Savannah/Hilton Head International Airport
Short-Term Development Program
Draft Environmental Assessment

November 2019

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Savannah/Hilton Head International Airport
Short-Term Development Program

Draft
Environmental Assessment

Prepared for:

Savannah Airport Commission
and
Federal Aviation Administration

Prepared by:

AECOM

November, 2019

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ACRONYMS AND ABBREVIATIONS

§	Section
100 LL	100 Octane Low Lead Aviation Gasoline
AC	Advisory Circular
ac-ft	Acre-Feet
ACS	American Community Survey
ADG	Airport Design Group
AEDT	Aviation Environmental Design Tool
AEM	Area Equivalent Method
AFFF	Aqueous Film Forming Foam
AIP	Airport Improvement Program
ALP	Airport Layout Plan
ALSF	Approach Lighting System with Sequence Flashing Lights
AN	Advance Notification
APE	Area of Potential Effect
APHIS	Animal and Plant Health Inspection Service
ARFF	Aircraft Rescue and Fire Facility
ARP	Airport Reference Point
ARPZ	Approach Runway Protection Zone
AST	Aboveground Storage Tank
ATCT	Air Traffic Control Tower
AvGas	Aviation Gasoline
BA	Biological Assessment
BMP	Best Management Practice
BSA	Biological Study Area
CAA	Clean Air Act
CAT II	Category II
CBRS	Coastal Barrier Resources System

CBSA	Core Based Statistical Areas
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CIP	Capital Improvement Program
cm	Centimeter
CO	Carbon Monoxide
CO2e	Carbon Dioxide Equivalent
CRAS	Cultural Resources Assessment Survey
CSS	Coastal Stormwater Supplement
CWA	Clean Water Act
CY	Calendar Year
CY	Cubic Yards
CZMA	Coastal Zone Management Act
dB	Decibel
dBA	A-weighted Decibels
DNL	Day-Night Average Sound Level
DOT	Department of Transportation
DRPZ	Departure Runway Protection Zone
DSA	Direct Study Area
EA	Environmental Assessment
EDGES	Effects Determination Guidance for Endangered and Threatened Species
EFH	Essential Fish Habitat
EIS	Environmental Impact Statement
EJSCREEN	Environmental Justice Screening and Mapping Tool
EO	Executive Order
EPA	U.S. Environmental Protection Agency
EPD	Environmental Protection Division
ESA	Endangered Species Act of 1973, as amended
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulation
FBO	Fixed Base Operator
FC	Functional Capacity
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
FONSI	Finding of No Significant Impact
FR	Federal Register
ft	Feet
GA	General Aviation
GADNR	Georgia Department of Natural Resources
GANG	Georgia Air National Guard
GASF	Georgia Archaeological Site File
GCMP	Georgia Coastal Management Program

GEPA	Georgia Environmental Policy Act
GHG	Greenhouse Gas
GI	Green Infrastructure
GIS	Geographic Information System
GNAHRGIS	Georgia's Natural, Archaeological, and Historical Resources Geographic Information System
GSE	Ground Support Equipment
GSMM	Georgia Stormwater Management Manual
hr	Hour
HUC	Hydrologic Unit Code
I&D	Industrial and Domestic
I-95	Interstate Highway 95
ILS	Instrument Landing System
IPaC	Information for Planning and Consultation
ISA	Indirect Study Area
JD	Jurisdictional Determination
LID	Low Impact Development
LOS	Levels of Service
LUST	Leaking Underground Storage Tanks
m/s	Meters per Second
MALSR	Medium Approach Light System with Runway Alignment Indicator Lights
MSA	Metropolitan Statistical Areas
MSW	Municipal Solid Waste
NAAQS	National Ambient Air Quality Standards
NAD	North Aviation Development
NATA	National Air Toxics Assessment
NAVAID	Navigational Aid
NEPA	National Environmental Policy Act
NFA	No Further Action
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NLR	Noise Level Reduction
NO2	Nitrogen Dioxide
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPIAS	National Plan of Integrated Airport Systems
NPL	National Priorities List
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRI	Nationwide Rivers Inventory
NWSRS	National Wild and Scenic Rivers System
O.C.G.A.	Official Code of Georgia Annotated
O3	Ozone

PAL	Project Action Level
Pb	Lead
PEM1Jx	Palustrine, Emergent, Persistent, Intermittently Flooded, Excavated
PFAS	Per- and Polyfluoroalkyl Substances
PFBS	Perfluorobutanesulfonate
PFO1/3C	Palustrine, Forested, Broad-Leaved, Deciduous/Evergreen, Seasonally Flooded
PFOA	Perfluorooctanoic Acid
PFOS	Perfluoro-octanesulfonate
PM10	Particulate Matter Equal to or Less than 10 Micrometers in Diameter
PM2.5	Particulate Matter Equal to or Less than 2.5 Micrometers in Diameter
POWx	Palustrine, Open Water, Excavated
ppb	Parts Per Billion
ppm	Parts Per Million
PSA	Primary Service Area
RCP	Reinforced Concrete Pipe
RCRA	Resource Conservation and Recovery Act
RPZ	Runway Protection Zone
RRv	Runoff Reduction Storm Event
RSA	Runway Safety Area
RSEI	Risk-Screening Environmental Indicators
SAGIS	Savannah Area Geographic Information Systems
SAV	Savannah/Hilton Head International Airport
SE	Southeast
SFHA	Special Flood Hazard Area
SHPO	State Historic Preservation Office
SO2	Sulfur Dioxide
SOP	Standard Operating Procedure
SOx	Sulfur Oxides
SPCC	Spill Prevention, Control, and Countermeasure
SSA	Secondary Service Area
SSA	Socioeconomic Study Area
STP	Shovel Test Pit
SWMP	Stormwater Management Plan
SWPPP	Stormwater Pollution Prevention Plans
SY	Square Yards
TAF	Terminal Area Forecast
TN	Total Nitrogen
TOFA	Taxiway Object Free Area
TSS	Total Suspended Solids
U.S.C.	U.S. Code
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture

USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
USNVC	U.S. National Vegetation Classification
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WHMP	Wildlife Hazard Management Plan
$\mu g/m^3$	Micrograms Per Cubic Meter

CHAPTER 1 INTRODUCTION

The Savannah Airport Commission (Commission, or the Airport Sponsor) is undertaking this Environmental Assessment (EA) in accordance with the National Environmental Policy Act of 1969 (NEPA) to support a variety of airside and landside development options within its Short-Term Development Program at Savannah/Hilton Head International Airport (SAV, or the Airport). These airside and landside development actions are hereinafter referred to as the Proposed Project. The purpose of the EA is to identify and consider the potential environmental impacts associated with the Proposed Project and any reasonable alternatives.

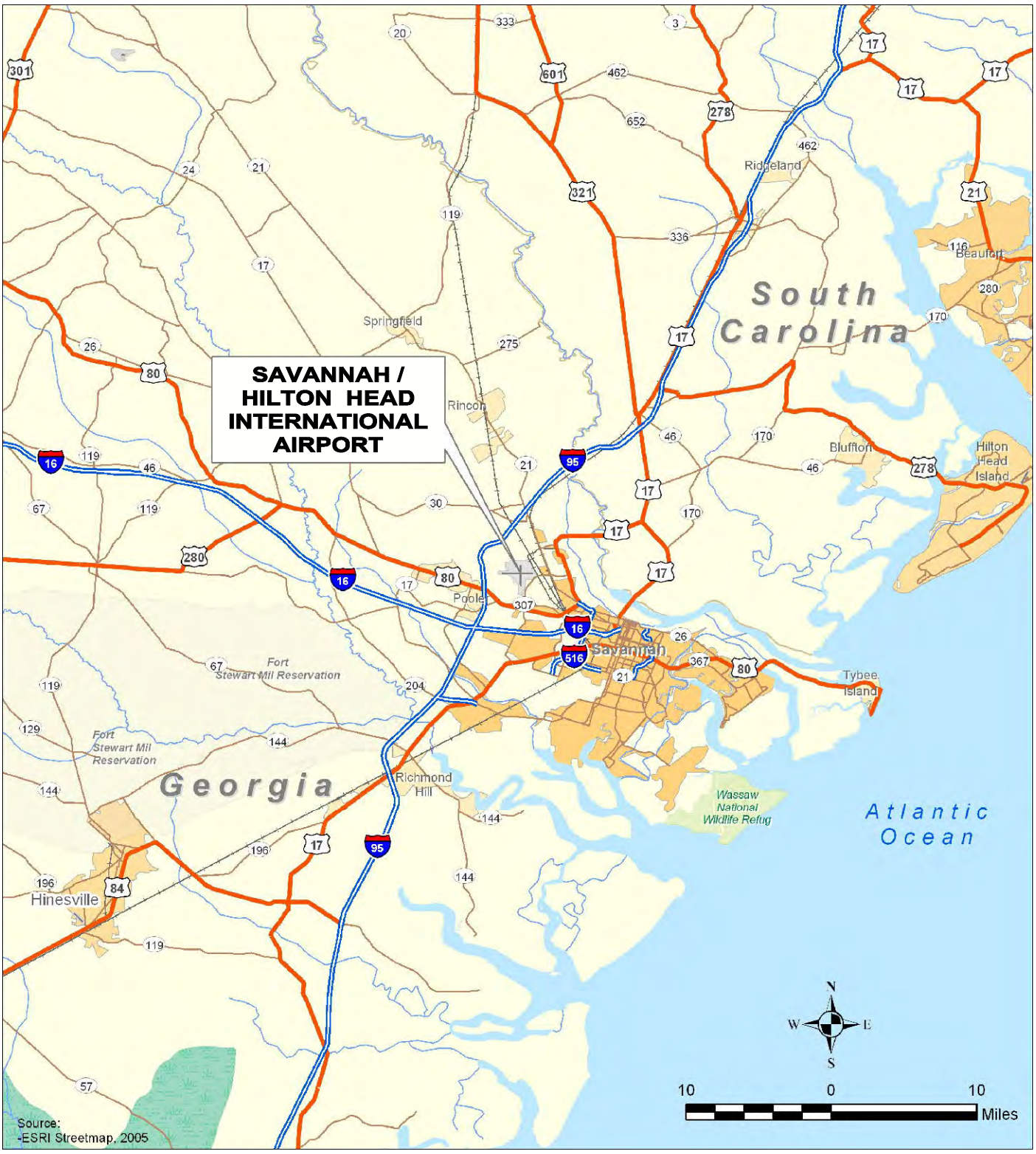
This chapter provides a summary overview and history of SAV, including a summary of existing facilities and current/projected activity levels. Direct and connected actions comprising the Proposed Project that are the subject of this EA are also detailed.

1.1. AIRPORT DESCRIPTION AND BACKGROUND

SAV is owned and operated by the Commission, which was created in 1955 pursuant to a Georgia State Legislature act. In 1941, the Airport purchased 590 acres and constructed two 3,500-foot runways. Subsequently, additional property acquisitions throughout the 1940s doubled the size of the Airport, named Chatham Field at the time. After being used for military operations during World War II, the Airport was considered surplus property by the War Assets Administration and offered to and accepted by the City of Savannah for use as a civilian airport. In the late 1940s, the United States Air Force used the Airport for military purposes before moving their operations to Hunter Army Air Field. Though the Air Force left the Airport, the Georgia Air National Guard (GANG) remained. Once the City of Savannah accepted control of the Airport, it was renamed Travis Field, followed by Savannah Municipal Airport, Savannah International Airport, and finally Savannah/Hilton Head International Airport.

The Airport is located in eastern Georgia on the east side of Interstate Highway 95 (I-95), approximately seven miles west of the central business district of the City of Savannah and four miles south of the South Carolina border. **Figure 1.1-1** depicts the location of the Airport as it relates to the City of Savannah and surrounding areas.

The Federal Aviation Administration's (FAA's) National Plan of Integrated Airport Systems (NPIAS) report identifies five-year funding needs for airports eligible to receive Airport Improvement Program (AIP) grants. Each airport is classified based on annual enplanements (departing passengers). The 2019-2023 NPIAS (published on September 26, 2018) classifies SAV as a small hub primary commercial service airport. A small hub primary commercial service airport accounts for 0.05 to 0.25 percent of all U.S. commercial passenger enplanements. U.S. enplanements in 2017 were approximately 840 million, of which SAV recorded 1,056,265 (0.13 percent).



SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT SHORT-TERM DEVELOPMENT PROGRAM	AIRPORT LOCATION MAP	FIGURE 1.1-1

S:\Projects\S\Savannah Airport Commission\XXXXXXX_Short Term CIP EA\Figures\FIG 1.1-1.dwg 07/15/2019 11:32

1.1.1. EXISTING AIRPORT FACILITIES AT SAV

The SAV Airport Reference Point (ARP) is located at 32°07'39.280" N Latitude and 81°12'07.699" W Longitude. Primary airside and landslide facilities supporting operations at SAV are shown on **Figure 1.1-2.**

1.1.1.1. Airside Facilities

Airside facilities include the system of runways, taxiways, navigational aids, weather aids, and air traffic control facilities that facilitate aircraft operations. Taken together, the following airfield features support current operations at SAV.

Runways

There are two intersecting, asphalt runways at the Airport oriented perpendicular to each other. The primary runway, Runway 10-28, is 9,351 feet long by 150 feet wide and oriented in an east/west direction. The secondary runway, Runway 1-19, is 7,002 feet by 150 feet wide and oriented in a north/south direction.

Runway Protection Zones

The Runway Protection Zone (RPZ) is a trapezoidal area at each runway end and/or threshold. The main purpose of RPZs is to protect people and property on the ground. According to FAA Advisory Circular (AC) 150/5300-13A (2014), the FAA recommends airports gain an interest in RPZs, such as fee title, lease, or avigation easement. While it is desirable to keep the entire RPZ clear of all above-ground objects, RPZs should be maintained clear of all incompatible activities at a minimum. Per FAA guidance, permissible land uses within RPZs include: farming, irrigation channels, airport service roads, underground facilities and unstaffed Navigational Aids (only if fixed by function). The FAA also recommends airports coordinate with the Airports District Office to remove or mitigate the risk of any existing incompatible land uses in the RPZ as practical, including public roads.

The RPZ includes an Approach RPZ (ARPZ) and a Departure RPZ (DRPZ). The DRPZ typically is located 200 feet from the runway end unless mitigation of non-compatible land uses is necessary. The ARPZ is located 200 feet from the landing threshold and is often larger than the DRPZ depending on approach visibility minimums.

Per FAA design standards at AC 150/5300-13A, Change 1, it is desirable to clear all objects from the RPZ, and therefore, certain land uses within RPZs are prohibited. FAA's 2012 *Interim Guidance on Land Uses within a Runway Protection Zone* indicates that the following land uses (among others) are not compatible if entered into the limits of an RPZ due to an airfield project: buildings and structures; recreational land uses; and public roads/highways.

For proposed construction at FAA obligated airports, mitigation or compensatory actions (e.g., declared distances, roadway/structure relocations, etc.) are typically to achieve land use

compatibility in the RPZ. The RPZs for Runways 1 and 10 are based on approach visibility minimums of "lower than 3/4 mile" and all aircraft types. They begin at 200 feet beyond the runway ends and are centered on the extended runway centerline. The inner width is 1,000 feet, the outer width is 1,750 feet, and the length is 2,500 feet. The RPZ for Runways 28 and 19 are based on approach visibility minimums of "visual and not lower than one mile" and aircraft in approach categories C and D (i.e., an approach speed of 121 knots or more, but less than 166 knots). They begin 200 feet beyond the runway ends and are centered on the extended runway centerline. The inner width is 500 feet, the outer width is 1,010 feet, and the length is 1,700 feet. The Airport currently owns all of the land within the RPZs.

Runway Safety Areas

FAA AC 150/5300-13A (2014) defines the RSA as a defined surface surrounding a runway prepared or suitable for reducing the risk of damage to aircraft in the event of an undershoot, overshoot or excursion from a runway. Per FAA standards in AC 150/5300-13A, the RSA must be free of all objects except those that must be located in the RSA because of their function, such as visual aids for aircraft approaches. Public roads, airport service roads, Instrument Landing System localizers, wind cones, and other objects not frangibly-mounted or fixed by function are not allowed within an RSA.

Title 14 Code of Federal Regulations CFR Part 139, provides certification requirements for airports with scheduled commercial passenger service. SAV currently holds a Part 139 certificate that allows scheduled and unscheduled commercial service by aircraft having a seating capacity of more than 30 passengers and must comply with the requirements of the certification program. Part 139.309 requires that each certificate holder provide and maintain safety areas for runways and taxiways that meet current FAA airport design standards. FAA Order 5200.8, Runway Safety Area Program, establishes procedures to ensure that all RSAs at Part 139 certificated airports conform to the applicable RSA standards, to the extent practicable. An RSA that does not meet standards, to the greatest extent practicable, places the Airport at risk of losing its Part 139 certification.

Taxiways

Several parallel and connecting taxiways at the Airport provide access from terminals, hangars, and apron areas to all runways. **Table 1.1-1** lists the taxiways at the Airport and are depicted on **Figure 1.1-2**.

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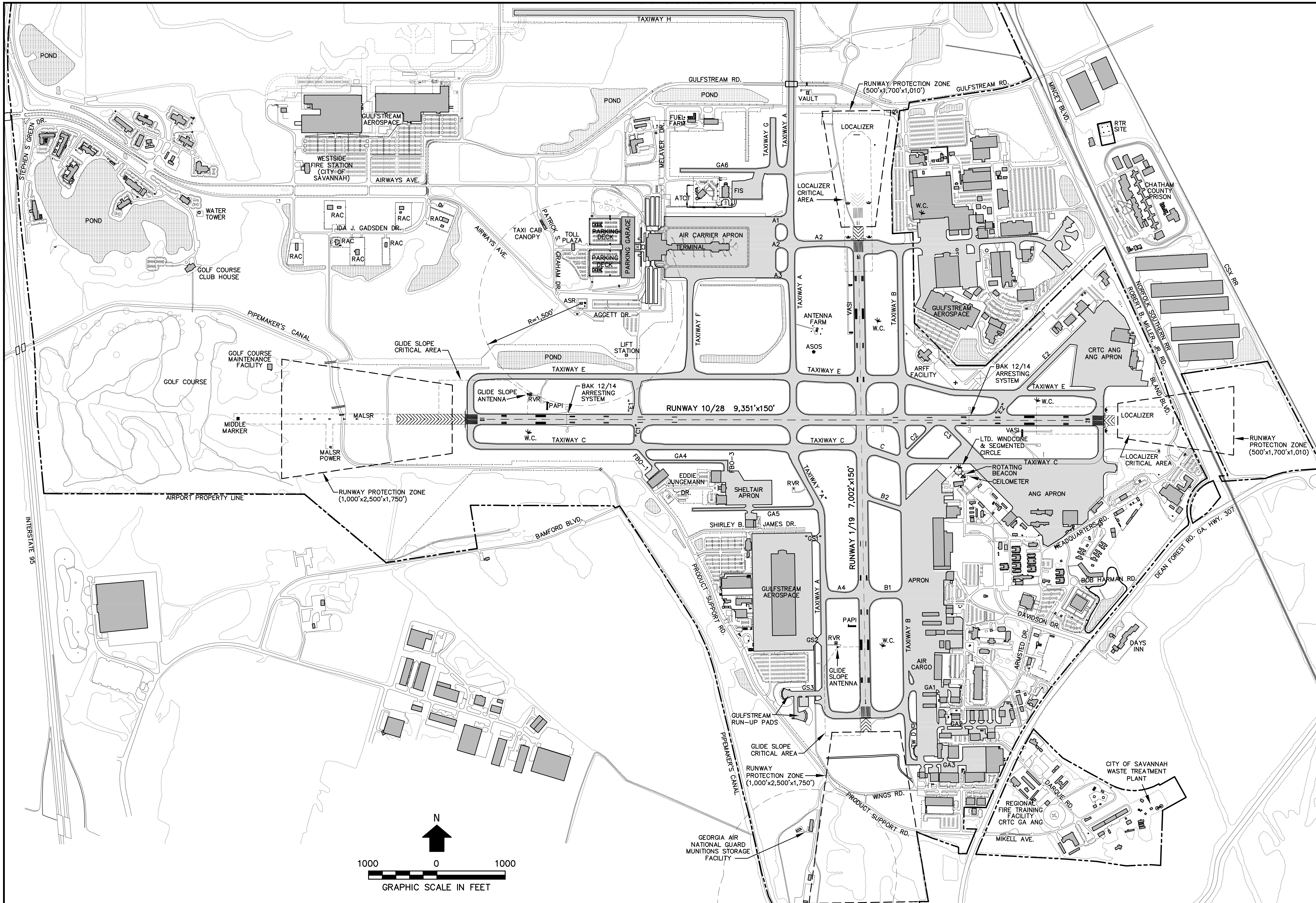

SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

EXISTING AIRPORT FACILITIES

FIGURE 1.1-2

S:\Projects\S\Savannah Airport Commission\XXXXXXX_Short Term CIP EA\Figures\FIG 1.1-2.dwg 07/15/2019 11:37

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Table 1.1-1 Taxiway Data

Taxiway	Width (feet)	Type	Separation from Runway (feet)
A	75	Parallel	600/985
A-1	100[2]	Connecting	N/A
A-2	100[2]	Connecting	N/A
A-3	90	Connecting	N/A
A-4	80	Connecting	N/A
B	75	Parallel	600
B-1	90	Connecting	N/A
B-2	60	Connecting	N/A
C	75	Parallel	400/600
C-1	75	Connecting	N/A
C-2	35	Connecting	N/A
C-3	75	Connecting	N/A
D	50	Parallel	N/A
D-1	78	Connecting	N/A
E	75	Parallel	400/631
E-1	75	Connecting	N/A
E-2	75	Connecting	N/A
F	75	Connecting	N/A
G	75	Connecting	N/A
H	75	Parallel	N/A

Notes: Taxiways A-1 and A-2 are designed to Design Group IV standards but have wider widths to provide the proper taxiway edge safety margin for air carrier aircraft turning onto the terminal apron.
N/A = Not applicable
Source: URS Corporation, RS&H, and Ruth and Associates, LLC. *Savannah/Hilton Head International Airport Master Plan Update*. December 2014.

Aprons

The apron surrounding the passenger terminal provides 151,000 square yards of aircraft parking at the terminal gates and supports movement of aircraft to and from the terminal. Access to the terminal apron is provided via Taxiways A-1 through A-3 and Taxiway F.

A 176,000-square yard general aviation (GA) apron, located in the southeast quadrant of the Airport, extends from just south of Taxiway C to a point beyond the approach end of Runway 1. This apron supports southeast quadrant Fixed Base Operator (FBO) activities, corporate hangars, and air cargo operations.

Two aircraft parking aprons belong to the GANG. The apron on the north side of Runway 10-28 is approximately 97,000 square yards and supports eight C-130 aircraft assigned to the 165th Airlift Wing. The apron on the south side of Runway 10-28 is approximately 123,000 square yards and supports transient aircraft operations associated with the Combat Readiness Training Center and a large variety of military aircraft.

An additional GA apron is located at the southwest FBO supporting iterant and based aircraft. This apron is approximately 31,000 square yards.

Other Facilities

Both Runways 10-28 and 1-19 are equipped with High Intensity Runway Lights. Runway 10-28 is equipped with centerline lighting. Runway 10 also includes Touchdown Zone Lights. All of the taxiways are equipped with Medium Intensity Taxiway Lights. Other airside facilities at the Airport include two airfield electrical vaults, Medium Intensity Approach Light System with Runway Alignment Indicator Light, and visual and electronic navigational aids.

1.1.1.2. Landside Facilities

Primary landside facilities at SAV include the passenger terminal, parking facilities, FBO facilities, corporate hangar, air cargo facilities, 165th Airlift Wing, Combat Readiness Training Center, Aircraft Rescue and Fire Facility (ARFF), fuel farm, air traffic control tower (ATCT), operations center and grounds maintenance facility, terminal support facility, and airfield operations facilities.

