston County

Geographic Area	Median Household Income (2009 dollars)	Population Below the Poverty Line (percent)	Unemployment Rate (percent)
United States	$51,425	13.5	8.9
South Carolina	$43,572	15.8	10.2
Charleston County	$47,770	15.6	8.2

Sources: U.S. Census Bureau, http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml, accessed April 17, 2011, 2011; U.S. Bureau of Labor Statistics, http://www.bls.gov/bls/unemployment.htm, accessed April 19, 2011.
Prepared by: Ricondo & Associates, Inc., April, 2011.

No "critical areas" or other ecologically sensitive areas are located within or adjacent to the proposed project footprint. The CCAA and neighboring U.S. Air Force properties do contain some intact bottomland hardwood forested habitats (outside of current cleared zones). These wooded areas consist of mixed pine and hardwood forest and animals typical of these forest types. Estuarine marshes of the Ashley River are located approximately 1 mile to the southwest of the boundaries of the CCAA property.

3.4.2 Endangered and Threatened Species

Under the Endangered Species Act (16 U.S.C. 1536), an "endangered species" is defined as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined as any species likely to become an endangered species in the foreseeable future. Species under these designations are commonly known as threatened and endangered (T&E) species and are accorded specific legal protection, including mandatory habitat protection in areas where they are known to occur.

The U.S. Fish & Wildlife Service identifies and publishes federally-listed T&E species, which include both vascular plants and animals. States may also list species under other legal designations, which do not afford any specific legal protections for the habitat, but can identify species as rare or of special concern. **Table III-3** summarizes listed terrestrial species that have been documented as occurring in Charleston County. These species would be deemed to have the highest likelihood of occurring on or near the project area. Marine and freshwater aquatic species would not be affected by the Proposed Action because no impacts to marine or freshwater habitat would occur.

The U.S. Air Force owned airfield property has been included in three wildlife and T&E studies since 1993. In February 2004, the U.S. Fish and Wildlife Service (USFWS) issued a concurrence letter indicating no T&E species were identified on the airfield or adjacent property. The USFWS was informed of this proposed undertaking during the scoping process in February 2011 to solicit feedback and information on the resources under their purview (see **Appendix A**). No new information or feedback relating to T&E species was received from the USFWS. In addition, no further study or assessment or study for T&E species was recommended following the scoping process.

Table III-3

Special Status Species Known to Occur within Charleston County

Species	Federal Status	State Status	Occurrence in Study Area
Wood Stork (*Mycteria americana*)	FE	SE	Feed in fresh and brackish wetlands and nest in cypress or other wooded swamps
Bachman's Warbler (*Vermivora bachmanii*)	FE	SE	Low wet forests with dense saw palmetto or giant cane understory - probably extinct
Red-cockaded Woodpecker (*Picoides borealis*)	FE	SE	Mature pine and hardwood stands greater than 30 years of age
Flatwoods Salamander (*Ambystoma cingulatum*)	FT	SE	Open mesic pine/wiregrass flatwoods
Shortnose Sturgeon (*Acipenser brevirostrum*)	FE	SE	Atlantic seaboard rivers
Gopher Frog (*Rana capito*)		SE	Floodplains; wet meadows; pastures; ponds
Least Tern (*Sterna antillarum*)		ST	Sandy beaches; sandbars
Canby's Dropwort (*Oxypolis canbyii*)	FE		Open cypress ponds
American Chaffseed (*Schwalbea americana*)	FE		Open fire managed xeric pine forest
Pondberry (*Lindera melissifolia*)	FE		Shallow depression ponds of sandhills

Notes:
FE = federally endangered; FT = federally threatened; SE = State endangered; ST = State threatened

Sources: U.S. Fish & Wildlife Service, Threatened Endangered Species Database, available: http://ecos.fws.gov/tess_public/ (accessed March 3, 2011) (federal status); and South Carolina Department of Natural Resources, *Rate, Threatened, and Endangered Species and Communities Known to Occur in Charleston County*, June 3, 2009 (state status).
Prepared by: S&ME, Inc., March 2011.

3.4.3 Water Resources

Water resources include all surface and groundwater features within a defined watershed. Physical components include surface waters, groundwater, aquifers, wetlands, and manmade features that convey, disperse, drain, or distribute water. Within a regulatory context, water resources are specifically controlled to prevent over-utilization, pollution, and degradation of these resources.

The predominant type of water resources within the vicinity of the Study Area are surface waters, specifically wetlands and tributaries, including ditches. The SCDHEC-OCRM manages a permitting program that oversees the design of stormwater treatment and retention facilities. The Storm Water Pollution Prevention Plan (SWPPP) program administered by OCRM is actively used to improve water quality by certifying that all stormwater runoff is controlled or treated and discharged with no adverse effect to the environment in the South Carolina coastal plain. This program includes issuance of permits for site development and construction in accordance with the National Pollutant Discharge Elimination System (NPDES).

The regulatory statutes involved in the issuance of SWPPP construction permits in the South Carolina Coastal Zone (SCCZ) are known commonly as "land disturbance or storm-water discharge

permits". This program requires that applicants demonstrate that a project's temporary and permanent site configuration will maintain flow, water quality, and discharge of run-off without adverse physical or chemical effects to upstream or downstream surface waters. The goal of the program is to ensure that a project will not contribute to degradation of water quality, and that storm flows are mitigated to prevent flooding. Use of open ditches, stormwater retention ponds, swales, and stormwater dissipaters are all common structures civil engineers use to design sites so that construction and SWPPP permits are compliant and meet SCDHEC-OCRM requirements. All approved SWPPPs include an evaluation of direct impacts to surface waters, including wetlands and other waters.

The Wild and Scenic Rivers Act of 1968 established the protection of designated river segments from development and manipulation. Federal actions should be analyzed for their effects on these rivers. There are no wild and scenic rivers located on or in the proximity of the project area. The only designated wild and scenic river in South Carolina is the Chattooga River, which is located in the Blue Ridge Mountains in the Piedmont region of South Carolina along the Georgia border (approximately 200 miles from the project location).

3.4.3.1 Wetlands

The U.S Army Corps of Engineers (USACE) defines wetlands as "those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 CFR Part 328). Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. Wetlands provide for water quality improvement, groundwater recharge and discharge, pollution absorption and attenuation, nutrient cycling, wildlife habitats, and erosion protection. Wetlands are protected as a subset of the "Waters of the United States" under Section 404 of the Clean Water Act.

USACE Charleston District documented the location of jurisdictional wetlands in the vicinity of the APE in two letters dated October 6, 2008 (see **Appendix B**). Wetlands within the vicinity of the proposed projects and APE are shown on **Exhibit III-4**.

3.4.3.2 Floodplains

Floodplains are designated by the Federal Emergency Management Agency (FEMA) and are delineated on Flood Insurance Rate Maps (FIRMs). The program administered by FEMA for the enforcement of floodplain compliance involves the assessment of the risk of flooding over the life of a project or property. Zones are designated based on the risk of flooding over an annualized basis and the chance of flooding during the life of a 30-year mortgage loan on a subject property. Flood zones B, C, and X are outside of the zone where the annual flooding risk is one percent or greater (i.e., the 100-year floodplain). Zones A, AE, and A1-A30 are areas that have a greater than one percent chance of flooding annually, with a 26 percent chance of flooding during the life of a 30-year mortgage. These areas may include a specific base flood elevation, and rules pertaining to the elevations of new construction must be followed for building to be approved within these zones.

Communities that participate in the National Flood Insurance Program (NFIP) require all properties in a flood zone to have supplemental flood insurance. Charleston County is a participant in the NFIP. Development activities in and near flood zones require that project engineers certify that a "no rise" condition will exist post construction with both local and federal agencies reviewing permits to determine that flooding effects are mitigated. The Flood Zone map for the APE depicts the project area as being in flood zone X outside of the 100-year floodplain (see **Exhibit III-5**).

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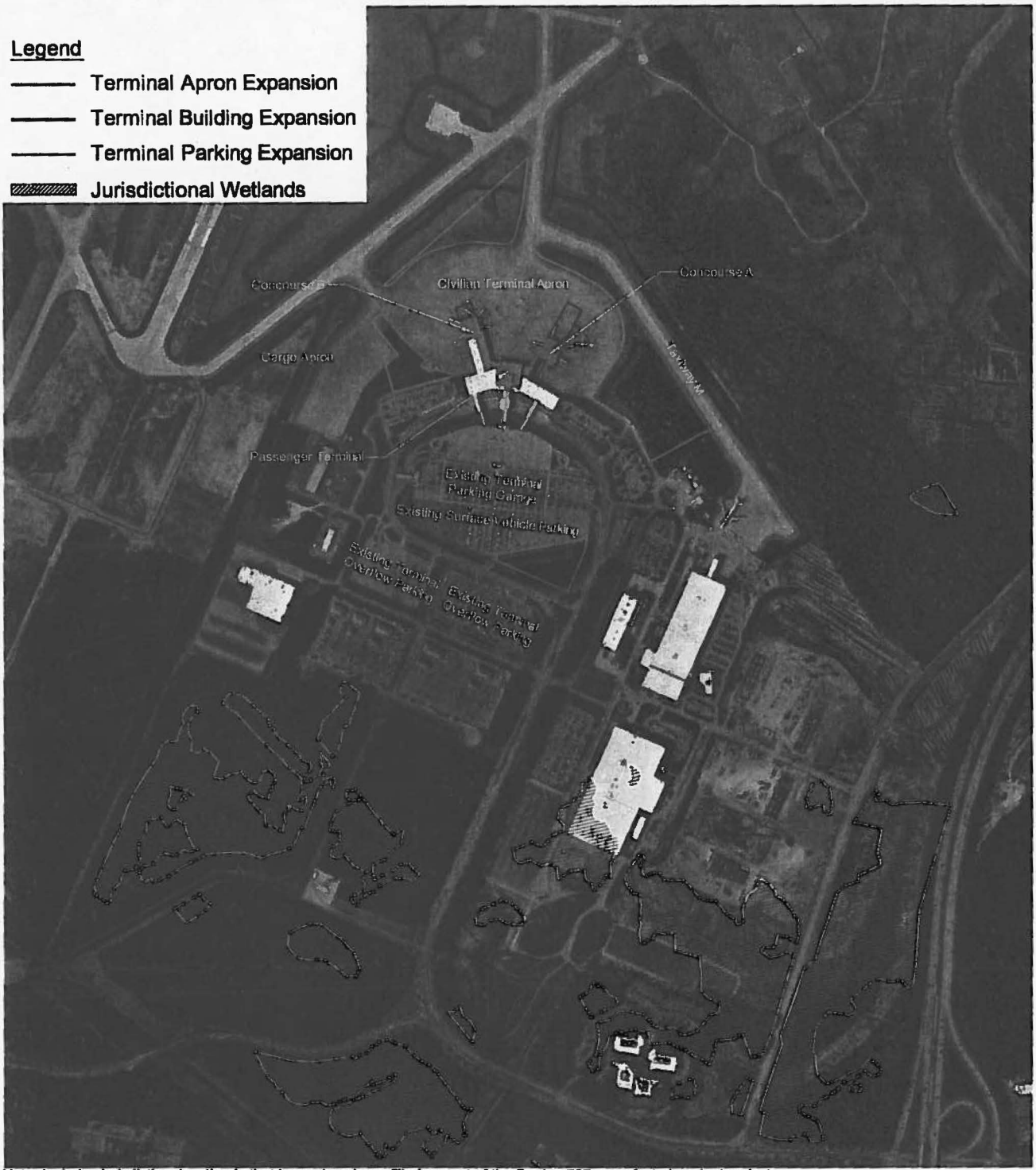

Note: Includes jurisdictional wetlands that have since been filled as part of the Boeing 787 manufacturing plant project.

Source: U.S. Air Force and Charleston International Airport base files received June 2010; Wetlands - Davis & Floyd, Inc., June 24, 2008; Ricondo & Associates, Inc. March 2011.

Prepared by: Ricondo & Associates, Inc.

Exhibit III-4

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Wetlands

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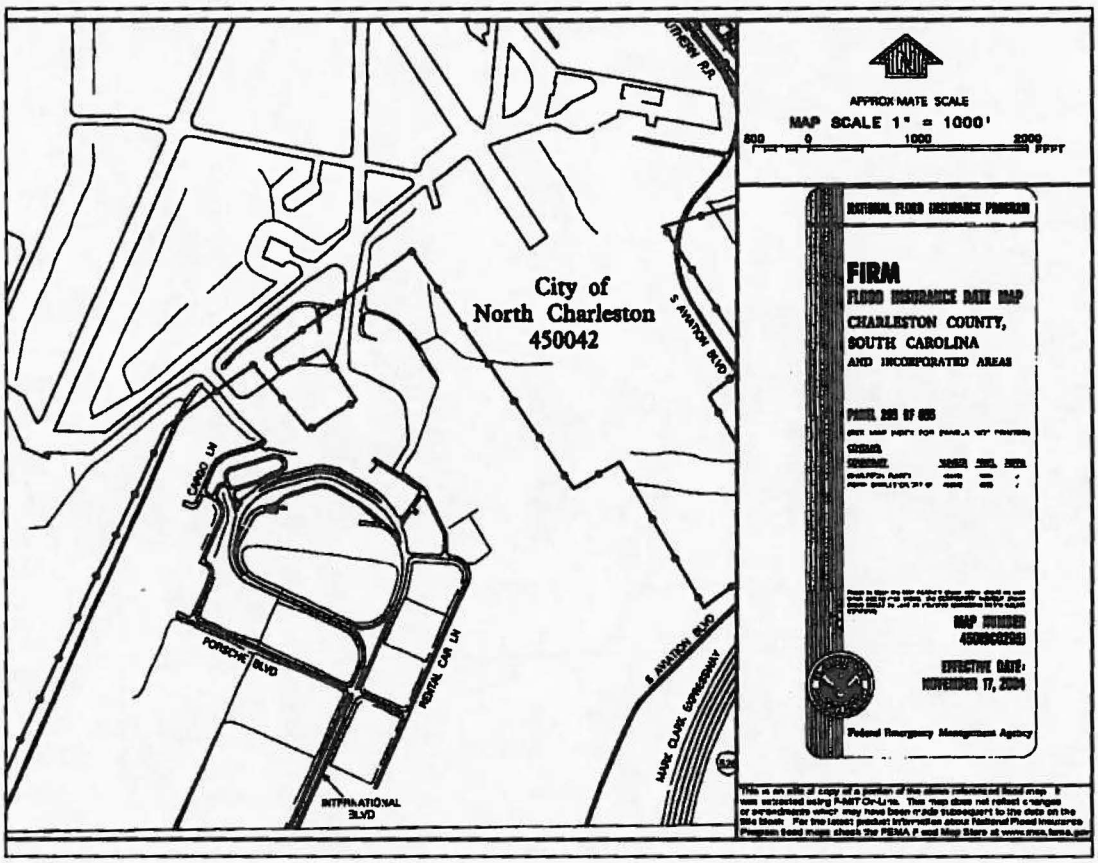
Exhibit III-5

Federal Emergency Management Agency Floodplain Map for Charleston International Airport



Source: Federal Emergency Management Agency, Flood Insurance Rate Map, Charleston County, South Carolina, Panel 295, November 17, 2004.
Prepared by: S&ME, Inc., 2011.

3.5 Public Lands

Section 4(f) of the Department of Transportation (DOT) Act of 1966, which was recodified and renumbered as Section 303(c), dictates that any program or project undertaken or approved by the U.S. Department of Transportation must consider impacts to the use of any publicly owned land of 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. The Act prohibits the use of these properties for transportation purposes unless no prudent and feasible alternative exists and all efforts to minimize impacts have been taken.

There are no parks or public lands protected by Section 4(f) located within the APE. There are no federal or state parks, recreation areas, or wildlife and waterfowl refuges located within the Study Area. Historic sites are discussed in Section 3.6, below.

3.6 Historic, Archaeological, Architectural, and Cultural Resources

Historic and cultural resources are prehistoric and historic sites, districts, structures, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or other reasons. Numerous laws and regulations

require that possible effects on cultural resources be considered during the planning and execution of federal undertakings. These laws and regulations stipulate a process of compliance, define the responsibilities of the federal agency proposing the actions, and prescribe the relationships among involved agencies. In addition to NEPA, the primary laws that pertain to the treatment of cultural resources during environmental analyses are the National Historic Preservation Act (NHPA, especially Sections 106 and 110), the Archaeological Resources Protection Act, the American Indian Religious Freedom Act, and the Native American Graves Protection and Repatriation Act.

Section 106 of the NHPA requires that federal agencies identify and "take into account" the effects of their actions on significant historic properties which are those historic and cultural resources listed on or eligible for the National Register of Historic Places. The implementing regulations (36 CFR 800) describe the process for compliance with Section 106, including defining the APE, steps to identifying resources, evaluate effects, and consult with interested parties including the State Historic Preservation Officer (SHPO). The APE for direct effects is limited to the footprint of the project and any adjoining areas of related ground disturbance, such as parking areas, access roads, equipment lay down areas, etc. The APE for indirect effects extends beyond the archaeological APE to include areas that might be affected by noise, vibration, and visual effects.

Based on the review of existing information indicating that the developed property has been heavily disturbed by past land use, FAA has determined that no historic properties are present within the APE. The SHPO, in a letter dated March 3, 2011 concurred that this project does not require any additional cultural resources studies (see **Appendix C**). SHPO does require that if unanticipated discovery of archeological materials occurs during construction or excavation, their office will require notification in accordance with provisions of 36 CFR 800.13.

3.7 Air Quality

3.7.1 Regulatory Framework

The federal Clean Air Act of 1970, 42 U.S.C. 7401, et seq., as amended, requires that states identify those areas where the National Ambient Air Quality Standards (NAAQS) are not met for specific air pollutants. The U.S. Environmental Protection Agency (EPA) designates such areas as nonattainment areas. A state with one or more nonattainment areas must prepare a State Implementation Plan (SIP) for each nonattainment area, detailing the programs and requirements that the state will implement in order to meet the NAAQS by the deadlines specified in the Clean Air Act Amendments of 1990 (CAAA), Public Law 101-49. SIPs must address each pollutant for which the NAAQS are not met.

The EPA, under mandates of the CAAA, has established primary and secondary NAAQS for seven air contaminants or criteria pollutants. These contaminants are carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead (Pb), sulfur dioxide (SO_2), particulate matter (PM_{10}), and fine particulates ($PM_{2.5}$). The primary standards were established at levels sufficient to protect public health with a satisfactory margin of safety. The secondary standards were established to protect public welfare from other adverse effects of air pollution.

The primary sources of guidance for assessing potential air quality effects are FAA Orders 1050.1E and the *Air Quality Procedures for Civilian Airports and Air Force Bases* (Airport Air Quality Handbook).[4] Typically, an emissions inventory is prepared for each reasonable alternative, including

[4] U.S. Department of Transportation, Federal Aviation Administration, *Air Quality Procedures for Civilian Airports and Air Force Bases*, Report No. FAA-AEE-97-03, Washington, DC, April 1997, including the addendum, Report No. FAA-AEE-04-03, September 2004.

the No Action alternative. Additional analyses, including dispersion modeling or roadway intersection hot spot analyses, are not normally required if the estimated emissions of each criteria pollutant do not exceed thresholds listed in the general conformity regulations. Information presented in the Airport Air Quality Handbook can be used as a guide to determine whether a NAAQS assessment should be performed for a proposed action.

The SCDHEC is responsible for maintaining the requirements of the SIP in South Carolina. The SIP addresses current requirements and ensures enforcement of EPA requirements. The greater Charleston / North Charleston area is designated as an "attainment" area by EPA. The "attainment" status is based on outdoor air monitoring sites in various areas of Charleston County.

3.7.2 Climate Change/Greenhouse Gases

The impact of proposed projects on climate change is of growing concern. Greenhouse gases are those that trap heat in the earth's atmosphere. Both naturally occurring and anthropogenic (man-made) greenhouse gases include water vapor (H_2O), carbon dioxide (CO_2),[5] methane (CH_4), nitrous oxide (N_2O), and ozone (O_3).[6]

Research has shown that there is a direct link between fuel combustion and greenhouse gas emissions. Therefore, sources that require fuel or power at an airport are the primary sources that would generate greenhouse gases. Aircraft are probably the most often cited air pollutant source, but they produce the same types of emissions as automobiles. Aircraft jet engines, like many other vehicle engines, produce carbon dioxide (CO_2), water vapor (H_2O), nitrogen oxides (NOx), carbon monoxide (CO), oxides of sulfur (SOx), unburned or partially combusted hydrocarbons (also known as volatile organic compounds (VOCs)), particulates, and other trace compounds.

According to most international reviews, aviation emissions comprise a small but potentially important percentage of anthropogenic (human-made) greenhouse gases and other emissions that contribute to global warming. The Intergovernmental Panel on Climate Change (IPCC) estimates that global aircraft emissions account for about 3.5 percent of the total quantity of greenhouse gas from human activities.[7] In terms of U.S. contribution, the U.S. General Accounting Office (GAO) reports that aviation accounts "for about 3 percent of total U.S. greenhouse gas emissions from human sources" compared with other industrial sources, including the remainder of the transportation sector (23 percent) and industry (41 percent).[8]

The scientific community is developing areas of further study to enable them to more precisely estimate aviation's effects on the global atmosphere. The FAA is currently leading or participating in several efforts intended to clarify the role that commercial aviation plays in greenhouse gases and climate change. The most comprehensive and multi-year program geared towards quantifying climate change effects of aviation is the Aviation Climate Change Research Initiative (ACCRI) funded by FAA and NASA. ACCRI will reduce key scientific uncertainties in quantifying aviation-related climate impacts and provide timely scientific input to inform policy-making decisions. FAA

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5 All greenhouse gas inventories measure carbon dioxide emissions, but different inventories may include different greenhouse gases (GHGs).

6 Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. For example, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons) or sulfur (sulfur hexafluoride: SF_6).

7 IPCC Report as referenced in U.S. General Accounting Office (GAO) *Environment: Aviation's Effects on the Global Atmosphere Are Potentially Significant and Expected to Grow*; GAO/RCED-00-57, February 2000, p. 4.

8 *Ibid*, p. 14; GAO cites available EPA data from 1997.

also funds Project 12 of the Partnership for AiR Transportation Noise & Emissions Reduction (PARTNER) Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Finally, the Transportation Research Board's (TRB) Airport Cooperative Research Program (ACRP) project 02-06 published a guidebook on preparing airport greenhouse gas emission inventories in 2009.

3.8 Past, Present, and Reasonably Foreseeable Future Actions

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or planned for implementation in the near future, is required. For purposes of this analysis, projects implemented within the last 5 years or proposed to be implemented within the next 5 years, and located within 1-mile of the Project site, were identified.

Commercial development along Montague Avenue, Aviation Avenue, and International Boulevard in North Charleston represent the most significant changes to the areas surrounding CHS in the last 5 years. This area has recently experienced the addition of many new shopping outlets, office complexes, and large hotels.

As part of the Boeing 787 Dreamliner assembly plant, a 584,000 square foot facility is being constructed between International Boulevard and South Aviation Avenue. This private project is projected to employ at least 3,800 jobs making it the fifth largest employer in the Charleston area. Additional projects are identified below.

Projects in the past five years (including those currently under construction)

- Boeing 787 Dreamliner final assembly plant (by others)
- Addition of elevators on Concourses A and B
- Fuel farm expansion (third tank)
- Remote parking lots
- Terminal curbfront canopies
- Runway 3/21 reconstruction (by others)

Projects anticipated in the next five years

- Terminal Annex rehabilitation
- Apron C expansion
- Taxiway F shoulder reconstruction
- Rental car ready/return expansion
- Runway 15/33 reconstruction (by others)

IV. Environmental Consequences

The potential environmental consequences associated with the No Action and the Proposed Action alternatives are discussed in this chapter. The environmental categories evaluated, as specified in FAA Order 1050.1E,[1] are as follows:

- Noise
- Compatible Land Use
- Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks
- Secondary (Induced) Impacts
- Air Quality
- Water Quality and Wetlands
- Coastal Resources
- Fish, Wildlife, and Plants
- Historical, Archaeological, Architectural, and Cultural Resources
- Light Emissions and Visual Impacts
- Natural Resources and Energy Supply
- Hazardous Materials, Pollution Prevention, and Solid Waste
- Construction Impacts
- Cumulative Impacts

The following environmental resources are not present within the Study Area and, therefore, would not be affected by the No Action or Proposed Action alternatives: Department of Transportation Act Section 4(f) lands; farmlands; floodplains; and wild and scenic rivers.

4.1 Noise

A determination of the potential noise effects of a project is based on evaluating the noise exposure expected to result from aviation activities related to the project on individuals and noise sensitive land uses. Typically, noise exposure expected to result from both the No Action and Proposed Action alternatives are compared during the same timeframes. The methodology to be used in conducting aircraft noise analyses is established in FAA Order 1050.1E. The FAA has determined that the cumulative noise exposure of individuals resulting from aircraft noise must be established in terms of the yearly day-night average sound level (DNL) metric.[2]

The civilian air fleet at CHS consists of a variety of private small propeller driven aircraft, small to medium corporate jets, commercial airliners ranging from small commuter jets, larger regional jets, to narrowbody jets, and the new 787 "Dreamliner" manufactured at the adjacent Boeing manufacturing facility. Noise studies previously conducted by the Charleston Air Force Base are documented in the Air Installation Compatible Use Zone (AICUZ) study dated 2004. The AICUZ study identifies the predicted noise contours for 2004 that result from military and civilian aircraft operations at the Airport and recommends compatible land use guidelines for land uses surrounding the Airport. Local communities and governments are encouraged to incorporate the recommended land uses in developing their planning and zoning policies. The 2004 noise contours for the Airport and Charleston Air Force Base are shown on **Exhibit IV-1**.

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1 U.S. Department of Transportation, Federal Aviation Administration, Order 1050.1E, *Environmental Impacts: Policies and Procedures,* Change 1, effective March 20, 2006.

2 The FAA definition of "significance" is specified using the day-night average sound level (DNL) metric.

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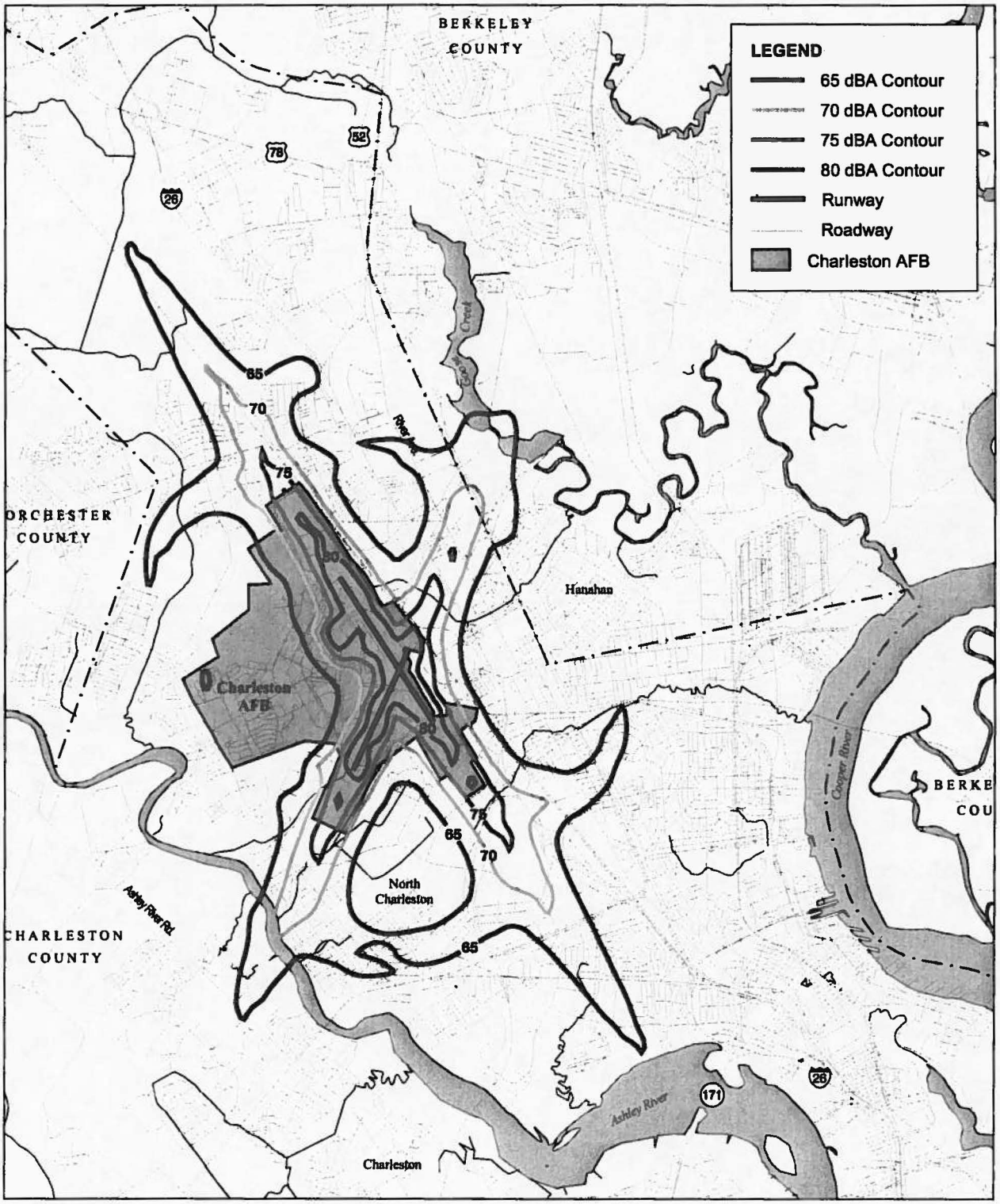

Source: U.S. Air Force, Air Installation Compatible Use Zone Study, Charleston Air Force Base, South Carolina, 2004.
Prepared by: U.S. Air Force, 2004; Ricondo & Associates, Inc. March 2011.

Exhibit IV-1

0 8,000 ft.

north

Average Busy Day Noise Contours for 2004

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The 2004 noise contours prepared for the AICUZ study assumed approximately 121,000 annual operations and 31,800 annual air carrier operations[3], a level of activity that is now anticipated to occur between 2016 and 2021 at CHS (see Table I-5). No changes to existing air traffic patterns or aircraft movement areas would occur under the Proposed Action compared with the No Action alternative. Additionally, the Proposed Action would not result in a change in the number or type of aircraft operations at the Airport compared with the No Action alternative. Thus, the 2004 AICUZ noise contours for CHS are considered representative of future conditions at the Airport, and no change to areas exposed to significant levels of aircraft noise in the Airport environs would occur under the Proposed Action compared with the No Action alternative.

4.2 Compatible Land Use

According to Appendix A of 14 CFR Part 150, *Airport Noise Compatibility Planning,*[4] and FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports,*[5] a proposed action is considered to have a significant impact on land use compatibility if it causes significant increases in noise exposure over residential or other noise-sensitive land uses, such as schools, parks, and historic buildings, within areas exposed to aircraft noise of DNL 65 or higher. The Proposed Action would not result in any change in areas exposed to significant levels of aircraft noise in the Airport environs when compared to the No Action alternative (see Section 4.1).

FAA Order 1050.1E also requires that documentation must be included to support the required airport sponsor's assurance under 49 U.S.C. 47107(a)(10) that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to promote airport/community land use compatibility (see **Appendix D**). The proposed improvements would occur on Airport property within the City of North Charleston. The Airport property is an area zoned as "Light Industrial District" (see Exhibit III-3). The existing and proposed uses of the site for the terminal area improvements are consistent with this zoning designation.

The environmental consequences for this undertaking would have no effect on land use or zoning (beyond those directly associated with implementation of the Proposed Action). Implementation of either the Proposed Action or the No Action Alternative will remain in compliance with the City of North Charleston's Zoning Ordinances.

4.3 Socioeconomic Impacts, Environmental Justice, and Children's Health and Safety Risks

4.3.1 Socioeconomic Impacts

In accordance with FAA Order 1050.1E, socioeconomic impacts were evaluated for each alternative to determine whether they would cause residential or business relocations, division or disruption of established communities, alteration of surface transportation patterns, disruption of orderly planned development, or appreciable change in employment.

The No Action alternative would not result in any residential or business relocations, division or disruption of established communities, alteration of surface transportation patterns, disruption of orderly planned development, or appreciable change in employment.

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[3] U.S. Air Force, *Air Installation Compatible Use Zone Study, Charleston Air Force Base, South Carolina,* 2004.

[4] 14 Code of Federal Regulations Part 150, *Airport Noise Compatibility Planning*, January 18, 1985, as amended.

[5] U.S. Department of Transportation, Federal Aviation Administration, Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports*, August 5, 1983.

The proposed terminal area improvements would be located on Airport property in an area where no existing housing has been developed or residential population is located. The Proposed Action would not result in any residential relocations, division or disruption of established communities, disruption of orderly planned development, or appreciable change in employment. The Proposed Action would have a beneficial socioeconomic impact, which would contribute to the cumulative economic growth for the North Charleston area. Construction jobs would be created in addition to the potential influx of workers that may enhance existing local businesses during implementation of the Proposed Action. The long term impacts on the local economy would be positive.

4.3.2 Environmental Justice

On February 11, 1994, Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, was signed requiring

> "to the greatest extent practicable and permitted by law...each federal agency shall make achieving environmental justice a part of its mission by identifying and addressing, as appropriate, disproportionately high adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States."

The Presidential Memorandum accompanying the Executive Order directed federal agencies to:

- Analyze the environmental effects (health, economic, and social) of proposed actions, including such effects on minority and low-income communities, when such analysis is required by NEPA;
- Address the significant adverse effects of any mitigation measures outlined or analyzed in an EA, environmental impact statement (EIS), or Record of Decision (ROD) on minority and low-income communities; and
- Provide opportunities for community input in the NEPA process, including identifying potential effects and mitigation measures in consultation with affected communities, improving the accessibility of meetings, and providing access to crucial documents and notices.

Neither the No Action nor the Proposed Action Alternative would disproportionately affect minority or low-income populations. The City of North Charleston has enacted multiple programs to assist the local community and recruit industry to the area, support new business, protect environmental justice issues, revitalize the area through tax incentive financing programs, and supplement the local school and technical college educational programs.

4.3.3 Children's Health and Safety Risks

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks,* stipulates that each federal agency "(a) shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and (b) shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." The proposed terminal area improvements would occur on Airport property in an area where no existing housing has been developed or residential population is located. Thus, neither the No Action nor the Proposed Action alternative would have an adverse effect on the health or safety of children.

4.4 Secondary (Induced) Impacts

Airport actions can involve the potential for secondary (or induced) impacts on surrounding communities. Examples of these impacts include shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by airport development.

There would be no effect on population or public service demand associated with implementation of the No Action or Proposed Action alternative. The Proposed Action would have no impact on performance objectives of police protection, fire protection, schools, parks, or other public service facilities. The Proposed Action would not generate any increase in the number of students or number of park users. The Proposed Action would not result in additional police or fire protection services compared to existing conditions. Therefore, no impact to these public services would be anticipated.

4.5 Air Quality

As stated in Section 3.7, the Airport is in an area designated as an "attainment" area by U.S. EPA. Thus, the General Conformity Rule does not apply to this project. Also, because the Proposed Action would not result in any change to aircraft operations when compared to the No Action alternative, an emissions inventory was not conducted. Emissions related to construction would occur under the Proposed Action, but these would be temporary and are not anticipated to significantly affect air quality in the area.

If deemed necessary to achieve construction goals, a temporary concrete batch plant may be located on the site to produce concrete. An air permit issued by the SCDHEC, Bureau of Air Quality would be required if a batch plant is planned to be used during construction. Specifically, a Minor Source permit per Standard No. 2 of South Carolina Regulation 61-62.5 would be required. Minor Source permits apply to sources emitting less than 100 tons of a single pollutant annually. If a concrete batch plant is temporarily located on the project site during construction, the required SCDHEC Minor Source permit would also require demonstration that no incremental increase would occur in support of compliance with Prevention of Signification Deterioration (PSD) standards. See Section 4.13 for additional discussion on potential construction impacts.

Based on 2010 FAA data,[6] operations activity at CHS represented less than 0.1 percent of total U.S. aviation activity. Therefore, assuming that greenhouse gases occur in proportion to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at CHS would be expected to represent less than 0.1 percent of U.S.-based greenhouse gases. Therefore, we would not expect the emissions of greenhouse gases from this project to be significant.

4.6 Water Quality and Wetlands

In accordance with FAA Order 1050.1E, the sponsor must follow local, state, tribal, or federal ordinances and regulations to address impacts to the quality of water resources. The Clean Water Act provides the authority for the U.S. EPA to establish water quality standards, control discharges, develop waste treatment management plans and practices, prevent or minimize the loss of wetlands, protect aquifers and sensitive ecological areas such as a wetlands area, and regulate other issues concerning water quality.

FAA Order 1050.1E indicates that significant effects on water quality include the following:

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[6] Federal Aviation Administration, *APO Terminal Area Forecast*, December 2010.

- Section 1424(e) of the Safe Drinking Water Act requires consultation with the U.S. EPA if the Proposed Action has the potential to contaminate an aquifer designated by the U.S. EPA as a sole or principal source of drinking water for the area.
- If the Proposed Action would impound, divert, drain, control, or otherwise modify the waters of any stream or other body of water, the Fish and Wildlife Coordination Act applies.
- Exceedances of water quality standards and water quality problems that cannot be avoided or satisfactorily mitigated would be identified as significant impacts.

The No Action alternative would have minimal effect on water quality or water resources. The Proposed Action would not affect any known aquifers, surface water, wetlands, tributaries, or ditches. The CCAA would be required to obtain a land disturbance or stormwater discharge permit from the SCDHEC-OCRM and to modify their existing SWPPP to reflect post-construction conditions.

4.7 Coastal Resources

The Coastal Zone Management Act of 1972 protects coastal resources including tidal waters and creeks, marshes, dune and beach systems as well as some non-tidal freshwater wetlands. CHS lies within the coastal zone of South Carolina between the Ashley and Cooper Rivers.[7] The SCDHEC-OCRM is the designated State coastal zone management agency responsible for the implementation of the South Carolina Coastal Zone Management Program. While Charleston County is a coastal county included in the South Carolina Coastal Zone Management Program, the Airport is not located in a coastal water, tideland, beach, or beach dune system. However, the Airport must comply with the SCDHEC-OCRM stormwater and land disturbance permit requirements, as discussed in Section 4.6 above.

Under the No Action alternative no affect to coastal resources protected under the South Carolina Coastal Zone Management Program would occur. Compliance with the SDDHEC-OCRM stormwater and land disturbance permit requirements would minimize effects of the Proposed Action on coastal resources and make the proposed project consistent with the South Carolina Coastal Zone Management Program.

4.8 Fish, Wildlife, and Plants

In accordance with FAA Order 1050.1E, potential effects to biological resources including fish, wildlife, and plants, and to species protected under the Endangered Species Act were evaluated. The Endangered Species Act of 1973, as amended (50 CFR Part 402), requires each federal agency to confer with the USFWS, "on any action which is likely to jeopardize the continued existence of any proposed species or result in the destruction or adverse modification of proposed critical habitat." No SDHEC-OCRM identified estuary (critical areas) or other ecologically sensitive areas are located within or adjacent to the proposed APE.

Under the No Action alternative, no effect to fish, wildlife, and plants would occur. The Proposed Action would occur on existing Airport property in close proximity to the existing Airport passenger terminal. Most areas that would be affected consist of paved or grassed areas. One small wooded area approximately 3.8 acres in size, located southeast of the existing surface parking lot would be converted to a parking lot (see Exhibit III-2). Another small wooded area, approximately 5.6 acres in size and located east of the employee parking lots, would be converted to aircraft apron (see Exhibit

[7] S&ME, Inc. *Environmental Assessment for Extension of Runways at the Charleston Air Force Base and Charleston International Airport*, prepared for the Charleston County Aviation Authority, April 8, 2008.

III-2). Both of these areas consist of secondary growth with no standing water; thus, these areas are not known to be attractive to migratory birds. There are no known invasive species issues associated with this area and the Proposed Action is not anticipated to introduce invasive species to the affected areas.

The USFWS was notified of the proposed undertaking in February 2011 (see Appendix A). No information or feedback relating to T&E species was received in response from the USFWS. As stated in Section 3.4.2, the U.S. Air Force owned airfield property has been included in three wildlife and T&E studies since 1993. In February 2004, USFWS issued a concurrence letter indicating no T&E species were identified on the airfield or adjacent property. Based on this information, no effect on T&E species is anticipated from implementation of the Proposed Action alternative.

4.9 Historical, Archaeological, Architectural, and Cultural Resources

Section 106 of the National Historic Preservation Act requires federal agencies to consider the effects of their actions on properties included, or eligible for inclusion, in the National Register of Historic Places. Compliance requires consultation with the Advisory Council on Historic Preservation, the State Historic Preservation Officer, and/or the Tribal Historic Preservation Officer.

FAA has determined that no historic properties are present within the APE. The Catawba Indian Nation, the only federally recognized Indian Tribe in South Carolina, stated in a letter dated March 2, 2011 that the Catawba have no immediate concerns with traditional cultural properties, sacred sites, or Native American archaeological sites within the APE (see Appendix C). The SHPO, in a letter dated March 3, 2011 concurred that this project does not require any additional cultural resources studies (see Appendix C), which they reiterated in a comment submitted on the Draft EA (see **Appendix E**). Thus, neither the No Action nor the Proposed Action alternative would affect historical, archaeological, architectural, or cultural resources. Both the Catawba Indian Nation and SHPO require that if unanticipated discovery of archaeological materials occurs during construction or excavation, construction activities are to be halted and their offices be notified in accordance with provisions of 36 CFR 800.13.

4.10 Light Emissions and Visual Impacts

Light emissions and visual impacts are considered to determine whether any lighting associated with an alternative would create an annoyance among residents in the vicinity or interfere with their typical activities, or whether an alternative would visually contrast with the existing environment significantly enough to be objectionable.

No change to existing light emissions or the visual environment would occur under the No Action alternative. Under the Proposed Action alternative, the expanded passenger terminal concourses, aircraft aprons, and parking areas would have illumination appropriate to these types of facilities. Thus, a slight increase in light emissions would occur, but would be similar to light emissions that exist at the Airport today. The proposed terminal area improvements would be most noticeable during construction. However, after construction is completed and landscaping elements provided, the improvements will be less noticeable and should blend in with the existing airport facilities. Because no residences are located within the designated APEs for the project (see Exhibit III-1), no adverse visual impacts from the Proposed Action alternative are anticipated.

4.11 Natural Resources and Energy Supply

FAA Order 1050.1E states that a significant environmental impact to energy and natural resource consumption occurs when airport actions result in a demand that exceeds supply in relation to the use of energy by new stationary facilities and changes in ground vehicles and/or aircraft.

Under the No Action alternative, no effect to natural resources and energy supply would occur. The Proposed Action would occur on existing Airport property. The CCAA property and surrounding lands were historically used for phosphate fertilizer mining. Prior to the development of this property as an airport, the phosphate lodes were becoming less economically viable. There are no other known natural or mineral resources present on the property. Therefore, no impact to these resources resulting from the Proposed Action would be anticipated.

The Proposed Action would not affect energy or other natural resource consumption where demand exceeds the capacity of the supplier. Energy use would increase during construction activities at the Airport and, once the terminal area improvements are operational, energy use would be higher than levels experienced at the Airport today (due to the larger facility sizes), but they should not substantially affect area energy supplies. Thus, minimal effect to natural resources and energy supply is anticipated under the Proposed Action alternative.

4.12 Hazardous Materials, Pollution Prevention, and Solid Waste

4.12.1 Hazardous Materials and Pollution Prevention

Several federal acts regulate the handling of hazardous wastes, substances, and materials. The Resource Conservation and Recovery Act of 1976 (RCRA) is intended to provide "cradle to grave" management of hazardous and solid wastes, and regulation of underground storage tanks (USTs) containing chemical and petroleum products. The RCRA allows the U.S. EPA to set standards for entities producing, storing, handling, transporting, and disposing of hazardous waste. The RCRA was amended by the Hazardous and Solid Waste Amendments of 1984, which addressed corrective actions and permitting of hazardous waste. Under the RCRA, wastes are considered hazardous if they exhibit hazardous characteristics, such as corrosivity, reactivity, or ignitibility or are specifically listed as such by the U.S. EPA. Wastes excluded from regulation as hazardous include household wastes, animal wastes, fly ash, slag, and wastes from ore processing.

The Toxic Substances Control Act of 1976 (TSCA) was enacted by the U.S. Congress to give the U.S. EPA the ability to track the 75,000 industrial chemicals currently produced or imported into the United States. Specifically, the TSCA includes regulations for polychlorinated biphenyls (PCBs) and defines the use and disposal of products and items containing them.

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) provides the authority with which the federal government can compel people or companies responsible for creating hazardous waste sites to clean them up. Referred to as "Superfund", CERCLA created a public trust fund to assist with the cleanup of inactive and abandoned hazardous waste sites and accidentally spilled or illegally dumped hazardous materials. Only sites listed on the National Priorities List (NPL) are eligible for funding through CERCLA. Hazardous substances under CERCLA include those pursuant to the Clean Water Act, Solid Waste Disposal Act, or TSCA and substances that present a danger to public health or welfare or to the environment, hazardous wastes, toxic pollutants, and hazardous air pollutants. Hazardous substances under CERCLA do not include petroleum products or natural gas substances or materials.

Hazardous materials are defined under 49 CFR Part 172 as substances or materials determined to be capable of posing an unreasonable risk to health, safety, and property when transported. Hazardous materials under 49 CFR Part 172 include hazardous substances, hazardous wastes, marine pollutants, and elevated temperature materials. Management of hazardous materials during transportation is regulated under 49 CFR Parts 171-199.

The Oil Pollution Control Act was enacted in August 1990 and provides regulations for the prevention of and response to oil spills. The Oil Spill Liability Trust Fund was created to provide assistance with removal costs and damages for discharges of oil and petroleum products.

The U.S. EPA has delegated much of its regulatory authority to individual states whenever adequate state regulatory programs exist. The SCDHEC Bureau of Land & Waste Management develops and oversees South Carolina's hazardous waste management regulations and enforces federal hazardous materials and waste regulations in South Carolina. No hazardous waste sites exist within the APE, according to the SCDHEC Bureau of Land & Waste Management Public Record database.[8] No sites listed on the NPL or Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) database are located within or adjacent to the APE.[9,10]

Several underground storage tanks are located in the vicinity of the Proposed Action, as indicated by the SCDHEC Bureau of Land & Waste Management (see Appendix A). The tanks identified in the vicinity of the Proposed Action include those associated with the Airport's fuel farm and with the Porsche Cars facility, which is now the Terminal Annex. The SCDHEC Bureau of Land & Waste Management database also indicates underground storage tanks associated with the rental car companies; however, these tanks were relocated when the rental car companies relocated their facilities south of Porsche Drive. None of the underground storage tanks contained in the SCDHEC Bureau of Land & Waste Management database would be impacted by the Proposed Action.

No hazardous materials or wastes are expected to be generated by the proposed terminal area improvements. Thus, neither the No Action nor the Proposed Action would have an effect on hazardous materials or wastes.

4.12.2 Solid Waste

FAA Order 150/5200.34A, *Construction or Establishment of Landfills near Public Airports*, provides guidelines concerning the establishment, elimination, or monitoring of landfills, open dumps, waste disposal sites, or similar titled facilities on or in the vicinity of airports. These types of facilities, used to process, bury, store, or otherwise dispose of waste, trash, and refuse, can attract rodents and birds. As the potential for bird strikes affects the safety of an airport environment, waste storage facilities are undesirable and potentially hazardous to aviation.

While random bird strikes in flight are always possible, it is also possible to define conditions within fairly narrow limits where the risk increases. Those high-risk conditions exist in the approach and departure patterns and landing areas on and in the vicinity of airports. FAA Order 150/5200-33B, *Hazardous Wildlife Attractants on or Near Airports* recommends that landfills should be located a minimum of 10,000 feet from an airport that serves turbine powered aircraft. Ideally, however, it is recommended that a landfill be located at least five miles from an active airport.

The 437th Environmental Flight Squadron identified five Solid Waste Management Units (SWMUs) located within the vicinity of the airfield during the EA completed for the extension of Runway 03-

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8 South Carolina Department of Health and Environmental Control, Bureau of Land & Waste Management, Public Record database. Available: http://www.scdhec.gov/environment/lwm/Databases/Public%20Record/public_record.htm (accessed March 31, 2011).

9 U.S. Environmental Protection Agency, NPL and Superfund Alternative Sites. Available: http://www.epa.gov/region4/waste/npl/index.htm#SC (accessed March 31, 2011).

10 U.S. Environmental Protection Agency, Superfund. Available: http://cumulis.epa.gov/supercpad/cursites/srchsites.cfm (accessed March 25, 2011).

21 in April 2008.[11] One active SWMU is located at the 03 end of Runway 03-21, another active SWMU is located at the 33 end of Runway 15-33, and the other three SWMUs are inactive and received "No Further Action" (NFA) letters from SCDHEC.[12]

The Charleston County Environmental Management Department manages the disposal of solid waste for the County. The solid waste generated in Charleston County is collected by municipal and private haulers and then taken to the Bees Ferry Landfill, which is located approximately 3 miles southwest of CHS. In 2010, the Bees Ferry Landfill had an estimated remaining life of 31 years based on its remaining capacity and permitted disposal rate.[13] While the Proposed Action would result in an increase in solid waste generation due to larger building sizes, the amount would not be significant and would not significantly affect existing landfill capacity.