Passenger Terminal

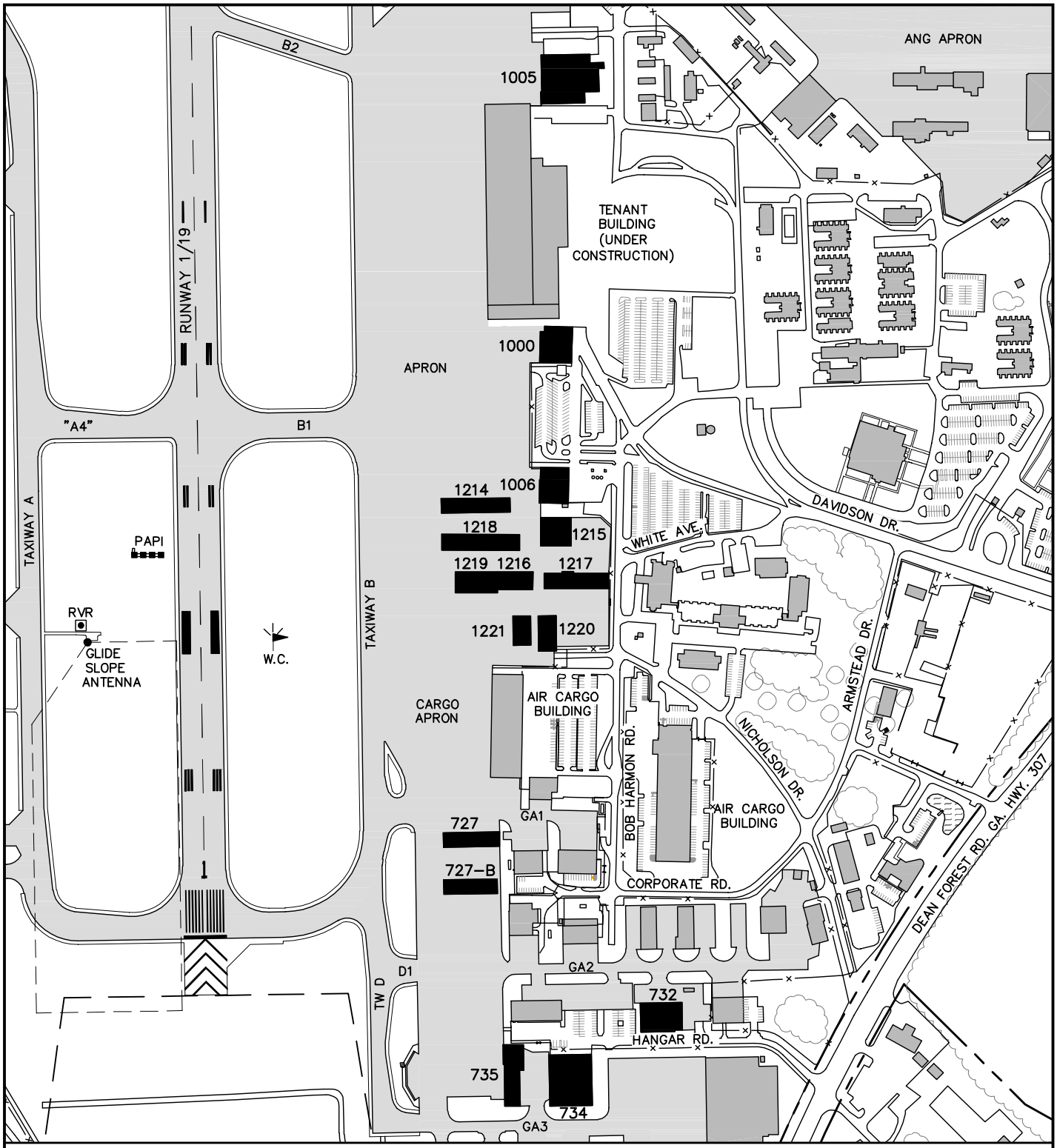
Originally constructed in 1994 with 10 gates, the passenger terminal was expanded in 2007 by adding another concessions core along with five additional gates. The terminal now consists of more than 380,000 square feet of space on three levels.

General Aviation

Two FBOs are located at the Airport. One is located in the southeast quadrant of the Airport and includes an approximately 13,000-square foot terminal providing administrative and office space, a crew lounge, meeting space, and restrooms. The southeast quadrant FBO also provides aircraft storage and flight support services, and has its own fuel farm located adjacent to Bob Harman Road. An approximately 176,000-square yard aircraft parking apron is located in the front of the FBO's terminal that extends southward to Taxilane GA3. Based aircraft are housed in T-hangars, shade hangars, and open-bay hangars. Transient aircraft are tied down in front of the administrative offices. **Figure 1.1-3** depicts these facilities.

The other FBO is located in the southwest quadrant of the Airport north of Gulfstream Aerospace's Service Center and south of Runway 10-28. A 7,000-square foot terminal provides space for crew and passenger support services. A 13,200-square foot open-bay hangar provides aircraft storage. The aircraft parking apron is approximately 31,000 square yards and supports transient and based aircraft. A cabled tie-down area is located at the south end of the apron. The southwest quadrant FBO's fuel farm is located at the southeast corner of Eddie Jungemann Drive and Product Support Road.

A variety of corporate hangars provide storage space for GA aircraft in the southeast and southwest quadrants of the airfield.



LEGEND

BUILDING 727 – SHADE PORT
BUILDING 727-B – T-HANGARS
BUILDING 732 – OPEN BAY HANGAR
BUILDING 734 – OPEN BAY HANGAR
BUILDING 735 – T-HANGARS
BUILDING 1000 – FBO
BUILDING 1005 – OPEN BAY HANGAR (GULFSTREAM)
BUILDING 1006 – OPEN BAY HANGAR
BUILDING 1214 – SHADE PORT
BUILDING 1215 – OPEN BAY HANGAR
BUILDING 1216 – T-HANGARS
BUILDING 1217 – T-HANGARS
BUILDING 1218 – T-HANGARS
BUILDING 1219 – T-HANGARS
BUILDING 1220 – OPEN BAY HANGAR
BUILDING 1221 – OPEN BAY HANGAR

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GRAPHIC SCALE IN FEET

SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

SOUTHEAST QUADRANT FBO FACILITIES

FIGURE 1.1-3

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.1-3.dwg 10/21/2019 13:22

Ground Transportation

The ground transportation system includes on-airport roadways, terminal curbside, parking facilities, and public transportation services. The primary access point to the passenger terminal is from Airways Avenue west of I-95. From the east, access to the terminal is provided from Patrick S. Graham Drive to Airways Avenue via Gulfstream Road. Access to the southeast quadrant FBO is provided from Davidson Road via Dean Forest Road/Georgia Highway 307. Access to the southwest quadrant FBO is provided from Eddie Jungemann Drive and Product Support Road via Dean Forest Road/Georgia Highway 307. The terminal curbside roadway consists of a two-level system separated for arrival and departure traffic. Parking facilities at the Airport consist of a four-level hourly/long-term parking garage, a two-level economy parking garage, and surface lots designated for valet, employees, cell phone waiting, and rental cars. Public transportation services to the Airport are provided by Chatham Area Transit and the Coastal Regional Coaches.

Military

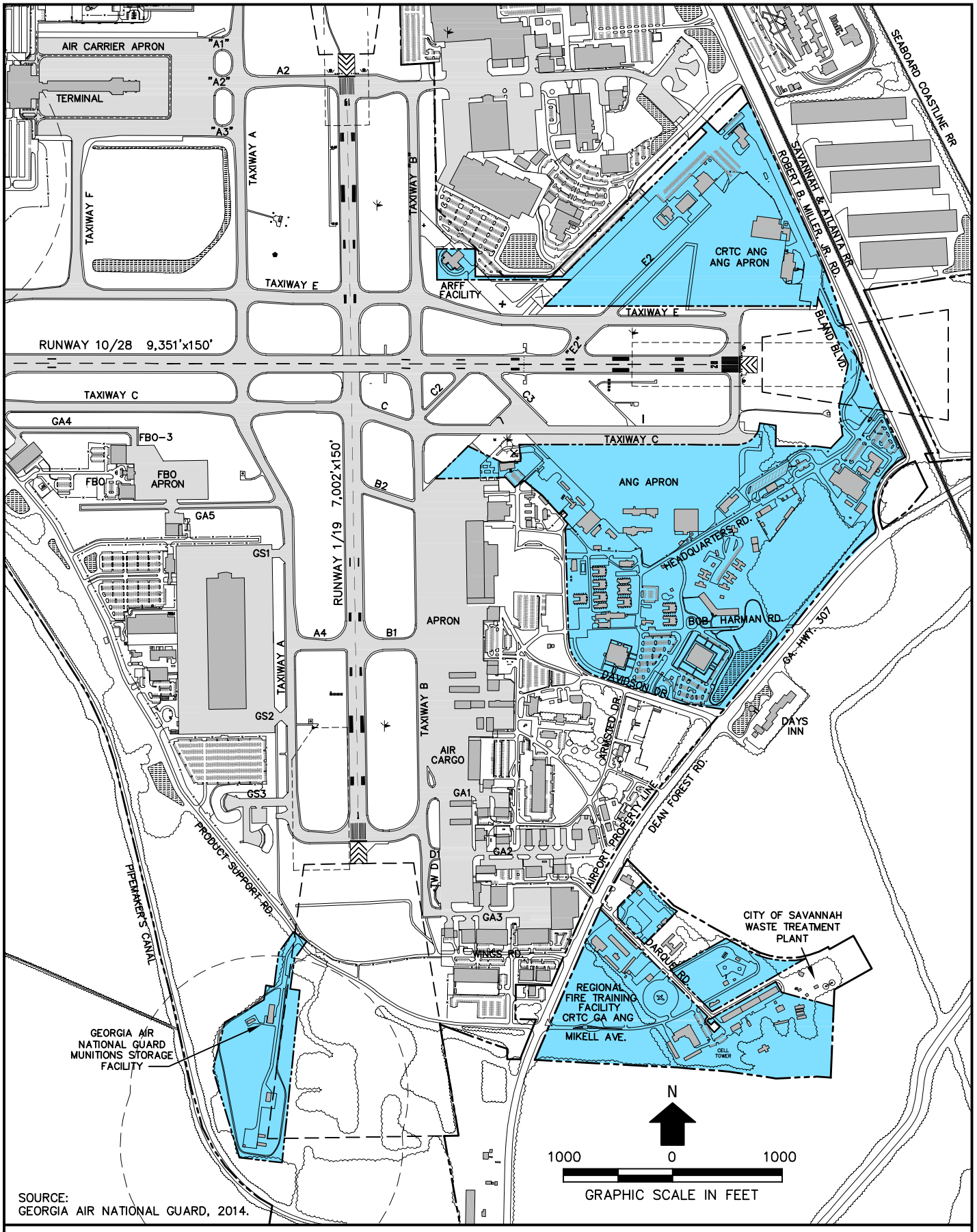
The GANG makes up the military facilities at the Airport consisting of the 165th Airlift Wing and the Combat Readiness Training Center. The 165th Airlift Wing provides air transport for airborne forces, delivers equipment and supplies by airdrop or airland, and provides strategic airlift of personnel, equipment and supplies. The Combat Readiness Training Center supports wings from other bases in the U.S. that come to Savannah to conduct flight training exercises. Aircraft used in these exercises include fighters, refueling tankers and cargo aircraft. There is an existing GANG leasehold occupying approximately 289 acres of the Airport property (see **Figure 1.1-4**).

Air Cargo

The air cargo building is located in the southeast quadrant of the airfield east of Taxiway B and west of Bob Harmon Road. The approximately 80,000-square foot building contains two levels with 12 bays on the lower level for the transfer and storage of air cargo and office space on the upper level. Airfield access to the air cargo building apron is provided from Taxiway B. The apron is used by multiple tenants for the onloading and offloading of freight and air mail. One tenant also has an approximately 58,000-square foot air cargo facility on the east side of Bob Harmon Road that has offices, storage, and sorting functions.

Support Facilities

The ARFF is located in the northeast quadrant of the airfield and is owned and operated by the 165th Airlift Wing. The station consists of five drive-through bays and a 14,000-square foot building that supports offices, training rooms, sleeping quarters, kitchen and dining area, and storage rooms.



SOURCE:
GEORGIA AIR NATIONAL GUARD, 2014.

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.1-4.dwg 10/21/2019 13:27

SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT SHORT-TERM DEVELOPMENT PROGRAM	GEORGIA AIR NATIONAL GUARD LEASE AREAS	FIGURE 1.1-4

The City of Savannah also has a fire station in addition to the ARFF located north of Airways Avenue that provides firefighting services to facilities within the City of Savannah such as hotels and businesses located at the I-95 interchange. There is a mutual aid agreement between the GANG and the City of Savannah Fire Department to provide assistance during emergencies.

The Airport's fuel farm is owned and operated by the Commission and is located south of Gulfstream Road east of Melaver Drive. The fuel farm contains five 30,000-gallon aboveground storage tanks (AST) for Jet-A fuel and one 4,000-gallon AST for automotive gasoline.

The ATCT, constructed in 2006, is located north of the passenger terminal and consists of a 183-foot control tower and a base building for air traffic control facilities and administrative offices.

The Airport's operations center and grounds maintenance facility is located south of Gulfstream Road and is accessed from Melaver Drive. Four buildings comprising this facility include the operations facility, ground and vehicle maintenance, vehicle equipment storage, and a paint shop.

The 9,300-square foot terminal support facility, located east of the fuel farm, contains five bays and supports Delta Freight, Paradies Shops, Host, and Delta Global Services. Airfield operations facilities, located in the southeast quadrant of the airport, are comprised of four buildings that include a lighting shop, open shed for vehicle and equipment storage, airfield maintenance shop, and storage shed.

1.1.2. AVIATION ACTIVITY AT SAV

The FAA's Terminal Area Forecast (TAF) is the official forecast of aviation activity for U.S. airports and is used for the budgeting and planning needs of the FAA. Currently, the TAF summarizes activity between 1990 and 2045 at SAV. **Table 1.1-2** presents a summary of the baseline aircraft operations for the existing year (2018) and future year (2023 and 2028) forecasts of aircraft operations.

Table 1.1-2 Aircraft Operations

Category	Year		
	2018	**2023**	**2028**
Air Carrier	27,141	35,454	38,255
Air Taxi/Commuter	20,417	14,982	15,162
GA	39,880	39,097	39,192
Military	8,162	8,162	8,162
Total	**95,600**	**97,695**	**100,771**

Source: FAA TAF, February 2019.

1.2. DESCRIPTION OF THE PROPOSED PROJECT

A variety of airside and landside development options are currently being considered for the Short-term Development Program. Individual projects included in the Short-term Development

Program are shown on **Figure 1.2-1**. For the purposes of this EA, these individual projects are grouped into the following five main categories:

- Air Cargo Relocation: this category includes the construction of new air cargo facilities north of Gulfstream Road, south of Taxiway H and west of Taxiway A and an extension of Taxiway G. Individual projects are Air Cargo Ramp West - Phase I (Project #1 on **Figure 1.2-1**), Air Cargo Ramp East - Phase II (Project #2), and Taxiway G and Bridge - Phase III (Project 3).

- Taxiway Improvements: this category consists of connecting the existing segments of Taxiway A and Taxiway G south of Gulfstream Road. Individual projects are Taxiway Connectors and Improvements (Project #4 on **Figure 1.2-1**), and Taxiway G Extension (Project #5).

- North Apron Improvements: this category consists of reconstructing an existing apron and constructing a new apron to provide additional parking for aircraft. Individual projects are Reconstruct North Apron - Phase I (Project # 6 on **Figure 1.2-1**) and North Apron Construction - Phase II/Vault Relocation (Project #7).

- General Aviation (GA) Redevelopment: projects related to GA redevelopment include construction of new facilities for Gulfstream and Signature east of Taxiway B and south of Taxiway C. Individual project are Southeast Taxilane/GA 5 Partial Reconstruction (Project #9 on **Figure 1.2-1**), Aviation-Related Development Area (Project #10), and General Aviation Redevelopment Area (Project #11).

- Southeast (SE) Quadrant Drainage Improvements: this project consists of new facilities to treat and attenuate the stormwater runoff generated from existing impervious surfaces, as well as any new impervious surfaces associated with the Proposed Project (Project #8 on **Figure 1.2-1**).

1.2.1. AIR CARGO RELOCATION

1.2.1.1. AIR CARGO RAMP WEST - PHASE I AND AIR CARGO RAMP EAST - PHASE II

Air cargo facilities north of Gulfstream Road, south of Taxiway H and west of Taxiway A would be constructed in two phases (**Figure 1.2-1**). The new facilities would consist of an air cargo building and an aircraft apron capable of supporting Boeing 767 sized aircraft. The proposed cargo building would consist of up to approximately 200,000-square foot building for existing tenants.

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PROPOSED SHORT–TERM DEVELOPMENT PROJECTS	
PROJECT NO.	PROJECT NAME
1	AIR CARGO RAMP WEST – PHASE I (2019)
2	AIR CARGO RAMP EAST – PHASE II (2019)
3	TAXIWAY G AND BRIDGE – PHASE III (2020)
4	TAXIWAY CONNECTORS AND IMPROVEMENTS (2020)
5	TAXIWAY G EXTENSION (2021)
6	RECONSTRUCT NORTH APRON – PHASE I (2020)
7	NORTH APRON CONSTRUCTION – PHASE II/VAULT RELOCATION (2022)
8	SE QUADRANT DRAINAGE IMPROVEMENTS (2020)
9	SE TAXILANE/GA 5 PARTIAL RECONSTRUCTION (2019)
10	AVIATION RELATED DEVELOPMENT AREA (2018–?)
11	GENERAL AVIATION REDEVELOPMENT AREA (2020–?)

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GRAPHIC SCALE IN FEET

SAVANNAH / HILTON-HEAD
INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

PROPOSED SHORT-TERM
DEVELOPMENT PROGRAM PROJECTS

FIGURE
1.2-1

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.2-1.dwg 11/06/2019 13:06

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Proposed aircraft aprons would consist of approximately 450,500 square feet of pavement and would be sized to accommodate up to five Boeing 767-300 aircraft. Automobile and truck parking would be sized to meet parking demand (approximately 446,700 square feet) and would generally occupy the area between the south side of the cargo building and the entrance roads. Access roads would consist of a two-way roadway that provides access to the parking lots serving both buildings and would terminate at a signalized intersection with Gulfstream Road and Daniel J. Coe, Jr. Drive. As shown on **Figure 1.2-2**, five aircraft parking positions are currently planned, however the development footprint affords for the installation of additional parking spaces. The potential for additional parking spaces and activities within the specified footprint is further discussed in the **Chapter 3** of this EA.

Of note, the Proposed Project layout depicted on **Figure 1.2-2** is conceptual in nature based on current facility requirements, and is representative of the best information available at the time of this EA's preparation. The final layout, geometry of the Proposed Project would be subject to final design and therefore subject to change. However, any changes during project design would be within the confines of the footprint specified on **Figure 1.2-2** and studied in this EA.

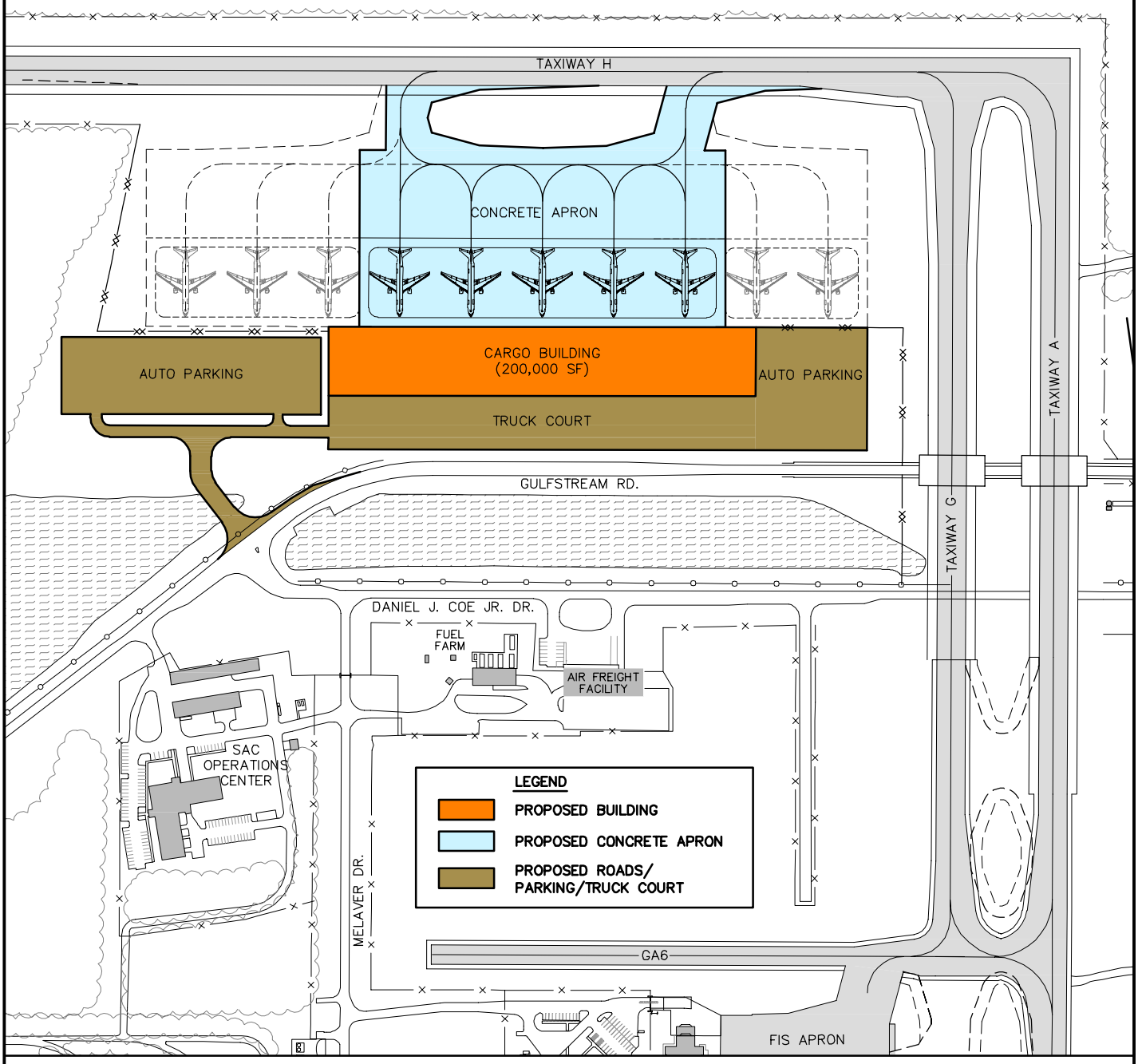
With the Proposed Project, a total of five parking positions would be provided, compared to the two available at the existing air cargo facilities at SAV. Based on the typical time it takes to off-load, sort, process, containerize, and on-load the Boeing 767, up to nine average daily turnarounds could potentially occur amongst the three new Boeing 767 gates afforded by the Proposed Project. For impact analysis purposes, and in order to adequately characterize the potential environmental impacts of increased air cargo operations, the potential addition of nine average daily landings and take-offs of the Boeing 767 will be assessed in the EA for the Proposed Project documented on **Figure 1.2-2**. As previously referenced, **Chapter 3** of this EA also evaluates an alternative for the provision of additional parking positions within this same footprint (up to ten total), the impacts of which are also identified and disclosed in **Chapter 5** of this EA.

1.2.1.2. TAXIWAY G AND BRIDGE - PHASE III

The third phase of the Air Cargo Relocation projects is the extension of Taxiway G northward over Gulfstream Road to Taxiway H (**Figure 1.2-2**). This extension will ensure that access is available to the proposed air cargo facilities in the event of an emergency or maintenance on Taxiway A by providing two-way taxiing capability.

1.2.2. TAXIWAY IMPROVEMENTS

A small segment of taxiway to connect the existing segments of Taxiways A and G south of Gulfstream Road would be constructed to provide a low-cost, short-term solution for providing bypass capability for aircraft taxi operations in the north portions of the airfield. For the future development of parcels adjacent to the airport traffic control tower, extending Taxiway G would provide a portion of the two-way taxiing capability from the passenger terminal apron to Taxiway H. Refer back to **Figure 1.2-1** for the locations of these improvements (Projects 4 and 5).



S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.2-2.dwg 11/05/2019 13:13

SAVANNAH / HILTON-HEAD
INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

AIR CARGO RELOCATION
PROPOSED PROJECT
ALTERNATIVE 1a

FIGURE
1.2-2

1.2.3. NORTH APRON IMPROVEMENTS

Phase 1 of the North Apron Improvements (**Figure 1.2-3),** includes the reconstruction of the existing North Apron, located south of Taxiway C and east of Taxiway B, due to the pavement conditions. Adjacent to the east side of the existing North Apron, Phase II consists of constructing a new apron to provide aircraft parking that has been displaced by the ongoing development of tenant facilities to the south. To accommodate the construction of the new apron, existing buildings are proposed to be removed and the existing electric vault would be relocated.