4.13 Construction Impacts

Construction impacts result directly and solely from construction activities and are, therefore, limited to the construction period. Additionally, the construction period is of relatively short duration in comparison to the design life of a facility, and the impacts from such operations can be mitigated using appropriately designed and phased construction techniques. Specific effects of construction activities have the potential to cause air and noise impacts, as well as soil and water quality impacts, resulting from onsite construction equipment operations and material deliveries.

In accordance with FAA Order 1050.1E, the sponsor must follow local, state, tribal, or federal ordinances and regulations to address the impacts of construction activities, including construction noise, dust and noise from heavy equipment traffic, disposal of construction debris, and air and water pollution. Although construction activities have the potential to create impacts that are temporary in nature, the severity of potential impacts diminish as work progresses and generally disappear after the construction phase. Also, construction impacts alone are rarely significant pursuant to NEPA. Under the No Action alternative, no construction activities would occur, and there would be no construction-related impacts.

4.13.1 Construction Noise

Construction of the proposed terminal area improvements may result in the temporary exposure of Airport employees and patrons to the generation of excessive groundborne vibration and noise levels. Construction of the proposed improvements would require some minor excavation and potentially the use of pile driving equipment to set the foundations for the terminal, concourse, and parking garage expansions. As the land uses surrounding the APE are generally airport-related or industrial in nature, there are no noise sensitive land uses in the areas adjacent to the proposed terminal area improvements. Therefore, any groundborne vibration or noise impacts resulting from construction activities would be temporary and have no significant effect.

4.13.2 Air Quality

If deemed necessary to achieve construction goals, a temporary concrete batch plant may be located onsite to produce concrete. An air permit issued by the SCDHEC, Bureau of Air Quality would be required if a batch plant is planned to be used during construction. Specifically, a Minor Source

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[11] S&ME, Inc. *Environmental Assessment for Extension of Runways at the Charleston Air Force Base and Charleston International Airport*, prepared for the Charleston County Aviation Authority, April 8, 2008.

[12] S&ME, Inc. *Environmental Assessment for Extension of Runways at the Charleston Air Force Base and Charleston International Airport*, prepared for the Charleston County Aviation Authority, April 8, 2008.

[13] South Carolina Department of Health and Environmental Control, Division of Mining and Solid Waste Management, *South Carolina Solid Waste Management Annual Report, Fiscal Year 2010*, March 15, 2011.

permit per Standard No. 2 of South Carolina Regulation 61-62.5 would be required. Minor Source permits apply to sources emitting less than 100 tons of a single pollutant annually. If a concrete batch plant is temporarily located on the project site during construction, the required SCDHEC Minor Source permit would also require demonstration that no incremental increase would occur in support of compliance with Prevention of Signification Deterioration (PSD) standards.

Other Best Management Practices (BMPs) used during construction would include the use of water truck sprayers to reduce dust, and proper equipment maintenance and operation would minimize potential effects to air quality.

4.13.3 Water Quality

The water quality effects caused by the Proposed Action are discussed in Section 4.6. The construction activities associated with the Proposed Action could temporarily expose soil surfaces and/or stockpiled soil to wind and water erosion, causing sedimentation that would adversely affect water quality.

Pollutants with the greatest potential to be present in stormwater runoff and groundwater as a result of the Proposed Action are oil and grease, as well as petroleum hydrocarbons. The most likely transport mechanisms for these substances into stormwater or groundwater systems is through spills or leaks, flow of rainwater, and outdoor area washdowns.

With implementation of SWPPP BMPs, and adherence to the NPDES permit requirements, projected increases in stormwater runoff, transportation, and construction activities under the Proposed Action would not significantly affect surface water or groundwater quality or discharge at CHS. The Proposed Action is not expected to significantly increase the quantity or quality of surface water runoff and would not require modifications to existing BMPs or water management programs.

4.13.4 Solid and Hazardous Waste

The effects of the Proposed Action on solid and hazardous waste, including the effects of construction and demolition activities, were discussed in Section 4.12. Construction waste generated by the Proposed Action alternative would most likely be accommodated at Bees Ferry Landfill, which has the capacity to receive waste until 2041. Therefore, solid waste impacts of the Proposed Action, as they relate to increases in construction and demolition wastes, would not be significant.

4.13.5 Construction Traffic

Construction staging and automobile parking related to the Proposed Action would occur on Airport property either east of the existing passenger terminal north of the fuel farm, or west of the passenger terminal adjacent to the air cargo building. Construction of the terminal area improvements would nominally increase the amount of construction traffic and is not expected to significantly affect existing or future traffic levels at the Airport.

4.14 Cumulative Impacts

Cumulative impacts to environmental resources result from incremental effects of proposed actions when combined with other past, present, and reasonably foreseeable future projects in the area. Cumulative impacts can result from individually minor, but collectively substantial, actions undertaken over a period of time by various agencies (federal, state, and local) or individuals. In accordance with NEPA, a discussion of cumulative impacts resulting from projects that are proposed, under construction, recently completed, or planned for implementation in the near future is required.

Projects implemented within the last five years or proposed to be implemented within the next five years, and located within 1-mile of the project area were identified in Section 3.8. Many of the past,

present, and reasonably foreseeable future actions are associated, like the current undertaking, with improvements to the Airport. Projects in the past five years (including those currently under construction) include:

- Boeing 787 Dreamliner final assembly plant (by others)
- Addition of elevators on Concourses A and B
- Fuel farm expansion (third tank)
- Remote parking lots
- Terminal curbfront canopies
- Runway 3/21 reconstruction (by others)

Projects anticipated in the next five years

- Terminal Annex rehabilitation
- Apron C expansion
- Taxiway F shoulder reconstruction
- Rental car ready/return expansion
- Runway 15/33 reconstruction (by others)

Anticipated impacts from the construction of these projects include:

- Temporary increases in emissions;
- Temporary increases in noise from construction equipment activity;
- Temporary increases in construction and demolition debris; and
- Potential impacts to local surface transportation patterns resulting from an increase in traffic on local roadways during construction and operation of the projects listed above.

Temporary increases in emissions at the Airport would be controlled through implementation of BMPs, including watering of disturbed areas, and implementing maintenance programs for construction vehicles aimed at minimizing emissions (see Section 4.13.2). Because aviation activity at CHS represents such a small amount of U.S. emissions, and given the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of this Proposed Action cannot be adequately assessed given the current state of the science and assessment methodology.[14]

The majority of construction activity associated with these projects would occur during normal business hours, when noise from these activities would be less noticeable because of other noise sources in the area. Because most of the activity would occur on the Airport and away from sensitive noise receptors, construction noise impacts are not anticipated to be significant.

Neither the Proposed Action nor any of the other planned activities at CHS are expected to cause any significant increase in the numbers of passengers, flights, or services. Therefore, solid waste impacts, as they relate to increases in waste generation by human activities, would be less than significant. Although the Proposed Action and other planned construction at CHS would increase the generation of construction waste and debris, waste quantities are not anticipated to be significant and there is adequate capacity for this waste at Bees Ferry Landfill. Therefore, cumulative solid waste impacts, as they relate to increases in solid waste, would be less than significant.

Construction activities at the Airport, in addition to the Proposed Action, will likely result in more petroleum products and hazardous materials handled and more potential for releases of these materials. However, adherence to federal and State waste regulations and stormwater pollution

[14] NEPA Regulations, Council on Environmental Quality, 40 CFR 1502.22, *Incomplete or unavailable information.*

prevention practices, coupled with best management practices, would be in place to prevent any significant impacts from these projects. Therefore, no significant cumulative impacts to water quality are expected.

Impacts associated with the Proposed Action would be related to construction activities compared to the No Action alternative. The Proposed Action is not anticipated to increase the type or amount of activity at the Airport, except for temporary increases in construction traffic. Thus, the Proposed Action, when considered with the projects identified above as being within the general vicinity of the Airport, would not create significant cumulative impacts with respect to air quality, noise, or surface traffic patterns.

4.15 Other Considerations

The Proposed Action is not likely to be environmentally controversial and no known organized opposition to the Proposed Action exists. The Proposed Action is consistent with the plans, goals, and policies of Charleston County. In addition, the Proposed Action is not likely to directly, indirectly, or cumulatively create a significant impact on the human environment.

4.16 Public Involvement

The Draft EA was made available for public review from June 12, 2011 through July 12, 2011. A Notice of Availability (NOA) was published in the print version of the Charleston *Post and Courier* announcing the availability of the Draft EA, locations for public viewing, and dates and times the document could be accessed. A copy of the NOA was also sent to the same federal, State, and local agency contacts to which the project introduction letter was transmitted in February 2011 (see Appendix A for a list of agency contacts).

One email comment was received during the public review period from a representative of the Charleston Air Force Base. The comment letter noted that the part of the proposed aircraft apron detailed in the Draft EA would encroach on U.S. Air Force property. Subsequent to publication of the Draft EA, the proposed expansion of the aircraft apron has been modified to limit expansion to Airport property. The commenter also noted that there was contradictory information contained in the Draft EA concerning whether wetlands were present in the APE or not. The language in the EA has been modified to eliminate the contradiction and a wetlands exhibit has been added showing existing wetlands in relation to the Proposed Action.

The South Carolina State Historic Preservation Office transmitted an email noting that they had received the Draft EA and that comments previously submitted on the project remain unchanged (see Appendix A).

Appendix E contains a copy of the NOA, the locations where the Draft EA was made available for public review, and the emails from the Charleston Air Force Base and South Carolina State Historic Preservation Officer (Department of Archives and History).

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V. List of Preparers, List of Parties to Whom Sent

This section identifies the principal preparers of this Draft EA, and identifies who was sent a copy of the Draft EA for review and comment.

5.1 List of Preparers

The following individuals prepared the Draft EA. Information provided includes the organizations for which each individual works, a brief synopsis of their relative experience and qualifications, and their responsibilities in the preparation of this Draft EA document.

5.1.1 Principal Federal Aviation Administration Reviewers

Lisa Favors, Planning/Environmental Program Manager, Atlanta Airports District Office

Responsible for overall review and approval of the Environmental Assessment.

Parks Preston, Program Manager, Atlanta Airports District Office

Responsible for review of the Environmental Assessment.

5.1.2 Charleston International Airport

Jim Fann, Deputy Director of Engineering and Planning

Sponsor's contracting officer and technical representative. Overall review and coordination with FAA Atlanta Airports District Office.

5.1.3 Ricondo & Associates, Inc.

Steven R. Ryan, AICP, Director

Qualifications – Over 14 years of airport planning experience, primarily in airport master planning and facility development projects.

Responsibilities – Project management, terminal planning alternatives, and quality assurance.

Stephen D. Culberson, Director

Qualifications – Over 20 years of experience in airport environmental and planning studies, with significant experience in preparing and managing environmental assessments and environmental impact statements, airport master planning projects, and activity forecasts.

Responsibilities –NEPA documentation, purpose and need, alternatives, affected environment, and environmental consequences.

Michael D. Truskoski, Senior Consultant

Qualifications – Over 3 years of airport planning experience, including apron layout, vehicle and aircraft parking studies, preparation of Airport Layout Plans, and airport master planning.

Responsibilities – Airfield and parking alternatives, exhibits.

5.1.4 S&ME, Inc.

Aaron G. Brummitt, RPA, Cultural Resources Department Manager

Qualifications – Over 10 years of experience with cultural resource management, agency consultation and project coordination under the requirements of NEPA and NHPA.

Responsibilities – Support services for project scoping, agency consultation, and acquiring information related to affected environment, and environmental consequences associated with NEPA documentation.

Bret K. Davis, Natural Resource and Environmental Professional

Qualifications – Over 12 years of experience with project management, wetlands delineation and permitting, and ecological assessments.

Responsibilities – Agency correspondence and consultation related to natural resources.

James L. Killingsworth, CHMM, Vice President and Environmental Department Manager

Qualifications – Over 27 years of experience with environmental and industrial hygiene consultation including, project management and oversight of NEPA and NHPA coordination and consultation.

Responsibilities – Project Management for support services including project scoping, agency consultation, and acquiring information related to affected environment, and environmental consequences associated with NEPA documentation.

5.2 List of Parties to Whom the Draft EA Was Distributed

5.2.1 Federal Agencies

- Mr. Joe Camp, U.S. Air Force, Charleston Air Force Base, Charleston, South Carolina
- Mr. Charles Crosby, U.S. Army Corps of Engineers, Charleston District Regulatory Division, Charleston, South Carolina
- Ms. Tina Hadden, U.S. Army Corps of Engineers, Charleston District Regulatory Division, Charleston, South Carolina
- Mr. Tim Hall, Field Director, U.S. Fish & Wildlife Service, Charleston, South Carolina
- Mr. Jeffrey Payne, Deputy Director, National Oceanic and Atmospheric Administration, Charleston, South Carolina

5.2.2 State Agencies

- Ms. Meredith Amick, RCRA Permit Engineer, South Carolina Department of Health and Environmental Control, RCRA Permit Compliance, Columbia, South Carolina
- Ms. Elizabeth J. Basil, Director, South Carolina Department of Health and Environmental Control, Columbia, South Carolina
- Mr. Robert Hodges, Brownfields/VCP Program Manager, South Carolina Department of Health and Environmental Control, Bureau of Land and Waste Management, Columbia, South Carolina

- Mr. Earl Hunter, Commissioner, South Carolina Department of Health and Environmental Control, Columbia, South Carolina
- Ms. Elizabeth Johnson, Deputy State Historic Preservation Officer, South Carolina Department of Archives and History, Columbia, South Carolina
- Mr. William McGoldrich, Stormwater Permit Coordinator, South Carolina Department of Health and Environmental Control, Ocean & Coastal Resource Management, Charleston, South Carolina
- Ms. Barbara Neale, Director, South Carolina Department of Health and Environmental Control, Ocean & Coastal Resource Management, Programs Division, Charleston, South Carolina
- Ms. Christine Sandford-Coker, Regional Director, South Carolina Department of Health and Environmental Control, Region 7 Environmental Quality Control Office, Charleston, South Carolina
- Mr. Wayne Stokes, Construction Permitting Section Manager, South Carolina Department of Health and Environmental Control, Bureau of Water, Columbia, South Carolina
- Mr. Blair Williams, South Carolina Department of Health and Environmental Control, Ocean & Coastal Resource Management, Regulatory Programs Division, Charleston, South Carolina
- State Clearinghouse, Office of State Budget, Columbia, South Carolina

5.2.3 Local Agencies

- Ms. Wanetta Mallette, Project Manager, City of North Charleston, Lowcountry Alliance Model Communities, North Charleston, South Carolina
- Mr. Alan O'Neal, County Administrator, Charleston County – Office of County Administrator, North Charleston, South Carolina
- Mr. Robert Ryan, Executive Director, Charleston Naval Complex Redevelopment Authority, North Charleston, South Carolina
- Honorable Keith Summey, City of North Charleston, Office of the Mayor, North Charleston, South Carolina
- City of North Charleston, Department of Public Works, Engineering Division, North Charleston, South Carolina

5.2.4 Tribes

- Ms. Caitlin Totherow, Tribal Historic Preservation Officer, Catawba Indian Nation, Rock Hill, South Carolina

5.2.5 Public Review

Copies of the Draft Environmental Assessment are also being made available at the following locations for public review during normal business hours.

- Charleston County Aviation Authority, 5500 International Boulevard, Suite 101, Charleston, South Carolina 29418-6911
- Dorchester Road Regional Branch, Charleston County Public Library, 6325 Dorchester Road, North Charleston, South Carolina 29418
- Main Library, Charleston County Public Library, 68 Calhoun Street, Charleston, South Carolina, 29401
- Atlanta Airports District Office, Federal Aviation Administration, 1701 Columbia Avenue, Campus Building 2-260, College Park, Georgia 30337

VI. References

Council on Environmental Quality, *Regulations for Implementing the Procedural Provision of the National Environmental Policy Act*, 40 CFR Parts 1500-1508.

Ricondo & Associates, Inc., *Charleston International Airport Master Plan Update*, January 2011.

S&ME, Inc., *Environmental Assessment for Extension of Runways at the Charleston Air Force Base and Charleston International Airport*, prepared for the Charleston County Aviation Authority, April 8, 2008.

South Carolina Department of Health and Environmental Control, Division of Mining and Solid Waste Management, *South Carolina Solid Waste Management Annual Report, Fiscal Year 2010*, March 15, 2011.

U.S. Air Force, *Air Installation Compatible Use Zone Study, Charleston Air Force Base, South Carolina*, 2004.

U.S. Department of Transportation, Federal Aviation Administration. August 5, 1983. Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports.*

U.S. Department of Transportation, Federal Aviation Administration. April 15, 1997. Order 5680.1: *Final Order to Address Environmental Justice in Low-Income and Minority Populations.*

U.S. Department of Transportation, Federal Aviation Administration. September 2004. *Air Quality Procedures for Civilian Airports and Air Force Bases, Report No. FAA-AEE-97-03*, Washington, DC, April 1997, including the addendum, Report No. FAA-AEE-04-03.

U.S. Department of Transportation, Federal Aviation Administration. March 20, 2006. Order 1050.1E, Change 1, *Environmental Impacts: Policies and Procedures.*

U.S. Department of Transportation, Federal Aviation Administration. April 28, 2006. Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions.*

U.S. Department of Transportation, Federal Aviation Administration. August 28, 2007. Advisory Circular 150/5200-33B: *Hazardous Wildlife Attractants on or near Airports.*

U.S. Department of Transportation, Federal Aviation Administration. September 30, 2009. Advisory Circular 150/5370-10A: *Standards for Specifying Construction of Airports.*

U.S. Department of Transportation, Federal Aviation Administration. January 2011. Advisory Circular 150/5300-13, through Change 16, *Airport Design.*

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VII. List of Abbreviations and Acronyms

A

AC - Advisory Circular

ACCRI - Aviation Climate Change Research Initiative

ACRP - Airport Cooperative Research Program

ADA - Americans with Disabilities Act

AICUZ - Air Installation Compatible Use Zone

AIP - Airport Improvement Program

ALP - Airport Layout Plan

APE - Area of Potential Effect

ASTM - American Society for Testing and Materials

ATCT - Airport Traffic Control Tower

ATSA - Aviation and Transportation Security Act

B

BMP - Best Management Practices

C

CAAA - Clean Air Act Amendments

CCAA - Charleston County Aviation Authority

CEQ - Council on Environmental Quality

CERCLA - Comprehensive Environmental Response, Compensation and Liability Act

CERCLIS - Comprehensive Environmental Response, Compensation Insurance System

CFR - Code of Federal Regulations

CH_4 - Methane

CHS - Charleston International Airport

CO - Carbon Monoxide

CO_2 - Carbon Dioxide

CWA - Clean Water Act

CZMA - Coastal Zone Management Act

D

dB - decibel

DHS - Department of Homeland Security

DNL - Day-Night Average Sound Level

DOT - Department of Transportation

E

EA - Environmental Assessment

EIS - Environmental Impact Statement

EPA - Environmental Protection Agency

F

FAA - Federal Aviation Administration

FAR - Federal Aviation Regulation

FE - Federally Endangered

FEMA - Federal Emergency Management Agency

FIRM - Flood Insurance Rate Map

FIS - Federal Inspection Services

FONSI - Finding of No Significant Impact

FR - Federal Register

FT - Federally Threatened

G

GA - General Aviation

GAO - General Accounting Office

GHG – Greenhouse Gas

H

H_2O - Water

HSWA - Hazardous and Solid Waste Amendments

HVAC - Heating, Ventilating, and Air Conditioning

I

IATA - International Air Transport Association

IFR - Instrument Flight Rules

ILS - Instrument Landing System

INM - Integrated Noise Model

IPCC - Intergovernmental Panel on Climate Change

J

K

L

M

MPU - Master Plan Update

msl - mean sea level

N

NAAQS - National Ambient Air Quality Standards

NASA – National Aeronautics and Space Administration

NEPA - National Environmental Policy Act

NFA - No Further Action

NFIP - National Flood Insurance Program

NHPA - National Historic Preservation Act

N_2O – Nitrous Oxide

NO_2 - Nitrogen Dioxide

NO_x – Nitrogen Oxides

NOA – Notice of Availability

NPDES - National Pollutant Discharge Elimination System

NPL - National Priorities List

NRHP - National Register of Historic Places

O

O_2 - Oxygen

O_3 - Ozone

OCRM – Office of Ocean & Coastal Resource Management

OFA - Object Free Area

P

PARTNER - Partnership for AiR Transportation Noise & Emissions Reduction

Pb - Lead

PBB - Passenger Boarding Bridge

PCB - Polychlorinated Biphenyls

PFC - Passenger Facility Charge

PL - Public Law

PM_{10} - Particulate Matter

$PM_{2.5}$ - Fine Particulate Matter

PSD - Prevention of Significant Deterioration

Q

R

RCRA - Resource Conservation and Recovery Act

ROD - Record of Decision

RON - Remain Overnight

RSA - Runway Safety Area

RPZ - Runway Protection Zone

S

SCDHEC - South Carolina Department of Health and Environmental Control

SCCZ - South Carolina Coastal Zone

SE - State Endangered

SIP - State Implementation Plan

SHPO - State Historic Preservation Officer

SO_2 - Sulfur Dioxide

SO_x - Oxides of Sulfur

ST - State Threatened

SWPPP - Storm Water Pollution Prevention Plan

SWMU - Solid Waste Management Unit

T

T&E - Threatened & Endangered

TAF - Terminal Area Forecast

TRB - Transportation Research Board

TSA - Transportation Security Administration

TSCA - Toxic Substances Control Act

U

USACE - U.S. Army Corps of Engineers

USAF - U.S. Air Force

U.S.C. - United States Code

USDA - U.S. Department of Agriculture

USFWS - U.S. Fish and Wildlife Service

USGS - United States Geological Survey

UST - Underground Storage Tank

V

VFR - Visual Flight Rules

VOCs - Volatile Organic Compounds

W

X

Y

Z

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Appendix A

Agency Coordination

Project introduction letters were sent to 25 individuals representing federal, State, and local agencies with jurisdiction over resources either known to be in the vicinity of the Airport or for resources that could potentially be present in the area. Letters were also sent to surrounding communities. The purpose of the letters was to inform agencies and communities about the Environmental Assessment (EA) process, the proposed project, preliminary purpose and need, and preliminary alternatives and to solicit input on issues of concern that they would like addressed in the EA.

The list of individuals, agencies, and communities the letter was sent to is provided on the following page. A sample introduction letter follows the mailing list. Agency correspondence received in response to the letter appears at the end of this appendix.

Project Introduction Letter Mailing List

Federal Agencies

Mr. Joe Camp, U.S. Air Force, Charleston Air Force Base, Charleston, South Carolina
Mr. Charles Crosby, U.S. Army Corps of Engineers, Charleston District Regulatory Division, Charleston, South Carolina
Ms. Tina Hadden, U.S. Army Corps of Engineers, Charleston District Regulatory Division, Charleston, South Carolina
Mr. Tim Hall, Field Director, U.S. Fish & Wildlife Service, Charleston, South Carolina
Mr. Jeffrey Payne, Deputy Director, National Oceanic and Atmospheric Administration, Charleston, South Carolina

State Agencies

Ms. Meredith Amick, RCRA Permit Engineer, South Carolina Department of Health and Environmental Control, RCRA Permit Compliance, Columbia, South Carolina
Ms. Elizabeth J. Basil, Director, South Carolina Department of Health and Environmental Control, Columbia, South Carolina
Mr. Robert Hodges, Brownfields/VCP Program Manager, South Carolina Department of Health and Environmental Control, Bureau of Land and Waste Management, Columbia, South Carolina
Mr. Earl Hunter, Commissioner, South Carolina Department of Health and Environmental Control, Columbia, South Carolina
Ms. Elizabeth Johnson, Deputy State Historic Preservation Officer, South Carolina Department of Archives and History, Columbia, South Carolina
Mr. William McGoldrich, Stormwater Permit Coordinator, South Carolina Department of Health and Environmental Control, Ocean & Coastal Resource Management, Charleston, South Carolina
Ms. Barbara Neale, Director, South Carolina Department of Health and Environmental Control, Ocean & Coastal Resource Management, Programs Division, Charleston, South Carolina
Ms. Christine Sandford-Coker, Regional Director, South Carolina Department of Health and Environmental Control, Region 7 Environmental Quality Control Office, Charleston, South Carolina
Mr. Wayne Stokes, Construction Permitting Section Manager, South Carolina Department of Health and Environmental Control, Bureau of Water, Columbia, South Carolina
Mr. Blair Williams, South Carolina Department of Health and Environmental Control, Ocean & Coastal Resource Management, Regulatory Programs Division, Charleston, South Carolina
State Clearinghouse, Office of State Budget, Columbia, South Carolina

Local Agencies/Communities

Ms. Wanetta Mallette, Project Manager, City of North Charleston, Lowcountry Alliance Model Communities, North Charleston, South Carolina
Mr. Alan O'Neal, County Administrator, Charleston County – Office of County Administrator, North Charleston, South Carolina
Mr. Robert Ryan, Executive Director, Charleston Naval Complex Redevelopment Authority, North Charleston, South Carolina
Honorable Keith Summey, City of North Charleston, Office of the Mayor, North Charleston, South Carolina

City of North Charleston, Department of Public Works, Engineering Division, North Charleston, South Carolina

Native American Tribes

Ms. Caitlin Totherow, Tribal Historic Preservation Officer, Catawba Indian Nation, Rock Hill, South Carolina

February 18, 2011

City of North Charleston, Office of the Mayor
P.O. BOX 190016
North Charleston, SC 29419-9016

Attention: Hon. Keith Summey

Reference: **Notice of Scoping**
Environmental Assessment: Terminal Expansion at the
Charleston International Airport
Charleston County, South Carolina

Dear Mayor Summey:

The Charleston County Aviation Authority (CCAA) has initiated on behalf of the Federal Aviation Administration (FAA) the production of an Environmental Assessment (EA) examining the proposed expansion of the existing passenger terminal, apron area, terminal parking garage, and surface vehicle parking at Charleston International Airport (CHS), located in Charleston County, South Carolina, near the City of North Charleston and just west of I-26 (Attachment 1). S&ME, Inc. (S&ME) has been retained to conduct the consultation and research associated with the production of the EA, as required by the National Environmental Policy Act (NEPA) of 1969 (40 CFR Parts 1500 – 1508).