1.2.4. GENERAL AVIATION REDEVELOPMENT

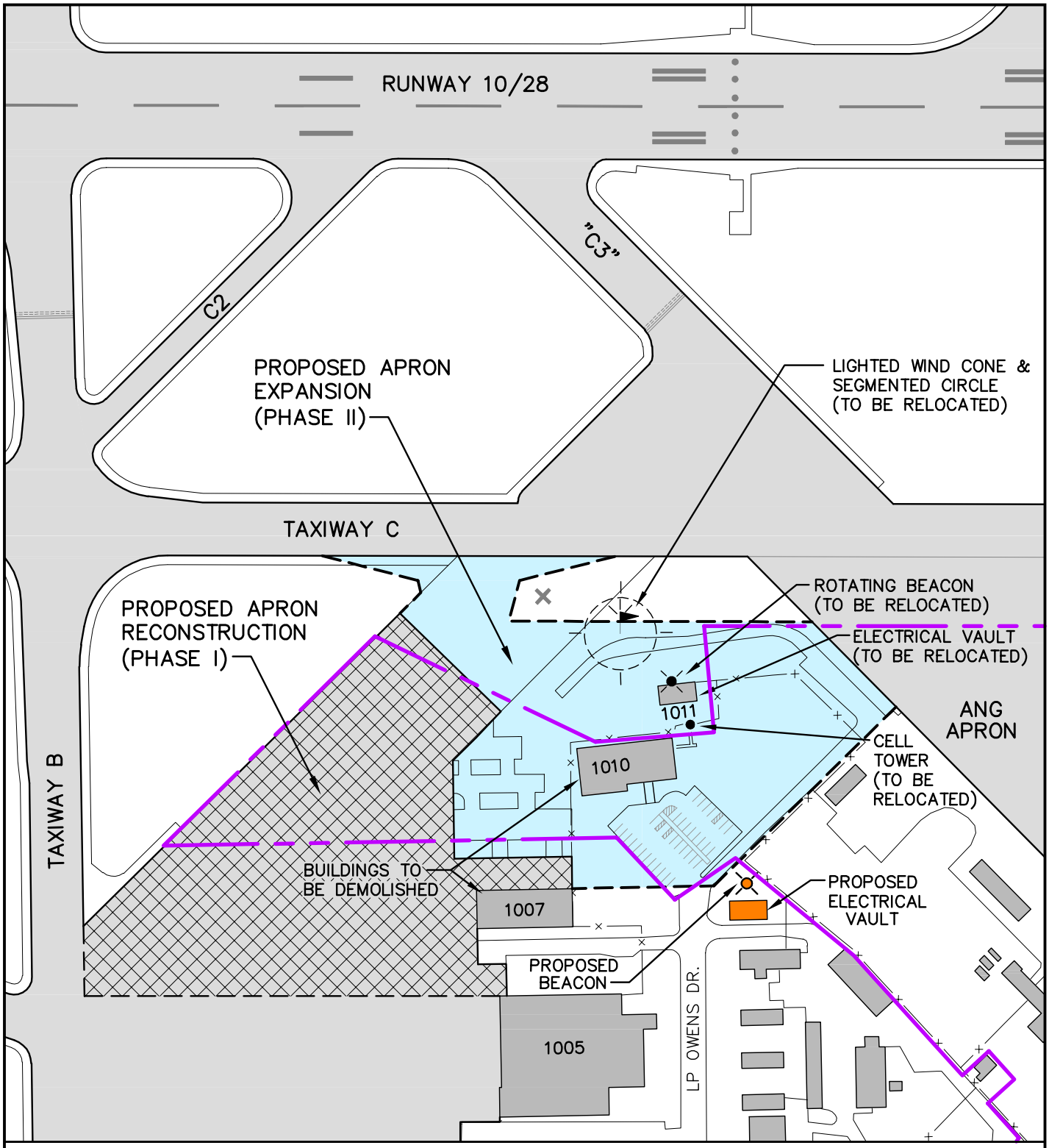
Proposed GA redevelopment (**Figure 1.2-4**), consists of constructing a new 50-foot wide by approximately 1,200-foot long Airport Design Group (ADG)-III taxilane. The proposed taxilane position runs through the existing air cargo ramp and air cargo facility. On the north of the taxiway, two new 115,000-square foot buildings and a new apron east of Taxiway B and south of Taxiway C would be constructed. The proposed apron would provide expanded aircraft movement area to serve the two new buildings as well as tenant facilities currently under construction.

Adjacent to the east side of the existing cargo ramp and FBO ramp, and to the south of the proposed taxiway, box hangars totaling approximately 120,000 square feet in size would be constructed, along with four T-hangars, aircraft apron, terminal building, parking areas, and a fuel farm with access roadway. To accommodate the redevelopment of GA facilities, several existing buildings and support structures are proposed to be removed.

Of note, the Proposed Project layout depicted on **Figure 1.2-4** is conceptual in nature based on current tenant requirements, and is representative of the best information available at the time of this EA's preparation. The final layout and geometry of the Proposed Project would be subject to final design and tenant needs, and therefore subject to change. However, any changes during project design would be within the confines of the footprint specified on **Figure 1.2-4** and studied in this EA.

1.2.5. SOUTHEAST QUADRANT DRAINAGE IMPROVEMENTS

The proposed stormwater management system (**Figure 1.2-5**) consists of a proposed underground piped storm sewer system that conveys stormwater to the two interconnected wet detention ponds identified as the existing POND 96 and the proposed POND TH_25. POND TH_25 would be located within an existing forested wetland and would be hydraulically connected to the existing wet detention pond identified as POND 96 with a triple barrel 60-inch RCP. These two interconnected wet detention ponds would be designed to function as one system to treat and attenuate stormwater runoff from the 361.80-acre contributing drainage area.



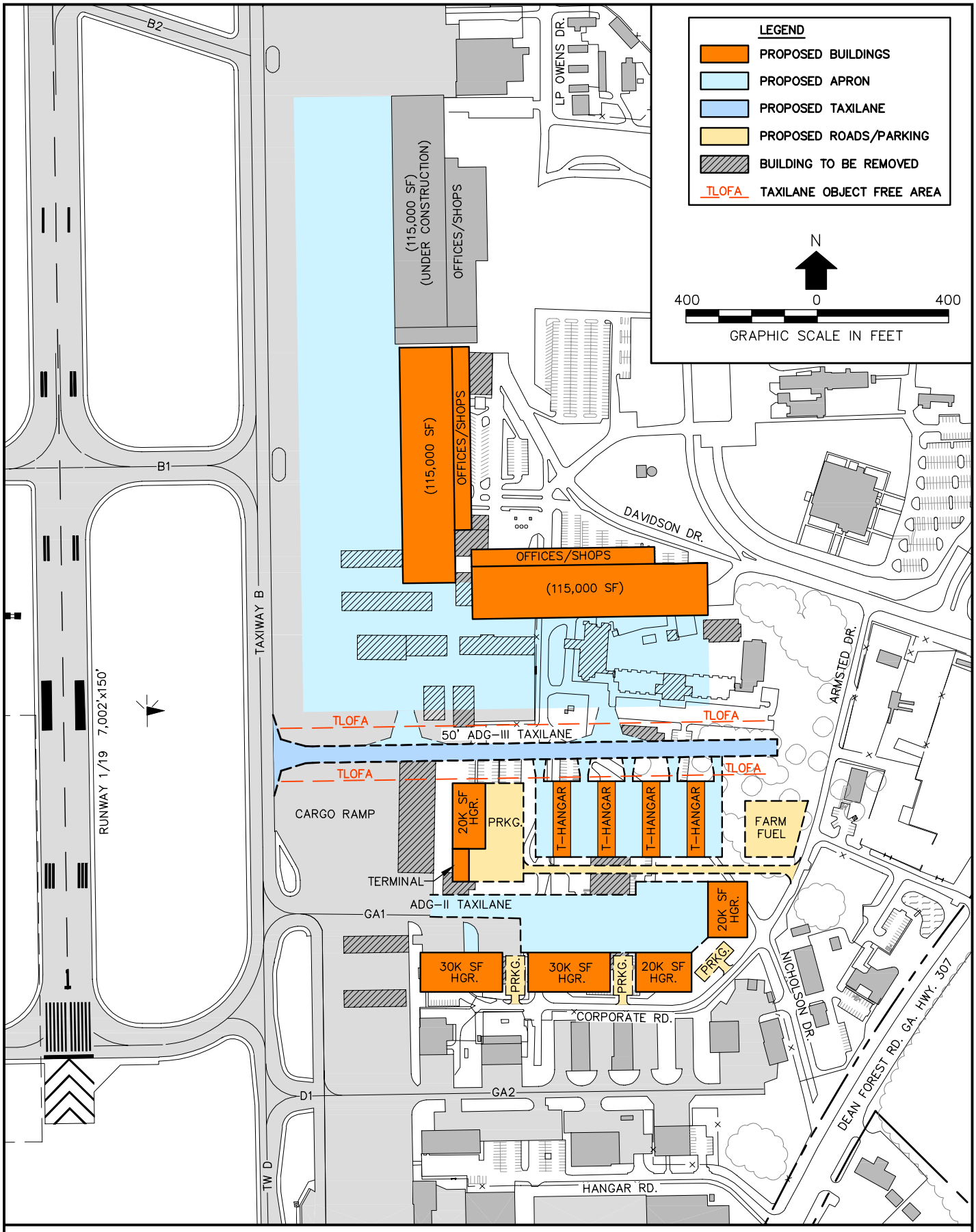
SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

NORTH APRON IMPROVEMENTS PROPOSED PROJECT

FIGURE 1.2-3

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.2-3.dwg 10/21/2019 13:39



S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.2-4.dwg 10/21/2019 13:46

SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

GA REDEVELOPMENT AREA
PROPOSED PROJECT

FIGURE 1.2-4

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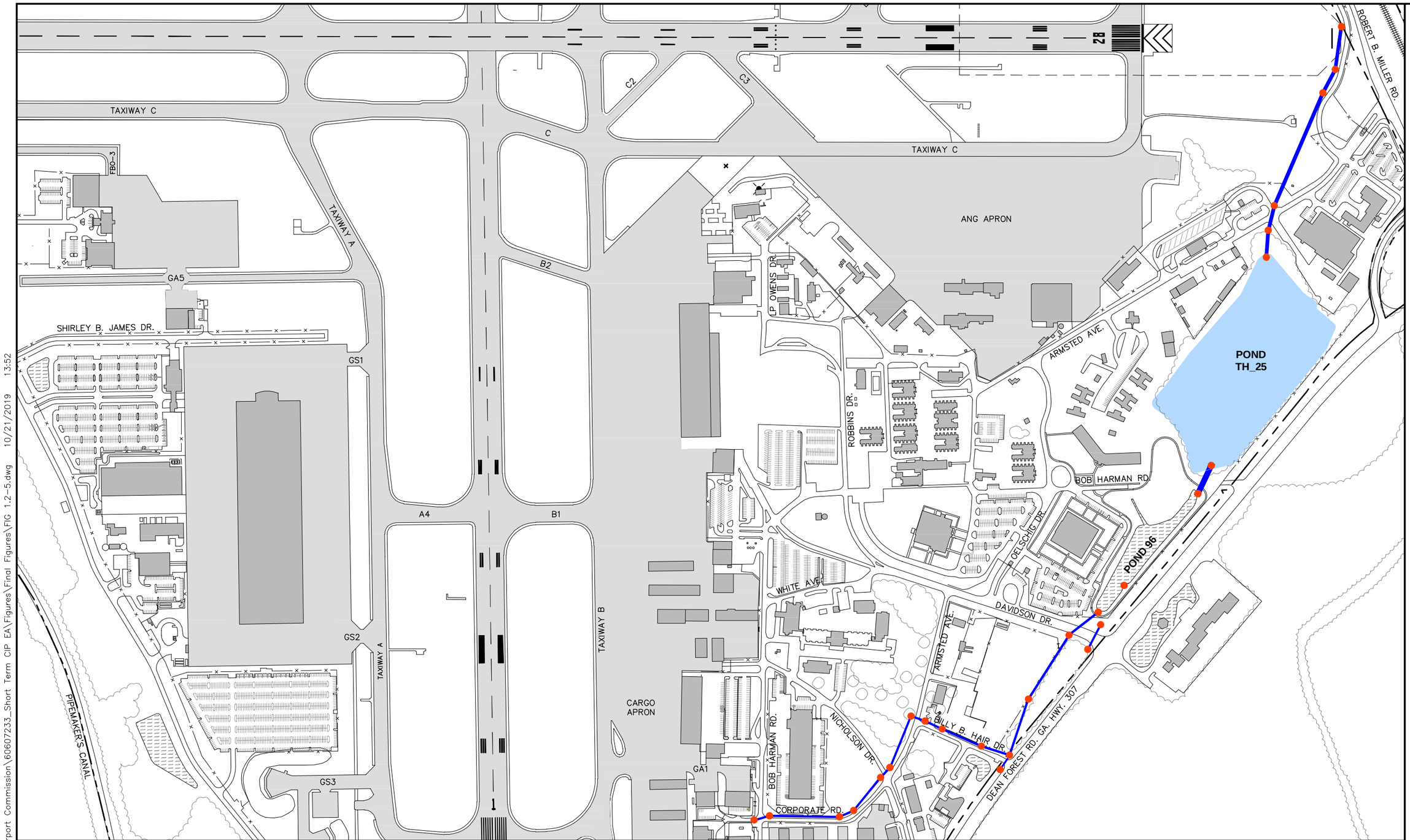

SAVANNAH / HILTON-HEAD
INTERNATIONAL AIRPORT
ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

SOUTHEAST QUADRANT
DRAINAGE IMPROVEMENTS
PROPOSED PROJECT

FIGURE
1.2-5

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 1.2-5.dwg 10/21/2019 13:52

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Water flowing over the top of bank for POND 96 into the drainage ditch along the west side of Dean Forest is in violation of the City of Savannah stormwater regulations. The regulations require that discharge from a stormwater pond can only discharge through a structure that controls the rate of discharge, and the water stage shall be below the top of bank elevation. A raised berm would be constructed on the east side of the pond along Dean Forrest Road. The existing control structure in POND 96 is also not adequate to control the rate of discharge and meet the requirements mandated by the City of Savannah. Therefore, the existing control structure would be removed and replaced with a new control structure, consisting of customized cast in place reinforced concrete. The control structure would contain an eight-foot wide by 1.5-foot high rectangular weir and a 12-inch diameter orifice to draw down the water from the weir elevation to the normal water elevation. The control structure would also contain three 48-inch RCPs that convey the water eastward into the ditch on the west side of Dean Forest Road.

Currently, water collected in the ditch on the west side of Dean Forest Road is conveyed under Dean Forest Road through two 48-inch RCP into a wet detention pond on the east side of Dean Forest Road. This pond discharges to a ditch in the wetlands located east and southeast of Dean Forest Road through a 60-inch RCP. A proposed inlet and a 45-inch by 29-inch elliptical RCP is proposed to be installed in the ditch on the west side of Dean Forest Road to divert some water away the wet detention pond on the east side of Dean Forest Road to avoid adverse impacts to this pond. The 45-inch by 29-inch ERCP conveys water under Davidson Drive to a proposed manhole structure where the water is conveyed under Dean Forest Road through the existing 36-inch RCP to the outfall located in the existing ditch in the forested wetland on the east side of Dean Forest Road.

1.3. ANTICIPATED PROGRAM SCHEDULE

Construction activities associated with the Short-term Development Program will commence within calendar year (CY) 2020 and will persist until completion of the Airport improvements in CY 2023. Therefore, the first year for environmental analysis of Proposed Project operational impacts will be CY 2023. For disclosure of potential additional operational impacts due to the Short-term Development Program, the forecast year 2028 will also be studied in the EA; to the extent such study is warranted under the NEPA.

1.4. ENVIRONMENTAL DOCUMENTATION

The FAA is responsible for complying with NEPA and approving Federal actions and Federal grants-in-aid for proposed airport development projects. All airport improvement projects which are considered to be Federal actions or which involve Federal funding must comply with the NEPA, the Airport and Airway Improvement Act of 1982, as amended and any other pertinent laws and regulations.

In accordance with the procedural provisions of the NEPA codified at 14 CFR parts 1500-1508 and per the requirements of FAA Order 1050.1F, *Environmental Impacts, Policies and Procedures*, this EA has been prepared to assess and document potential environmental, social

and economic effects associated with the Proposed Project. Once comments received on this EA from the FAA, government agencies, interested organizations and the general public have been reviewed and considered, the FAA will evaluate the Final EA and a decision will be made as to whether to issue a Finding of No Significant Impact (FONSI), or to render a decision to prepare an Environmental Impact Statement (EIS).

The format and content of this EA conforms to 14 CFR 1500-1508 and Order 1050.1F and is organized as follows:

- Chapter 1.0, Introduction: identifies the Proposed Project, the EA process, and relevant background information;
- Chapter 2.0, Purpose and Need: discusses the Proposed Project in the context of its overarching purpose and why it is needed;
- Chapter 3.0, Alternatives: identifies and screens reasonable alternatives to the Proposed Project considered as part of the environmental evaluation process. The identification and screening process typically involve a discussion of the evaluation criteria, alternatives eliminated from further consideration and reasonable alternatives retained for further study;
- Chapter 4.0, Affected Environment: describes baseline environmental conditions within the EA study areas;
- Chapter 5.0, Environmental Consequences: presents and compares potential environmental impacts associated with the Proposed Project, reasonable alternatives, and the No-Action Alternative;
- Chapter 6.0, Coordination and Public Involvement: presents information on the coordination and public involvement steps undertaken throughout the EA process, including a listing of Federal, state and local agencies and other interested parties receiving early coordination material and a copy of the Draft EA;
- Chapter 7.0, List of Preparers: lists preparers of the EA;
- Appendices: as needed, for technical information, coordination records and other materials.

CHAPTER 2 PURPOSE AND NEED

Presented in this chapter is a concise statement of purpose for the Proposed Project as introduced in **Section 1.2**, a series of substantiating points as to why the Proposed Project is needed and will be of benefit to SAV and its users, and an itemized summary of Federal actions requested of the FAA in reviewing this EA.

2.1. AIRPORT SPONSOR'S PURPOSE AND NEED

The Airport Sponsor's purpose for the Short-Term Development Program projects, as well as the underlying need for each set of improvements, is to make highest and best use of airport land for documented airport and tenant operational growth and development needs.

In general terms, the purpose and need for north apron improvements and taxiway improvements portions of the EA Proposed Project focus on the routine maintenance of airfield pavements and promotion of airfield operational efficiencies (i.e., rehabilitating pavements in poor or degrading condition, providing additional apron-to-taxiway connections, and providing taxiway redundancy in the event some taxiways are unexpectedly closed).

Similarly, the purpose and need for southeast quadrant GA redevelopment is to optimize, contemporize and expand existing facilities to better service tenant demand, replace hangars and other structures that are past their useful lives or are in suboptimal condition for the intended use, and to provide facility reorganizations to promote continued GA and FBO tenant use in the southeast quadrant.

In contrast, the purpose and need for the air cargo relocation and southeast quadrant drainage improvement components of the EA Proposed Project (described in **Section 1.2**) are intended to remedy distinct shortfalls over existing conditions, and are therefore described in further detail in the following sections.

2.1.1. AIR CARGO RELOCATION

2.1.1.1. PURPOSE

The purpose of the proposed air cargo relocation is to provide air cargo facilities at SAV that can meet the aircraft parking apron, facility and operational requirements of existing and future tenants. The existing air cargo facilities in the southeast quadrant are surrounded by other development and do not have space to expand beyond their current size. Future facilities will also need to comply with airspace obstacle clearance requirements established by 14 Code of Federal Regulations (CFR) Part 77 for the Boeing 767 sized aircraft, whereas current facilities were planned around the smaller Boeing 757-200.

2.1.1.2. NEED

Facility Sizing Requirements

The need for the proposed facilities is based on current and future air cargo requirements of current and potential future carriers. Principally, the existing air cargo aircraft parking apron does not provide space to accommodate additional aircraft parking positions. The existing air cargo ramp only accommodates one aircraft parking position each of the two current tenants at SAV. One existing tenant has indicated that the availability of only one aircraft parking space constrains their existing operations and is not adequate to meet future demand. Similarly, the tenant is in the process of replacing its current fleet (i.e., the 757-200) with Boeing 767 sized aircraft, in order to provide fuel, maintenance and other cost savings, with a capability of carrying up to approximately 58 tons of revenue cargo with intercontinental range.

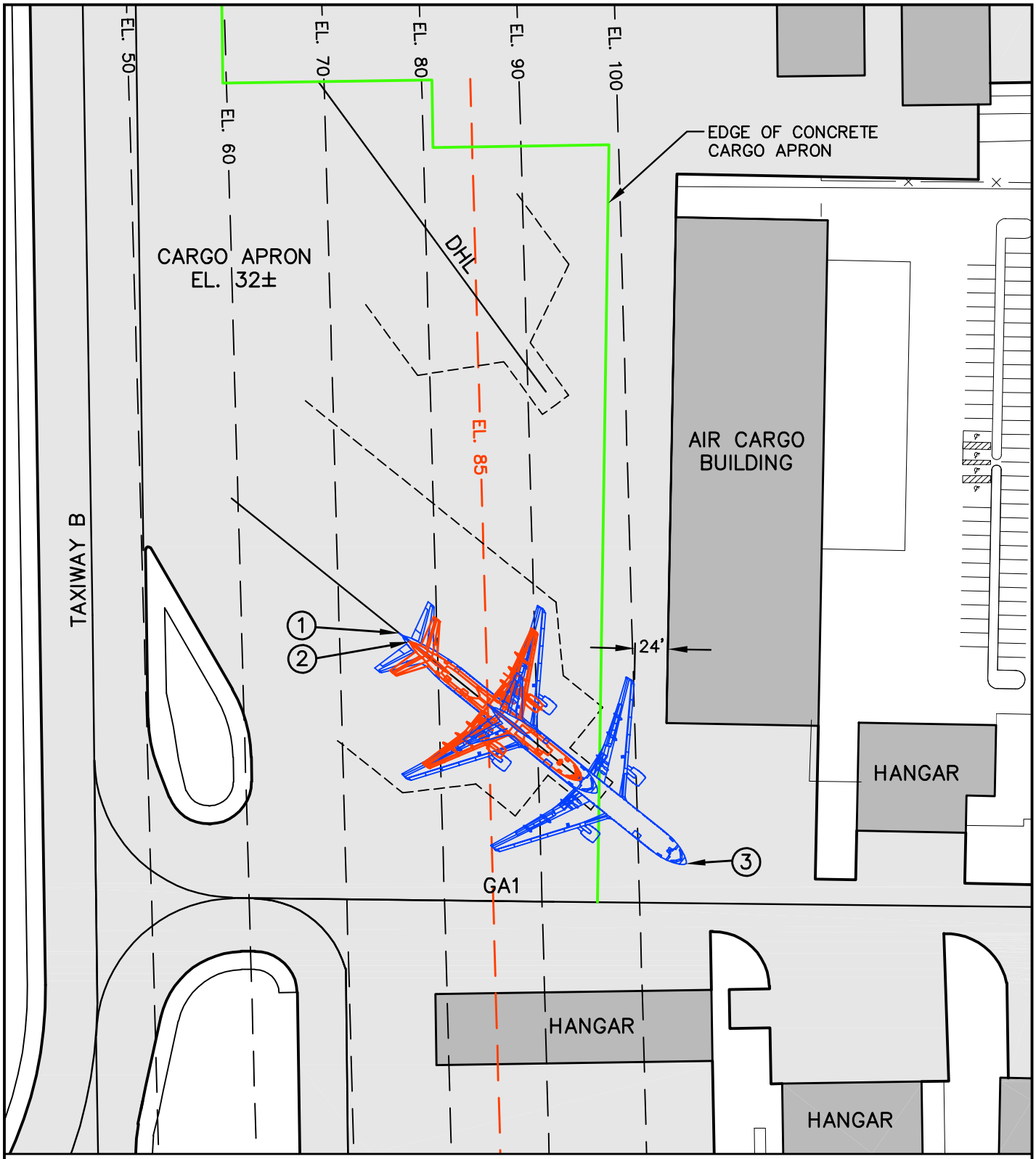
In addition, existing facilities are becoming undersized for current cargo volumes and will not meet future requirements. The existing air cargo building provides 58,000 square feet of space. Expansions made possible by relocating the air cargo facilities would provide up to 200,000 square feet of space, adequately sized and designed to meet requirements for the SAV market.

Tail Height Clearance Requirements for the Boeing 767-300

Figures 2.1-1 depicts the existing air cargo building and apron in the southeast quadrant of the airfield. The aircraft apron parking position which supports a Boeing 757-200 requires it to be parked diagonally from the face of the terminal. This parking position places the aircraft's tail just beneath the Federal Aviation Regulation (FAR) Part 77 transitional surfaces from Runway 1-19. This parking position cannot accommodate existing tenants' growing fleet of Boeing 767-300 which they would prefer to use to accommodate seasonal demand. The Boeing 767-300 will become the operator's most common air carrier aircraft in the near future.[1]

Figure 2.1-1 indicates that the tail of a Boeing 767-300 parked in this position would result in an 8.5-foot penetration of the 7:1 transitional surface. The aircraft's tail would need to be approximately 60 feet further away from the centerline of Runway 1-19 in order to clear the transitional surface. This would place the aircraft beyond the east edge of the full-strength cargo apron limit shown in the red dashed line (see position 3). It would also place the aircraft too close to the air cargo terminal to safely permit the movement of support vehicles.

[1] FedEx Corporation Q2 Fiscal 2019 Statistics, December 18, 2018.



1 767–300
APRON EL. 32 MSL
TAIL HEIGHT 52.6'
SURFACE EL. 76.1 MSL
TAIL PENETRATION 8.5'

2 757–200
APRON EL. 32 MSL
TAIL HEIGHT 45.1'
SURFACE EL. 77.1 MSL
TAIL PENETRATION 0'

N

100 0 100

GRAPHIC SCALE IN FEET

SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

TAIL HEIGHT CLEARANCES:
EXISTING CARGO APRON

FIGURE 2.1-1

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 2.1-1.dwg 10/21/2019 13:54

2.1.2. SOUTHEAST QUADRANT DRAINAGE IMPROVEMENTS

2.1.2.1. PURPOSE

The purpose of the proposed improvements is to treat and attenuate the stormwater runoff generated from the new impervious surfaces associated with the development proposed in the southeast quadrant of the airport, in accordance with county and local stormwater management ordinances.

2.1.2.2. NEED

Without the Proposed Project, further development of the southeast quadrant at SAV would not satisfy county and local stormwater management requirements. The implementation of the southeast quadrant drainage improvements will provide new facilities to treat and attenuate the stormwater runoff generated from existing impervious surfaces, as well as any new impervious surfaces associated with the other actions associated with the Proposed Project, which will satisfy the requirements of the City of Savannah and Chatham County Stormwater Management Ordinances.

Chatham County's Stormwater Management Ordinance requires that a stormwater management plan (SWMP) be developed for all projects required to have a permit for land disturbing activities. These SWMPs must include better site design practices for stormwater management, treat stormwater runoff quality, provide stream channel protection, and provide downstream overbank flood protection. The City of Savannah requires redevelopment projects to satisfy the following items indicated in the City of Savannah Stormwater Management Local Design Manual.

Stormwater Runoff Reduction

The stormwater runoff volume generated by the first 1.2" of rainfall is called the runoff reduction storm event (RRv), in Section 4.4.1 of the latest edition of the Coastal Stormwater Supplement (CSS) to the Georgia Stormwater Management Manual (GSMM). The RRv shall be captured on-site. A stormwater management system is presumed to comply with this criteria if, according to the following criteria: 1) it includes green infrastructure practices that provide for the interception, evapotranspiration, infiltration or capture and reuse of stormwater runoff, that have been selected, designed, constructed and maintained; and, 2) it is designed to provide the amount of stormwater runoff reduction specified in the latest edition of the CSS to the GSMM.

Stormwater Quality Management and Protection

In order to protect local aquatic resources from water quality degradation, post-construction stormwater runoff shall be adequately treated before it is discharged from a development site. Applicants can satisfy these criteria by satisfying the stormwater runoff reduction criteria. However, if any of the stormwater runoff volume generated by the runoff reduction storm event, as defined in the latest edition of the CSS to the GSMM, cannot be reduced on the development site, due to site characteristics or constraints, it shall be intercepted and treated in one or more

stormwater management practices that provide at least an 80 percent reduction in total suspended solids loads and that reduce nitrogen and bacteria loads to the maximum extent practical.

Aquatic Resource Protection

In order to protect local aquatic resources from several other negative impacts of the land development process, including complete loss or destruction, stream channel enlargement and increased salinity fluctuations, applicants shall provide aquatic resource protection in accordance with the information provided in the latest edition of the CSS to the GSMM. The aquatic resource protection criteria are satisfied if the stormwater ponds provide 24 hours of extended detention for the stormwater runoff volume generated by the 1-year, 24-hour storm event before it is discharged.

Overbank Flood Protection

All stormwater management systems shall be designed, constructed, and maintained to control the peak discharge generated by the overbank flood protection storm event, as defined in the latest edition of the CSS to the GSMM, to prevent an increase in the duration, frequency and magnitude of downstream overbank flooding. A stormwater management system is presumed to comply with these criteria if it is designed to assure that the peak flow rate for the 1 year frequency 24 hour duration, 5 year 24 hour, 10 year 24 hour, and 25 year 24 hour storms do not exceed their pre-development conditions.

Extreme Flood Protection

All stormwater management systems shall be designed, constructed, and maintained to control the peak discharge generated by the extreme flood protection storm event, as defined in the latest edition of the CSS to the GSMM, to prevent an increase in the duration, frequency and magnitude of downstream extreme flooding and protect public health and safety. Development sites shall be designed, constructed, and maintained such that all GI/LID practices that impound stormwater runoff can safely pass the 100-year storm without overtopping or creating damaging or dangerous downstream conditions.

Demonstration of safe passage of the 100 year 24 hour storm shall include a stage storage analysis of the system, an inflow/outflow comparison of the system, and construction of a table showing peak stage elevations in comparison to safe freeboards to structures of the system and adjacent buildings/structures/infrastructure.

Flood mitigation capacity in accordance with City Code Part 8 Article D must come from below the flood elevation determined from the latest Federal Emergency Management Agency (FEMA) maps for the project site. Such capacity is to be determined separate from overbank flood or aquatic resource protection detention capacity.

2.2. FAA'S PURPOSE AND NEED

The FAA's mission is to ensure the safe and efficient use of navigable airspace in the United States. In furtherance of this mission, the FAA is charged with implementation of Federal policies under its statutory authorities. It is within the framework of the Airport and Airway Improvement Act of 1982, 49 U.S.C. Section (§) 47101 (as amended), that the FAA is responding to the Airport Sponsor's request for the FAA's unconditional approval of that portion of an updated Airport Layout Plan (ALP) that concerns the Proposed Project and associated improvements. Moreover, it is the statutory policy of the FAA under 49 U.S.C. § 47101 (a)(1) to ensure that the safe operation of airports and the airway system is the highest priority. Approval of an updated ALP specific to the Proposed Project ensures compliance with FAA standards for safety, design and operations at SAV.

2.3. REQUESTED FEDERAL ACTION

Approval of this EA by the FAA will allow the FAA to complete a variety of Federal actions requested by the Airport Sponsor, including (but not limited to) approval of an update to the ALP depicting the Airport Sponsor's Proposed Project; allowance to the Airport Sponsor to proceed with site development activities using non-FAA funding; and permission to seek Federal funding participating for project component(s) deemed eligible by FAA.

The specific requested Federal actions considered in this EA include the following:

- Unconditional approval of those portions of the Proposed Project that are depicted on the existing ALP;
- Unconditional approval of those portions of the Proposed Project that will require an ALP modification; and
- Federal approval necessary to proceed with processing of an application for Federal funding for those development items qualifying under 49 U.S.C § 47101 et seq.

Appropriate Federal findings would be required prior to FAA approval requested above, comprised of:

- FAA determination of the effects upon safe and efficient utilization of airspace;
- FAA determination that the project elements conform to FAA design criteria; and
- FAA determination that the project conforms to Federal grant agreements per FAR Parts 77, 150, 152, 157, and 169.

FAA acceptance of a NEPA analysis document and issuance of a decision document or finding is only a determination that the document satisfies applicable environmental statutes and regulations. FAA's finding would allow the Airport Sponsor to proceed with site development

activities using non-FAA funding as described, and seek Federal funding participation for project components as determined eligible by the FAA.

Similarly, FAA approval of an ALP does not indicate the FAA will participate in the cost of any development proposed. The FAA's unconditional approval of an ALP, or portions thereof, signals that: 1) the proposed ALP features are safe and efficient; 2) the FAA has completed its environmental review; and 3) the FAA has authorized the Airport Sponsor to proceed with implementing the Proposed Project.

2.4. TIMEFRAME OF THE PROPOSED PROJECT

Construction activities associated with the Short-Term Development Program projects will commence within CY 2020 and will persist until culmination of airport improvements in CY 2023. Therefore, the first year for environmental analysis of Proposed Project operational impacts will be CY 2023. For disclosure of potential additional operational impacts due to the Short-Term Development Program, the forecast year 2028 will also be studied in the EA; to the extent such study is warranted under the NEPA.

CHAPTER 3 ALTERNATIVES

This chapter summarizes the screening process used to identify, compare, and evaluate a range of alternatives to the Proposed Project, inclusive of: an overview of the structure of the alternatives screening process and analysis used in this EA; a description of reasonable alternatives to the Proposed Project, including the No-Action Alternative; a concise statement explaining why some alternatives were eliminated from further evaluation in the EA; and identification of reasonable alternatives retained for further evaluation in the EA.

The alternatives analysis was conducted in accordance with the Council on Environmental Quality (CEQ) regulations [40 CFR § 1502.14] and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, which require that Federal agencies perform the following tasks:

- Rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- Devote substantial treatment to each alternative considered in detail, including the Proposed Project, so that reviewers may evaluate their comparative merits.
- Include reasonable alternatives not within the jurisdiction of the lead agency.
- Include the alternative of "No-Action."

3.1. ALTERNATIVES SCREENING PROCESS

The alternatives screening process for projects included in the Short-Term Development Program consists of three levels. A Level 1 evaluation identifies alternatives that would meet the specified purpose of and need for the Project. Screening Level 2 then evaluates alternatives with respect to operations and constructability in terms of airfield accessibility; development constraints such as the impact of each alternative on future development and operation of the airport; the need to relocate existing infrastructure; and impacts to existing tenants and surrounding land uses. Finally, Screening Level 3 examines an alternative's potential impact on environmental resources such as streams and floodplains; wetlands; historic and archaeological resources; Department of Transportation (DOT) Section 4(f) resources; and biological resources.

The alternative screening is applied in a stepwise fashion; that is, only alternative(s) meeting the Purpose and Need (i.e., Level 1) are further evaluated in terms of operations and constructability (i.e., Level 2) and, subsequently, potential impact upon key environmental resources (i.e., Level 3).

Alternatives passing all three levels of screening are carried forward for more detailed analysis in the EA, whereas alternatives not passing these screening levels are eliminated from further

consideration. As stated previously, the No-Action Alternative is carried forward in the EA regardless of the screening process results.

3.1.1. LEVEL 1 ANALYSIS – PURPOSE AND NEED

The Level 1 analysis assessed each alternative against the stated Purpose and Need described in **Sections 2.1.1 and 2.1.2**, respectively. Only alternatives which fully satisfied all Purpose and Need criteria were carried forward for Level 2 screening analysis.

3.1.2. LEVEL 2 ANALYSIS – OPERATIONS AND CONSTRUCTABILITY

This level of the alternatives screening analysis was designed to determine which alternatives, of those meeting the Purpose and Need, were considered to be feasible and prudent with respect to project constructability and airport operations. Level 2 criteria specifically addressed the following considerations:

- Accessibility and Operational Considerations: This criterion further considers requirements and issues associated with providing sufficient access runways and other airport facilities both during and following construction. Ease of motor vehicle access on- and off-airport is also considered. Alternatives should not deteriorate or impede airport or tenant facilities or operations, and improvement of these conditions is preferred. Alternatives that represent the most accessible and efficient are considered preferable to others.

- Constructability, Considering Cost: An alternative must be reasonable in that it does not require a disproportionate amount of land clearing, earthworks, site preparation, asset relocations or other factors that would render it prohibitive in terms of cost or implementation. Cost effective alternatives are considered preferable to those with a disproportionately large cost.

- Land Acquisition Requirements: This criterion addresses the need to acquire land for the development of each alternative. Land acquisition comparisons were made for the total amount of land to be acquired and the number of business structures and residential structures to be acquired. Alternatives requiring the least amount of land acquisition are the most prudent in this regard.

- Land Use Compatibility: Land acquired for a given alternative must already be compatible with airport use, must be able to maintain its current use, or can otherwise be rezoned or repurposed to become compatible. Roadway and right-of-way access must also be maintained. An alternative with minimal effect on existing land use is considered more prudent than one with a larger effect.

- Potential Interference with Planned Airport Development: This criterion addresses the potential impact of each alternative to directly conflict with planned development at the airport or to reduce the efficient future use of airport lands for aviation-related use. Alternatives that conflict with planned development are considered less preferable,

whereas alternatives that foster or facilitate planned development are more preferable.

3.1.3. LEVEL 3 ANALYSIS – ENVIRONMENTAL IMPACTS

Environmental resource categories that have regulatory requirements (i.e., avoidance and minimization of impacts) and those resources that are protected under special purpose environmental laws were evaluated for each alternative passing the Level 2 screening. At the conclusion of the Level 3 analysis, reasonable alternatives were retained for subsequent detailed analysis in this EA. Specific environmental resource areas captured in this screening level comprise:

- Biological Resources: Alternatives were evaluated for the potential to impinge upon documented critical habitats of threatened or endangered plant and animal species, or Essential Fish Habitat (EFH). Alternatives that resulted in fewer impacts on biotic resources were considered to be more reasonable and prudent than those with greater impacts.

- DOT Act Section 4(f) Resources: The alternatives screening process evaluated alternatives based on their potential to result in direct or indirect impacts to properties protected under Section 4(f) of the DOT Act [codified at 49 U.S.C. § 303(c)], which provides protection for special properties, including publicly-owned parks, recreation areas, wildlife and waterfowl refuges, or any significant historic sites. Alternatives that would have no direct impacts to Section 4(f) resources were considered to be more practicable than alternatives that resulted in Section 4(f) resource impacts.

- Floodplains: Area of potential impact on natural or beneficial floodplain, or Special Flood Hazard Area (SFHA) delineated by the FEMA was accounted for each alternative. Alternatives with the least amount of floodplain impact were considered preferable to others.

- Historic and Archaeological Resources: The alternatives screening process evaluated each alternative on its potential to result in direct impacts to historic and/or archaeological resources listed on, or eligible for listing on, the National Register of Historic Places (NRHP). Alternatives that resulted in fewer impacts to listed resources were considered to be more feasible and practical than those alternatives that resulted in a greater amount of impact(s).

- Wetlands and Water Resources: Alternatives were evaluated based on the approximate acreage of wetlands impacted and the potential for implications on existing stormwater management and/or surface water quality. Alternatives with few impacts were considered more prudent and feasible than those generating greater impacts.

3.2. ALTERNATIVES CONSIDERED

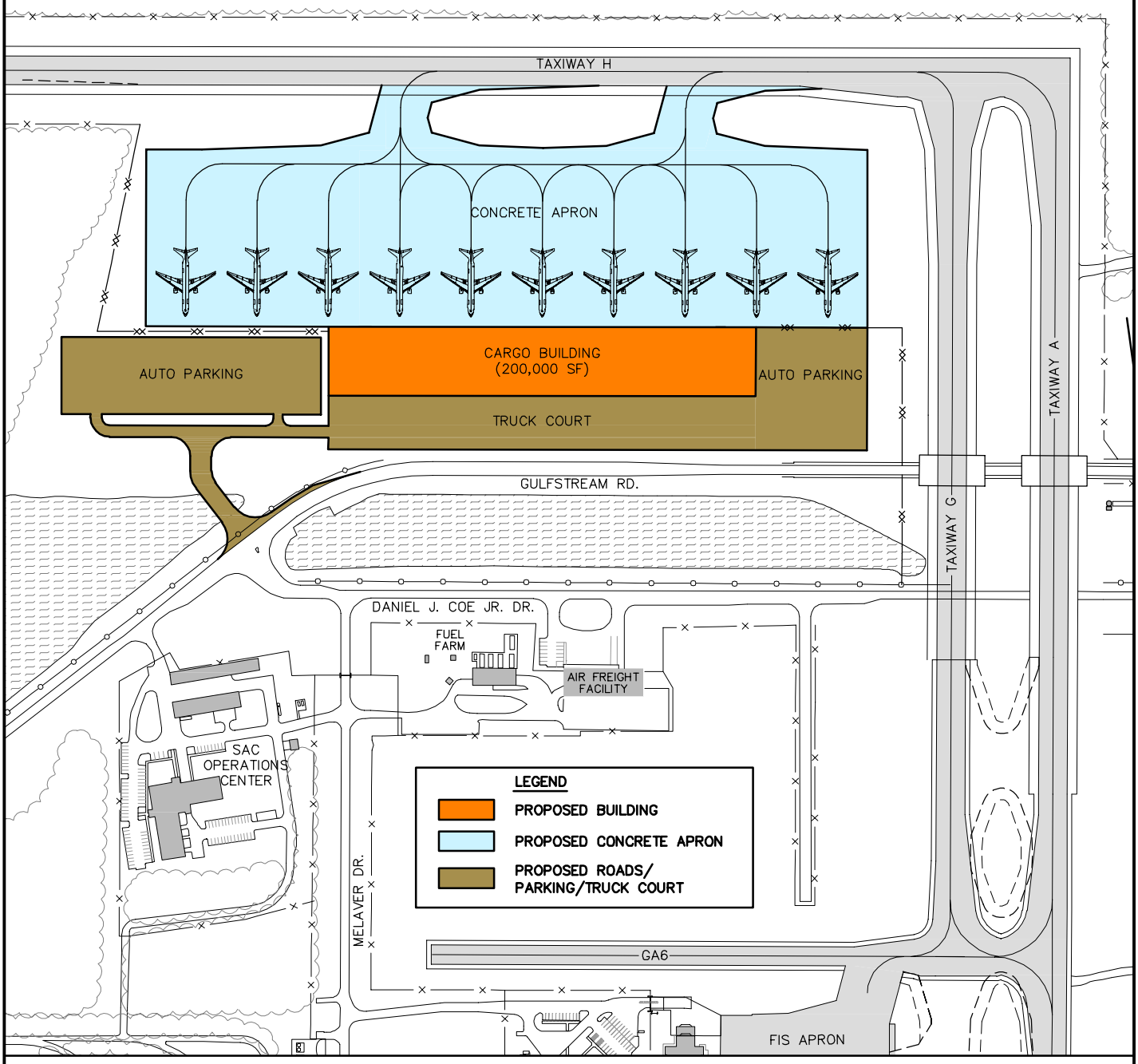
For the purposes of this EA, airside and landside development alternatives considered in the Short-Term Development Program are limited to the proposed air cargo relocation and the southeast quadrant drainage improvements (**Table 3.2-1**). Other improvements shown on **Figure 1.2-1** are either minor in nature or would be implemented by private tenants at SAV, and did not merit the identification of discrete alternatives. Therefore, they are omitted from **Table 3.2-1**. As shown on **Table 3.2-1**, the EA also considers a No-Action Alternative pursuant to the requirements of NEPA.

Table 3.2-1 EA Alternatives Summary

Project	Alternative	Description
Air Cargo Relocation	1a (**Figure 1.2-2**)	Construct new air cargo facilities north of Gulfstream Road, south of Taxiway H and west of Taxiway A. The proposed cargo buildings would consist of an 200,000-square foot building for existing cargo carriers. Provides three additional aircraft parking positions for a total of five. Associated construction also includes new aircraft aprons (approximately 450,800 square feet), automobile and truck parking (approximately 446,700 square feet). Facility access would be provided via two-way access roads terminating at a signalized intersection at Gulfstream Road and Daniel J. Coe, Jr. Drive. Taxiway G would be extended northward over Gulfstream Road to Taxiway H.
	1b (**Figure 3.2-1**)	Construct new air cargo facilities north of Gulfstream Road, south of Taxiway H and west of Taxiway A. The proposed cargo buildings would consist of an 200,000-square foot building for existing cargo carriers. Provides eight additional aircraft parking positions for a total of ten. Associated construction also includes new aircraft aprons (approximately 1,007,000 square feet), automobile and truck parking (approximately 450,800 square feet). Facility access would be provided via two-way access roads terminating at a signalized intersection at Gulfstream Road and Daniel J. Coe, Jr. Drive. Taxiway G would be extended northward over Gulfstream Road to Taxiway H.
	2 (**Figure 3.2-2**)	Construct two new 50,000-square foot cargo buildings south of Gulfstream Road, east of Melaver Drive, and west of Taxiway A. Associated construction also includes new aircraft aprons, and automobile and truck parking. Facility access would be provided via a connection to Daniel J. Coe, Jr. Drive.
	3 (**Figure 3.2-3**)	Construct two new 50,000-square foot cargo buildings north of Bamford Boulevard and south of Taxiway C and Pipemaker's Canal. Associated construction includes a new aircraft apron serving both buildings and two areas for automobile and truck parking at each building. A taxiway bridge over Service Road and Pipemaker's Canal would connect the apron to Taxiway C. A new

Project	Alternative	Description
		access road would be constructed to connect each parking area with Bamford Boulevard.
Southeast Quadrant Drainage Improvements	1 (**Figure 3.2-4**)	Install an underground piped storm sewer system that conveys stormwater to the proposed dry detention pond identified as POND 12. Also includes construction of a proposed wet detention pond identified as POND 9 and proposed 24-inch Reinforced Concrete Pipe (RCP) that would convey portions of the contributing drainage area to POND 9.
	2 (**Figure 3.2-5**)	Install an underground piped storm sewer system that conveys stormwater to a proposed underground dry detention system (vault) and the proposed dry detention pond identified as POND 12. Also includes construction of proposed wet detention pond identified as POND 9 and proposed 24-inch RCP that would convey portions of the contributing drainage area to POND 9.
	3 (**Figure 3.2-6**)	Install an underground piped storm sewer system that conveys stormwater to a proposed underground vault. Also includes the construction of proposed wet detention pond identified as POND 9 and proposed 24-inch RCP that would convey portions of the contributing drainage area to POND 9.
	4 (**Figure 3.2-7**)	Install an underground piped storm sewer system that conveys stormwater to a proposed dry detention pond identified as POND 5-6. Also includes the construction of proposed wet detention pond identified as POND 9 and proposed 24-inch RCP that would convey portions of the contributing drainage area to POND 9.
	5 (**Figure 1.2-5**)	Install an underground piped storm sewer system that conveys stormwater to two interconnected wet detention ponds identified as the existing POND 96 and the proposed POND TH_25.
All	No-Action	With the No-Action Alternative, the Proposed Project would not be implemented. This alternative will be studied in the EA for the purposes of establishing an environmental baseline and comparing environmental impacts of the Proposed Project.

Sources: AECOM, 2019



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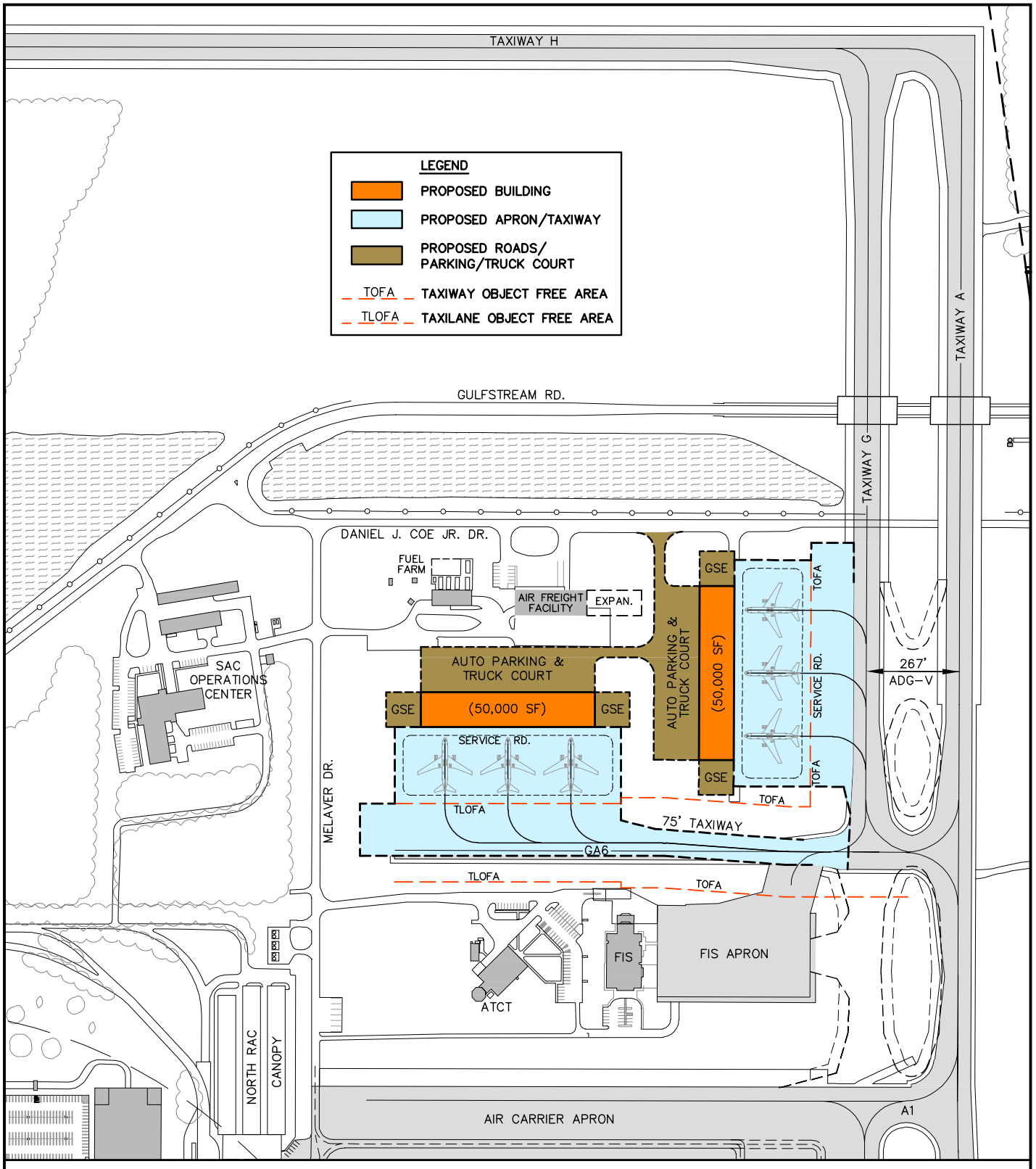
SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT SHORT-TERM DEVELOPMENT PROGRAM	AIR CARGO RELOCATION ALTERNATIVE 1b	FIGURE 3.2-1