CHS is operated by CCAA, under the Joint Use Agreement with the U.S. Air Force. The U.S. Air Force owns and operates the airfield as part of the Charleston Air Force Base and the CCAA owns approximately 1,300 acres for civilian aviation use, including passenger, cargo, and general aviation facilities, along with adjacent aircraft manufacturing operations.

The existing passenger terminal concourses contain 10 gates with passenger boarding bridges and seven striped positions with no passenger boarding bridges. While well-maintained and structurally sound, the terminal building exhibits finishes, furnishings, and equipment that have reached or are nearing the end of their useful life. Additionally, forecast growth in passenger volumes, larger aircraft, and changes in security, technology, and airline business strategies have fundamentally affected the manner in which passengers interface with terminal services, the manner in which airlines operate at the Airport, and the profitability of commercial tenants.

To address the needs identified above, the CCAA has identified the purpose of the Proposed Action (or the solution to the need) as the provision of expanded terminal, aircraft apron, and public parking facilities at CIAP that:

- Support passenger and air carrier growth;
- Improve space efficiency and maintain competitive cost structure for airlines and tenants;
- Achieve compliance with current state adopted building and life safety codes;
- Accommodate changing FAA and Department of Homeland Security programs; and,
- Improve Airport initiatives to gain revenue from non-airline sources.

While meeting this purpose the proposed action should also maximize the use of existing facilities and operational efficiency and minimize disruption to existing facilities.

The forthcoming EA will address the following issues:

- Identify any adverse environmental effects that cannot be avoided or mitigated should this project be implemented;
- Describe the effects of short-term use and development, and long term operations and maintenance on the environment;
- Characterize irreversible and irretrievable commitments of resources that would be involved if this proposed action should be implemented; and,
- Identify and discuss effects of the proposed project on floodplains.

Probable Environmental Issues Scoped for the Environmental Assessment

The EA will identify, describe, and determine potential effects, if any, on the environment and address mitigation to eliminate or reduce impacts for the following concerns:

- Air Quality
- Natural Resources and Energy Supply
- Biological Resources
- Water Resources including floodplains and wetlands
- Historical, Archaeological, Architectural, and Cultural Resources
- Land Use
- Noise
- Construction Impacts
- Light Emissions and Visual Impacts
- Socioeconomic Impacts including environmental justice
- Hazardous Materials, Pollution Prevention, and Solid Waste

Public Scoping

We are sending this Notice of Scoping to interested governmental and related agencies to provide information on the proposed project and the issues to be addressed in the EA. The CCAA invites comments from governmental agencies specific to their statutory responsibilities. The public will be invited to comment on the Draft EA, upon completion and distribution of the draft document.

S&ME, on behalf of CCAA, welcomes your input throughout the NEPA process. Please provide your written comments on this Notice of Scoping to the address below by March 11, 2011:

S&ME, Inc.
ATTN: CCAA TERMINAL EXPANSION - Comments
620 Wando Park Boulevard
Mount Pleasant, South Carolina 29464

If you prefer to submit comments electronically you may send them via electronic mail to abrummitt@smeinc.com or by facsimile to (843) 881-6149

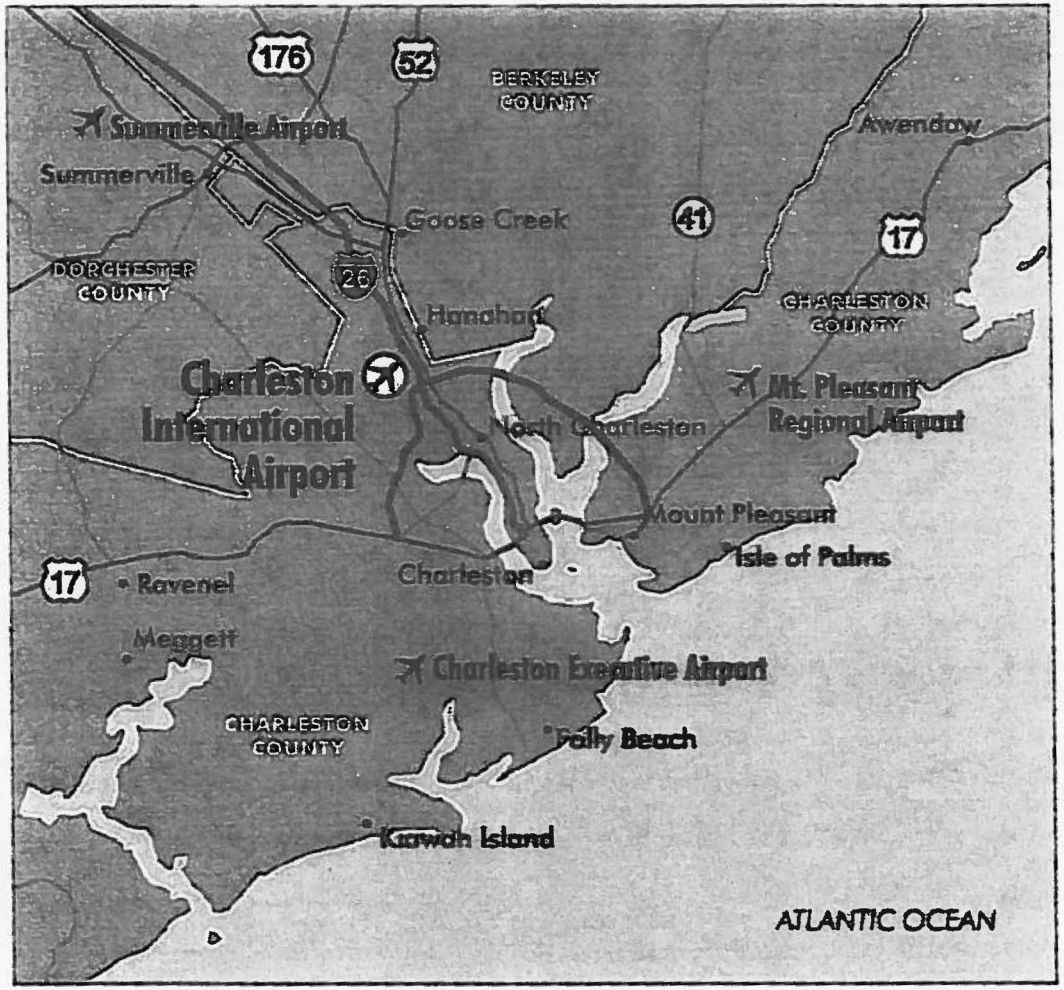
Sincerely,

James L. Killingsworth, CHMM
Environmental Department Manager

Aaron Brummitt, M.A., RPA
Project Manager

Attachments: Attachment 1, General Location of the Charleston International Airport
Attachment 2, Alternative Terminal Concepts
Attachment 3, Proposed Action

Charleston International Airport

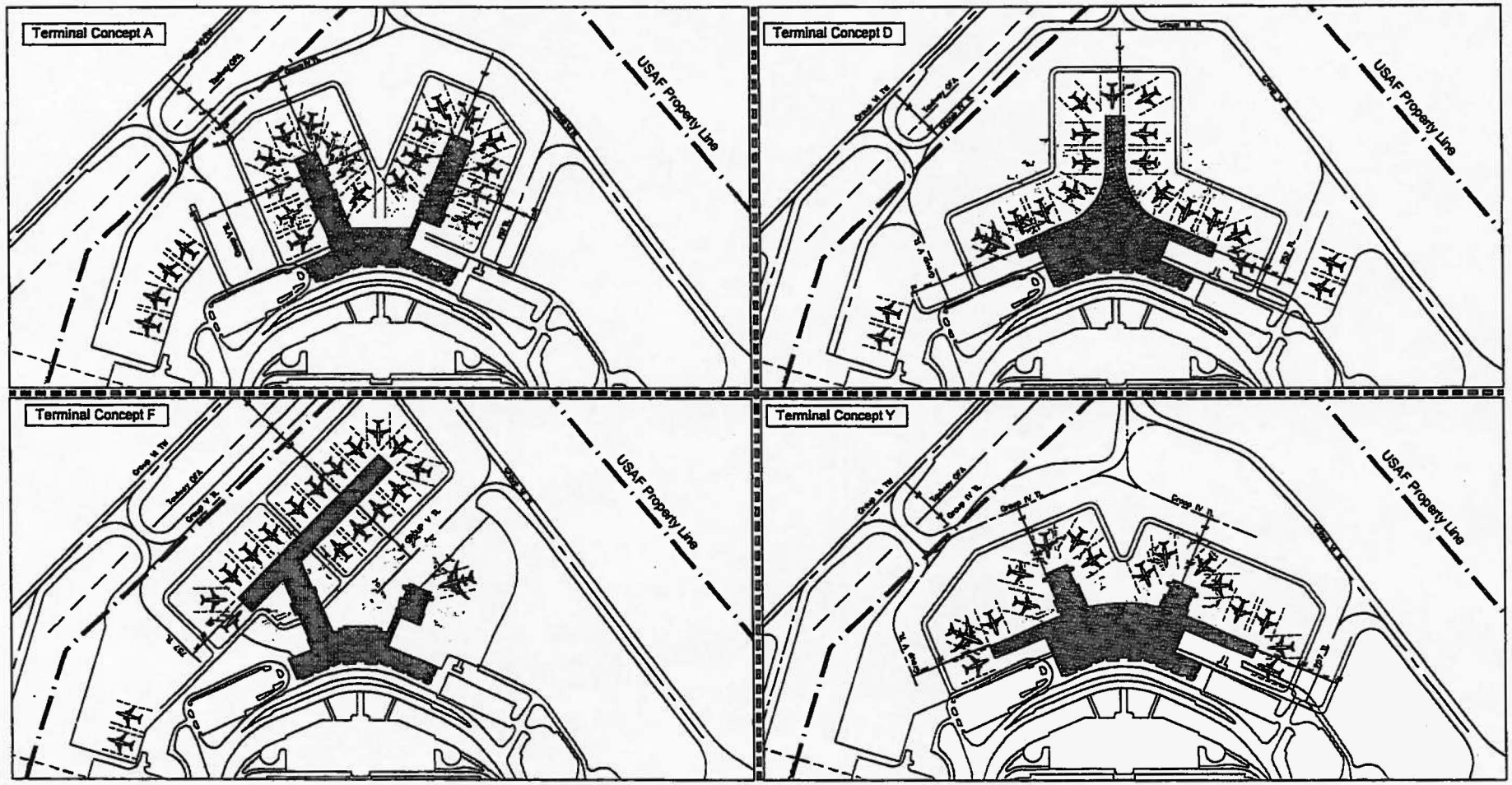


Source: Map Resources, 2007.
Prepared by: Ricondo & Associates, Inc., October 2010.

Exhibit 1

Not to Scale north

Airport Vicinity Map



Source: USAF and Charleston International Airport Base files June 2010; Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit 9

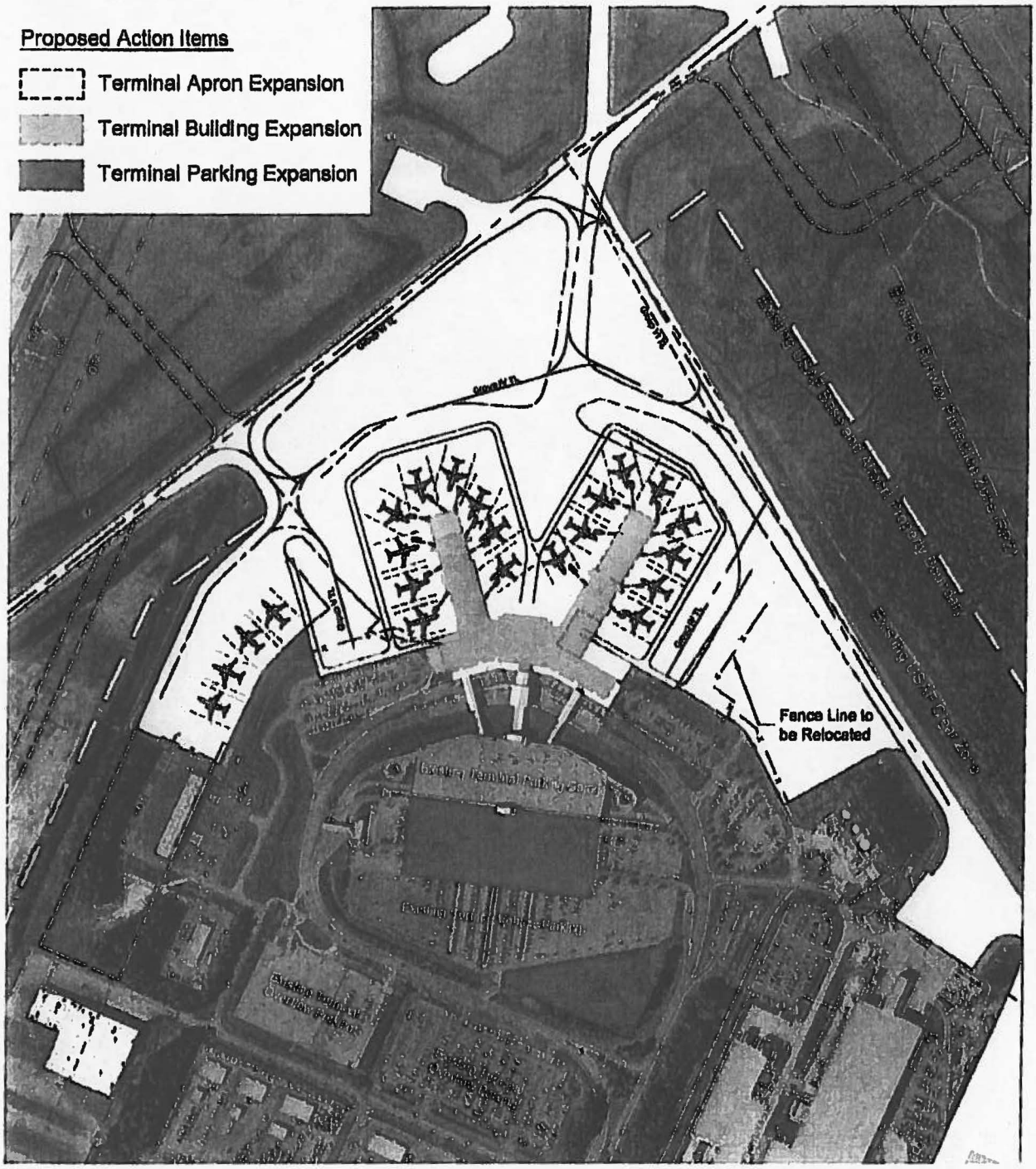
0 500 ft. north

EXISTING AIRCRAFT PROPOSED AIRCRAFT PROPOSED BUILDING EXISTING BUILDING

Terminal Concept Comparison

February 2011

Charleston International Airport



Source: USAF and Charleston International Airport Base Files Received June 2010; Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc.

Exhibit 10

0 600 ft.

north

Proposed Action

Drawing: Z:\CHS\Environmental Assessment\Exhibits\Proposed Action - Aeratdwg, Layout: Proposed Action, Feb 17, 2011 3:56pm

February 2011

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

MAR 1 2 2011

March 8, 2011

Regulatory Division

S&ME
Mr. Aaron Brummitt
ATTN: CCAA TERMINAL EXPANSION - Comments
620 Wando Park Blvd
Mount Pleasant, South Carolina 29464

Dear Mr. Brummitt:

This is in response to your letter of February 18, 2011, regarding the Notice of Scoping, Environmental Assessment: Terminal Expansion at the Charleston International Airport in Charleston County, South Carolina.

Based on a review of the information submitted and a review of aerial photography, topographic maps, National Wetland Inventory maps and soil survey information, it has been concluded that there are may be wetlands or waters of the United States located on the project site that may be subject to the jurisdiction of this office. This office should be contacted prior to performing any work in or around these wetlands or other waters of the United States in order for a more accurate delineation to be made.

In future correspondence concerning this matter, please refer to SAC#2011-00244-2JR. If you have any questions concerning this matter, please contact Robin Coller-Socha at 843-329-8044 or toll free at 1-866-329-8187.

Respectfully,

Charles R. Crosby
Chief, South Branch

D H E C

PROMOTE PROTECT PROSPER

C. Earl Hunter, Commissioner

Promoting and protecting the health of the public and the environment

MAY 19 2011

May 16, 2011

Aaron Brummitt
S&ME, Inc.
620 Wando Park Boulevard
Mount Pleasant, SC 29464

Re: CCAA Terminal Expansion

Dear Mr. Brummitt:

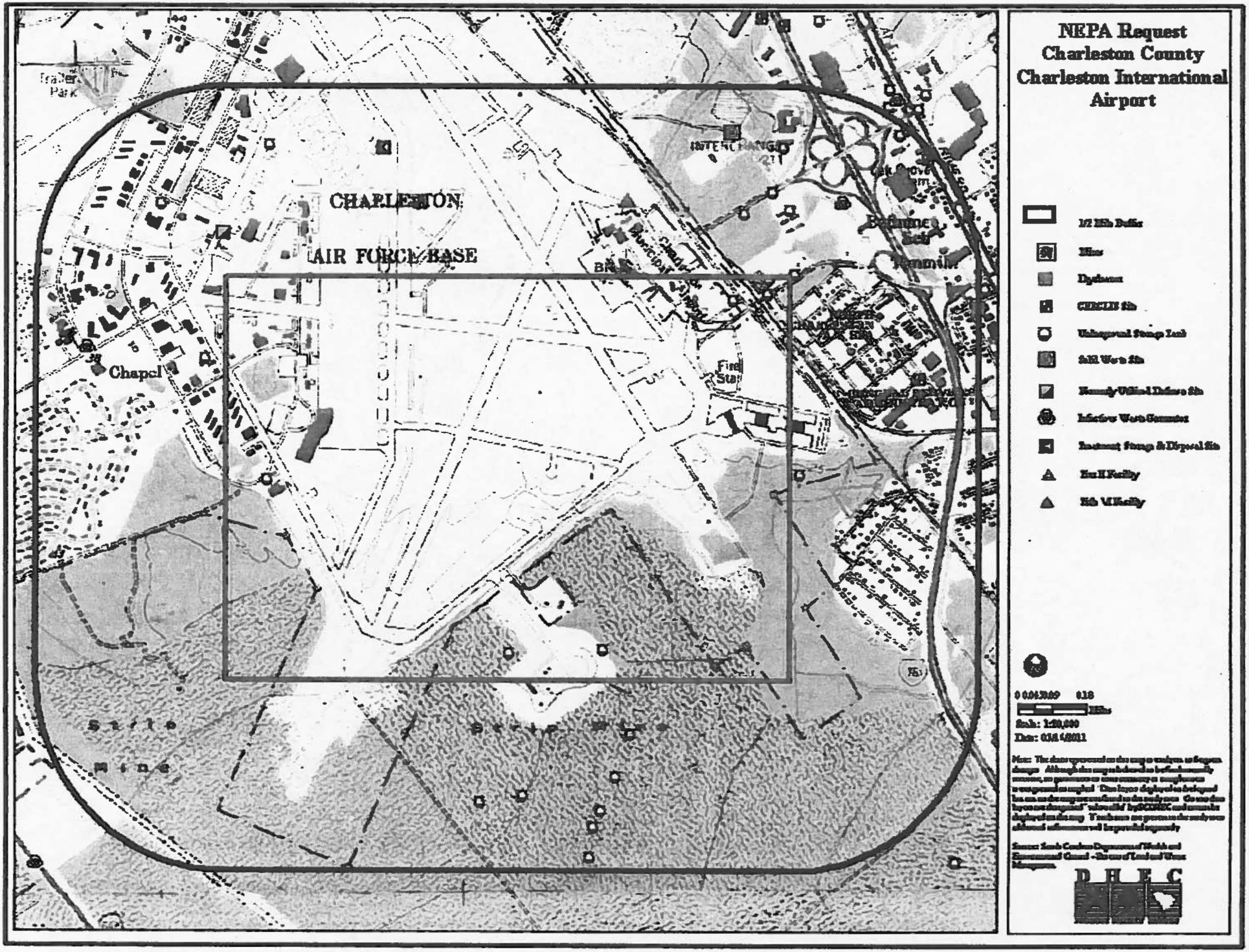
The map(s) enclosed with this correspondence are in response to your February 18, 2011 request for information regarding any potentially adverse environmental impacts in proximity to the project location(s) you provided. On the map(s) attached to this correspondence you will find "non-vulnerable"sites, within a half-mile radius of the selected project locations, that are either known, permitted or regulated by SCDHEC-BLWM and may adversely impact the project location(s). Excluded from the map output are sites that may adversely impact the project area but are designated by DHEC as "vulnerable" and therefore cannot be displayed on cartographic output provided to external parties. "Vulnerable" sites include Hazardous Waste Generators, Radiological Waste Generators and Nuclear Power Plants. The data used to create the enclosed map(s) and any additional tables are subject to frequent changes. Although the data are believed to be fundamentally accurate, no guarantees as to the accuracy or completeness of the data are expressed or implied.

If you need further information regarding any site, you are encouraged to review the site file through a Freedom of Information (FOI) request. You may contact Mr. Jody Hamm with the SCDHEC FOI office at (803) 898-3817. If further information regarding this correspondence is required, please contact me at (803) 896-6942.