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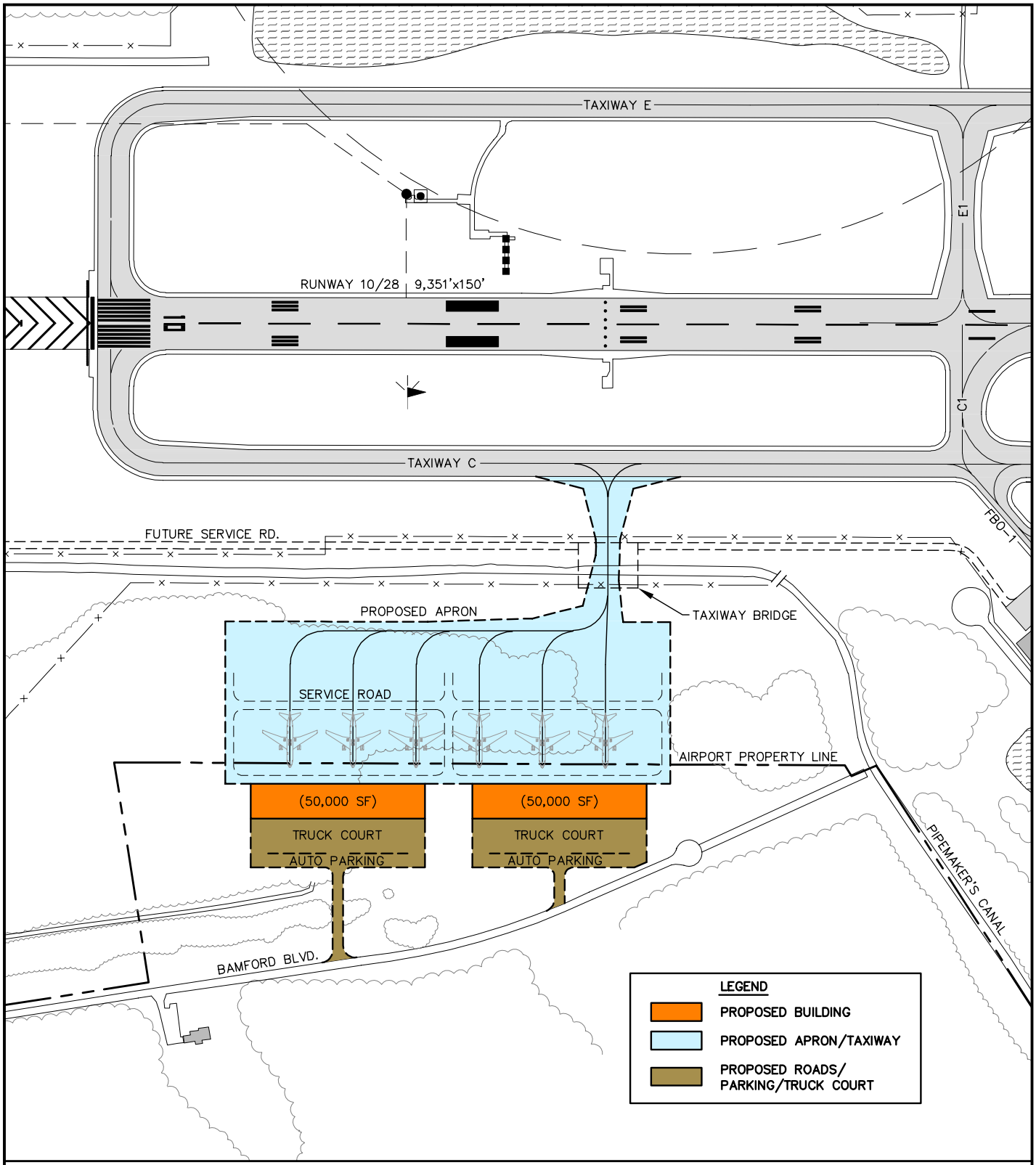
SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT ENVIRONMENTAL ASSESSMENT SHORT-TERM DEVELOPMENT PROGRAM	AIR CARGO RELOCATION ALTERNATIVE 2	FIGURE 3.2-2



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SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

AIR CARGO RELOCATION ALTERNATIVE 3

FIGURE 3.2-3

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SAVANNAH / HILTON-HEAD
INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

SOUTHEAST QUADRANT
DRAINAGE IMPROVEMENTS
(ALTERNATIVE 1)

FIGURE
3.2-4

LEGEND

- PROPOSED STORMWATER POND
- PROPOSED STORMWATER PIPE
- PROPOSED DRAINAGE STRUCTURE

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ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

SOUTHEAST QUADRANT
DRAINAGE IMPROVEMENTS
(ALTERNATIVE 2)

FIGURE
3.2-5

POND 12
POND 9
PIPEMAKER'S CANAL
GS1
GS2
GS3
A4
B1
TAXIWAY A
TAXIWAY B
TW D
CARGO
APRON
GA1
GA2
GA3
D1
ROBBINS DR.
BOB HARMAN RD.
OELSCHIG DR.
WHITE AVE.
DAVIDSON DR.
ARMSTED AVE.
BILLY B. HAIR DR.
DEAN FOREST RD. GA. HWY. 307
NICHOLSON DR.
BOB HARMAN RD.
CORPORATE RD.
HANGAR RD.
WINGS RD.
WINGS CT.
DARQUE RD.
BARFIELD CIR.
PRODUCT SUPPORT RD.
MIKELL AVE.

LEGEND
PROPOSED STORMWATER POND
PROPOSED UNDERGROUND VAULT
PROPOSED STORMWATER PIPE
PROPOSED DRAINAGE STRUCTURE

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S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 3.2-4_7.dwg 10/21/2019 14:12

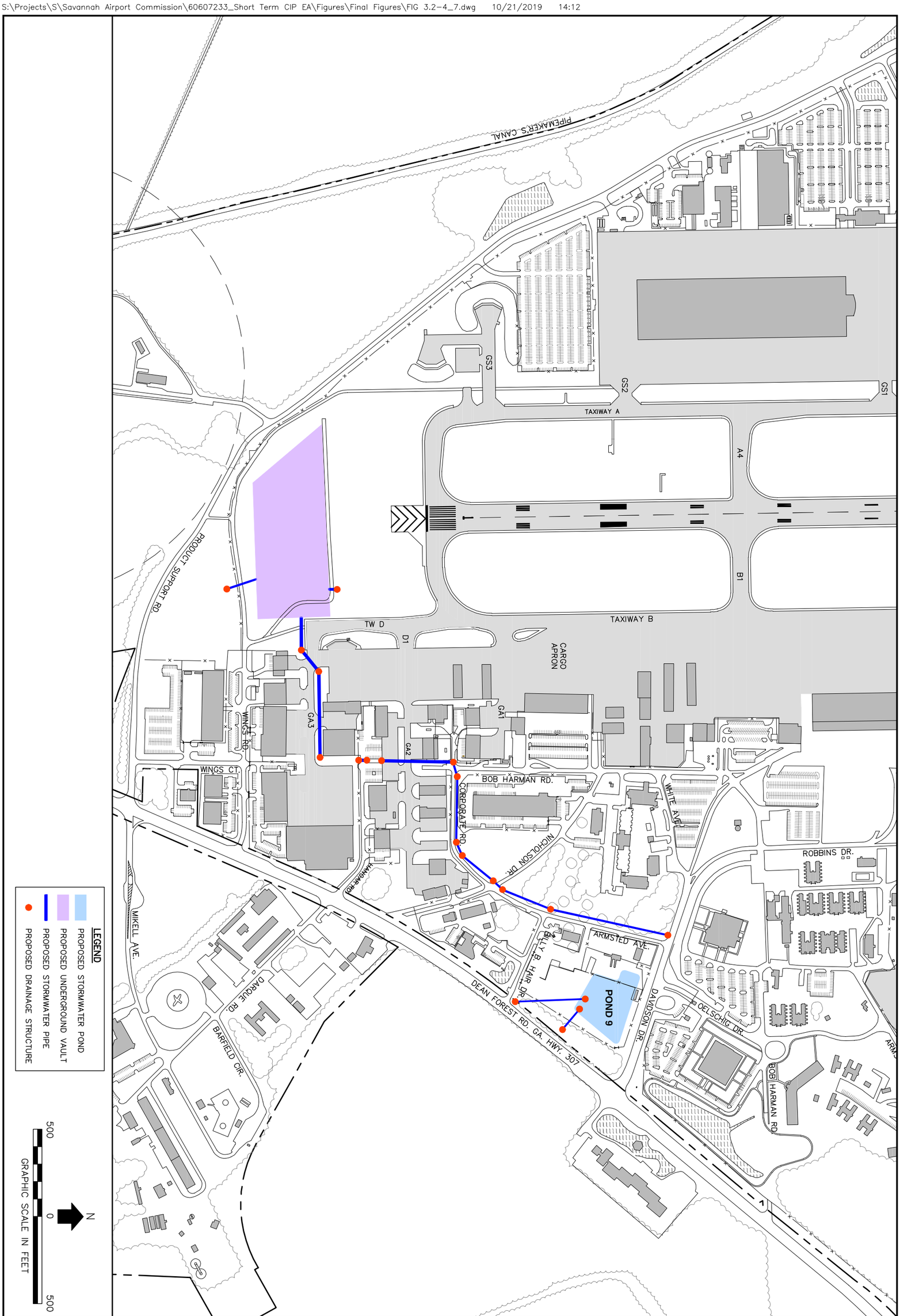

FIGURE 3.2-6

SOUTHEAST QUADRANT DRAINAGE IMPROVEMENTS (ALTERNATIVE 3)

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ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\Figures\Final Figures\FIG 3.2-4_7.dwg 10/21/2019 14:14

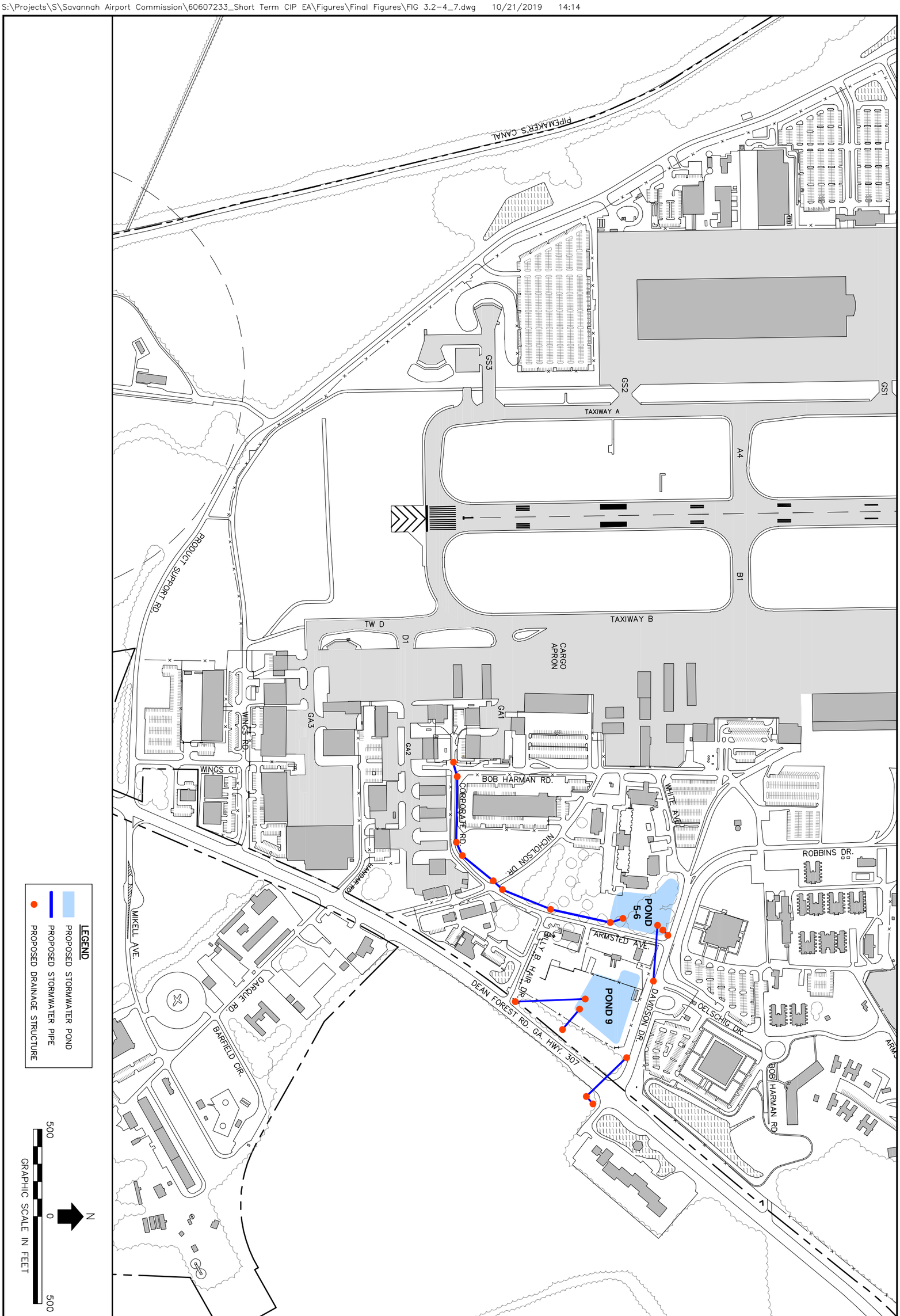


FIGURE 3.2-7

SOUTHEAST QUADRANT DRAINAGE IMPROVEMENTS (ALTERNATIVE 4)

SAVANNAH / HILTON-HEAD INTERNATIONAL AIRPORT

ENVIRONMENTAL ASSESSMENT
SHORT-TERM DEVELOPMENT PROGRAM

3.3. ALTERNATIVES SCREENING RESULTS

3.3.1. ALTERNATIVES TO AIR CARGO RELOCATION

The results of the three-level alternatives screening process for the Air Cargo relocation alternatives are summarized on **Table 3.3-1** and detailed in the following sections.

3.3.1.1. PURPOSE AND NEED

Criterion #1: Meet Facility Sizing Requirements

As shown on **Table 3.3-1**, all alternatives aside from the No-Action Alternative meet the facility sizing requirements by expanding facility space compared to existing conditions, and providing additional air cargo aircraft parking positions to meet current and expected future demand. However, Alternative 1a and 1b maximize these two parameters and best meet the stated purpose and need.

Criterion #2: Meet Tail Height Clearance Requirement's for the Boeing 767-300

As shown on **Table 3.3-1**, all alternatives aside from the No-Action Alternative comply with tail height clearance requirements with respect to the existing transitional surface established by Part 77.

Conclusion

Whereas all alternatives considered meet the facility sizing requirements and Part 77 requirements for tail height clearance, all alternatives meet the established purpose and need and are therefore carried forward to Level 2 screening analysis. Despite not meeting the established purpose and need, the No-Action Alternative is also carried forward for further consideration per NEPA requirements.

3.3.1.2. OPERATIONS AND CONSTRUCTABILITY

Per **Table 3.3-1**, Alternative 3 is eliminated from further consideration as it requires extensive site preparation, environmental permitting, and off airport land acquisition and transportation connections. Alternative 2 is a reasonable and feasible alternative but is constrained by the available site footprint and does not allow for further expansion or adjacency to planned future industrial development. Alternatives 1a and 1b do not suffer these constraints and are carried forward to Level 3 screening, along with the No-Action Alternative.

3.3.1.3. POTENTIAL ENVIRONMENTAL IMPACT

Alternatives 1a and 1b are each sited on graded and cleared land that has already received environmental approval through the NEPA process and has been fully mitigated for significant natural resource impacts. No significant cultural resources are within the footprint boundaries and the alternatives would not measurably impact DOT Section 4(f) resources or floodplains.

Therefore, these alternatives, along with the No-Action Alternative, are carried forward for detailed analysis in this EA.

Table 3.3-1 Air Cargo Relocation Alternatives Screening Summary

Screening Level	Criteria	Result				
		Alt 1a (Proposed Project)	**Alternative 1b**	**Alt 2**	**Alt 3**	**No-Action**
Level 1 – Purpose and Need	Meet Facility Sizing Requirements	Provides 200,000 square feet of facility space compared to 58,000 square feet of space available at existing facilities, for an increase of 344%. Accommodates up to three additional parking positions compared to existing facility, for a total of five.	Provides 200,000 square feet of facility space compared to 58,000 square feet of space available at existing facilities, for an increase of 344%. Accommodates up to eight additional parking positions compared to existing facility, for a total of ten.	Provides 100,000 square feet of facility space compared to 58,000 square feet of space available at existing facilities, for an increase of 172%. Accommodates up to six additional parking positions compared to existing facility, for a total of eight.	Provides 100,00 square feet of facility space compared to 58,000 square feet of space available at existing facilities, for an increase of 172%. Accommodates up to six additional parking positions compared to existing facility, for a total of eight.	Provides 58,000 square feet of facility space.
	Meet Tail Height Clearances Requirements for Boeing 767-300	Tail height of Boeing 767-300 clears 7:1 transitional surface by 1.2 feet.	Tail height of Boeing 767-300 clears 7:1 transitional surface by 1.2 feet.	Tail height of Boeing 767-300 clears 7:1 transitional surface by 105.3 feet.	Tail height of Boeing 767-300 clears 7:1 transitional surface by 36.4 feet.	Tail height of Boeing 767-300 penetrates 7:1 transitional surface by 8.5 feet with no mitigations available.
Proceed to Level 2 Screening?		**Yes**	**Yes**	**Yes**	**Yes**	**Yes**
Level 2 – Operations and Constructability	Accessibility and Operational Considerations	Two-way taxi capabilities are possible at this location using proposed airfield pavement.	Two-way taxi capabilities are possible at this location using proposed airfield pavement.	Two-way taxi capabilities are possible at this location using existing airfield pavement.	Taxiway access is provided only by Taxiway C.	No change compared to existing conditions.
	Constructability, Considering Cost	Occurs on land that is already cleared and graded, for which environmental approvals have already been secured and any natural resources impacts have been previously mitigated.	Occurs on land that is already cleared and graded, for which environmental approvals have already been secured and any natural resources impacts have been previously mitigated.	Occurs on already developed land, so no significant site preparation activities would be required.	Development of this site would require site preparation and environmental permitting activities.	No change compared to existing conditions.
	Land Acquisition and Land Use Compatibility	No land acquisition would be required. The land use is compatible with adjacent facilities.	No land acquisition would be required. The land use is compatible with adjacent facilities.	No land acquisition would be required. The land use is compatible with adjacent facilities.	Off-airport land acquisition and tie-ins to off-airport Bamford Boulevard would be required.	No change compared to existing conditions.
	Potential Interference with Planned Airport Development	Site expansion opportunities exist to the west of the proposed footprint, which according to current development plans may be used for planned industrial development areas.	Site expansion opportunities exist to the west of the proposed footprint, which according to current development plans may be used for planned industrial development areas.	The site is constrained to the footprint shown with no opportunity for additional expansion and little room for synergies with planned industrial development areas at SAV.	No interference anticipated.	Maintains air cargo operations in the midst of GA industrial tenant and FBO operations.
Proceed to Level 3 Screening?		**Yes**	**Yes**	**No**	**No**	**Yes**
Level 3 – Potential Environmental impacts	Biological Resources	Environmental approvals have already been secured for the site and any natural resources impacts have been previously mitigated.	Environmental approvals have already been secured for the site and any natural resources impacts have been previously mitigated.	--	--	None
	DOT Section 4(f) Resources	No direct or constructive use under Section 4(f) would occur with this alternative.	No direct or constructive use under Section 4(f) would occur with this alternative.	--	--	None
	Floodplains	A small portion of 100-year floodplain occurs within the study	A small portion of 100-year floodplain occurs within the study	--	--	None

Screening Level	Criteria	Result				
		Alt 1a (Proposed Project)	**Alternative 1b**	**Alt 2**	**Alt 3**	**No-Action**
		area for this alternative, but would not be directly impacted by project construction.	area for this alternative, but would not be directly impacted by project construction.			
	Historic Architectural/ Archaeological Resources	Previous and current archaeological studies made no positive archaeological recoveries within the project footprint. Site clearing and grading activities to date have encountered no significant resources. Indirect impacts to historic resources in the area around SAV will not occur.	Previous and current archaeological studies made no positive archaeological recoveries within the project footprint. Site clearing and grading activities to date have encountered no significant resources. Indirect impacts to historic resources in the area around SAV will not occur.	--	--	None
	Wetlands and Water Resources	Environmental approvals have already been secured for the site and any natural resources impacts have been previously mitigated.	Environmental approvals have already been secured for the site and any natural resources impacts have been previously mitigated.	--	--	None
Carried Forward for Detailed Analysis in EA?		**Yes**	**Yes**	**No**	**No**	**Yes**

Source: AECOM, 2019

3.3.2. ALTERNATIVES FOR THE SOUTHEAST QUADRANT DRAINAGE IMPROVEMENTS

The results of the three-level alternatives screening process for the southeast quadrant drainage improvement alternatives are summarized on **Table 3.3-6,** and detailed in the following sections.

3.3.2.1. PURPOSE AND NEED

Criterion #1: Runoff Reduction Volume

Runoff reduction volumes for each alternative are shown on **Table 3.3-2** and indicate that Alternative 5 has the greatest efficacy. These volumes cannot be further reduced with better site planning techniques such as reducing the amount of impervious area by at least 20% and implementing low impact development practices because the aviation related facilities associated with the future development need to maximize the amount of impervious area to effectively operate. As a result only a portion of the runoff reduction volume criteria is satisfied for all five alternatives by conveying the stormwater runoff to the proposed detention ponds identified which also satisfies the stormwater quality protection criteria as described in the following section.

Currently the Airport and Crosswinds Golf Course, which is located on Airport property, irrigates the grass and landscaping by pumping water from existing surface water bodies located on Airport property. The Airport utilizes approximately 134 million gallons per year and the Crosswinds Golf Course utilizes approximately 22.3 million gallons per year from the existing surface water bodies for irrigation purposes. Representatives from the City of Savannah Public Works Department Stormwater Section indicated during a meeting held at the Airport on April 2, 2019 that they will allow for reusing water for irrigation purposes as credit toward the runoff reduction criteria. Therefore, the runoff reduction criteria can be satisfied with the proposed treatment ponds and reusing water for irrigation. Alternative 5 would provide least reliance on this contingency, whereas Alternative 4 would rely on it the most. Alternative 1, 2 and 3 are comparable in this regard.

Table 3.3-2 Summary of Runoff Reduction Volumes

Alternative	Runoff Reduction Volume for Each Best Management Practice					Total (ac-ft)
	POND12 (ac-ft)	POND9 (ac-ft)	POND5-6 (ac-ft)	VAULT (ac-ft)	TH_25 & 96 (ac-ft)	
1	12.22	0.85	-	-	-	13.07
2	12.17	0.85	-	Note 1	-	13.02
3	-	0.85	-	11.08	-	11.93
4	-	0.85	6.92	-	-	7.77
5	-	-	-	-	20.83	20.83

Source: AECOM, 2019.

Note 1: Runoff Reduction Volume for Alternative 3 is provided in Pond 12. The underground dry detention system, VAULT, under Alternative 3 is needed for additional volume to meet the overbank flood protection and extreme flood protection.

Criterion #2: Stormwater Quality Protection

The stormwater quality protection criteria are satisfied by routing the stormwater runoff from the contributing drainage areas to the proposed stormwater Best Management Practices (BMP) for each of the five alternatives (**Table 3.3-3**). Alternative 5 maximizes treatment efficacy (in terms of acre-feet, or ac-ft), followed by Alternatives 1 and 2.

Table 3.3-3 Summary of Contributing Drainage Areas Treated

Alternative	Contributing Drainage Area for Each Best Management Practice					Total (ac-ft)
	POND12 (ac-ft)	POND9 (ac-ft)	POND5-6 (ac-ft)	VAULT (ac)	TH_25 & 96 (ac-ft)	
1	217.52	9.69	-	-	-	227.21
2	207.25	9.69	-	Note 1	-	216.94
3	-	9.69	-	151.8	-	161.49
4	-	9.69	85.11	-	-	94.80
5	-	-	-	-	361.8	361.8

Source: AECOM, 2019

Note 1: 151.80-acres flows through the underground dry detention system, VAULT, prior to entering POND12 in Alternative 3.

POND9, Pond TH_25 and Pond 96 are wet detention ponds that provide 80% reduction in total suspended solids (TSS) loads, a 30% reduction in total nitrogen (TN) loads and a 70% reduction in bacteria loads according to Table 8-1 in the CSS GSMM. Therefore, POND9, POND TH-25 and POND 96 satisfy the stormwater quality protection criteria because they contain treatment volumes stored between the orifice at the normal water elevation to the weir elevation. The ac-ft of water contained in POND9 as well as ponds TH_25 and 96 provide treatment with the settlement of sediments contained in the water, nutrient uptake in aquatic plants and chemical processes in the open water. These quantities are much greater than the required runoff reduction volume of 0.85 ac-ft for POND9, and the required runoff reduction volume of 20.83 ac-ft for TH-25 and 96. Therefore, the stormwater quality protection criteria are satisfied.

POND12, POND5-6 and VAULT are dry detention ponds. Dry detention ponds are identified by the Georgia Environmental Protection Division (EPD) as a BMP that is limited in providing adequate treatment of stormwater runoff because most of the water contained in the pond slowly bleeds down to the pond bottom through weir openings in the control structure and only some of the water infiltrates into the ground. Therefore, dry detention ponds cannot be used as a BMP to satisfy the stormwater quality protection criteria according to Table 8-1 in the CSS GSMM. However, the City of Savannah applies credit toward the stormwater quality protection criteria for dry detention ponds if the flow path through the detention pond is maximized. This is accomplished by placing the outfall structure as far as possible such as the opposite end of the pond from the pipe(s) that convey water into the detention pond. Site constraints may prohibit placing the outfall structure far from a particular inflow pipe into the dry detention pond. Baffle walls constructed inside the pond comprised of soil berms or fiberglass walls supported by posts can be positioned to route the water throughout the pond before exiting the pond through the outfall structure. This allows the stormwater to flow through the entire length of the pond and

contact the ground surfaces where some water infiltrates. These design features also allow for the settlement of suspended solids because it increases the residence time of the stormwater in the pond.

Constructing POND12 as a wet detention pond is not feasible because it is directly behind a runway and the FAA prohibit wet detention ponds in the vicinity of airports where aircraft operations take place because they attract wildlife that threaten the safety of aircraft. The City of Savannah is aware of the FAA criteria that prohibit the use of wet detention ponds in the vicinity of airfields at airports and therefore allows the use of dry detention as a BMP to meet the stormwater quality protection criteria if the residence time is increased in the pond.