Sincerely,

Alison M. Hathcock

Alison M. Hathcock, Permitting Coordinator
SCDHEC – Bureau of Land and Waste Management
2600 Bull St., Columbia, SC 29201


NEPA Request
Charleston County
Charleston International
Airport
CHARLESTON
AIR FORCE BASE
Chapel
Strip
Mine
Strip
Mine
Scale: 1:20,000
Date: 03/14/2011

Underground Storage Tanks

FACILITY	*STREET*	*CITY*	*STATE*
AVIATION BUSINESS PARK IV	2421 AVIATION AVE	CHARLESTON	SC
AVIS RENT A CAR INC	3425 RENTAL CAR LN	NORTH CHARLESTON	SC
BUDGET CAR & TRUCK RENTAL	3460 RENTAL CAR LN	CHARLESTON	SC
CHARLESTON AIR FORCE BASE BLDG 4	CHARLESTON AFB	CHARLESTON AFB	SC
CHARLESTON AIR FORCE BASE BLDG 5	CHARLESTON AFB	CHARLESTON	SC
CHARLESTON EQUITIES INC	AVIATION AVE	CHARLESTON	SC
DOLLAR RENT A CAR	RENTAL CAR LN	NORTH CHARLESTON	SC
EL CHEAPOS	2353 AVIATION AVE	CHARLESTON	SC
FAST POINT 53 DBA SCOTCHMAN 17	5995 RIVERS AVE	NORTH CHARLESTON	SC
GAS N GO	5995 RIVERS AVE	NORTH CHARLESTON	SC
GSP TRANSPORTATION INC	5501 PORSCHE BLVD #101	CHARLESTON	SC
HAWTHORNE AVIATION	AVIATION AVE	CHARLESTON	SC
HERTZ RENT A CAR	3450 RENTAL CAR LN	CHARLESTON	SC
N BOLAND CIRCLE SITE	RIVERS AVE & N BOLAND CIRC	NORTH CHARLESTON	SC
NATIONAL CAR RENTAL	3440 RENTAL CAR LN	NORTH CHARLESTON	SC
PORSCHE CARS NORTH AMERICA INC	5550 PORSCHE BLVD	NORTH CHARLESTON	SC
RENTAL CAR MAIN FAC BLDG 100	5501 PORSCHE BLVD BLDG 100	CHARLESTON	SC
RENTAL CAR MAINT FAC BLDG 200	5501 PORSCHE BLVD BLDG 200	CHARLESTON	SC
SECTOR FIELD OFFICE	5775 S AVIATION	CHARLESTON	SC

FACILITY	*STREET*	*CITY*	*STATE*
TMS 472 0 0 018	AIRPORT RD	N CHARLESTON	SC
US AIR FORCE	437 SPTG 102 E HILL BLVD	CHARLESTON	SC
VANGUARD CAR RENTAL USA INC	5501 PORSCHE BLVD #300	CHARLESTON	SC
YEAMANS HALL AMOCO	1256 YEAMANS HALL RD	CHARLESTON	SC

Treatment, Storage Disposal Site

FACILITY	*LOCADD*	*LOCCITY*	*LOCZIP*	*STATE*
CHARLESTON AIR FORCE BASE	437 ABG/DEEV	CH. AFB	29404	SOUTH CAROLINA

Tier VI Facility

NAME	*MAILADDR1*	*MAILCITY*	*MAILSTATE*	*MAILZIP*
USAF - CHARLESTON	437 CES/CEVE BLDG 661	CHARLESTON	SC	29404-4827

Solid Waste Sites

FACILITY_N	*STREET*	*CITY*	*STATE*	*ZIP*
WESTVACO-CHSTN CO DUMP				0

Infectious Waste Generator

IDENTIFIER	*ADDRESS_1*	*CITY*	*ZIP_CODE*	*STATE*
437TH MEDICAL GROUP SGSLF	204 HILL BLVD	CHARLESTON	29404	SC
MUSC ALZHEIMERS RESEARCH & CLINICAL PROGRAM	5900 CORE RD STE 203	CHARLESTON	29406-6076	SC
PEDIATRIC ASSOCIATES OF CHARLESTON	5900 CORE AVE STE 503	NORTH CHARLESTON	29406-6056	SC

Hazardous Generators

FAC	*EPA_ID*
ANNEX TO CHARLESTON NAVAL COMPLEX	SC000032890
B&M MARINE REPAIRS INC	SC000093650
GEBROS PAINT AND BODY SHOP	SCD98191984
MOBAY CHEM CORP/VERONA DYESTUFF	SCD03740408
PORSCHE CARS NORTH AMERICA INC	SCD11918568
SHERWIN WILLIAMS CO	SCD00082664

Formerly Utilized Defense Site

PROP_NAME	*PROP_NUM*
CHARLESTON AAF	I04SC0450

Cerclis

SITE_NAME	*EPA_ID_NO*	*CITY_NAME*	*ZIP_CODE*
AMERICAN DEVELOPMENT CORPORATION (ADCOR)	SCD981467194	HANAHAN	29406-
ONE HOUR CLEAN CRAFT SITE	SCS123456900	N. CHARLESTO	29406-
USAF CHARLESTON AIR FORCE BASE	SC3570024460	CHARLESTON	29404

Appendix B

Wetlands

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

October 6, 2008

Regulatory Division

Mr. Ken Smoak
Sabine and Waters, Inc.
P.O. Box 1072
Summerville, South Carolina 29484

Re: SAC 2007-02029-2J

Dear Mr. Smoak:

This is in response to your letter received August 30, 2007, requesting a wetland determination, on behalf of the Charleston Aviation Authority, for a 656 acre tract located at the intersection of Michaux Parkway and International Boulevard in the City of North Charleston, Charleston County, South Carolina. The project area is depicted on the survey plat you submitted which was prepared by Davis and Floyd, Inc., dated June 5, 2008; revised June 24, 2008, and entitled "Wetlands Survey Showing Updated Jurisdictional Wetlands on a Portion of TMS# 400-00-00-007, TMS# 400-00-00-009, and on TMS# 400-00-00-020 & 021 and Filled Areas Per Permit # SAC-81-2002-1558(S) Showing On TMS# 400-00-00-020 & 021 Property of Charleston County Aviation Authority Located City of North Charleston Charleston County, South Carolina".

This plat depicts surveyed boundaries of wetlands or other waters of the United States as established by your office. You have requested that this office verify the accuracy of this mapping as a true representation of wetlands or other waters of the United States within the regulatory authority of this office. The property in question contains 56.37 acres of federally defined jurisdictional freshwater wetlands or other waters of the United States subject to the jurisdiction of this office. The location and configuration of these areas are reflected on the plat referenced above.

Based on an on-site inspection and a review of aerial photography and soil survey information, it has been determined that the surveyed jurisdictional boundaries shown on the referenced plat are an accurate representation of jurisdictional areas within our regulatory authority. This office should be contacted prior to performing any work in these areas. Enclosed is a form describing the basis of jurisdiction for the areas in question. You should also be aware that these areas may be subject to restrictions or requirements of other state or local governmental entities.

If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified survey plat, should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted. This **approved** jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The

administrative appeal options, process and appeals request form is attached for your convenience and use.

In future correspondence concerning this matter, please refer to SAC 2007-02029-2J. You may still need state or local assent. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management. A copy of this letter is being forwarded to them for their information.

If you have any questions concerning this matter, please contact David Chamberlain at 843-329-8044 or toll free (outside of the Charleston area) at 1-866-329-8187.

Respectfully,

Charles R. Crosby
Chief, South Branch

Enclosures:
Basis for Jurisdiction
Notification of Appeal Options

Copy Furnished:

S.C. Department of Health
and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405

DEPARTMENT OF THE ARMY
CHARLESTON DISTRICT, CORPS OF ENGINEERS
69A Hagood Avenue
CHARLESTON, SOUTH CAROLINA 29403-5107

REPLY TO
ATTENTION OF

October 6, 2008

Regulatory Division

Mr. Ken Smoak
Sabine and Waters, Inc.
P.O. Box 1072
Summerville, South Carolina 29484

Re: SAC 2008-00109-2JY

Dear Mr. Smoak:

This is in response to your letter received January 4, 2008, requesting a wetland determination, on behalf of the Charleston Aviation Authority, for a 430.52 acre tract located immediately south of Charleston Airport Runway 3 and north of Dorchester Road in the City of North Charleston, Charleston County, South Carolina. The project area is depicted on the survey plat you submitted which was prepared by Davis and Floyd, Inc., dated June 5, 2008, and entitled "Wetlands Survey Showing 50.92 AC. Of Jurisdictional Wetlands 'A&B', C', 'D', 'E', 'F', 'G', 'O', 'P', and Jurisdictional Watters of the U.S. 'R', 'S', 'T', 'U', & 'V' Located on a portion of TMS# 400-00-00-007 Property of Charleston County Aviation Authority Located City of North Charleston Charleston County, South Carolina" (Sheets 1-10).

This plat depicts surveyed boundaries of wetlands or other waters of the United States as established by your office. You have requested that this office verify the accuracy of this mapping as a true representation of wetlands or other waters of the United States within the regulatory authority of this office. The property in question contains 50.92 acres of federally defined jurisdictional freshwater wetlands or other waters of the United States subject to the jurisdiction of this office. The location and configuration of these areas are reflected on the plat referenced above.

Based on an on-site inspection and a review of aerial photography and soil survey information, it has been determined that the surveyed jurisdictional boundaries shown on the referenced plat are an accurate representation of jurisdictional areas within our regulatory authority. This office should be contacted prior to performing any work in these areas. Enclosed is a form describing the basis of jurisdiction for the areas in question. You should also be aware that these areas may be subject to restrictions or requirements of other state or local governmental entities.

If a permit application is forthcoming as a result of this delineation, a copy of this letter, as well as the verified survey plat, should be submitted as part of the application. Otherwise, a delay could occur in confirming that a delineation was performed for the permit project area.

Please be advised that this determination is valid for five (5) years from the date of this letter unless new information warrants revision of the delineation before the expiration date. All actions concerning this determination must be complete within this time frame, or an additional delineation must be conducted. This **approved** jurisdictional determination is an appealable action under the Corps of Engineers administrative appeal procedures defined at 33 CFR 331. The

administrative appeal options, process and appeals request form is attached for your convenience and use.

In future correspondence concerning this matter, please refer to SAC 2008-00109-2JY. You may still need state or local assent. Prior to performing any work, you should contact the South Carolina Department of Health and Environmental Control, Office of Ocean and Coastal Resource Management. A copy of this letter is being forwarded to them for their information.

If you have any questions concerning this matter, please contact David Chamberlain at 843-329-8044 or toll free (outside of the Charleston area) at 1-866-329-8187.

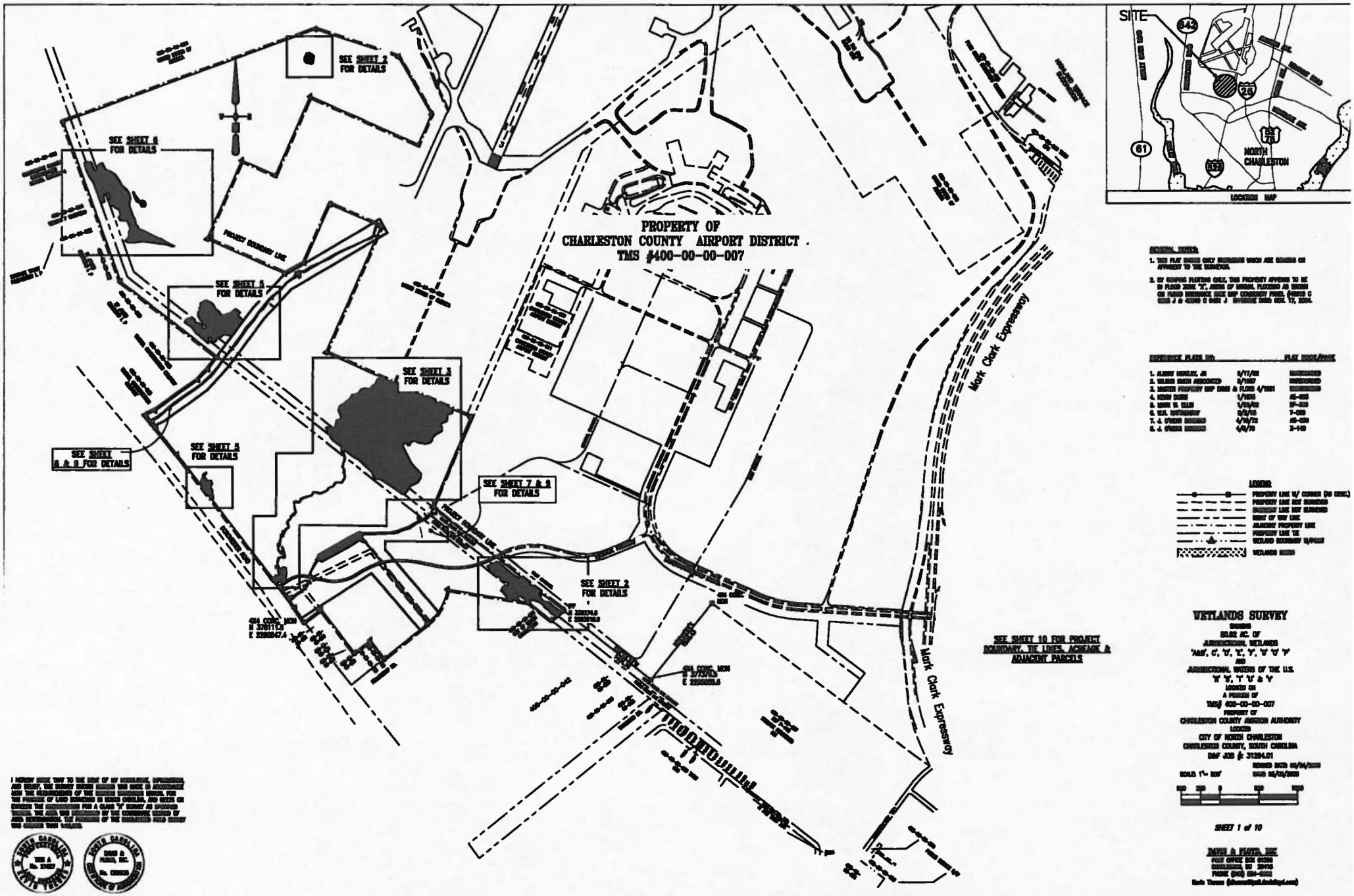
Respectfully,

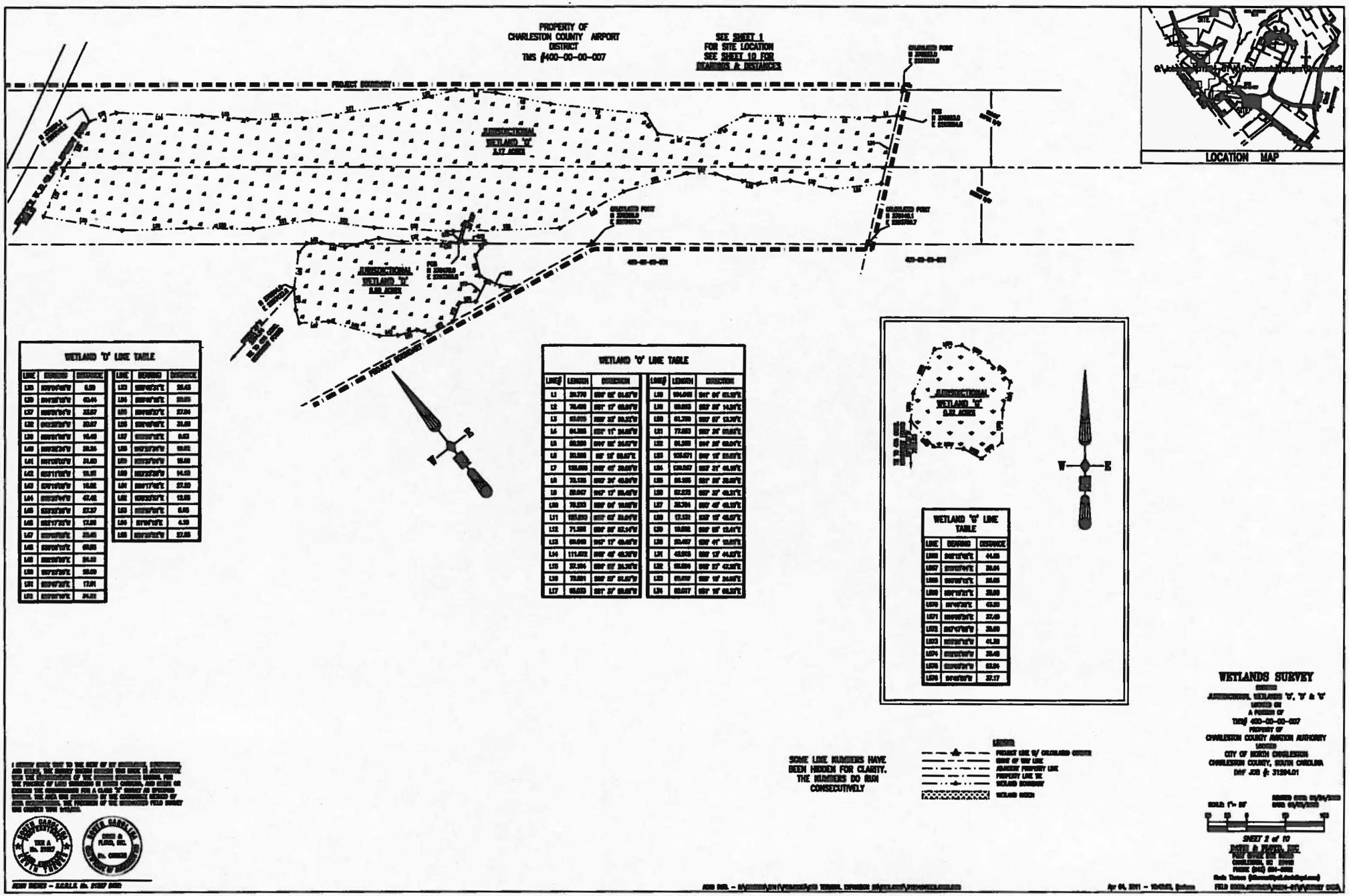
for Charles R. Crosby
Chief, South Branch

Enclosures:
Basis for Jurisdiction
Notification of Appeal Options

Copy Furnished:

S.C. Department of Health
and Environmental Control
Office of Ocean and Coastal Resource Management
1362 McMillan Avenue, Suite 400
Charleston, South Carolina 29405


SEE SHEET 2 FOR DETAILS
SEE SHEET 6 FOR DETAILS
SEE SHEET 5 FOR DETAILS
SEE SHEET 3 FOR DETAILS
SEE SHEET 4 FOR DETAILS
SEE SHEET 8 & 9 FOR DETAILS
SEE SHEET 7 & 9 FOR DETAILS
SEE SHEET 2 FOR DETAILS
PROPERTY OF
CHARLESTON COUNTY AIRPORT DISTRICT
TMS #400-00-00-007
Mark Clark Expressway
Mark Clark Expressway
SEE SHEET 10 FOR PROJECT BOUNDARY, TIE LINES, ACREAGE & ADJACENT PARCELS
SITE
NORTH CHARLESTON
LOCATION MAP
WETLANDS SURVEY
SHOWN
50.82 AC. OF
JURISDICTIONAL WETLANDS
'A&B', 'C', 'D', 'E', 'F', 'G' 'H' 'I'
AND
JURISDICTIONAL WATERS OF THE U.S.
'F' 'G', 'I' 'J' & 'K'
LOCATED ON
A PORTION OF
TMS# 400-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
DAVID A. FLOYD, INC. JOB #: 31294.01
SHEET 1 of 10
DAVID A. FLOYD, INC.



WETLAND 'U' LINE TABLE					
LINE	BEARING	DISTANCE	LINE	BEARING	DISTANCE
L35	S19°04'48"E	6.59	L53	S59°45'37"E	39.43
L36	S44°28'18"E	43.44	L54	S59°45'19"E	39.83
L37	S69°09'16"E	33.57	L55	S59°45'52"E	37.04
L38	S59°23'58"E	33.67	L56	S59°46'04"E	34.68
L39	S59°51'58"E	16.49	L57	S72°22'12"E	8.62
L40	S59°36'34"E	39.56	L58	S72°37'37"E	19.81
L41	S61°05'02"E	34.80	L59	S72°37'37"E	35.69
L42	S53°11'02"E	15.93	L60	S62°23'37"E	14.13
L43	S39°16'58"E	16.82	L61	S59°17'46"E	37.33
L44	S19°23'14"E	47.45	L62	S39°23'57"E	13.55
L45	S32°23'38"E	37.37	L63	S21°57'41"E	8.65
L46	S52°17'32"E	17.69	L64	S7°49'14"E	4.19
L47	S70°07'58"E	23.45	L65	S21°23'52"E	37.69
L48	S59°09'14"E	69.89			
L49	S58°23'58"E	39.19			
L50	S72°37'58"E	39.69			
L51	S72°47'34"E	17.91			
L52	S72°07'34"E	24.22			

WETLAND 'U' LINE TABLE					
LINE#	LENGTH	DIRECTION	LINE#	LENGTH	DIRECTION
L1	39.77ft	S59° 56' 01.67"E	L30	104.44ft	S61° 04' 43.92"E
L2	76.49ft	S61° 17' 49.67"E	L31	69.80ft	S62° 09' 14.26"E
L3	43.61ft	S62° 37' 39.32"E	L32	61.30ft	S62° 37' 13.76"E
L4	94.30ft	S31° 11' 24.67"E	L33	77.80ft	S62° 24' 03.67"E
L5	63.59ft	S64° 55' 24.67"E	L34	94.30ft	S64° 24' 03.67"E
L6	33.59ft	S5° 15' 09.67"E	L35	105.67ft	S66° 15' 03.67"E
L7	106.66ft	S62° 47' 29.67"E	L36	139.66ft	S62° 21' 43.92"E
L8	73.13ft	S62° 24' 43.67"E	L37	94.30ft	S61° 24' 03.67"E
L9	69.84ft	S62° 17' 39.67"E	L38	62.57ft	S62° 21' 43.21"E
L10	79.83ft	S62° 04' 19.92"E	L39	35.34ft	S62° 47' 43.92"E
L11	105.83ft	S62° 03' 34.67"E	L40	17.53ft	S62° 15' 43.67"E
L12	71.10ft	S62° 21' 52.21"E	L41	19.80ft	S62° 15' 13.41"E
L13	69.84ft	S62° 17' 49.67"E	L42	29.40ft	S62° 41' 13.67"E
L14	111.43ft	S62° 47' 43.92"E	L43	43.80ft	S62° 17' 44.92"E
L15	37.19ft	S62° 21' 34.21"E	L44	69.89ft	S62° 37' 43.26"E
L16	73.69ft	S62° 37' 31.67"E	L45	69.89ft	S62° 15' 34.92"E
L17	69.83ft	S61° 37' 39.67"E	L46	69.91ft	S61° 15' 43.92"E

WETLAND 'V' LINE TABLE					
LINE#	LENGTH	DIRECTION	LINE#	LENGTH	DIRECTION
L18	39.77ft	S59° 56' 01.67"E	L30	104.44ft	S61° 04' 43.92"E
L19	76.49ft	S61° 17' 49.67"E	L31	69.80ft	S62° 09' 14.26"E
L20	43.61ft	S62° 37' 39.32"E	L32	61.30ft	S62° 37' 13.76"E
L21	94.30ft	S31° 11' 24.67"E	L33	77.80ft	S62° 24' 03.67"E
L22	63.59ft	S64° 55' 24.67"E	L34	94.30ft	S64° 24' 03.67"E
L23	33.59ft	S5° 15' 09.67"E	L35	105.67ft	S66° 15' 03.67"E
L24	106.66ft	S62° 47' 29.67"E	L36	139.66ft	S62° 21' 43.92"E
L25	73.13ft	S62° 24' 43.67"E	L37	94.30ft	S61° 24' 03.67"E
L26	69.84ft	S62° 17' 39.67"E	L38	62.57ft	S62° 21' 43.21"E
L27	79.83ft	S62° 04' 19.92"E	L39	35.34ft	S62° 47' 43.92"E
L28	105.83ft	S62° 03' 34.67"E	L40	17.53ft	S62° 15' 43.67"E
L29	71.10ft	S62° 21' 52.21"E	L41	19.80ft	S62° 15' 13.41"E
L30	69.84ft	S62° 17' 49.67"E	L42	29.40ft	S62° 41' 13.67"E
L31	111.43ft	S62° 47' 43.92"E	L43	43.80ft	S62° 17' 44.92"E
L32	37.19ft	S62° 21' 34.21"E	L44	69.89ft	S62° 37' 43.26"E
L33	73.69ft	S62° 37' 31.67"E	L45	69.89ft	S62° 15' 34.92"E
L34	69.83ft	S61° 37' 39.67"E	L46	69.91ft	S61° 15' 43.92"E

WETLAND 'W' LINE TABLE		
LINE	BEARING	DISTANCE
L666	S62°12'46"E	44.66
L667	S59°09'04"E	39.84
L668	S59°09'04"E	39.66
L669	S59°10'31"E	39.69
L670	S59°10'31"E	43.25
L671	S59°09'39"E	37.49
L672	S59°07'09"E	39.69
L673	S59°07'31"E	41.39
L674	S59°07'09"E	39.49
L675	S59°09'39"E	69.84
L676	S59°09'39"E	37.17

SOME LINE NUMBERS HAVE BEEN HIDDEN FOR CLARITY. THE NUMBERS DO RUN CONSECUTIVELY

LEGEND
- PROJECT LINE W/ CENTERLINE STATION
- EDGE OF TIDAL LINE
- JURISDICTIONAL PROPERTY LINE
- PROPERTY LINE TIE
- WETLAND BOUNDARY
- WETLAND AREA

WETLANDS SURVEY

JURISDICTIONAL WETLANDS 'U', 'V' & 'W'
LOCATED ON
A PORTION OF
TMS# 400-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
DAVID JOB #: 31394.01

SCALE 1"= 50' | ISSUED DATE: 03/04/2022 | REVISED DATE: 03/31/2022

0 50 100 200

SHEET 2 of 10

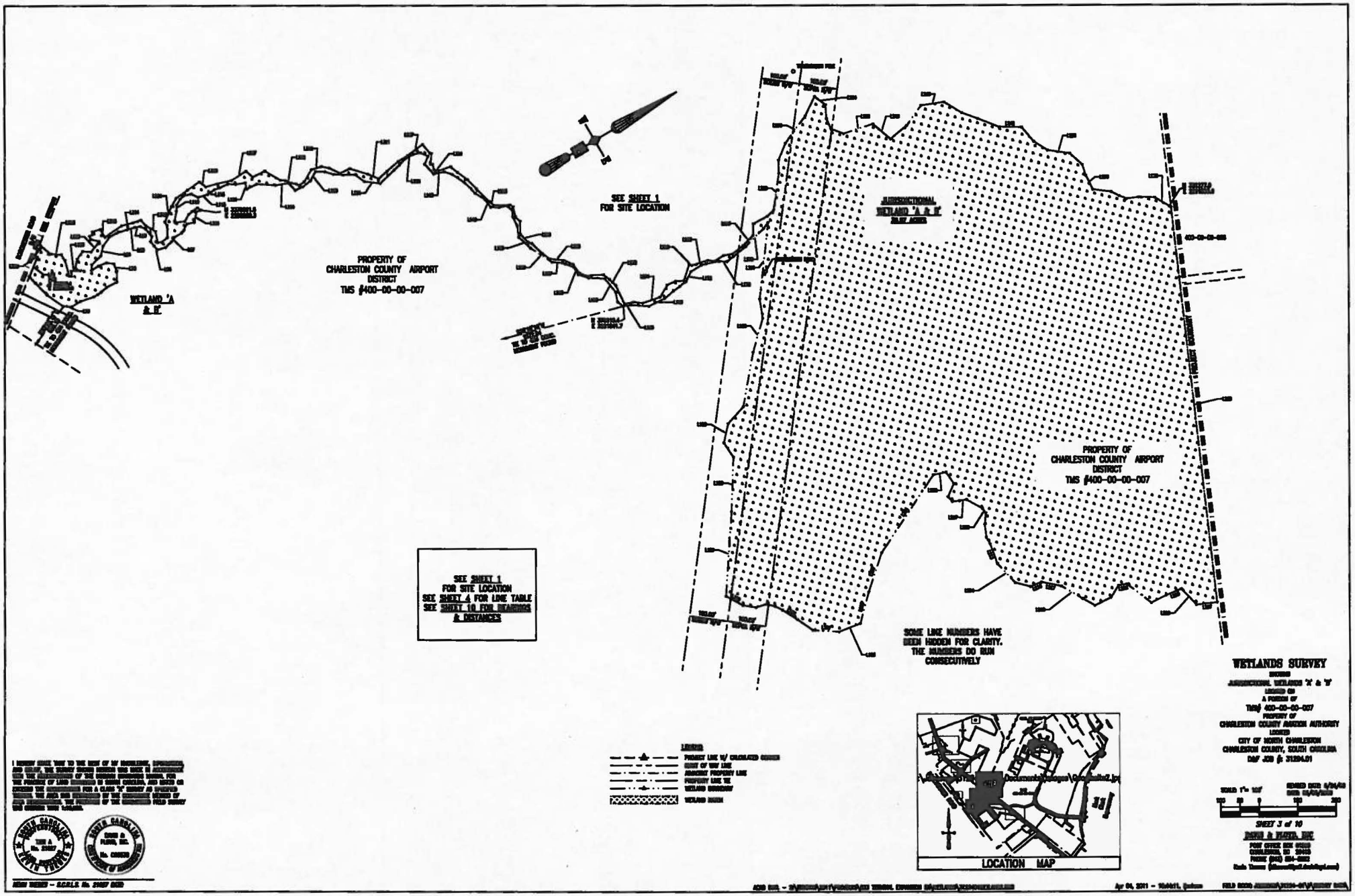
DAVID & PARTNERS, INC.
1037 CHUCK DAWLEY BLVD
CHARLESTON, SC 29492
PHONE (843) 884-4888

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARD MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; AND THAT THE ACCURACY OF THE CONTROL MEASURED BY ME OR UNDER MY SUPERVISION, THE PRECISION OF THE UNADJUSTED FIELD SURVEY WAS GREATER THAN 1:10,000.

NORTH CAROLINA PROFESSIONAL ENGINEER — TIMOTHY A. DAVID, P.E. — No. 31307

NORTH CAROLINA PROFESSIONAL LAND SURVEYOR — TIMOTHY A. DAVID, P.L.S. — No. L-3989

JOHN DOE – S.C.P.L.S. No. 31307 DATE



WETLANDS SURVEY

SHOWING
JURISDICTIONAL WETLANDS 'A' & 'B'
LOCATED ON
A PORTION OF
TMS# 400-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
D&F JOB #: 31294.01

SHEET 3 of 10

DAVID & FLOYD, INC.
POST OFFICE BOX 91000
CHARLESTON, SC 29415
PHONE (843) 554-8900

JOHNS ISLAND MUNICIPAL WATERWORKS

LINE #	BEARING	DISTANCE
L1	S 00° 00' 00" E	1000.00'
L2	S 90° 00' 00" W	1000.00'
L3	N 00° 00' 00" W	1000.00'
L4	N 90° 00' 00" E	1000.00'
L5	S 00° 00' 00" E	1000.00'
L6	S 90° 00' 00" W	1000.00'
L7	N 00° 00' 00" W	1000.00'
L8	N 90° 00' 00" E	1000.00'
L9	S 00° 00' 00" E	1000.00'
L10	S 90° 00' 00" W	1000.00'
L11	N 00° 00' 00" W	1000.00'
L12	N 90° 00' 00" E	1000.00'
L13	S 00° 00' 00" E	1000.00'
L14	S 90° 00' 00" W	1000.00'
L15	N 00° 00' 00" W	1000.00'
L16	N 90° 00' 00" E	1000.00'
L17	S 00° 00' 00" E	1000.00'
L18	S 90° 00' 00" W	1000.00'
L19	N 00° 00' 00" W	1000.00'
L20	N 90° 00' 00" E	1000.00'
L21	S 00° 00' 00" E	1000.00'
L22	S 90° 00' 00" W	1000.00'
L23	N 00° 00' 00" W	1000.00'
L24	N 90° 00' 00" E	1000.00'
L25	S 00° 00' 00" E	1000.00'
L26	S 90° 00' 00" W	1000.00'
L27	N 00° 00' 00" W	1000.00'
L28	N 90° 00' 00" E	1000.00'
L29	S 00° 00' 00" E	1000.00'
L30	S 90° 00' 00" W	1000.00'
L31	N 00° 00' 00" W	1000.00'
L32	N 90° 00' 00" E	1000.00'
L33	S 00° 00' 00" E	1000.00'
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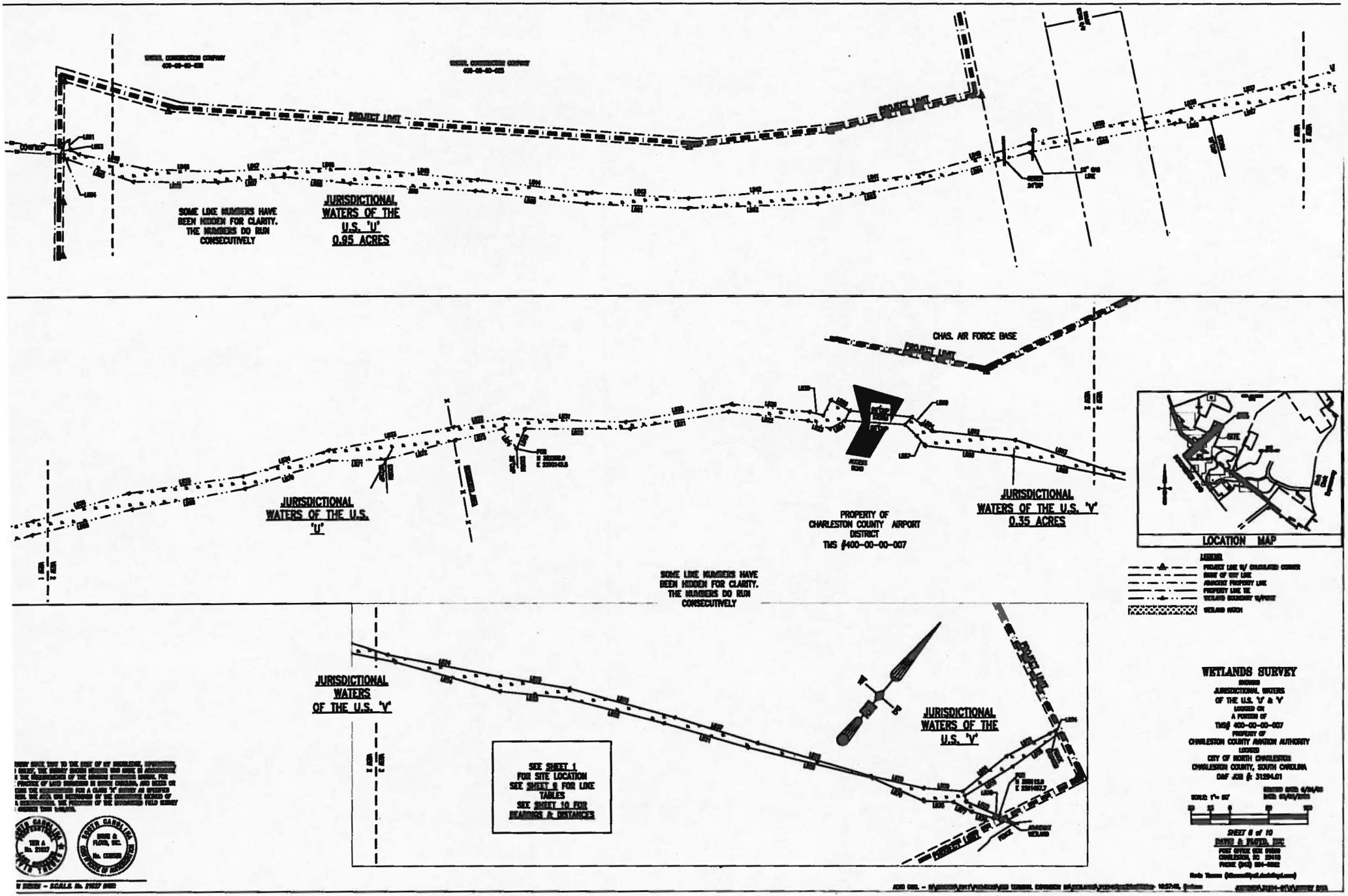
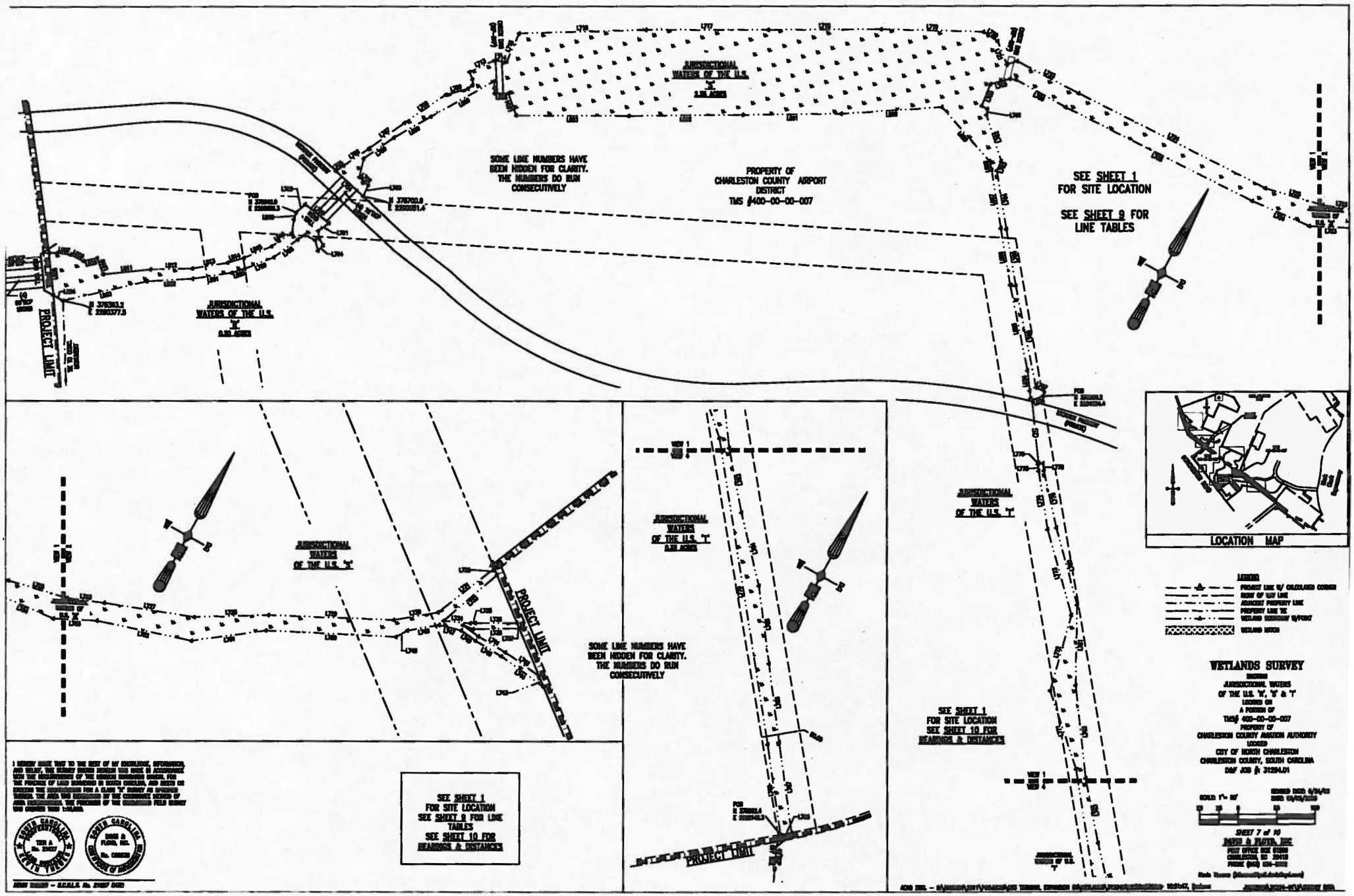


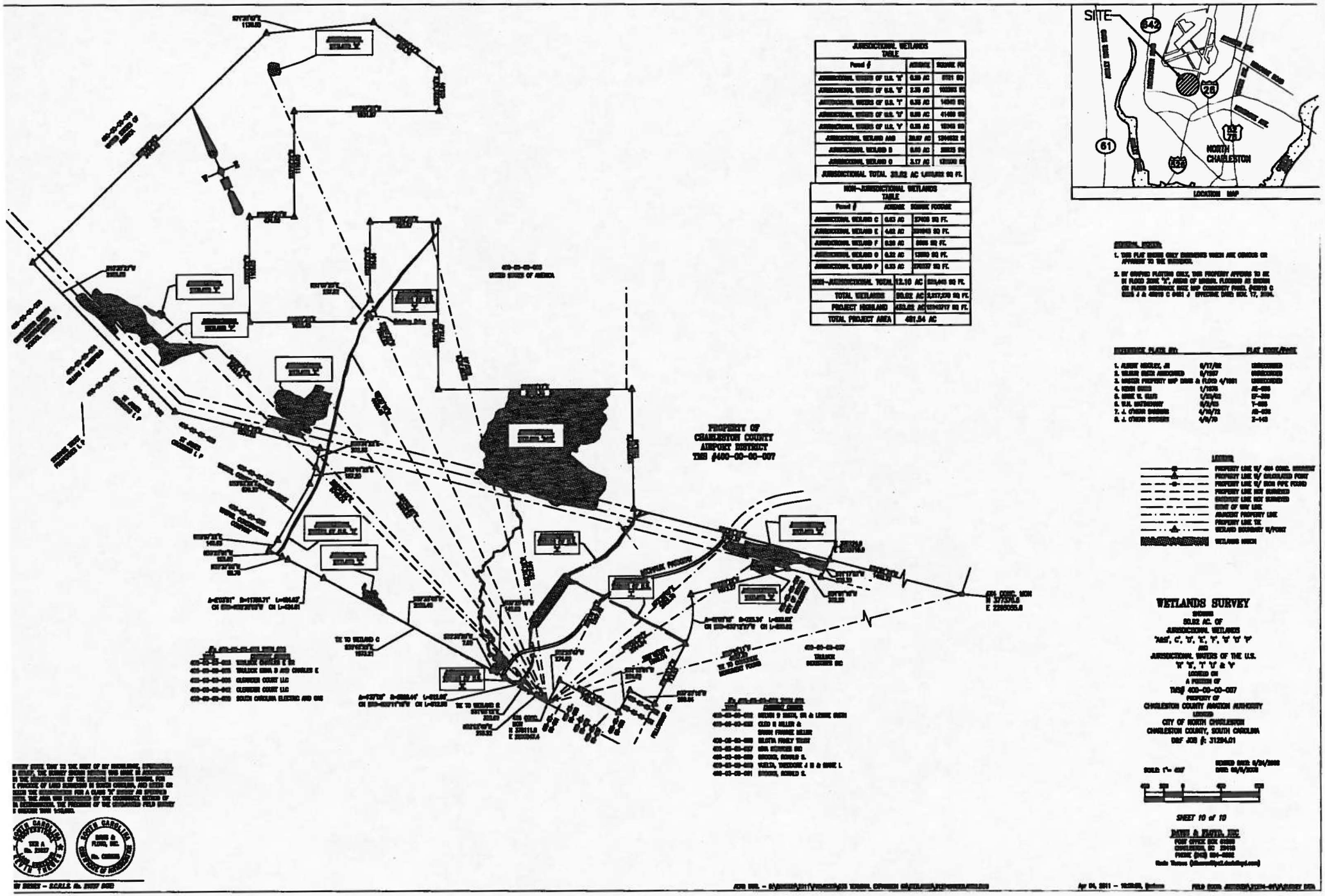
WETLANDS SURVEY

SHOWING
JURISDICTIONAL WATERS OF THE U.S. 'U' & 'V'
LOCATED ON
A PORTION OF
TMS# 400-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
DMF JOB #: 31294.01

SHEET 6 of 10

DAVIS & FLOYD, INC.
POST OFFICE BOX 0000
CHARLESTON, SC 29410
PHONE (843) 000-0000


JURISDICTIONAL WATERS OF THE U.S. 'A'
SOME LINE NUMBERS HAVE BEEN HIDDEN FOR CLARITY. THE NUMBERS DO RUN CONSECUTIVELY
PROPERTY OF CHARLESTON COUNTY AIRPORT DISTRICT TMS #400-00-00-007
SEE SHEET 1 FOR SITE LOCATION
SEE SHEET 9 FOR LINE TABLES
PROJECT LIMIT
JURISDICTIONAL WATERS OF THE U.S. 'B'
JURISDICTIONAL WATERS OF THE U.S. 'C'
JURISDICTIONAL WATERS OF THE U.S. 'D'
SEE SHEET 1 FOR SITE LOCATION
SEE SHEET 9 FOR LINE TABLES
SEE SHEET 10 FOR BEARINGS & DISTANCES
LOCATION MAP
WETLANDS SURVEY
JURISDICTIONAL WATERS OF THE U.S. 'A', 'B' & 'D'
LOCATED ON A PORTION OF TMS# 400-00-00-007
PROPERTY OF CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED CITY OF NORTH CHARLESTON CHARLESTON COUNTY, SOUTH CAROLINA
DAVID & FLATER, INC.



JURISDICTIONAL WETLANDS TABLE		
Pond #	ACREAGE	SQUARE FOOTAGE
JURISDICTIONAL WATERS OF U.S. 'A'	0.00 AC	0000 SQ
JURISDICTIONAL WATERS OF U.S. 'B'	2.35 AC	102000 SQ
JURISDICTIONAL WATERS OF U.S. 'C'	0.33 AC	14340 SQ
JURISDICTIONAL WATERS OF U.S. 'D'	0.95 AC	41400 SQ
JURISDICTIONAL WATERS OF U.S. 'E'	0.28 AC	12240 SQ
JURISDICTIONAL WETLAND AAD	28.87 AC	1244532 SQ
JURISDICTIONAL WETLAND B	0.00 AC	00000 SQ
JURISDICTIONAL WETLAND C	3.17 AC	138000 SQ
JURISDICTIONAL TOTAL	35.82 AC	1560000 SQ FT.

NON-JURISDICTIONAL WETLANDS TABLE		
Pond #	ACREAGE	SQUARE FOOTAGE
JURISDICTIONAL WETLAND C	0.63 AC	27400 SQ FT.
JURISDICTIONAL WETLAND E	4.62 AC	200940 SQ FT.
JURISDICTIONAL WETLAND F	0.20 AC	8800 SQ FT.
JURISDICTIONAL WETLAND G	0.32 AC	13900 SQ FT.
JURISDICTIONAL WETLAND P	0.33 AC	14337 SQ FT.
NON-JURISDICTIONAL TOTAL	12.10 AC	526,940 SQ FT.
TOTAL WETLANDS	35.82 AC	1,557,270 SQ FT.
PROJECT HIGHLAND	455.52 AC	19,844,077 SQ FT.
TOTAL PROJECT AREA	491.34 AC	

PROPERTY OF
CHARLESTON COUNTY
AIRPORT DISTRICT
TMS #400-00-00-007

GENERAL NOTES:

1. THIS PLAT SHOWS ONLY EASEMENTS WHICH ARE OBVIOUS OR APPARENT TO THE SURVEYOR.
2. BY GRAPHIC PLOTTING ONLY, THIS PROPERTY APPEARS TO BE IN FLOOD ZONE "X", AREAS OF MINIMAL FLOODING AS SHOWN ON FLOOD INSURANCE RATE MAP COMMUNITY PANEL #45019 C 0025 J & 45019 C 0401 J EFFECTIVE DATE: JULY 17, 2006.