During the design phase geotechnical testing of the soils at the pond locations will occur to determine if the pond sites are suitable to function as dry retention ponds rather than dry detention ponds. This geotechnical testing will include laboratory tests to determine the vertical unsaturated infiltration rate in feet per day, the horizontal saturated hydraulic conductivity in feet per day, the fillable porosity, depth to the seasonal high groundwater and the depth to confining layer (clay or rock) of the surficial groundwater. Dry retention ponds function where the required runoff reduction volumes shown in **Table 3.3-2** are contained from the pond bottom to a weir elevation that prevents the required runoff reduction volume from passing through the outfall. Therefore, the runoff reduction volume is treated by infiltrating through the soil. The City of Savannah allows dry retention ponds to be utilized to satisfy the stormwater quality protection criteria without maximizing the flow path.

Criterion #3: Aquatic Resource Protection

The aquatic resource protection criteria are satisfied for all five alternatives as demonstrated with the results shown in **Table 3.3-4**. The water stage in both peak and 24-hours after peak conditions are lower than the top weir elevation. The peak water surface elevations for the 1-year, 24-hour storm event in the respective ponds for each alternative are lower than the top weir elevations for the control structures. Therefore, the water slowly draws down through the lower weir elevations at the pond bottom for the dry detention ponds (POND12, POND5-6 and VAULT) and the normal water surface for the wet detention ponds (POND9, POND TH_25 and POND 96).

Twenty four hours after the peak elevations occurred into the 1-year, 24-hour storm event, the water stages in the respective ponds for each alternative are above the lower weir elevations at the bottoms of the dry retention ponds and the normal water surface elevations for the wet detention pond. This indicates not all of the water volume stored in in the ponds during the 1-year, 24-hour storm event discharged within 24-hours. Therefore, the aquatic resource protection criteria are satisfied for all alternatives.

Table 3.3-4 Aquatic Resource Protection Summary

Alt.	Pond	Peak			24-Hours After Peak		
		Top Weir Elev. (ft)	Water Stage (ft)	Time (hr)	Lower Weir Elev. (ft)	Water Stage (ft)	Time (hr)
1	POND12	18.3	14.88	19.31	12.0	13.51	43.31
	POND9	14.8	13.35	20.12	12.0	12.91	44.12
2	POND12	18.8	14.54	20.42	12.0	13.46	44.42
	POND9	14.8	13.35	20.12	12.0	12.91	44.12
3	VAULT	18.0	17.81	14.70	12.0	13.28	38.70
	POND9	14.8	13.35	20.12	12.0	12.91	44.12
4	POND5-6	28.5	23.08	13.60	16.0	16.16	37.60
	POND9	14.8	13.35	20.12	12.0	12.91	44.12
5	POND TH_25	16.0	14.34	15.88	11.0	12.82	39.88
	POND 96		14.35	15.84	11.0	12.82	39.84

Source: AECOM, 2019

Criterion #4: Overbank Flood Protection

The overbank flood protection criteria are satisfied if the peak future condition discharge rates to the off-site boundary nodes are less than or equal to the peak existing condition discharge rates for the 1-year, 5-year, 10-year and 25-year storm events. Per **Table 3.3-5**, modeled cumulative peak discharge rates for each alternative are less than existing conditions, with the exception of Alternative 1 in the 25-year time horizon.

Table 3.3-5 Cumulative Peak Discharge Rates Per Alternative

Alt.	Existing Condition Discharge Rate (cubic feet per second)				Future Condition Discharge Rate (cubic feet per second)			
	1-year	5-year	10-year	25-year	1-year	5-year	10-year	25-year
1	97.57	145.31	159.31	97.57	47.09	81.02	86.82	98.83
2	97.57	145.31	159.31	170.97	47.09	81.02	86.81	95.21
3	97.57	145.31	159.31	170.97	48.13	85.66	89.64	100.01
4	97.57	145.31	159.31	170.97	96.04	144.79	152.16	161.62
5	230.53	359.41	394.55	465.43	151.75	307.22	366.51	453.85

Source: AECOM, 2019

Criterion #5: Extreme Flood Protection

The extreme flood protection criteria only apply for projects that impact floodplains. Therefore, the extreme flood protection criteria apply to POND12 in Alternatives 1 and 2 only. The extreme flood protection criteria are satisfied if the peak future condition discharge rates to off-site boundary nodes are less than or equal to the peak existing condition discharge rates for the 100-year storm event. The future condition peak discharge rates to boundary nodes are less than the existing condition peak discharge rates. However, the future condition peak discharge rate is more

than the existing condition discharge rate boundary nodes for the 100-year storm event. Therefore, the extreme flood protection criteria are not satisfied for Alternative 1 or 2.

Conclusion

As described in the preceding sections and summarized on **Table 3.3-6**, all five alternatives meet City of Savannah stormwater management criteria for runoff reduction volume, stormwater quality protection, and aquatic resource protection. Alternatives 1 and 2 are discounted from further analysis, however, because they do not meet City of Savannah extreme flood protection criteria. Alternative 1 further does not fully meet established overbank flood protection criteria.

3.3.2.2. OPERATIONS AND CONSTRUCTABILITY

Of the remaining alternatives passing Level 1 screening analysis, Alternatives 3 and 4 are not considered reasonable and prudent for the purposes of this EA on the following grounds.

Alternative 3 places an underground stormwater vault in the portion of the Runway 1 RSA extending off the end of the runway. FAA AC 150/5300-13A stipulates the following conditions with respect to activities or structures within active RSAs:

- Per Section 307b(1), RSAs must be cleared and graded and have no potentially hazardous ruts, humps, depressions or other surface variations;
- Per Section 307b(3), RSAs must be capable, under dry conditions, of supporting heavy equipment such as firefighting and rescue vehicles, as well as the occasional passage of aircraft without causing damage to the aircraft;
- Per Section 307c, Compaction of RSA soils must comply with FAA Specification P-152, Excavation, Subgrade and Embankment.

Although there is potential for RSA non-compliance issues to be alleviated in design for Alternative 3, on its face the Alternative creates the potential to create RSA surface variations that are noncompliant with FAA's design circular. Similarly, creating a void space underground within the RSA may impact the ability for the RSA to support heavy equipment and aircraft due to potential subsidence over time, reduction in soil compaction, and reduced structural integrity.

Further, Alternative 3 creates no mechanism by which stormwater can be diverted from GANG parking areas to alleviate current flooding conditions. Additionally, the alternative places POND9 in an open space area within the southeast quadrant which could otherwise be used for aviation related development.

Alternative 4 similarly does not provide the capability of eliminating nuisance flood conditions in the GANG leasehold and eliminates development opportunity in the proposed POND9 area.

On these grounds, Alternatives 3 and 4 do not pass Level 2 screening and are eliminated from further consideration in this EA.

3.3.2.3. POTENTIAL ENVIRONMENTAL IMPACT

Alternative 5 (Proposed Project) and the No-Action Alternative are the only alternatives remaining for evaluation after Level 2 screening. For Alternative 5, approximately 13.2 acre of forested wetland area would need to be converted to an open-water stormwater management pond, which reduces available habitat for rare, threatened and endangered species such as the wood stork. Potential effects of this alternative on these species was coordinated with the U.S. Fish and Wildlife Service (USFWS), and has concluded that the alternative may affect, but would not likely adversely affect, these species (**Appendix A**). Removing 13.2 acre of forested wetland area could be mitigated using measures described in **Section 5.12** of this EA.

Therefore, Alternative 5 and the No-Action Alternative pass Level 3 screening analysis and are retained for further evaluation in this EA.

Table 3.3-5 Southeast Quadrant Drainage Improvements Alternatives Screening Summary

Screening Level	Criteria	Result					
		Alt 1	**Alt 2**	**Alt 3**	**Alt 4**	**Alt 5**	**No-Action**
Level 1 – Purpose and Need	Runoff Reduction Volume	Provides 13.07 ac-ft runoff reduction volume.	Provides 13.02 ac-ft runoff reduction volume.	Provides 11.93 ac-ft runoff reduction volume.	Provides 7.77 ac-ft runoff reduction volume.	Provides 20.83 ac-ft runoff reduction volume.	Criteria not met.
	Stormwater Quality Protection	227.21 ac-ft of contributing drainage area treated.	216.94 ac-ft of contributing drainage area treated.	161.49 ac-ft of contributing drainage area treated.	94.80 ac-ft of contributing drainage area treated.	361.8 ac-ft of contributing drainage area treated.	Criteria not met.
	Aquatic Resource Protection	Not all of the water volume stored in in the ponds during the 1-year, 24-hour storm event is discharged within 24-hours.	Not all of the water volume stored in in the ponds during the 1-year, 24-hour storm event is discharged within 24-hours.	Not all of the water volume stored in in the ponds during the 1-year, 24-hour storm event is discharged within 24-hours.	Not all of the water volume stored in in the ponds during the 1-year, 24-hour storm event is discharged within 24-hours.	Not all of the water volume stored in in the ponds during the 1-year, 24-hour storm event is discharged within 24-hours.	Criteria not met.
	Overbank Flood Protection	Proposed cumulative peak condition discharge rates are exceed existing condition cumulative peak discharge rates in the 25-year time horizon.	Proposed cumulative peak condition discharge rates are less than existing condition cumulative peak discharge rates.	Proposed cumulative peak condition discharge rates are less than existing condition cumulative peak discharge rates.	Proposed cumulative peak condition discharge rates are less than existing condition cumulative peak discharge rates.	Proposed cumulative peak condition discharge rates are less than existing condition cumulative peak discharge rates.	Criteria not met.
	Extreme Flood Protection	Future condition peak discharge rate at POND12 is more than the existing condition discharge rate for the 100-year storm event.	Future condition peak discharge rate at POND12 is more than the existing condition discharge rate for the 100-year storm event.	Criteria not applicable as Alternative does not impact floodplain.	Criteria not applicable as Alternative does not impact floodplain.	Criteria not applicable as Alternative does not impact floodplain.	Criteria not met.
Proceed to Level 2 Screening?		**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**
Level 2 – Operations and Constructability	Accessibility and Operational Considerations	--	--	Underground vault would be located within the Runway Safety Area of Runway 1. May not meet soil compaction requirements or structural support requirements for aircraft and rescue vehicles. Does not alleviate surface flooding in GANG parking facilities.	Does not alleviate surface flooding in GANG parking facilities.	Surface flooding at GANG parking facilities can be alleviated by diverting overland flow to Pond TH_25.	No change compared to existing conditions.
	Constructability, Considering Cost	--	--	Estimated $12.9M construction cost.	Estimated $1.47M construction cost.	Estimated $4.58M construction cost.	No construction costs would be incurred.
	Land Acquisition and Land Use Compatibility	--	--	No land acquisition required.	No land acquisition required. Aboveground stormwater management features are located 0.4 mile from active runway/taxiway, which may promote attraction of wildlife hazards.	No land acquisition required. Aboveground stormwater management features are located 0.2 mile from active runway/taxiway, which may promote attraction of wildlife hazards..	No change compared to existing conditions.

Screening Level	Criteria	Result					
		Alt 1	**Alt 2**	**Alt 3**	**Alt 4**	**Alt 5**	**No-Action**
	Potential Interference with Planned Airport Development	--	--	POND9 would be constructed in airport open land that could be used for future aviation-related development in the southeast quadrant.	POND9 would be constructed in airport open land that could be used for future aviation-related development in the southeast quadrant.	Compatible with airport development plans.	No change compared to existing conditions.
Proceed to Level 3 Screening?		**No**	**No**	**No**	**No**	**Yes**	**Yes**
Level 3 – Potential Environmental impacts	Biological Resources	--	--	--	--	May affect, not likely to adversely affect, rare, threatened or endangered species.	None.
	DOT Section 4(f) Resources	--	--	--	--	No impacts anticipated.	None.
	Floodplains	--	--	--	--	No impacts anticipated.	None.
	Historic Architectural/ Archaeological Resources	--	--	--	--	No impacts anticipated.	None.
	Wetlands and Water Resources	--	--	--	--	Impacts approximately 13.2 acres of forested wetland area.	None.
Carried Forward for Detailed Analysis in EA?		**No**	**No**	**No**	**No**	**Yes**	**Yes**

Source: AECOM, 2019.

CHAPTER 4 AFFECTED ENVIRONMENT

4.1. INTRODUCTION

This chapter provides a description of the relevant existing human, physical, and natural environment that may be affected by the Proposed Project and its alternatives. The amount of information on each resource is based on the extent of potential impact and is commensurate with the impact's relevance to the Proposed Project. The environmental impacts of the alternatives retained for detailed evaluation are discussed in **Chapter 5.0** of this EA.

4.1.1. STUDY AREAS

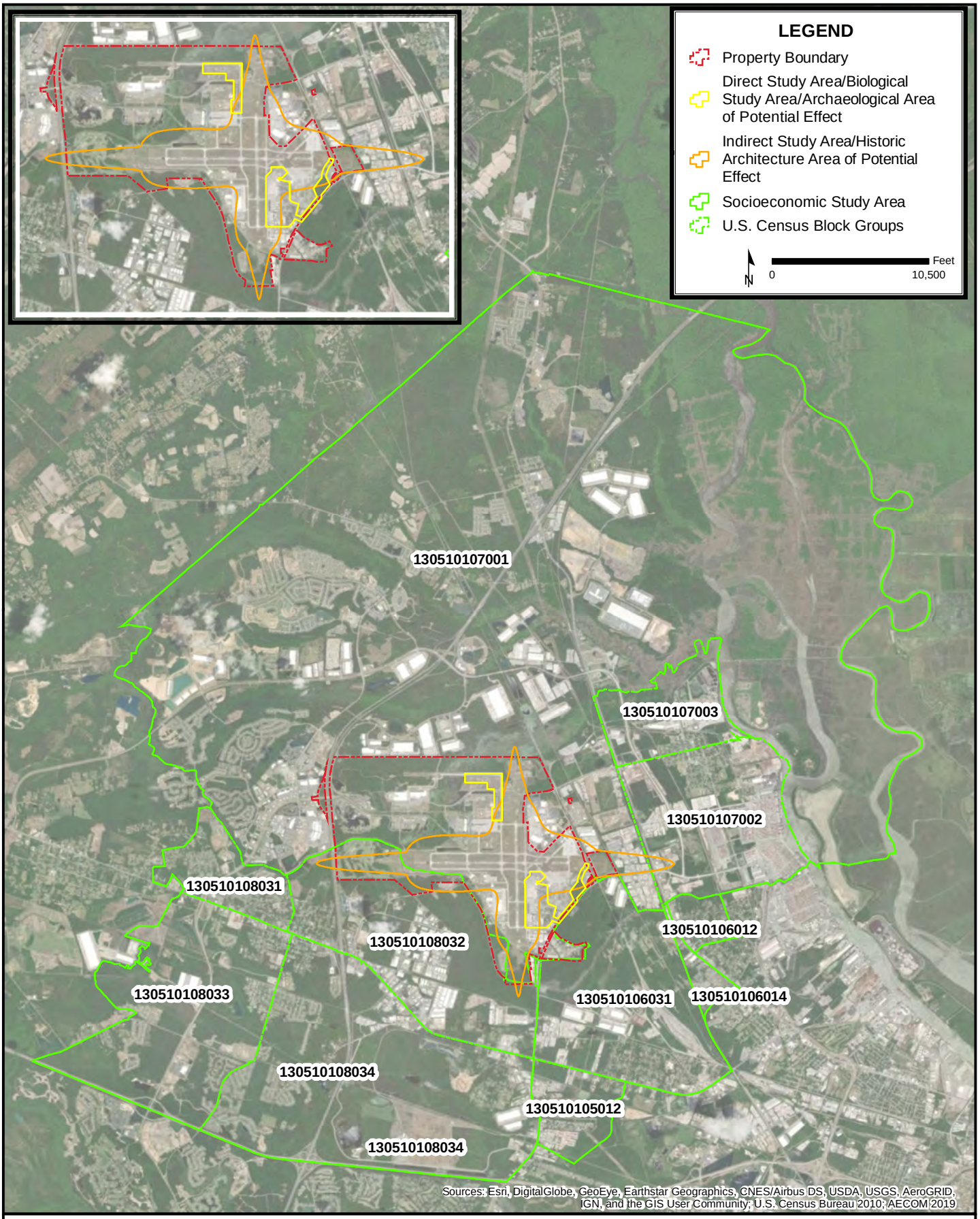
Based on the EA Proposed Project identified in **Section 2.1**, a Direct Study Area (DSA) was delineated within which direct physical impacts of the Proposed Project (i.e., construction footprint) will be characterized and disclosed. To account for indirect ground disturbance activities that may occur during construction, such as materials and equipment staging, the DSA includes a 100-foot buffer. The DSA also coincides with the proposed Biological Study Area (BSA) and archaeological resources Area of Potential Effect (APE) for the Proposed Project, which will be used for the purposes of Section 7 coordination, pursuant to the Endangered Species Act of 1973, as amended (87 Stat. 884; 16 U.S.C. 1531 et seq.) (ESA) and Section 106 coordination pursuant to the National Historic Preservation Act (NHPA), respectively.

An Indirect Study Area (ISA) was also delineated to assess potential secondary impacts not related to the construction footprint of the Proposed Project and corresponds to the area within the composite 65 decibel day-night average sound level (DNL 65 dB) noise contour of the Proposed Project and retained alternatives. The ISA also serves as the Historic Resources APE and will also be used to identify, disclose and evaluate potential impacts on eligible historic architectural resources protected by the NHPA, DOT Section 4(f) resources and other potentially incompatible land uses.

Finally, a Socioeconomic Study Area (SSA) was established to broadly characterize conditions of relevance within the Airport vicinity, relating to socioeconomic and environmental justice conditions that would be germane to evaluation of the Proposed Project. The SSA is comprised of U.S. Census Block Groups at least partially located within one mile of the SAV boundary.[2]

Refer to **Figure 4.1-1** for a graphical depiction of the study areas delineated for the EA.

[2] Block Groups 130510106031, 130510108034, 130510108033, 130510105012, 130510107002, 130510108031, 130510106012, 130510107001, 130510108032, 130510106014, 130510107003



SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM ENVIRONMENTAL ASSESSMENT

STUDY AREAS

FIGURE 4.1-1

Path: S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\900-Work\920 GIS\mxd\PDEA\190814_Figure 4-1-1_Study Areas_rev1.mxd, Date Saved: 10/18/2019 11:55:38 AM

4.1.1.1. ENVIRONMENTAL RESOURCE EVALUATION

FAA Order 1050.1F calls for the analysis of the environmental resource categories identified below.

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

All of the environmental resource categories listed above were considered for applicability in defining/establishing the affected environment outlined in this Chapter, as well as evaluating the potential environmental consequences of the Proposed Project as detailed in **Chapter 5.0**. **Table 4.1-1** summarizes the boundaries of study for each of these categories, in the context of the EA study areas described in **Section 4.1.1**. As indicated on **Table 4.1-1**, the following resources were determined either not present or not measurably impacted by the Proposed Project:

- DOT Section 4(f): Section 4(f) of the DOT Act of 1966 (re-codified and renumbered as Section 303(c) of 49 U.S.C.) provides protection for publicly-owned parks, recreational areas, wildlife, and waterfowl refuges; and significant historic sites (properties listed on or eligible for listing on the National Register). The term "Section 4(f) resource" refers to any specific site or property meeting DOT Act criteria. Special consideration needs to also be given to noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in Title 14 CFR Part 150, *Airport Noise Compatibility Planning,* are not relevant to the value, significance, and enjoyment of the area in question. A review of available information indicates that no Section 4(f) eligible properties are located within the EA study areas.

- Farmlands: In accordance with the Farmland Protection Policy Act, the NRCS of the USDA uses soil survey information to identify the extent to which soils are classified as Prime, Unique, or Statewide/Locally Important farmland. Based on current analysis of the NRCS soils data, no "prime farmland" and/or "farmlands of statewide/unique

importance" are located in the DSA.

- Light Emissions and Visual Effects: Substantial changes in the viewshed compared to existing conditions would not occur with the Proposed Project. Light Emissions and Visual Effects will not be evaluated in detail within the EA.

- Wild and Scenic Rivers: Established pursuant to the Wild and Scenic Rivers Act, the National Wild and Scenic Rivers System (NWSRS) is an inventory of rivers having outstanding natural, cultural or recreational values, jointly administered by the Bureau of Land Management, National Park Service, USFWS and the U.S. Forestry Service. NWSRS rivers are afforded full protection under the Wild and Scenic Rivers Act or have been identified by Congress as "study rivers" potentially eligible for protection under the Act. Additionally, the Nationwide Rivers Inventory (NRI) catalogs rivers with minimum eligibility requirements of the Act and are afforded some protections under the Act pending detailed study.

  There are no rivers listed to the NWSRS within 225 miles of SAV. One water body located within two miles of SAV has been included in the NRI: the Savannah River. The Savannah River has been included in the NRI on the grounds of having cultural, fish, geologic, historic, recreational, scenic, and wildlife values which would potentially afford its protection under the Act. However, due to the distance of this resource from SAV, no further evaluation in this EA is warranted.

Table 4.1-1 Environmental Resources Evaluated

Category	Study Boundaries (Fig. 4.1-1)				
	APE	BSA	DSA	ISA	SSA
Air Quality			x	x	
Biological Resources (including fish, wildlife and plants)		x			
Climate			x	x	
Coastal Resources			x	x	
DOT Section 4(f)					
Farmlands					
Hazardous Materials, Pollution Prevention and Solid Waste			x		
Historical, Architectural, Archaeological and Cultural Resources	x		x		
Land Use			x	x	
Natural Resources and Energy Supply			x		
Noise and Noise Compatible Land Use	x		x	x	
Socioeconomics, Environmental Justice, Children's Health and Safety Risks					x

Category	Study Boundaries (Fig. 4.1-1)				
	APE	BSA	DSA	ISA	SSA
Light Emissions and Visual Effects					
Wetlands		x			
Floodplains			x		
Surface/ Groundwater Resources			x		
Wild and Scenic Rivers					

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.
APE = Area of Potential Effect; BSA = Biological Study Area; DSA= Direct Study Area; ISA = Indirect Study Area; SSA = Socioeconomic Study Area

4.1.2. STUDY YEARS

CY 2018 will be studied for the purposes of establishing an environmental and operational baseline at SAV, which constitutes the Affected Environment for this EA. Construction activities associated with the Short-term Development Program will commence within CY 2020 and will persist until completion of the Airport improvements in CY 2023. Therefore, the first year for environmental analysis of Proposed Project operational impacts will be CY 2023. For disclosure of potential additional operational impacts due to the Short-term Development Program, the forecast year 2028 will also be studied in this EA, to the extent such study is warranted under the NEPA.

4.2. AIR QUALITY

Pursuant to the Federal Clean Air Act (CAA) and its amendments, the U.S. Environmental Protection Agency (EPA) identifies air pollutants that cause or contribute to the endangerment of human health and/or environmental welfare, and establishes air quality "criteria" that guide the establishment of air quality standards to regulate these pollutants (42 U.S.C. §§ 7408 - 7409). To date, EPA has established such criteria for six air pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), fine and respirable particulate matter ($PM_{2.5}$ and PM_{10}), and sulfur dioxide (SO_2), and has subsequently promulgated National Ambient Air Quality Standards (NAAQS) meant to safeguard public health (i.e., primary NAAQS) and environmental welfare (i.e., secondary NAAQS).[3]

EPA delegates authority to enforce the NAAQS with individual states. In the state of Georgia, the EPD of the Georgia Department of Natural Resources (GADNR) is the state agency charged with demonstrating compliance with the NAAQS. To do this, EPD works with state and local government to establish, operate and maintain ambient (i.e., outdoor) air quality monitoring networks, as well as to establish any necessary control programs. Notably, regional air quality conditions can require states to promulgate and enforce air quality standards that are more

[3] EPA. National Ambient Air Quality Standards. September 5, 2019.

stringent than the Federal NAAQS. At this time, the state of Georgia has elected to retain the Federal NAAQS and has not issued any state level air quality standards.

4.2.1. RESOURCE CHARACTERIZATION

4.2.1.1. AIR QUALITY MONITORING

EPA evaluates ambient monitoring data on a geographic basis, delineated by Core Based Statistical Areas (CBSA) or Metropolitan Statistical Areas (MSA) established by the U.S. Office of Management and Budget and U.S. Census Bureau. From each ambient monitor within a CBSA/MSA, EPA derives criteria pollutant *design values*, which are statistics that describe the air quality status of a given location relative to the level of the NAAQS. Areas where monitored ambient air concentrations (i.e., design values) are within an applicable NAAQS are considered in *attainment* of that NAAQS. If sufficient data are not available to make a determination, the area is instead deemed *attainment/unclassifiable.* Areas where monitored ambient air concentrations exceed the NAAQS are designated by EPA as *nonattainment* areas. Lastly, areas that have historically violated the NAAQS, but have since instituted controls and programs that have successfully remedied these violations are known as *maintenance* areas. According to the EPA's Green Book listing of nonattainment areas, Chatham County is listed as *attainment/unclassifiable* for all current NAAQS[4].