REFERENCE PLATS (R):

1. ALBERT HUDSON, JR.	6/17/52	UNRECORDED
2. WILDER DATA ASSOCIATES	6/1987	UNRECORDED
3. MASTER PROPERTY MAP DRAWN & PLOTTED 4/1991		UNRECORDED
4. [illegible]	1/1978	R-000
5. HOWE W. ELLIS	1/24/62	R-000
6. W.A. ANTHONY	6/9/72	R-000
7. J. J. O'NEIL ENGINEERS	4/19/72	R-000
8. J. J. O'NEIL ENGINEERS	4/8/70	R-000

LEGEND:

- PROPERTY LINE W/ 4X4 CONC. MONUMENT
- PROPERTY LINE W/ 5/8" REBAR/CAP FOUND
- PROPERTY LINE W/ 3/4" PIPE FOUND
- PROPERTY LINE NOT SURVEYED
- EASEMENT LINE NOT SURVEYED
- CENTER OF WAY LINE
- ADJACENT PROPERTY LINE
- PROPERTY LINE TIE
- WETLAND BOUNDARY W/POINT
- WETLANDS AREA

WETLANDS SURVEY

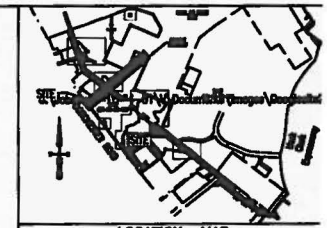
SHOWING
SOLELY AC. OF
JURISDICTIONAL WETLANDS
"A&F", 'C', 'D', 'E', 'F', 'G' & 'P'
AND
JURISDICTIONAL WATERS OF THE U.S.
'A' 'B', 'D' & 'E'
LOCATED ON
A PORTION OF
TMS# 400-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
DRF JOB #: 31294.01

SCALE: 1"= 400'

REVISED DATE: 5/24/2006
DATE: 10/6/2005

SHEET 10 of 10

DAVID A. FLOYD, INC.
POST OFFICE BOX 0000
CHARLESTON, SC 29410
PHONE (843) 554-0000



JURISDICTIONAL WATERS OF THE U.S. 'A'

LINE	BEARING	LENGTH	LINE	BEARING	LENGTH
L369	N19°04'14"E	19.57'	L384	N89°06'25"E	14.17'
L380	S81°06'26"E	39.39'	L385	N39°06'58"E	59.06'
L381	S32°03'26"E	17.29'	L386	N89°06'58"E	19.76'
L382	S39°06'58"E	19.06'	L387	N89°06'58"E	19.06'
L383	S89°43'25"E	19.39'	L388	N89°17'58"E	19.06'
L384	S19°06'13"E	8.06'	L389	N89°25'25"E	19.06'
L385	S89°06'58"E	14.39'	L390	S49°03'19"E	29.76'
L386	S89°06'14"E	19.04'	L391	N89°06'58"E	91.12'
L387	S89°27'39"E	19.39'	L392	S89°03'19"E	84.12'
L388	S39°03'39"E	39.73'	L393	N89°27'58"E	49.39'
L389	S39°06'25"E	49.06'	L394	N49°12'11"E	29.22'
L390	S49°06'58"E	17.49'	L395	N89°25'58"E	39.39'
L391	S89°11'49"E	21.32'	L396	N89°25'58"E	39.39'
L392	S89°25'58"E	69.39'	L397	N89°49'39"E	17.04'
L393	S89°49'19"E	119.89'	L398	N89°39'58"E	9.39'

JURISDICTIONAL WATERS OF THE U.S. 'B'

LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	LINE	BEARING	LENGTH
L400	S39°49'49"E	19.39'	L711	S39°03'39"E	7.49'	L741	S89°39'25"E	41.39'			
L402	S89°13'25"E	3.07'	L712	S39°06'13"E	19.09'	L742	S89°39'13"E	69.89'			
L403	N39°39'49"E	6.39'	L713	S39°06'13"E	39.39'	L743	S89°19'13"E	19.49'			
L404	S89°39'49"E	39.49'	L714	S89°06'13"E	19.09'	L744	N89°49'39"E	69.13'			
L405	N89°31'39"E	113.39'	L715	S89°49'19"E	39.09'	L745	N89°39'58"E	39.19'			
L406	N89°39'58"E	74.39'	L716	S89°49'19"E	169.09'	L746	N89°25'49"E	69.39'			
L407	N89°49'13"E	79.09'	L717	N89°06'58"E	169.09'	L747	S39°03'49"E	39.09'			
L408	N89°49'58"E	11.49'	L718	N89°25'58"E	149.09'	L748	S89°03'49"E	49.09'			
L409	S39°39'39"E	69.09'	L719	N89°25'58"E	133.09'	L749	S89°39'49"E	17.09'			
L410	S89°49'49"E	131.77'	L720	S89°49'19"E	39.13'	L750	N89°39'49"E	169.09'			
L411	S89°49'39"E	139.09'	L721	S89°25'49"E	39.39'	L751	N89°39'49"E	97.09'			
L412	N89°31'49"E	149.49'	L722	N89°25'49"E	13.01'	L752	S39°39'39"E	134.09'			
L413	S89°49'49"E	147.49'	L723	S89°49'19"E	69.09'	L753	N89°49'49"E	69.17'			
L414	N89°39'39"E	31.09'	L724	N89°49'39"E	271.09'	L754	S89°39'39"E	69.39'			
L415	N89°17'49"E	19.09'	L725	S89°39'49"E	39.39'	L755	S89°49'49"E	271.39'			
L416	N89°09'49"E	6.09'	L726	N89°39'49"E	49.39'	L756	N89°49'49"E	73.09'			
L417	N89°17'49"E	9.09'	L727	N89°49'39"E	117.39'	L757	S89°49'19"E	9.09'			
L418	S39°49'49"E	84.09'	L728	S89°49'39"E	69.19'	L758	S89°49'39"E	39.39'			
L419	S39°39'39"E	39.49'	L729	N89°09'49"E	169.09'	L759	S71°49'09"E	39.01'			
L420	S89°39'39"E	49.13'	L730	N89°13'49"E	69.39'	L760	S89°39'49"E	9.47'			
L421	S89°49'17"E	34.09'	L731	N89°49'39"E	69.43'	L761	S89°39'49"E	7.09'			
L422	S89°13'39"E	19.49'	L732	S89°19'49"E	9.19'	L762	S49°49'11"E	69.39'			
L423	S49°49'39"E	19.39'	L733	S89°39'39"E	69.11'	L763	S39°09'49"E	13.49'			
L424	N39°17'39"E	49.09'	L734	N89°17'39"E	34.09'	L764	S89°17'39"E	79.09'			
L425	N89°49'39"E	13.09'	L735	N89°39'39"E	9.49'	L765	S39°39'11"E	74.39'			
L426	N39°39'39"E	49.09'	L736	N89°39'39"E	84.09'	L766	S49°19'49"E	139.13'			
L427	N89°49'39"E	69.09'	L737	S89°09'49"E	7.39'	L767	N89°49'39"E	13.09'			
L428	N89°49'39"E	69.09'	L738	S89°09'39"E	69.09'	L768	S13°39'49"E	9.39'			
L429	N89°49'49"E	39.49'	L739	S89°49'49"E	14.09'						
L430	N89°39'49"E	7.39'	L740	S89°49'49"E	84.09'						

JURISDICTIONAL WATERS OF THE U.S. 'C'

LINE	BEARING	LENGTH
L769	S39°49'09"E	119.14'
L770	S89°39'19"E	403.19'
L771	S89°39'09"E	193.19'
L772	S89°39'09"E	191.89'
L773	S89°39'39"E	119.89'
L774	S89°49'39"E	79.89'
L775	S89°39'49"E	6.89'
L776	S89°49'11"E	1.39'
L777	N89°39'39"E	9.39'
L778	S39°49'39"E	9.89'
L779	S49°39'39"E	79.09'
L780	S49°09'49"E	109.89'
L781	S89°49'49"E	104.89'
L782	N89°49'89"E	193.39'
L783	S39°49'49"E	89.39'
L784	S49°39'49"E	69.19'
L785	S89°39'09"E	191.89'
L786	S89°39'49"E	193.89'
L787	S89°39'39"E	119.39'
L788	S89°39'89"E	14.39'

JURISDICTIONAL WATERS OF THE U.S. 'D'

LINE TABLE			LINE TABLE			LINE TABLE			LINE TABLE		
LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	LINE	BEARING	LENGTH	LINE	BEARING	LENGTH
L830	S17°19'09"E	57.09'	L853	N89°39'39"E	169.89'	L897	N89°09'39"E	69.89'	L891	N89°39'49"E	139.14'
L831	S49°09'39"E	137.49'	L854	N39°14'39"E	119.19'	L845	N89°49'89"E	94.89'	L893	S89°39'09"E	169.89'
L832	S49°09'49"E	139.39'	L839	S49°39'49"E	149.89'	L849	N89°49'49"E	69.19'	L893	N89°49'39"E	139.49'
L833	S89°39'39"E	109.89'	L859	N89°09'39"E	139.89'	L859	N89°09'39"E	13.11'	L894	S89°09'11"E	149.89'
L863	S89°39'39"E	39.39'	L857	N89°09'39"E	169.89'	L891	S49°17'39"E	11.07'	L919	S39°39'39"E	169.89'
L834	S39°09'49"E	39.89'	L859	N89°49'39"E	69.49'	L833	N89°39'39"E	7.39'	L869	S89°49'49"E	49.89'
L835	S13°39'49"E	14.09'	L839	N89°39'39"E	169.49'	L883	N89°39'89"E	69.49'	L897	S39°09'39"E	169.39'
L869	N39°19'39"E	39.39'	L869	N89°89'11"E	149.39'	L884	N89°09'49"E	4.39'	L894	S89°09'49"E	139.17'
L837	N89°09'19"E	39.47'	L894	S49°39'49"E	139.19'	L885	S89°49'49"E	91.39'	L899	S39°49'39"E	149.89'
L899	N89°89'89"E	19.89'	L843	N89°49'89"E	177.89'	L899	S89°39'49"E	169.49'	L879	S39°49'39"E	114.39'
L869	N89°89'89"E	169.19'	L843	N89°49'89"E	139.89'	L897	S49°49'39"E	69.89'	L871	S89°49'17"E	79.49'
L839	N89°19'39"E	149.11'	L844	N89°49'39"E	139.89'	L899	S89°89'49"E	69.14'	L893	S39°39'39"E	94.89'
L831	N39°49'49"E	169.19'	L849	N89°39'39"E	149.39'	L839	S39°39'49"E	149.89'	L893	S89°49'89"E	69.89'
L833	N39°49'89"E	69.89'	L899	N89°49'89"E	169.89'	L899	S39°39'49"E	149.39'	L874	S39°49'39"E	31.39'

JURISDICTIONAL WATERS OF THE U.S. 'E'

LINE TABLE			LINE TABLE		
LINE	BEARING	LENGTH	LINE	BEARING	LENGTH
L870	S39°39'39"E	7.49'	L888	S89°89'39"E	169.37'
L876	S89°39'49"E	39.89'	L883	S89°39'89"E	133.89'
L877	S77°39'49"E	39.89'	L884	S89°49'49"E	199.89'
L878	S89°19'49"E	39.89'	L885	S89°49'39"E	69.89'
L879	S89°39'49"E	79.89'	L886	S89°49'39"E	149.39'
L880	S89°39'89"E	169.37'	L887	S89°89'89"E	113.89'
L884	S89°89'39"E	114.39'	L889	S89°89'39"E	194.39'
L883	S89°49'89"E	139.89'	L889	S89°39'89"E	71.49'
L883	S89°89'39"E	69.89'	L889	S89°39'89"E	91.89'
L884	S89°39'89"E	141.39'	L889	S89°39'13"E	79.39'
L889	S89°39'89"E	139.49'	L888	S89°39'39"E	69.49'
L888	S89°39'89"E	119.89'	L883	S89°39'39"E	7.39'
L887	S89°49'49"E	19.39'	L884	S89°89'39"E	9.39'
L889	S89°39'89"E	29.39'	L885	S89°49'89"E	79.89'
L889	S89°39'89"E	13.39'	L889	S89°89'89"E	79.49'
L891	S89°49'39"E	19.39'	L897	S89°89'89"E	7.89'
			L898	S89°39'89"E	49.39'

SEE SHEET 1 FOR SITE LOCATION
SEE SHEET 10 FOR BEARINGS & DISTANCES

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARDS MANUAL FOR THE PRACTICE OF LAND SURVEYING IN NORTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; THE RATIO PRECISION OF THE UNADJUSTED SURVEY IS AS CALCULATED; THE POSITIONS OF THE UNADJUSTED FIELD SURVEY WERE ESTABLISHED WITH TRIMBLE.

NORTH CAROLINA PROFESSIONAL SEAL — No. 21057 — SURVEYOR

NORTH CAROLINA SEAL — No. [illegible]

WETLANDS SURVEY

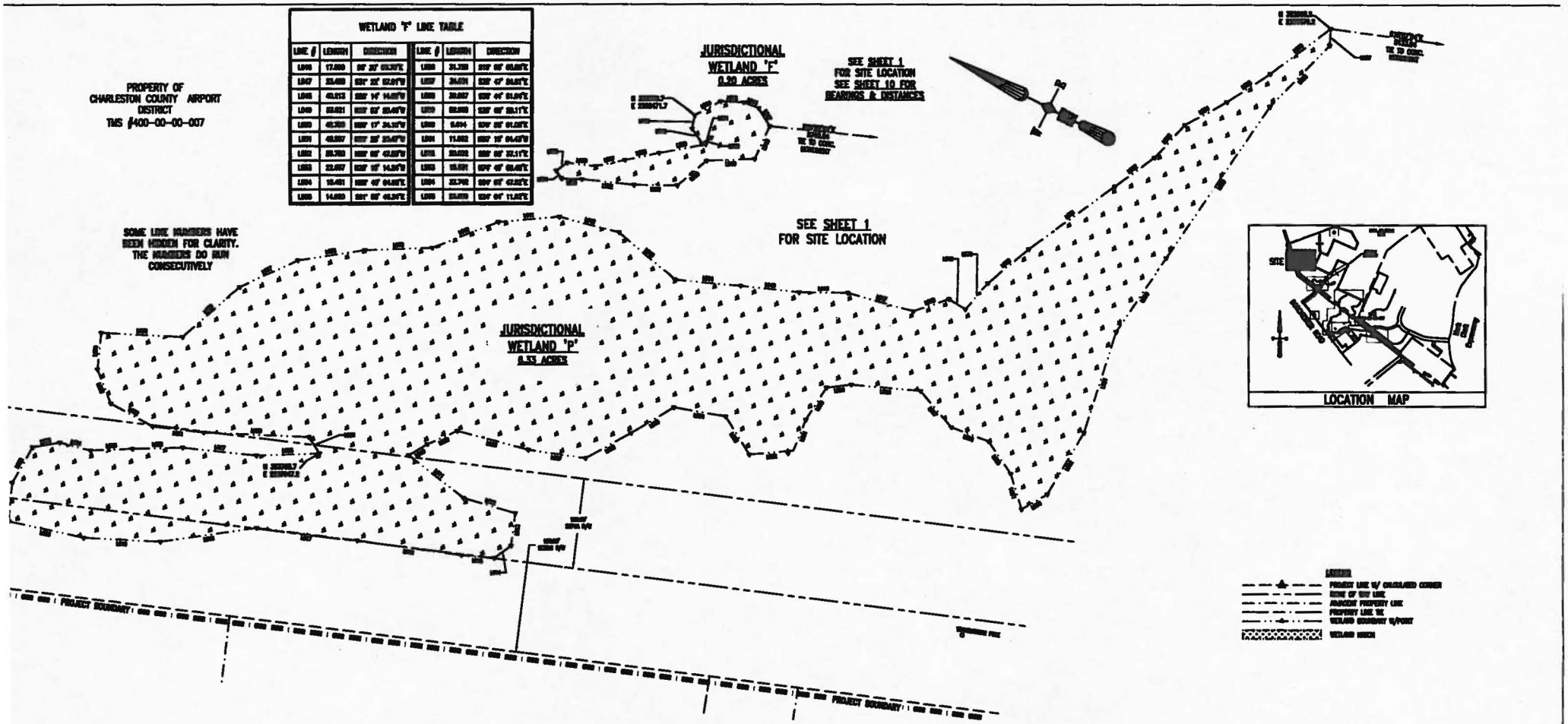
SHOWING
WETLANDS
LINE TABLES
FOR
JURISDICTIONAL WATERS
OF THE U.S. 'A', 'B', 'C', 'D' & 'E'
LOCATED ON
A PORTION OF
TMS# 460-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
DAVI JOB #: 31294.01

ISSUED DATE: 6/24/15
DGN: 03/05/2015

SCALE: 1"= 80'

0 80 160 320

DAVIS & FLOYD, INC.
POST OFFICE BOX 31000
CHARLESTON, SC 29417
PHONE (843) 554-8300



WETLAND 'E' LINE TABLE

LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION
L946	17.669	S6° 23' 03.30"E	L955	31.330	S33° 05' 45.85"E
L947	33.469	S39° 32' 52.91"E	L957	34.674	S35° 47' 39.65"E
L948	49.213	S55° 14' 14.05"E	L958	39.667	S39° 44' 51.94"E
L949	53.621	S69° 53' 33.46"E	L959	53.588	S39° 06' 39.11"E
L950	43.359	S89° 17' 39.35"E	L960	9.614	S39° 06' 01.05"E
L951	49.697	S89° 25' 23.47"E	L961	71.662	S39° 06' 04.43"E
L952	33.783	N89° 05' 43.89"E	L962	33.602	S39° 06' 32.11"E
L953	23.457	N89° 15' 14.35"E	L963	15.531	S39° 47' 09.46"E
L954	10.451	N89° 47' 04.55"E	L964	22.742	S39° 06' 42.92"E
L955	14.669	S81° 05' 45.30"E	L965	23.609	S39° 04' 11.92"E

WETLAND 'P' LINE TABLE

LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION
L576	33.602	S39° 45' 03.05"E	L594	41.102	S89° 05' 03.17"E	L612	33.453	S57° 47' 13.04"E	L630	25.304	S32° 01' 33.67"E	L648	76.197	S89° 25' 42.26"E
L577	39.669	S89° 04' 03.53"E	L595	44.662	S77° 22' 15.01"E	L613	34.033	S87° 15' 04.17"E	L631	45.833	S39° 06' 14.35"E	L649	76.302	S89° 06' 03.91"E
L578	118.633	S52° 21' 49.07"E	L596	44.665	S6° 12' 33.74"E	L614	72.365	S11° 17' 39.01"E	L632	69.640	S39° 06' 33.67"E	L650	69.355	S31° 26' 43.91"E
L579	94.344	S52° 13' 34.01"E	L597	53.535	S32° 01' 57.15"E	L615	63.357	S19° 26' 43.53"E	L633	63.433	S32° 26' 03.37"E	L651	69.342	S32° 01' 35.76"E
L580	59.402	S70° 47' 14.09"E	L598	70.637	S32° 45' 04.08"E	L616	39.440	S39° 06' 43.26"E	L634	70.466	S39° 32' 02.67"E	L652	61.810	S32° 01' 57.82"E
L581	59.662	S39° 06' 34.33"E	L599	25.695	S32° 17' 39.67"E	L617	23.552	S89° 41' 43.67"E	L635	21.725	S32° 11' 43.91"E	L653	74.041	S31° 26' 19.33"E
L582	57.602	S89° 06' 39.47"E	L600	43.845	S32° 41' 14.67"E	L618	39.691	S31° 45' 39.45"E	L636	117.334	S39° 06' 41.39"E	L654	69.017	S32° 06' 33.91"E
L583	63.639	S52° 26' 44.91"E	L601	57.634	S32° 12' 39.55"E	L619	117.948	S32° 41' 03.04"E	L637	57.117	S32° 45' 01.65"E	L655	94.693	S32° 06' 33.62"E
L584	13.902	S39° 06' 13.67"E	L602	43.804	S32° 04' 03.44"E	L620	113.391	S32° 37' 19.21"E	L638	63.633	S1° 04' 39.04"E	L656	74.859	S31° 26' 49.61"E
L585	55.288	S32° 21' 01.24"E	L603	43.851	S32° 15' 33.61"E	L621	109.371	S39° 26' 04.33"E	L639	43.745	S81° 06' 39.12"E	L657	74.839	S31° 26' 33.67"E
L586	113.637	S32° 12' 17.51"E	L604	53.619	S17° 02' 43.67"E	L622	69.648	S32° 45' 33.65"E	L640	43.633	S32° 15' 39.91"E	L658	51.881	S7° 06' 39.77"E
L587	59.835	S32° 12' 03.47"E	L605	53.651	S31° 26' 39.67"E	L623	69.781	S14° 17' 39.35"E	L641	43.845	S81° 06' 39.12"E			
L588	113.613	S31° 07' 43.67"E	L606	53.651	S31° 26' 39.67"E	L624	43.853	S89° 15' 03.67"E	L642	69.643	S39° 32' 19.67"E			
L589	118.613	S31° 07' 43.67"E	L607	53.651	S31° 26' 39.67"E	L625	43.783	S89° 15' 03.67"E	L643	69.781	S39° 06' 39.91"E			
L590	70.637	S39° 47' 03.35"E	L608	94.669	S32° 32' 03.67"E	L626	39.781	S39° 26' 43.41"E	L644	71.197	S31° 06' 03.47"E			
L591	33.494	S39° 26' 03.35"E	L609	94.669	S31° 04' 33.53"E	L627	39.781	S39° 26' 43.41"E	L645	76.346	S32° 21' 03.91"E			

KNOW ALL THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REQUIREMENTS OF THE MINIMUM STANDARD MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; AND THAT THE ACCURACY OF THE CONTROL SHOWN HEREON IS GREATER THAN 1:10,000.

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 23027

DAVIS & FLOYD, INC. CERTIFICATE OF AUTHORIZATION No. 000065

WETLANDS SURVEY

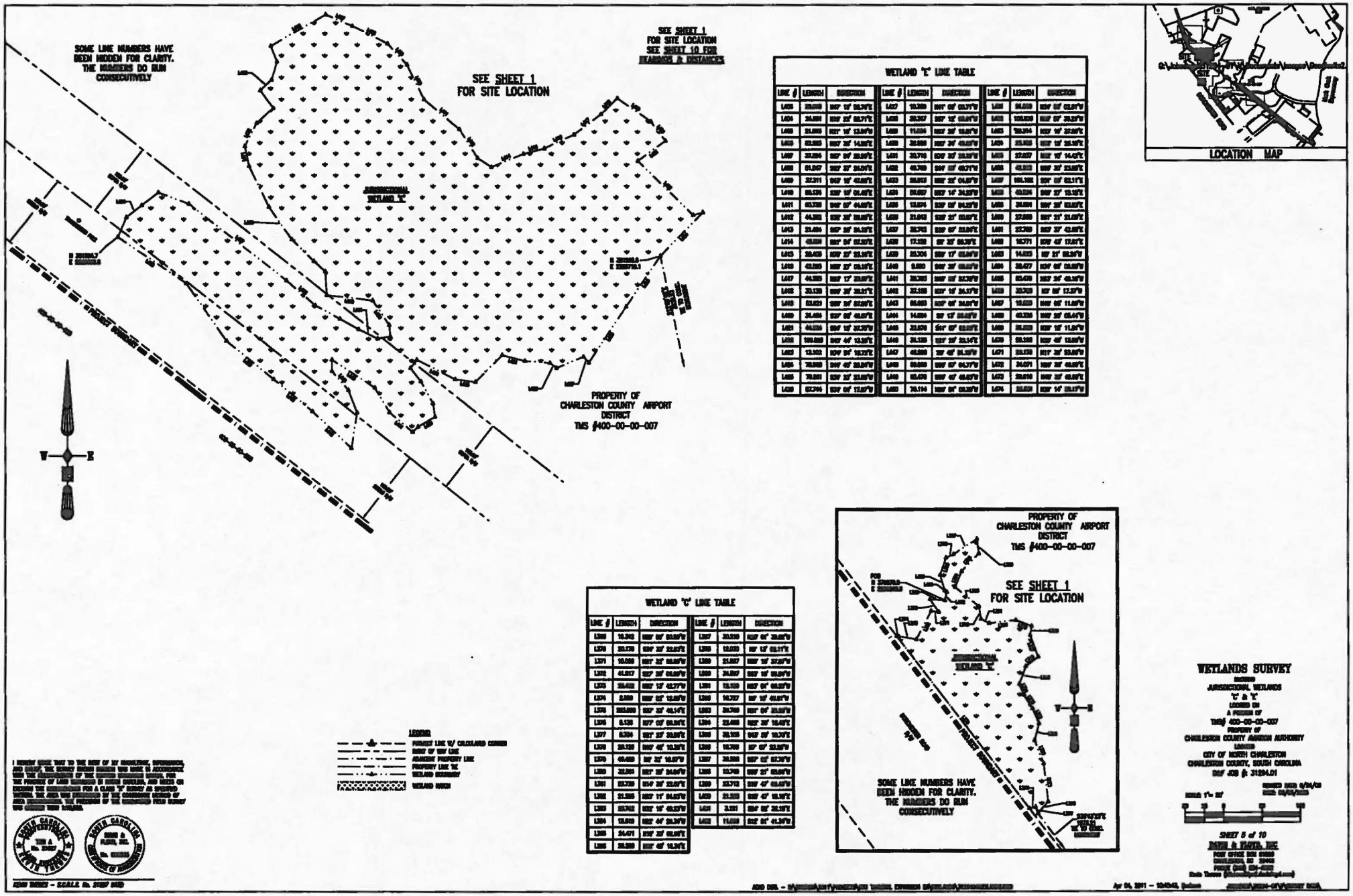
DELINEATION OF
JURISDICTIONAL WETLANDS
'E' & 'P'
LOCATED ON
A PORTION OF
TMS# 400-00-00-037
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
D&F JOB #: 31294.01