The current NAAQS are summarized on **Table 4.2-1**, along with EPA data from the nearest available air monitoring stations for the period of 2016-2018. Of note, only Pb, O_3, $PM_{2.5}$, and SO_2 are monitored at stations within 10 miles of the airport. Available data indicate no current violations of the NAAQS for any criteria pollutants. As stated above, per EPA's Green Book, the SAV area is considered attainment/unclassifiable of all NAAQS.

[4] EPA. Nonattainment Areas of for Criteria Pollutants (Green Book). https://www.epa.gov/green-book. September 5, 2019

Table 4.2-1 Air Monitoring Data Summary (2016-2018)

Pollutant	Averaging Time	Level	Form	Concentration (Monitor ID, Distance from SAV)		
				13-051-0091 (1.7 Miles SE)	13-051-1002 (4 Miles SE)	13-051-0021 (9 Miles SE)
CO [76 FR 54294, Aug 31, 2011]	8-hour	9 ppm	Not to be exceeded more than once per year	--	--	--
	1-hour	35 ppm		--	--	--
Pb [81 FR 71906, October 18, 2016]	Rolling 3 month average	0.15 µg/m^3	Not to be exceeded	--	--	Not exceeded
NO_2 [75 FR 6474, Feb 9, 2010] [77 FR 20218, April 3, 2012]	1-hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years	--	--	--
	Annual	53 ppb	Annual mean	--	--	--
O_3 [80 FR 65292, Oct 26, 2015]	8-hour	0.070 ppm	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years	--	--	0.0058
Particle Pollution [78 FR 3085, Jan 15, 2013]	$PM_{2.5}$ Annual (primary)	12 µg/m^3	Annual mean, averaged over 3 years	7.77	--	--
	$PM_{2.5}$ Annual (secondary)	15 µg/m^3	Annual mean, averaged over 3 years			
	$PM_{2.5}$ 24-hour	35 µg/m^3	98th percentile, averaged over 3 years	19.43	--	--
	PM_{10} 24-hour	150 µg/m^3	Not to be exceeded more than once per year on average over 3 years	--	--	--
SO_2 [77 FR 20218, April 3, 2012] [75 FR 35520, Jun 22, 2010]	1-hour	75 ppb	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years	--	44.67	32.2
	3-hour	0.5 ppm	Not to be exceeded more than once per year	--	Not exceeded	Not exceeded

-- = not monitored; FR = Federal Register; ppb = parts per billion; ppm = parts per million; µg/m^3 = micrograms per cubic meter of air
Sources: FR, as above; and EPA AirData (https://www.epa.gov/outdoor-air-quality-data), accessed September 4, 2019.

4.2.1.2. EXISTING CONDITIONS AIR EMISSIONS INVENTORY

SAV produces emissions of criteria air pollutants and their precursors due to the operation of a variety of mobile and stationary combustion sources at SAV. Under current conditions, the bulk of these emissions are produced due to aircraft operations. Many larger commercial aircraft utilize Auxiliary Power Units (APU) to provide comfort air and power to instrumentation while at the gate, if not using gate infrastructure to do so. Ground support equipment (GSE) are also used to service arriving and departing aircraft in terms of assisting in aircraft pushback from the gate, refueling, moving baggage and freight, cleaning and restocking aircraft, and other functions. Motor vehicle traffic on airport roadways and the operation of stationary combustion devices also contribute to emissions from SAV operations, but to a nominal degree.

For the purpose of describing existing conditions, an inventory of aircraft emissions at SAV is provided on **Table 4.2-2**, as aircraft emissions are the bulk of the emissions potentially affected by the Proposed Project**.** Emissions of greenhouse gases (GHG) are also disclosed on **Table 4.2-2**. See **Sections 4.4** and **5.4** of this EA for discussion of GHG emissions.

Table 4.2-2 Existing Conditions Emissions Inventory (CY 2018)

Emissions (tons)[1]						GHG Emissions (metric tons)
CO	**NO_x**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**	**VOC**	**CO_2e**
114.8	116.7	1.2	1.2	10.5	7.3	25,729

CY = Calendar Year; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter; PM_{10} = particulate matter equal to or less than 10 micrometers in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compounds.

[1] NO_x and VOC are considered precursors to criteria pollutant formation (O_3 and $PM_{2.5}$)

Sources: Aviation Environmental Design Tool (AEDT) 2d, 2019.

4.3. BIOLOGICAL RESOURCES

The Airport was evaluated for potential occurrences of federally and state listed plant and animal species. The ESA requires that all Federal agencies undertake programs for the conservation of endangered and threatened species and prohibits Federal agencies from authorizing, funding, or carrying out any action that would jeopardize a listed species or destroy or modify its critical habitat as designated in 50 CFR §§ 17 and 226. Projects that would otherwise jeopardize a federally listed species or impact its critical habitat must contain conservation measures or habitat mitigation that removes the jeopardy. State listed species are those plant and animal species managed by the state of Georgia pursuant to Georgia's Protection of Endangered, Threatened, Rare, or Unusual Species Rules and Regulations (Rule 391-4-10).

An animal or plant species may be classified as "endangered" when it is in danger of extinction within the foreseeable future throughout all or a significant portion of its range. A "threatened" classification is provided to those species likely to become endangered within the foreseeable future throughout all or a significant part of their ranges. The state of Georgia also maintains a

state list of endangered and threatened species as well as “rare” and “unusual”. A “rare” species is any species which, although not presently endangered or threatened, should be protected because of its scarcity. An “unusual” species is any species which exhibits special or unique features and because of these features deserves special consideration in its continued survival in the state of Georgia.

4.3.1. RESOURCE CHARACTERIZATION

As part of the NEPA process, an Advance Notification (AN) of the Proposed Project was sent to the GADNR and USFWS on August 1, 2019 requesting comments on potential effects of the Proposed Project on listed species and potential permit requirements (see **Appendix A**). In addition, an official species list was requested from the USFWS Information for Planning and Consultation (IPaC) database (Consultation code 04EG1000-2019-SLI-2043) on July 11, 2019. On August 27, 2019, the USFWS responded to the AN stating the following:

- Suitable habitats for the species listed in the IPaC are not anticipated with the exception of the wood stork (*Mycteria americana*).
- A previous wood stork rookery has already been removed. Through a biological opinion and Migratory Bird permit, the Commission is allowed to harass wood storks and other wading birds at SAV to reduce the risks of bird-aircraft-strike hazards.
- The southeast quadrant drainage improvements include a forested wetland that appears to be too dense to offer foraging habitat to listed species; however, if cleared of trees and maintained as a detention/retention pond, the site might attract this species and other wading birds.
- There are two bald eagle (*Haliaeetus leucocephalus*) nests located near the intersection of Gulfstream Road and Prestion Heine Drive, west of the air cargo relocation area. However, these nests are outside of the BSA and project activities do not appear to encroach upon the recommended 200-meter buffer or suitable foraging habitats.

A revised species list was requested from the USFWS through IPaC (Consultation code 04EG1000-2019-SLI-2456) on September 11, 2019 based on recent changes to the USFWS’s methodology on determining the list of species potentially occurring within a designated project area. As suggested in conversation with the USFWS, a species list was also obtained from the USFWS Georgia Ecological Services’ Hydrologic Unit Code (HUC) 10 Watershed Report for guidance. Agency coordination documentation is provided in **Appendix A.**

The potential presence of state and federally listed species within the BSA was assessed by review of the following:

- Listed species accounts;
- USFWS and Georgia Department of Natural Resources (GADNR) listings of species

known to occur or potentially occurring in Chatham County;

- Online database sources from the USFWS and GADNR; and
- Field observations of habitats and wildlife species.

A Biological Assessment (BA) was required in support of this EA due to the potential for listed species to occur within the BSA and the potential impacts of the Proposed Project on these species. A copy of the BA for the Proposed Project is contained in **Appendix B**. The BA describes the habitats and listed species potentially present within the BSA and the effects that implementation of the Proposed Project could have on listed species and critical habitat. A copy of the BA was submitted to the USFWS on September 23, 2019 for review. On September 30, 2019, the USFWS responded with a letter concurring with findings in the BA (**Appendix A**).

Elemental occurrences of rare species likely to occur within Chatham County were obtained from the GADNR's online biodiversity portal and observations recorded during the August 23, 2019 field inspections by qualified biologists.

The following information was reviewed prior to the field reviews to characterize habitat features and land use patterns within the BSA:

- U.S. Geological Survey (USGS) 7.5-minute Topographical Quadrangle Map, Port Wentworth, Georgia, 1993;
- 2018 aerial photographs, Savannah Area Geographic Information Systems (SAGIS, 2018);
- U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS), *Web Soil Survey of Chatham County, Georgia.* (https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx) (NRCS, 2018);
- USFWS, *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, *et al.,* 1979);
- USFWS National Wetland Inventory for Chatham County (https://data-sagis.opendata.arcgis.com/) (SAGIS, 2019); and
- GADNR Chatham County vegetation mapping from the Georgia Geographic Information System (GIS) Data Clearinghouse (https://data.georgiaspatial.org) (GADNR, 2010).

As stated, ESI biologists familiar with Georgia's natural communities conducted a field review of the BSA on August 23, 2019. During the field review, each vegetative community and land use type within the BSA was visually inspected to assess approximate boundaries and document dominant vegetation. Exotic plant infestations and other disturbances such as erosion and existing structures (i.e. riprap) were noted. Field activities also included identifying wildlife and signs of wildlife usage within the BSA and within adjacent habitats.

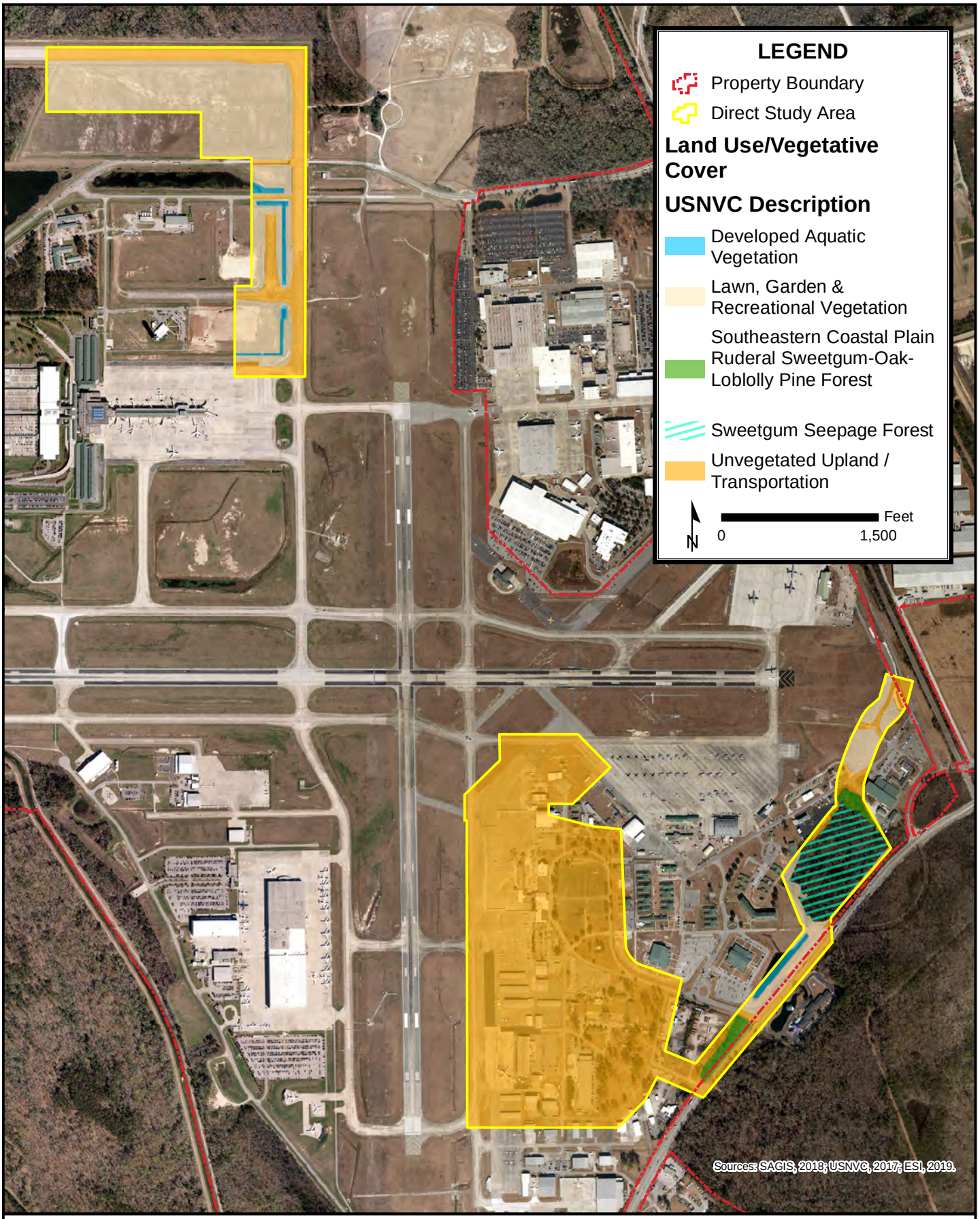
4.3.1.1. EXISTING LAND USE AND VEGETATIVE COVER

Based on in-house and field reviews, three upland community types, one wetland community type, and one surface water community type are present within the BSA (**Figure 4.3-1**). The individual wetlands and other surface waters are depicted on **Figure 4.3-2.** All vegetative habitats within the BSA were classified based on the U.S. National Vegetation Classification (USNVC, 2017) system. Wetland and other surface water habitats were also classified using the *U.S. Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin, et. al., 1979). A summary description of each land use/vegetative cover type is provided below. **Table 4.3-1** summarizes the acreage of each land use/vegetative cover type within the BSA.

Table 4.3-1 Existing Land Use and Vegetative Communities within the BSA

Vegetative Community/Land Use[1]	USFWS Classification[2]	Acres in BSA
Uplands		
Unvegetated Upland / Transportation Land Use	N/A	165.2
Lawn, Garden, & Recreational Vegetation (CFO09)	N/A	59.1
Southeastern Coastal Plain Ruderal Sweetgum – Oak – Loblolly Pine Forest (CEGL007726)	N/A	3.1
	Subtotal Uplands	*227.4*
Wetlands		
Sweetgum Seepage Forest (CEGL004631)	PFO1/3C	13.2
	Subtotal Wetlands	*13.2*
Other Surface Waters		
Developed Aquatic Vegetation (CF013)	POWx/PEM1Jx	3.1
	Subtotal Other Surface Waters	*3.1*
	TOTAL	**243.7**

[1] GADNR, 2010; USNVC, 2017; ESI, 2019.
[2] Cowardin, *et. al.,* 1979.
NA = Not applicable; PFO1/3C = palustrine, forested, broad-leaved, deciduous/evergreen, seasonally flooded; POWx = palustrine, open water, excavated; PEM1Jx = palustrine, emergent, persistent, intermittently flooded, excavated



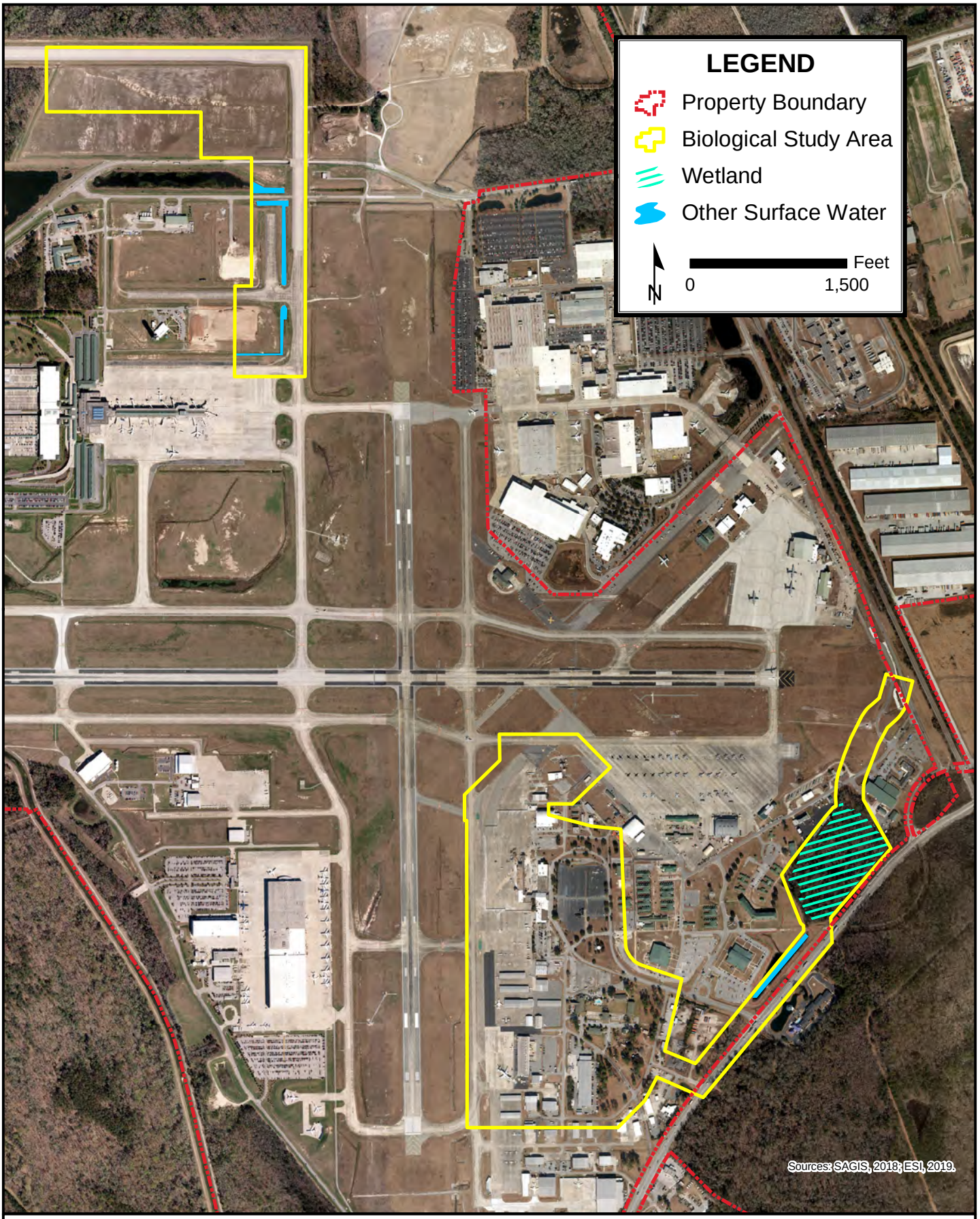
Path: S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\900-Work\920 GIS\mxd\PDEA\190814_Figure 4-3-1_Existing LUVC_rev1.mxd, Date Saved: 10/21/2019 4:31:08 PM

SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM ENVIRONMENTAL ASSESSMENT

EXISTING LAND USE AND VEGETATIVE COVER

FIGURE 4.3-1



SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM
ENVIRONMENTAL ASSESSMENT

WETLANDS AND OTHER SURFACE WATERS

FIGURE 4.3-2

Path: S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\900-Work\920 GIS\mxd\PDEA\190909_Figure 4-3-2_WLs_rev0.mxd, Date Saved: 9/16/2019 2:54:20 PM

Upland Land Use/Vegetative Cover Descriptions

The main land use type throughout the BSA consists of unvegetated developed areas, which support the Airport's transportation land use. Essentially none of these areas are covered by vegetation, besides the occasional planted shade tree or patch of grass. As shown on **Figure 4.3-1**, approximately 165.2 acres of the 243.7-acre BSA is characterized as transportation land use.

The most widely distributed vegetated upland type includes USNVC classification Lawn, Garden, and Recreation Vegetation (CFO09). Specifically, this vegetative cover within the BSA includes closely chipped lawns with no tree canopy. As shown on **Figure 4.3-1**, approximately 59.1 acres of the 243.7-acre BSA is characterized as Lawn, Garden and Recreation Vegetation.

There are only two portions of intact hardwood forested upland remaining within the southeastern corner of the BSA. These areas are classified by the USNVC as Southeastern Coastal Plain Ruderal Sweetgum-Oak-Loblolly Pine Forest (CEGL007726). Within the BSA, these areas are primarily dominated by laurel oak (*Quercus laurifolia*), water oak (*Quercus nigra*), *sweetgum* (*Liquidambar styraciflua*), and red maple (*Acer rubrum*) with an overarching canopy of loblolly pine (*Pinus taeda*). A thick shrub stratum below is dominated by various oaks (*Quercus sp.*), red maple, vaccinium (*Vaccinium sp.*), and wax myrtle (*Morella cerifera*).

Vines are sparse, but diverse, consisting of muscadine grape (*Vitis rotundifolia*), green briers (*Smilax bona-nox* and *Smilax rotundifolia*), yellow jessamine (*Gelsemium smepervirens*), and poison ivy (*Toxicodendron radicans*). Groundcover is sparse with occasional longleaf woodoats (*Chasmanthium sessiliflorum*) and bracken fern (*Pteridium aquilinum*). As shown on **Figure 4.3-1**, approximately 3.1 acres of the 243.7-acre BSA is characterized as Southeastern Coastal Plain Ruderal Sweetgum-Oak-Loblolly Pine Forest.

Wetland and Other Surface Water Land Use/Vegetative Cover Descriptions

There is only one wetland within the BSA, which most closely resembles the USNVC vegetative cover type Sweetgum Seepage Forest (CEGL004631). This environment is nearly constantly saturated, but rarely flooded, maintained mostly by a high water table. This environment is characterized by its well-developed thick vegetative cover across all strata. Within the BSA, the canopy and subcanopy is dominated by sweetgum, laural oak, water oak, blackgum (*Nyssa sp.*), red maple, loblolly pine, sweetbay (*Magnolia virginiana*), southern magnolia (*Magnolia grandiflora*), American holly (*Ilex opaca*), and American elm (*Ulmus americana*). The shrub layer is thick consisting of the above-mentioned woody species, in addition to sweet pepperbush (*Clethra alnifolia*) and fetterbush (*Lyonia lucida*). The groundcover is dominated by royal fern (*Osmunda spectabilis*), cinnamon fern (*Osmundastrum cinnamomeum*), netted chain fern (*Woodwardia areolate*), and Virginia chain fern (*Woodwardia virginica*).

As shown on **Figure 4.3-1** and **Figure 4.3-2**, approximately 13.2 acres of the 243.7-acre BSA is characterized as Sweetgum Seepage Forest.

Other surface water features present within the BSA include upland-cut drainage ditches and stormwater ponds which are associated with the overall stormwater management plan for the Airport. These other surface waters are typical of urban development and can be distinguished from natural features due to their form and function. Within the BSA, these features have been regularly managed and therefore have not had a chance to naturalize. For the purposes of this assessment these features most closely resemble the USNVC type Developed Aquatic Vegetation (CFO13). Vegetation in these areas is either completely lacking or is characterized by floating or submerged aquatic vegetation. As shown on **Figure 4.3-1** and **Figure 4.3-2**, approximately 3.1 acres of the 243.7-acre BSA is characterized as Developed Aquatic Vegetation.

4.3.1.2. WILDLIFE

The BSA primarily consists of developed areas supporting the transportation land use of the Airport, which does not provide for conducive environment for most listed species; however, many species that tolerate urban conditions could and would utilize the area. The Airport has a Wildlife Hazard Management Plan (WHMP), which has a goal to minimize wildlife populations on the Airport property that may pose a threat to aviation safety. To achieve this goal, the WHMP identifies wildlife control procedures and habitat modification projects that would deter or exclude wildlife from utilizing Airport property.

The WHMP is applied across the entire Airport property and is reviewed annually by the Airport Operations department and a USDA Animal and Plant Health Inspection Service Wildlife Services (APHIS) biologist so that portions of the WHMP can be updated, as needed. The plan details a depredation permit from the USFWS that allows for lethal take of non-listed migratory birds (Permit Number MB673816-0), but it also emphasizes the use of nonlethal techniques, such as pyrotechnics, when appropriate. The Airport also maintains a permit from the GADNR, which authorizes the removal of white-tail deer (*Odocoileus virginianus*) by lethal method. This WHMP details specific wildlife control procedures for a wide variety of species including gulls, ducks, geese (*Anserini* spp.), wading birds, raptors, starlings (*Sturnidae* spp.), blackbirds, pigeons, doves, crows, swallows, martins, killdeer (*Charadrius vociferous*), sandpipers (*Scolopacidae* spp.), coyotes (*Canis latrans*), fox, white-tail deer, beavers (*Castor canadensis*), wild turkey (*Meleagris gallopavo*), and alligators (*Alligator mississippiensis*).

Due to the WHMP deterring species from occupying the Airport, minimal long-term wildlife occupancy is anticipated, especially within the northwestern BSA in particular, which is directly adjacent to the airfield, where the depredation techniques are most utilized. In contrast, the southeastern BSA area has some intact forested areas that a variety of species could utilize; however, these areas are fenced in, which does not allow for much movement into or out of the BSA.