SCALE: 1"= 60' REVISED DATE: 5/24/11
ORIG: 03/03/2011

60 30 0 60 120

SHEET 6 of 10

DAVIS & FLOYD, INC.
POST OFFICE BOX 00000
CHARLESTON, SC 29416
PHONE (843) 000-0000



WETLAND "E" LINE TABLE

LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION
L403	39.69ft	S07° 13' 55.74"E	L427	10.38ft	S01° 09' 03.71"E	L451	94.83ft	S04° 59' 03.84"W
L404	34.48ft	S09° 22' 08.71"E	L428	29.35ft	S05° 12' 03.84"W	L452	109.83ft	S03° 59' 39.84"W
L405	21.89ft	S01° 16' 13.84"W	L429	71.03ft	S02° 28' 03.84"W	L453	39.31ft	S02° 16' 22.84"E
L406	63.58ft	S02° 25' 14.16"E	L430	32.89ft	S02° 24' 43.84"W	L454	25.16ft	S01° 13' 39.34"E
L407	39.89ft	S07° 09' 39.84"E	L431	30.77ft	S09° 32' 39.84"W	L455	37.65ft	S02° 16' 14.43"E
L408	64.84ft	S02° 27' 34.84"E	L432	49.79ft	S04° 11' 49.71"W	L456	43.83ft	S00° 31' 33.84"E
L409	32.31ft	S02° 16' 43.84"E	L433	38.85ft	S02° 23' 04.84"W	L457	103.36ft	S04° 13' 03.31"E
L410	89.53ft	S02° 16' 04.48"E	L434	59.69ft	S03° 14' 34.84"W	L458	43.84ft	S00° 31' 13.34"E
L411	63.72ft	S02° 07' 44.84"E	L435	13.61ft	S09° 16' 04.84"W	L459	28.69ft	S01° 28' 03.84"E
L412	44.36ft	S02° 28' 39.84"E	L436	21.84ft	S09° 21' 03.84"E	L460	27.66ft	S01° 21' 31.84"E
L413	23.48ft	S07° 28' 34.33"E	L437	28.74ft	S09° 07' 33.84"E	L461	23.34ft	S00° 31' 43.84"E
L414	43.83ft	S01° 04' 03.33"E	L438	17.19ft	S1° 25' 03.33"E	L462	16.77ft	S78° 43' 17.84"E
L415	39.40ft	S02° 23' 33.16"E	L439	25.30ft	S09° 17' 03.84"W	L463	14.83ft	N7° 21' 03.34"W
L416	43.28ft	S02° 23' 03.16"E	L440	9.89ft	S02° 28' 03.84"W	L464	39.47ft	S04° 06' 03.84"W
L417	44.38ft	S02° 17' 33.81"E	L441	30.36ft	S02° 02' 32.39"W	L465	65.43ft	S02° 26' 43.34"W
L418	39.13ft	S02° 26' 39.21"E	L442	32.18ft	S07° 16' 26.17"W	L466	20.70ft	S7° 06' 17.39"W
L419	53.83ft	S02° 26' 22.99"E	L443	69.66ft	S03° 06' 34.84"W	L467	16.83ft	S02° 06' 11.84"W
L420	26.49ft	S10° 03' 49.84"E	L444	14.89ft	S5° 13' 03.84"W	L468	43.35ft	S02° 26' 03.44"W
L421	44.83ft	S04° 16' 37.33"W	L445	23.87ft	S01° 07' 03.84"E	L469	26.83ft	S01° 16' 11.84"W
L422	199.88ft	S02° 44' 13.39"E	L446	26.13ft	S22° 29' 33.14"E	L470	69.38ft	S02° 46' 13.84"W
L423	13.10ft	S09° 26' 16.33"E	L447	49.89ft	S5° 48' 31.39"W	L471	53.83ft	S21° 29' 53.84"W
L424	78.89ft	S01° 46' 33.84"W	L448	69.69ft	S02° 07' 04.27"E	L472	24.07ft	S02° 26' 43.84"E
L425	79.83ft	S09° 21' 33.84"W	L449	63.47ft	S02° 47' 43.84"E	L473	39.61ft	S02° 26' 43.84"E
L426	63.74ft	S09° 04' 13.84"W	L450	79.11ft	S02° 24' 03.39"E	L474	33.62ft	S09° 14' 03.31"E

WETLAND "C" LINE TABLE

LINE #	LENGTH	DIRECTION	LINE #	LENGTH	DIRECTION
L369	16.34ft	S02° 09' 03.84"E	L387	20.23ft	S02° 04' 39.84"E
L370	33.17ft	S09° 22' 33.84"E	L388	12.03ft	S5° 13' 03.31"E
L371	19.09ft	S01° 22' 03.84"W	L389	21.83ft	S09° 16' 37.84"W
L372	41.81ft	S2° 26' 03.84"W	L390	34.89ft	S02° 16' 03.84"E
L373	33.46ft	S02° 13' 43.77"W	L391	13.10ft	S02° 04' 03.84"W
L374	2.99ft	S09° 02' 13.84"W	L392	16.72ft	S5° 13' 43.84"W
L375	103.69ft	S02° 23' 43.14"E	L393	39.79ft	S02° 04' 33.84"W
L376	6.12ft	S17° 03' 03.84"E	L394	33.46ft	S02° 26' 16.44"E
L377	6.30ft	S01° 23' 29.84"E	L395	39.15ft	S02° 26' 16.34"E
L378	39.13ft	S02° 46' 16.39"E	L396	16.39ft	S7° 03' 33.84"W
L379	49.46ft	S1° 23' 16.83"E	L397	39.39ft	S02° 02' 57.34"E
L380	33.84ft	S01° 23' 34.84"W	L398	13.74ft	S09° 21' 03.84"E
L381	29.23ft	S04° 26' 33.84"E	L399	33.71ft	S09° 47' 43.84"E
L382	21.39ft	S02° 11' 04.84"W	L400	21.23ft	S02° 47' 16.84"E
L383	33.74ft	S02° 16' 43.84"E	L401	3.11ft	S04° 16' 26.16"E
L384	13.84ft	S02° 44' 39.34"E	L402	11.68ft	S02° 24' 41.34"E
L385	54.47ft	S1° 23' 03.84"E			
L386	33.59ft	S01° 47' 16.34"E			

I HEREBY STATE THAT TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, THE SURVEY SHOWN HEREON WAS MADE IN ACCORDANCE WITH THE REGULATIONS OF THE MINIMUM STANDARD MANUAL FOR THE PRACTICE OF LAND SURVEYING IN SOUTH CAROLINA, AND MEETS OR EXCEEDS THE REQUIREMENTS FOR A CLASS "A" SURVEY AS SPECIFIED THEREIN; AND THAT THE RATIO OF PRECISION OF THE UNADJUSTED SURVEY AS SHOWN HEREON IS 1:[illegible]

SOUTH CAROLINA REGISTERED LAND SURVEYOR No. 21607

SOUTH CAROLINA CERTIFICATE OF AUTHORIZATION

WETLANDS SURVEY

SHOWING
JURISDICTIONAL WETLANDS
"C" & "E"
LOCATED ON
A PORTION OF
TMS# 400-00-00-007
PROPERTY OF
CHARLESTON COUNTY AVIATION AUTHORITY
LOCATED
CITY OF NORTH CHARLESTON
CHARLESTON COUNTY, SOUTH CAROLINA
DEF JOB #: 31294.01

ISSUED DATE 9/24/10
REVISED 09/03/2020

SCALE 1"= 20'

SHEET 9 of 10

PAUL & FLOYD, INC.
POST OFFICE BOX 30000
CHARLESTON, SC 29405
PHONE (843) 554-4222
Email Theresa (tfloyd@paulandfloyd.com)

Appendix C

Historical, Archaeological, Architectural, and Cultural Resources Correspondence

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427
Fax 803-328-5791

MAR 4 2011

March 2nd , 2011

Attention: CCAA Terminal Expansion – Comments
S&ME, Inc.
620 Wando Park Boulevard
Mount Pleasant, SC 29464

Re. THPO #	TCNS#	Project Description
2011-8-11		EA: Terminal Expansion at the Charleston International Airport Charleston Co., SC

Dear Mr. Killingsworth,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions please contact Caitlin Totherow at 803-328-2427 ext. 226, or e-mail caitlinh@ccppcrafts.com.

Sincerely,

Caitlin Totherow for
Wenonah G. Haire
Tribal Historic Preservation Officer

MAR 9 2011

March 3, 2011

South Carolina Archives & History Center
History & Heritage For All Generations

Aaron Brummitt
SM&E
620 Wando Park Blvd
Mt. Pleasant, SC 29464

Re: Charleston International Airport Expansion, Charleston County, SC
SHPO #: 11CW0076

Dear Mr. Brummitt:

Thank you for your letter of February 18, which we received on February 22, regarding the above referenced project. We also received photos and maps as supporting documentation for this undertaking. The State Historic Preservation Office is providing comments to Federal Aviation Administration pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations, 36 CFR 800.

Based on the description of the Area of Potential Effect (APE) and the identification of historic properties within the APE, our office concurs with the assessment that no properties listed in or eligible for listing in the National Register of Historic Places will be affected by this project.

If archaeological materials are encountered during construction, the procedures codified at 36 CFR 800.13(b) will apply. Archaeological materials consist of any items, fifty years old or older, which were made or used by man. These items include, but are not limited to, stone projectile points (arrowheads), ceramic sherds, bricks, worked wood, bone and stone, metal and glass objects, and human skeletal materials. The federal agency or the applicant receiving federal assistance should contact our office immediately.

If you have any questions, please contact me at (803) 896-6169 or cwilson@scdah.state.sc.us.

Sincerely,

Caroline Dover Wilson
Review and Compliance Coordinator
State Historic Preservation Office

Appendix D

Land Use Assurance Letter

CHARLESTON COUNTY AVIATION AUTHORITY

CHARLESTON INTERNATIONAL AIRPORT • 5500 INTERNATIONAL BLVD. • #101 • CHARLESTON, SC 29418-6911

TELE: (843) 767-7000 • FAX: (843) 760-3020

WWW.CHS-AIRPORT.COM

August 8, 2011

VIA E-MAIL

Ms. Lisa Favors
Program Manager
Federal Aviation Administration
Atlanta Airports District Office
1701 Columbia Avenue, Suite 2-260
College Park, Georgia 30337

RE: Proposed Terminal Area Improvements Charleston International Airport

Dear Ms. Favors:

The following information is provided in regards to land use assurance as required by Section 511 (a) (5) of the Airport and Airway Improvement Act of 1982, as amended:

The Charleston County Aviation Authority provides assurance that appropriate action within the authority of the Charleston County Aviation Authority, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to restrict the use of land adjacent to or in the immediate vicinity of the Charleston International Airport to activities and purpose compatible with normal airport operations, including landing and takeoff of aircraft. This assurance includes the consideration of both existing and planned land uses.

Charleston International Airport is operated by the Charleston County Aviation Authority under a joint use agreement with the U.S. Air Force, which owns and operates the airfield as part of the Charleston Air Force Base. The U.S. Air Force conducts and produces Air Installation Compatible Use Zone (AICUZ) studies for Charleston Air Force Base that includes military and civilian aircraft operations at both Charleston Air Force Base and Charleston International Airport. The AICUZ study recommends compatible land use guidelines for land uses surrounding the Charleston Air Force Base and Charleston International Airport that include both U.S. Air Force and FAR Part 77 requirements. Local communities and governments are encouraged to incorporate the recommended land uses in developing their planning and zoning policies.

Thank you for your support and please do not hesitate to contact should you have any questions.

Sincerely,

Jim Fann, A.A.E., P.E.
Deputy Director of Engineering and Planning

JF/dcl
cc: Parks Preston, FAA Southern Region Program Manager
Robert Rau, FAA Southern Region Planner
Susan M. Stevens, A.A.E., Director of Airports
William F. New, Jr., Deputy Director of Airports
John Connell, P.E., LEED AP, Director of Engineering and Facilities
Sean Tracey, Director of Special Projects
Robert Carew, A.A.E., Manager of Properties
Stephen Culberson, Ricondo & Associates, Inc.

Appendix E

Public Involvement

The Draft EA was released for public review on June 12, 2011. A Notice of Availability (NOA) requesting comments on the Draft EA was published in the print version of the Charleston *Post and Courier* on June 12, 2011; proof of publication is provided in this appendix. The Draft EA was made available for public review at four locations including the Charleston County Aviation Authority, Charleston International Airport, the Federal Aviation Administration Atlanta Airports District Office, and public libraries in Charleston and North Charleston. A complete list of locations can be found in the NOA text on the following pages. A copy of the NOA was also sent to the same federal, State, and local agency contacts to which the project introduction letter was transmitted in February 2011 (see Appendix A for a list of agency contacts).

The NOA requested comments be transmitted by the close of business on July 12, 2011. As of July 22, 2011, two email comment letters, one from the U.S. Air Force Charleston Air Force Base and the other from the South Carolina Department of Archives and History (SHPO) were received. Copies of those comments are provided at the end of this appendix. A discussion of the comments and resolution is provided in Chapter IV, Section 4.16.

STEPHEN CULBERSON RICONDO & ASSOCIATES INC.
20 NORTH CLARK STREET SUITE 1500
CHICAGO IL 60602

AFFIDAVIT OF PUBLICATION

The Post and Courier

State of South Carolina
County of Charleston

Personally appeared before me the undersigned advertising clerk of the above indicated newspaper published in the city of Charleston, county and state aforesaid, who, being duly sworn, says that the advertisement of

(copy attached)

appeared in the issues of said newspaper on the following day(s):

06/12/11 Sun PC
06/12/11 Sun CNW

at a cost of	$318.90
Account#	269790
Order#	549203
P.O. Number:	

Subscribed and sworn to before me this 15th day of June A.D. 2011

advertising clerk

NOTARY PUBLIC, SC
My commission expires

SHELLY DUBERRY NOTARY

Charleston County Aviation Authority

U.S. Department of Transportation Federal Aviation Administration

Draft Environmental Assessment Terminal Area Improvements

Charleston International Airport, Charleston County, South Carolina

NOTICE OF AVAILABILITY AND NOTICE OF OPPORTUNITY FOR A PUBLIC HEARING

The Charleston County Aviation Authority (CCAA) and the U.S. Department of Transportation, Federal Aviation Administration (FAA) has published a Draft Environmental Assessment (EA) for proposed terminal area improvements at Charleston International Airport. The Draft EA evaluates the potential environmental effects of the expansion of the existing passenger terminal, expansion of the passenger terminal aircraft apron, expansion of the passenger terminal parking garage, and expansion of the surface vehicle parking at Charleston International Airport. The Draft EA was prepared by the CCAA and the FAA pursuant to the National Environmental Policy Act of 1969, FAA Order 1050.1E, Environmental Impacts: Policies and Procedures, and FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions. Copies of the Draft EA are available for public review at the following locations during normal business hours through July 12, 2011:

- Charleston County Aviation Authority, 5500 International Boulevard, Suite 101, Charleston, South Carolina 29418-6911
- Dorchester Road Regional Branch, Charleston County Public Library, 6325 Dorchester Road, North Charleston, South Carolina 29418
- Main Library, Charleston County Public Library, 68 Calhoun Street, Charleston, South Carolina 29401
- Atlanta Airports District Office, Federal Aviation Administration, 1701 Columbia Avenue, Campus Building 2-260, Atlanta, Georgia 30337

Written comments on the adequacy of information disclosed in the Draft EA may be sent by mail or facsimile to:

SMME, Inc.
ATTN: CCAA TERMINAL AREA IMPROVEMENTS - Comments
639 Wando Park Boulevard
Mount Pleasant, SC 29464
Fax: (843) 881-6149
Email: abrummitt@smeinc.com

Comments must be received by 5:00 p.m. Eastern Daylight Time, Tuesday, July 12, 2011. Please allow adequate time for mailing. Comments received on the Draft EA and the responses to those comments will be disclosed in the Final EA. A public hearing on the Draft EA to address the proposed actions, potential economic, social, and environmental effects, and the project's consistency with the goals and objectives of each affected area's land use or planning strategy, will be held if one is requested in writing by 5:00 p.m. Eastern Daylight Time, Tuesday, July 12, 2011. AD# 549203

Charleston County Aviation Authority

U.S. Department of Transportation
Federal Aviation Administration

Draft Environmental Assessment
Terminal Area Improvements

Charleston International Airport, Charleston County, South Carolina

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S&ME, Inc.
ATTN: CCAA TERMINAL AREA IMPROVEMENTS - Comments
620 Wando Park Boulevard
Mount Pleasant, South Carolina 29464
Fax: (843) 881-6149
Email: abrummitt@smeinc.com

Comments must be received by 5:00 p.m. Eastern Daylight Time, Tuesday, July 12, 2011. Please allow adequate time for mailing. Comments received on the Draft EA and the responses to those comments will be disclosed in the Final EA. A public hearing on the Draft EA to address the proposed actions, potential economic, social, and environmental effects, and the project's consistency with the goals and objectives of each affected area's land use or planning strategy, will be held if one is requested in writing by 5:00 p.m. Eastern Daylight Time, Tuesday, July 12, 2011.

Stephen Culberson

From: CAMP, JOE V JR GS-11 USAF AMC 628 CES/CEAO <joe.camp@us.af.mil>
Sent: Friday, July 01, 2011 9:00 AM
To: abrummitt@smeinc.com
Cc: jfann@chs-airport.com; URRUTIA, ALVARO E GS-11 USAF AMC 628 CES/CEAO; WERRELL, WILLIAM G GS-12 USAF AMC 628 CES/CEAO; STANLEY, JON B GS-13 USAF AMC 628 ABW/JA; EPSTEIN, MARK A GS-12 USAF AMC 628 CES/CEAO
Subject: Draft Environmental Assessment (EA) for Terminal Area Improvements - Charleston International Airport

Dear S&ME representative for CCAA,

628 CES/CEA is providing review comments on subject document provided to us as an enclosure to Ricondo and Associates letter dated 10 June 2011.

The Proposed Action includes unapproved encroachment onto Air Force property, a small portion of which also includes an Air Force Clear Zone. This is depicted on Exhibit I-6 of the EA, shown as part of Terminal Apron Expansion. If this encroachment is deemed necessary, the proponent should formalize the request through appropriate Air Force channels.

The document contains contradictory information regarding wetlands that could have a significant impact on the project. Section 3.4.3.1 states that there are no wetlands on the direct Area of Potential Effect (APE) and refers the reader to Appendix B letters. Appendix B letters do not address wetlands on the direct APE. A letter in Appendix A from the Army Corps of Engineers dated 8 March 2011, however, concludes that there may be wetlands or waters of the US located on the project site. "No wetlands present" language also occurs in the "IV. Environmental Consequences" section of the document.

If you have any questions, please mail, email or give me a call at 843-963-4125.

Joe Camp
Environmental Impact Analysis Process (EIAP) Program Manager
628 CEA/CEAO
100 W. Stewart Ave.
Joint Base Charleston-Air SC
29404-4827

Stephen Culberson

From: Aaron G. Brummitt <ABrummitt@smeinc.com>
Sent: Wednesday, July 13, 2011 12:38 PM
To: Stephen Culberson
Subject: FW: Charleston Airport Expansion

Steve

I just received this email from the SCSHPO. My opinion is that the previous letter will suffice.

Aaron

From: Wilson, Caroline D. [mailto:cwilson@SCDAH.STATE.SC.US]
Sent: Wednesday, July 13, 2011 1:37 PM
To: Aaron G. Brummitt
Subject: Charleston Airport Expansion

Aaron,

I wanted to let you know that we received the draft EA for the Charleston Airport Expansion. Our previous comments remain unchanged. Let me know if you need anything else from me.

Regards,

Caroline Dover Wilson
Review and Compliance Coordinator
South Carolina Dept. of Archives and History
8301 Parklane Road
Columbia, SC 29223
(803)896-6169
Fax:(803)896-6167

****STATUS UPDATE for the week of July 11:** We have reviewed and sent letters for projects received through June 15.**

PLEASE NOTE: Project submissions should be MAILED to our office. We recommend using certified mail or UPS/Fed-Ex to ensure your project package has arrived. Due to the high volume of projects we receive, we are unable to confirm delivery. Thank you for your understanding.**

RICONDO
& ASSOCIATES

July 27, 2011

Mr. Joe Camp
Environmental Impact Analysis Process (EIAP) Program Manager
U.S. Air Force
628 CEA/CEAO
100 West Stewart Avenue
Joint Base Charleston-Air, South Carolina 29404-4827

RE: Comments on Draft Environmental Assessment
Proposed Terminal Area Improvements
Charleston International Airport

Dear Mr. Camp:

Thank you for your July 1, 2011 comments on the Draft Environmental Assessment (EA) for Terminal Area Improvements at Charleston International Airport. Revisions to the Draft EA have been made to address your comments, but I also wanted to supply a direct response to you for your information.

The first comment in your comment email-letter concerned the fact that parts of the proposed terminal apron expansion depicted in the Draft EA encroached onto U.S. Air Force property. After further review of this element of the proposed terminal area improvements project, the Charleston County Aviation Authority (CCAA) has decided to restrict the limits of the proposed apron expansion to Charleston Aviation Authority property. Thus, no encroachment to U.S. Air Force property is would occur under the proposed project. The EA has been revised accordingly.

The second comment in your comment email-letter concerned discrepancies regarding wetlands. The Draft EA erroneously stated that there are no wetlands within the Area of Potential Effect (APE). Appendix B of the Draft EA contained maps depicting jurisdictional wetlands within the APE. A new exhibit has been added to Chapter III of the EA showing the jurisdictional wetlands within the APE (see attached).

You also noted that the U.S. Army Corps of Engineers had stated in a letter dated March 8, 2011 that wetlands or waters of the U.S. may be present within the project site. Subsequent conversations with the U.S. Army Corps of Engineers determined that the project site had been included in previous wetland determinations, specifically jurisdictional determination SAC-2007-0209-2J, a copy of which is contained in Appendix B of the EA. Although jurisdictional wetlands are located within the APE they are not in or adjacent to areas that would be disturbed by the proposed projects; thus, no wetland impacts are anticipated. The EA has been revised to clarify this information and rectify the discrepancies you noted.

20 NORTH CLARK STREET, SUITE 1500, CHICAGO, IL 60602
TEL (312) 606-0611 · FAX (312) 606-0706

If you have any further questions, please feel free to contact me at 312.606-0611, x136.

Sincerely,

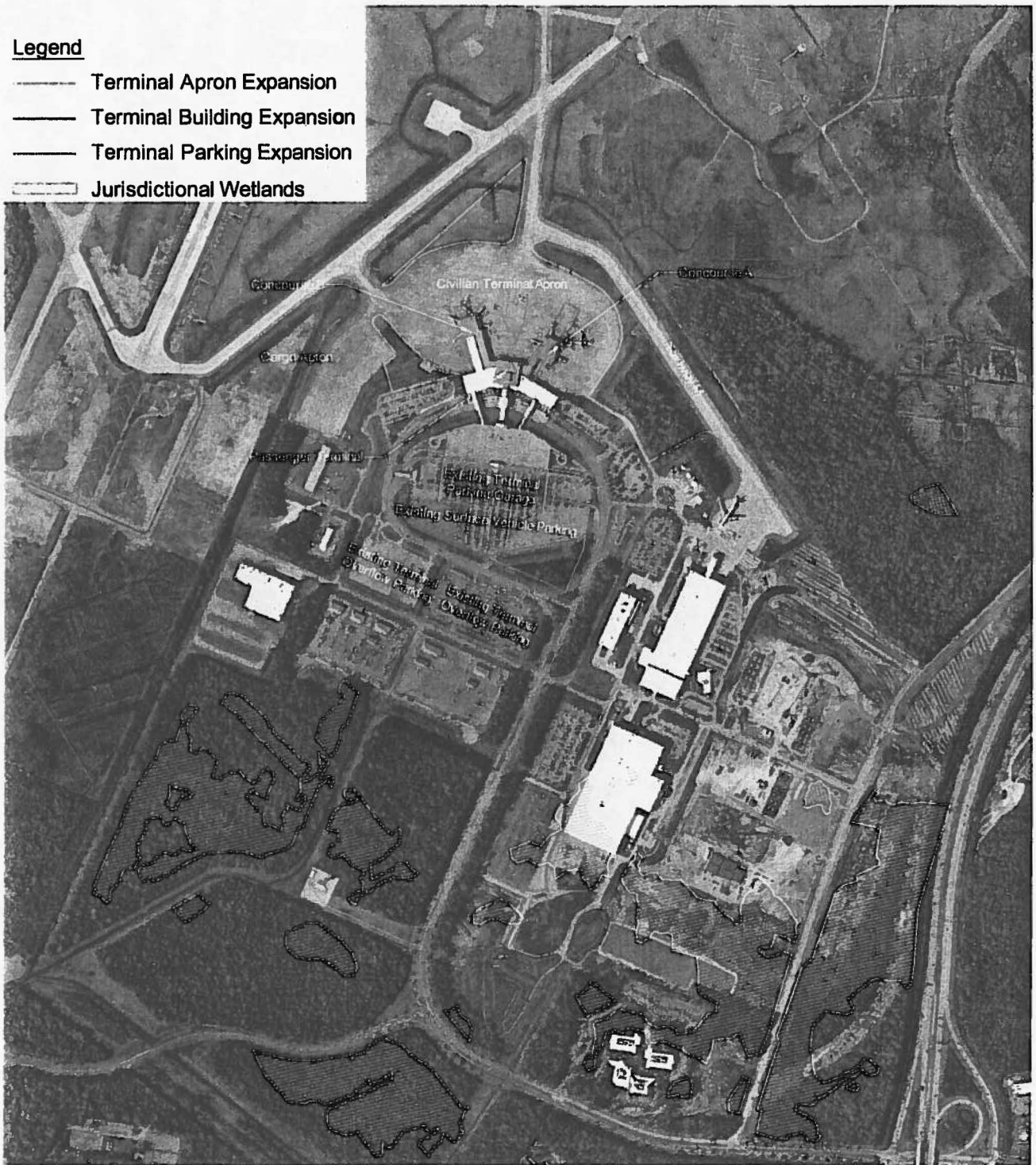
RICONDO & ASSOCIATES, INC.

Stephen Culberson
Director

Enclosure

cc: JFann - CCAA
10-01-0650-13
Read File

document2



Note: Includes jurisdictional wetlands that have since been filled as part of the Boeing 787 manufacturing plant project.

Source: U.S. Air Force and Charleston International Airport base files received June 2010; Wetlands - Davis & Floyd, Inc., June 24, 2008; Ricondo & Associates, Inc. March 2011.

Prepared by: Ricondo & Associates, Inc.

Exhibit III-4

0 1,100 ft.

north

Wetlands

Drawing: Z:\CHS\Environmental Assessment\Exhibits\Existing Conditions.dwg, Layout: Wetlands, Jul 25, 2011, 12:17pm