4.3.1.3. LISTED SPECIES

The BSA was evaluated for potential occurrences of federally and state listed plant and animal species. Federally listed species are those plant and animal species protected by the federal

government pursuant to the ESA. Federally listed species are classified as endangered or threatened. State listed species are those plant and animal species managed by the state of Georgia pursuant to Georgia's Protection of Endangered, Threatened, Rare, or Unusual Species Rules and Regulations (Rule 391-4-10). State listed species are classified as endangered, threatened, rare, or unusual. During the August 23, 2019 field review, the BSA was assessed for the presence of, or potential use by, federally and state listed plant and animal species. The following literature and online data sources were used to collect information concerning the potential presence of federally and/or state listed species within the BSA:

- USFWS, Endangered and Threatened Wildlife and Plants, 50 Code of Federal Regulations (CFR) 17.11 and 17.12, as updated in February 2015 (http://www.fws.gov/endangered/) (USFWS, 2015);
- USFWS, IPaC (https://ecos.fws.gov/ipac) (USFWS, 2019a);
- USFWS, Georgia Ecological Services office, HUC 10 Watershed Report (https://www.fws.gov/athens/transportation/huc10/0306010903_FWS_guidance.pdf) (USFWS, 2019b);
- NatureServ Explorer (http://explorer.natureserve.org/index.htm), updated March 2019 (NatureServ, 2019);
- GADNR's Online Biodiversity Portal (https://georgiabiodiversity.org/natels/natural-element-locations.html) (GADNR, 2019);
- Georgia Rules and Regulations, Protection of Endangered, Threatened, Rare, or Unusual Species, Rule 391-4-10 (GADNR, 2017); and
- U.S. Army Corps of Engineers's (USACE's) Savannah District and the USFWS Georgia Ecological Services Office Effects Determination Guidance for Endangered and Threatened Species (EDGES) (https://www.sas.usace.army.mil/Regulatory/Permitting/EDGES/) (USACE, 2018).

For a listed species to be considered potentially occurring within the BSA, appropriate habitat for reproduction, nesting, foraging, feeding, or resting must be present in the BSA and the BSA must be located within the species' geographical range. The listed species with potential to occur within the BSA are described below. **Table 4.3-2** provides a summary of the listed and protected species with potential to occur within the BSA.

Table 4.3-2: Listed Species[1] Potentially Occurring within BSA

Scientific Name	Common Name	Federal Status[2]	State Status[3]	Habitat Preference
Plants				
Lindera melissifolia	Pondberry	E	E	Pond margins and wet savannas.

Scientific Name	Common Name	Federal Status[2]	State Status[3]	Habitat Preference
Sarracenia minor var. minor	Hooded pitcherplant	NL	U	Wet savannas, pitcherplant bogs.
Reptiles				
Clemmys guttata	Spotted turtle	NL	U	Heavily vegetated swamps, marshes, bogs, small ponds, and tidally influenced freshwater wetlands.
Drymarchon corais couperi	Eastern indigo snake	T	T	During winter, den in xeric sandridge habitat preferred by gopher tortoises; during warm months, forage in creek bottoms, upland forests, and agricultural fields
Gopherus polyphemus	Gopher tortoise	C	T	Dry upland habitats, including disturbed habitats such as pastures, old fields, and road shoulders.
Birds				
Elanoides forficatus	Swallow-tailed kite	NL	R	River swamps, marshes, open pine and bottomland forest.
Haliaeetus leucocephalus	Bald eagle	NL	T	Nests in tall trees. Forages near bodies of water.
Mycteria americana	Wood stork	T	E	Nests in inundated forested wetlands; forages in freshwater marshes, swamps, flooded pastures.

Notes:
Notes:
F = Federal; E = Endangered; T = Threatened; R = Rare; U = Unusual; NL = Not Listed; C = Candidate
[1] GADNR, 2019; USFWS, 2019a; USFWS, 2019b
[2] USFWS, 2015.
[3] GADNR, 2017.
[4] The bald eagle is neither state nor federally listed; however, this species is federally protected by the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act.

Flora

- **Pondberry (*Lindera melissifolia*):** Pondberry is a perennial, deciduous shrub that is federally and state listed as endangered. This shrub typically flowers between March and April before leaves appear, and fruits between August and October. Pondberry generally occurs in seasonally-flooded forested wetlands and seasonal ponds of old dune fields, pinelands, and forested coastal areas.

- **Hooded pitcherplant (*Sarracenia minor var. minor*):** The hooded pitcherplant is a perennial, carnivorous plant that is listed as unusual by the GADNR. This species typically flowers in late March to mid-May and eats a wide range of flying insects. Hooded pitcherplants occur in swampy environments with poor nutrients.

The majority of the BSA is either routinely mowed and maintained for airport operations or is already developed in support of transportation land use. The general field reviews did not detect the occurrence of any protected plant species within the BSA. Additionally, a protected species survey was conducted on August 23, 2019 within the 13.2-acre forested wetland. Biologists traversed the area, conducting a plant specific survey for both pondberry and hooded pitcherplants, while also assessing habitat to determine whether the species habitat requirements could be supported. No protected plant species were discovered. Additionally, the habitat requirements for pondberry were not met within the 13.2-acre wetland. This wetland is constantly saturated by a high water table, but rarely flooded, and has a thick understory and herbaceous layer which means it does not meet the habitat requirements of pondberry.

Federally Listed Faunal Species

- **Eastern indigo snake (*Drymarchon corais couperi*):** The eastern indigo snake is federally and state listed as threatened. The indigo snake can be found in a variety of habitats including mesic flatwoods, swamps, wet prairies, xeric pinelands, and scrub areas. It may use gopher tortoise burrows for shelter to escape hot or cold ambient temperatures within its range. While suitable habitat is available for this species in limited areas of the BSA, no eastern indigo snakes were observed during the August 23, 2019 field review.

- **Wood stork (*Mycteria americana*):** The wood stork is federally listed as threatened and state listed as endangered. This wading bird species is opportunistic and uses various habitat types, including forested wetlands, freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches for feeding. A specialized feeding technique commonly referred to as "groping" limits the wood stork to feeding in shallow water. Wood storks and a wading bird rookery have been observed historically in wetlands occurring on and adjacent to Airport property. The rookery was adjacent to the northern portion of the BSA and was determined to be a wildlife hazard that endangered human and aircraft safety at SAV. Therefore, in 2017, an EA was prepared to move the rookery away from Airport property and alter the habitat to avoid further nesting. In 2018, the USFWS issued a Biological Opinion that included an Incidental Take Statement authorizing SAV to remove the rookery, alter the habitat, and remove any future nests that are observed on Airport property. Even though no known wood stork nests and/or rookeries currently exist within the BSA, there is a potential for storks to use the area for foraging purposes; however, the BSA does not offer any unique habitat for this species.

State Listed Faunal Species

- **Spotted turtle (*Clemmys guttata*):** The spotted turtle is listed by the GADNR as unusual and inhabit shallow water bodies with a soft bottom and aquatic vegetation, such as small marshes, marshy pastures, bogs, fens, woodland streams, swamps, and small ponds. Marginally suitable habitat for this species occurs within the BSA in the southeast forested wetland, however due to the lack of ponded hydrologic conditions

within this wetland, the likelihood for occurrence is low. Additionally, movement of wildlife to and from this wetland habitat is limited due to the surrounding roadways, fences, and other airport operations. During the August 23, 2019 field review, no individuals were observed within the BSA.

- **Swallow-tailed kite (*Elanoides forficatus*):** The swallow-tailed kite is listed as rare by the GADNR and nests in tall trees that occur in various pine forests, cypress swamps, hardwood hammocks, mangrove swamps, and riparian forests. Foraging occurs in savannahs, freshwater marshes, prairies, and over tree canopies. Suitable nesting and foraging habitat occur within the BSA; however, no kites were observed within the BSA during the August 23, 2019 field review.

- **Gopher tortoise (*Gopherus polyphemus*):** The gopher tortoise is listed as threatened by the GADNR and is considered a candidate species by USFWS due to habitat loss, degradation, and a declining number of individuals. The gopher tortoise requires well-drained, loose, sandy soils for burrowing, and low-growing herbs and grasses for food. Marginally suitable habitat for this species is present throughout the BSA; however, no gopher tortoise burrows were observed within the BSA during the August 23, 2019 field review.

- **Bald eagle (*Haliaeetus leucocephalus*):** The bald eagle is listed as threatened by the GADNR. Though the bald eagle has been removed from Federal listings, it is still protected by the Bald and Golden Eagle Protection Act in accordance with 16 United States Code (U.S.C.) § 668 and the Migratory Bird Treaty Act in accordance with 16 U.S.C. §§ 703-712. The bald eagle typically uses riparian habitat associated with coastal areas, lake shorelines, and river banks. The nests are generally located near water bodies that provide a dependable food source. In 2009, an active bald eagle nest was observed approximately 1,700 feet southwest of the northern portion of the BSA. In coordination with the USFWS, a Non-Purposeful Eagle Take Permit was issued in February 2012 prior to the clearing and grading of an approximate 40-acre area. This Non-Purposeful Eagle Take Permit expired in 2016. Prior to development of the Proposed Project, coordination with the USFWS may be required to obtain either another Non-Purposeful Eagle Take Permit or authorization to remove the nest structure permanently. However, pursuant to USFWS bald eagle guidelines, any disturbance within 1,000 feet of a bald eagle nest requires additional coordination and potential permitting with the USFWS.

4.3.1.4. DESIGNATED CRITICAL HABITAT

The BSA was also evaluated for the occurrence of listed species critical habitat designated by Congress in 50 CFR 424. No designated critical habitat for any federally listed species occurs within the BSA.

4.4. CLIMATE

4.4.1. RESOURCE CHARACTERIZATION

Savannah's climate is classified as humid subtropical. Seasonal weather patterns are controlled by the interaction of the subtropical jet stream with a semi-permanent, high-pressure system situated off the Atlantic Coast known as the Bermuda High.

Savannah currently experiences an annual average maximum temperature of 77.3 degrees Fahrenheit and an annual average minimum temperature of 56.3 degrees Fahrenheit, with summer maxima averaging 92 degrees in July and winter minima averaging 39 degrees in January. The maximum temperature exceeds 90 degrees for 69 days on average in a given year; temperatures are below 32 degrees for 28 days on average within a given year. Annual average precipitation totals 47.98 inches. The area experiences an average of 149 days per year with precipitation exceeding 0.1 inch. [5,6]

In 2016, Chatham County and the City of Savannah updated their Comprehensive Plan, which includes strategies for climate change adaptation and resiliency. The Plan is intended to guide development decisions over the next twenty years. The four primary climate change risk areas identified are impacts from (1) sea level rise, (2) storm surge inundation, (3) coastal flooding, and (4) erosion. Chatham County is now updating its zoning ordinances, subdivision codes, and stormwater policies to address these issues by prioritizing such strategies as low impact development, open space preservation, transportation infrastructure retrofits, green infrastructure, and discouraging development in flood-prone areas.

As indicated on **Table 4.2-2**, operations of aircraft at SAV emit an estimated 25,729 metric tons of carbon dioxide equivalent (CO_2e) GHG annually under existing conditions.

4.5. COASTAL RESOURCES

4.5.1. RESOURCE CHARACTERIZATION

Coastal resources comprise any natural resources or natural environments occurring in coastal waters or adjoining shorelines and are primarily protected by the Coastal Zone Management Act (CZMA), as well as the Coastal Barrier Resources Act, which governs development within the Coastal Barrier Resources System (CBRS). SAV is within Georgia's designated coastal area and therefore provisions of the Federal CZMA and Georgia's federally-approved Coastal Management Program (GCMP) apply to activities occurring at SAV. The GADNR Coastal Resources Division is responsible for administering the GCMP and considers all development projects within the coastal area to have direct effects on the coastal zone. All such projects must be reviewed for

[5] U.S. Climate Data for Savannah, Georgia accessed from https://www.usclimatedata.com/climate/savannah/georgia/united-states/usga1191 on September 6, 2019.
[6] The Southeast Regional Climate Center. Number of Days with Max Temperaturs Equal to or Above 90ºF for Selected Cities in the Southeast. Accessed from https://sercc.com/climateinfo/historical/mean90.html on September 6, 2019.

consistency with the GCMP and the Enforceable Policies contained therein. These policies are further discussed in **Section 5.5** of this EA.

4.6. HAZARDOUS MATERIALS, POLLUTION PREVENTION AND SOLID WASTE

To characterize the affected environment with respect to current/historical contamination at SAV, and to evaluate potential for hazardous waste and contamination related impacts on the property, an environmental records search was performed by GeoSearch which queried available environmental records from 68 Federal, state, and tribal environmental databases. Of the 68 databases searched, records located on or surrounding SAV property were uncovered within the following 23 databases:

- Alternative Fueling Stations (ALTFUELS): Nationwide list of alternative fueling stations made available by the U.S. Department of Energy's Office of Energy Efficiency & Renewable Energy. Includes Bio-diesel stations, Liquefied Petroleum Gas (Propane) stations, Ethanol (E85) stations, Natural Gas stations, Hydrogen stations, and Electric Vehicle Supply Equipment (EVSE).

- Brownfield Properties (BF): The Brownfield Properties list is provided by the GADNR Environmental Protection Division. This list provides information on properties that have cleanup actions planned, in progress or completed under Georgia's Brownfields law, the Hazardous Site Reuse and Redevelopment Act. Both Hazardous Site Inventory (State Superfund List or HSI) properties and non-HSI properties are presented.

- Delisted Hazardous Site Inventory Sites (DHSI): This list of sites that have been delisted from the Hazardous Site Inventory (HSI) is provided by the GADNR Environmental Protection Division.

- Emergency Response Notification System (ERNS): This National Response Center database contains data on reported releases of oil, chemical, radiological, biological, and/or etiological discharges into the environment anywhere in the United States and its territories. The data comes from spill reports made to the EPA, U.S. Coast Guard, the National Response Center and/or the U.S. DOT.

- Enforcement and Compliance History Information (ECHOR04): The EPA's Enforcement and Compliance History Online (ECHO) database, provides compliance and enforcement information for facilities nationwide. This database includes facilities regulated as CAA stationary sources, Clean Water Act (CWA) direct dischargers, Resource Conservation and Recovery Act hazardous waste handlers, Safe Drinking Water Act public water systems along with other data, such as Toxics Release Inventory releases.

- Facility Registry System (FRSGA): The EPA's Office of Environmental Information (OEI) developed the Facility Registry System (FRS) as the centrally managed database that identifies facilities, sites or places subject to environmental regulations or of environmental

interest. The Facility Registry System replaced the Facility Index System or FINDS database.

- Formerly Used Defense Sites (FUDS): The Formerly Used Defense Sites (FUDS) inventory includes properties previously owned by or leased to the United States and under Secretary of Defense Jurisdiction, as well as Munitions Response Areas (MRAs). The remediation of these properties is the responsibility of the Department of Defense. This data is provided by the USACE, the boundaries/polygon data are based on preliminary findings and not all properties currently have polygon data available.

- Hazardous Materials Information Reporting System (HMIRSR04): The HMIRS database contains unintentional hazardous materials release information reported to the U.S. DOT located in EPA Region 4.

- Hazardous Site Inventory (HSI): The Hazardous Site Inventory (HSI) is a list of sites where there has been a known or suspected release of a regulated substance above a reportable quantity and which have yet to show they meet state clean-up standards found in the Rules for Hazardous Site Response. This listing is maintained by the GADNR Environmental Protection Division.

- Historic Non-Hazardous Site Inventory (HISTNONHSI): This Non-Hazardous Site Inventory database was compiled by Rindt-McDuff Associates, Inc (RMA). The sites included on the Inventory were designated from 1994 through September of 2010 by the GADNR Environmental Protection Division as properties where GADNR had no reason to believe a release of a regulated substance exceeding a reportable quantity had occurred.

- Integrated Compliance Information System National Pollutant Discharge Elimination System (ICISNPDES): Authorized by the CWA, the National Pollutant Discharge Elimination System (NPDES) permit program controls water pollution by regulating point sources that discharge pollutants into waters of the United States. This database is provided by the U.S. EPA.

- Leaking Underground Storage Tanks (LUST): This listing of leaking underground storage tanks is maintained by the GADNR Environmental Protection Division.

- National Pollutant Discharge Elimination System (NPDES): The GADNR Environmental Protection Division provides this list of facilities with NPDES Permits

- Non-Hazardous Site Inventory (NONHSI): This Non-Hazardous Site Inventory data is provided by the Response & Remediation Program (RRP) of the GADNR Environmental Protection Division. The RRP evaluates notices of releases of regulated substances to determine if the release should be listed on the Hazardous Site Inventory (HSI) for further investigation and cleanup, if necessary. Using the information provided and site visits, the RRP issues a "Non-HSI letter" or an "HSI Listing Letter." Non-HSI letters are sent to those

properties where GADNR has no reason to believe a release of a regulated substance exceeding a reportable quantity has occurred.

- Resource Conservation & Recovery Act (RCRA) – Generator (RCRAGR04): The Resource Conservation and Recovery Act (RCRA) gives the EPA the authority to control hazardous waste from the "cradle-to-grave." This includes the generation, transportation, treatment, storage, and disposal of hazardous waste. RCRA also set forth a framework for the management of non-hazardous solid wastes. The 1986 amendments to RCRA enabled EPA to address environmental problems that could result from underground tanks storing petroleum and other hazardous substances. This listing refers to facilities that currently generate hazardous waste in EPA Region 4.

- RCRA – Non-Generator (RCRANGR04): This listing refers to RCRA facilities classified as non-generators in EPA Region 4. Non-Generators do not presently generate hazardous waste.

- RCRA – Non-CORRACTS Treatment, Storage & Disposal Facilities (RCRAT): This RCRA listing refers to facilities classified as hazardous waste treatment, storage, and disposal sites (TSD).

- RCRA – Corrective Action Facilities (RCRAC): This listing refers to RCRA facilities with corrective action activity.

- Solid Waste Facilities (SWF): The GADNR Solid Waste Management Program maintains this list of facilities with solid waste permits.

- Spills Listing (SPILLS): This listing of reported spills and/or chemical releases is provided by the GADNR Environmental Protection Division. The data only includes spills reported since late 2009.

- Superfund Enterprise Management System (SEMS): The U.S. EPA Office of Solid Waste and Emergency Response, Office of Superfund Remediation and Technology Innovation (OSRTI), has implemented The Superfund Enterprise Management System (SEMS), formerly known as CERCLIS (Comprehensive Environmental Response, Compensation and Liability Information System) to track and report on clean-up and enforcement activities taking place at Superfund sites. SEMS represents a joint development and ongoing collaboration between Superfund's Remedial, Removal, Federal Facilities, Enforcement and Emergency Response programs.

- Tier II Chemical Reporting Program Facilities (TIERII): The GADNR Environmental Protection Division maintains this listing of Tier II facilities which store hazardous chemicals or materials on-site. Tier II reports are forms that the EPA requires organizations and businesses in the United States with hazardous chemicals above certain quantities are required to fill out. Known officially as Emergency and Hazardous

Chemical Inventory Forms, Tier II Reports are submitted annually to local fire departments, Local Emergency Planning Committees (LEPC) and State Emergency Response Commissions (SERCs) to help those agencies plan for and respond to chemical emergencies.

- Underground Storage Tanks (UST): This listing of underground storage tanks is maintained by the GADNR Environmental Protection Division. The list includes data from 1988 to the present.

Available historical aerial photographs were also collected and evaluated. The *Final Site Inspection Report Air National Guard Phase II Regional Site Inspections for Per- and Polyfluoroalkyl Substances,* dated December 2018 was also reviewed for this report. The results of the evaluation are presented in the following sections.

4.6.1. RESOURCE CHARACTERIZATION

The locations of the environmental records discovered as described above are depicted graphically on **Figure 4.6-1**. Results of the searches are also described in detail on **Table 4.6-1** for those records that likely occur on existing and proposed Airport property based on best available geographic data. Records occurring within or immediately adjacent to the DSA for this EA (i.e., within 150 ft.) are highlighted in red.

Table 4.6-1 Environmental Records Search Summary

Map ID	Site Name	Database(s)	Description
1	Gulfstream Service Center East Demolition Plans *(1001 Davidson Drive) (see also Map ID #'s 10, 28, and 30)*	ECHOR04, FRSGA, ICISNPDES	This facility has an active CWA permit for storm water construction set to expire in 2023. No violations identified in the past 3 years. No record of enforcement actions in the past 5 years. This facility held a Minor Discharge NPDES permit from 9/23/2013 to 7/31/2018.
1	Goodwill Industries of the Coastal Empire *(1001 Davidson Drive)*	FRSGA	Registered under the FRSGA system under the classification of – 336413 – Other Aircraft parts and auxiliary equipment manufacturing.
1	Signature Flight Support *(1001 Davidson Drive) (see also Map ID # 5)*	NPDES, TIERII	This facility holds a NPDES permit effective from 7/27/2017 to 5/31/2022. This facility participated in TIER2 chemical reporting for the period of 2013 through 2019 (Naphtha, light alkylate, 100LL, diesel fuel, gasoline, and kerosene Jet-A)
2	Federal Express Corporation *(51 Nicholson Drive) (see also Map ID # 6)*	HMIRSR04, NPDES	Twenty-one (21) reports of de minimis leaks and spills from shipping containers involving a variety of chemicals including: gasoline, hypochlorite, acids, paint, hexane isopropanol, acetone, and unknown liquids. None of the reported releases prompted assessment and remediation activities. This facility held a NPDES permit from 9/05/2006 to 7/01/2011.
3	Delta Airlines *(Savannah International Airport) (see also Map ID # 26)*	RCRAGR04[1]	Registered as a CESQG of hazardous waste under the RCRA as of July 2003. Specific wastes include: (F001) Spent Halogenated Solvents: tetrachloroethylene, trichloroethylene, methylene

Map ID	Site Name	Database(s)	Description
			chloride, 1,1,1-trichloroethane, carbon tetrachloride and chlorinated fluorocarbons; (F003) Spent non-halogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutul ketone, n-butyl alcohol, cyclohexanone, and methanol; (F005) Spent non-halogenated solvents: toluene, methyl ethyl ketone, carbon disulfide, isobutanol, pyridine, benzene, 2-ethoxyethanol, and 2-nitropropane. No violations reported.
3	Key Airlines (*700 Bob Harmon Road*)	RCRANGR04[2]	Registered as of 2007 under the RCRA as a handler of hazardous waste ([D001] ignitable waste, [D007] chromium, and [D018] benzene). The current non-generator status signifies that hazardous waste is not currently generated by the facility. No violations reported.
4	Chatham County Mosquito Control (*65 Billy B. Hair Drive*)	ECHOR04, ERNSGA, FRSGA, RCRAGR04[3], TIERII, UST	This facility has an active RCRA Small Quantity Generator permit for "other automotive mechanical and electrical repair and maintenance". No violations identified in the past 3 years. No record of enforcement actions in the past 5 years. As a part of the listing with the ERNSGA – 1081977 - A spill of approximately 1-gallon of diesel was reported in 2014 that reportedly reached the storm drain. A spill kit was used to remediate remaining fluids. Registered under the FRSGA system under the classification of – 811118 – "other automotive mechanical and electrical repair and maintenance". This facility participated in TIER2 chemical reporting for the period of 2014 through the present (Scourge, Trumpet, diesel fuel #2, unleaded gasoline, and kerosene Jet-A). The site is listed as having four (4) active USTs: a 5000-gallon aviation gas/AV gas tank, a 6000-gallon aviation gas/AV gas tank, a 4000-gallon gas tank, and a 4000-diesel tank.
5	Signature Flight Support *(1006 Bob Harmon Road)*	ECHOR04, ERNSGA, FRSGA, LUST, RCRANGR04, UST	This facility has an inactive RCRA Unspecified Universe permit. No violations identified in the past 3 years. No record of enforcement actions in the past 5 years. As a part of the ERNSGA – Incident date 2/10/1996 reported an underground storage tank/ overfilled due to mechanical malfunction on-valve of 450-gallons of Jet Fuel JP-1 (Kerosene). Remedial action cleanup is listed as complete. Registered under the FRSGA system for RCRA information system. Under the LUST system, petroleum releases were reported on 4/2/1991, 9/9/1991, 2/13/1996, and 11/1/1990. No Further Action (NFA) was issued for each of the releases. Eight (8) petroleum USTs were listed as being removed in 1966 and six (6) petroleum USTs were removed in 1974.
6	Federal Express Corp *(1222 Bob Harmon Road) (see also Map ID # 2)*	ECHOR04, FRSGA,	This facility has an inactive RCRA Unspecified Universe permit as a non-generator a former handler of hazardous waste. Hazardous wastes

Map ID	Site Name	Database(s)	Description
		RCRANGR04[2] SPILLS	include: (D001) ignitable waste, (D018) benzene, (D039) tetrachloroethylene, (F001) spent halogenated solvents, and (F005) nonhalogenated solvents. The current non-generator status signifies that hazardous waste not currently generated by the facility. No violations reported. Registered under the FRSGA system under the classification of – 48851 – "freight transportation arrangement". A release was reported on 4/26/2011 of an unknown amount of jet fuel, storm drains affected, caused by overfilling of the jet. Eagle SWS was contracted for cleanup. The complaint was reported closed on 5/3/2011.
7	Travis Field *(400 Airway Avenue)*	FUDS	The Army Air Corps used a portion of the site from 1941 to 1950. Three (3) landfills were created at the site totaling approximately 34 acres and located adjacent to SAV. The landfills are currently under investigation. Heavy metals have been found to moderately exceed Georgia Standards.
7	Savannah International Airport *(see also Map ID # 8 and 24)*	HSI, LUST, SEMS, UST	The site is listed on Georgia's HSI #10091, with pending corrective actions. The site has a known release of chromium in groundwater exceeding the reportable quantity. The site also has a known release of lead in soil at levels exceeding the reportable quantity. Under the LUST program two (2) releases were reported. A petroleum release was reported on 12/11/1992, however the release was not confirmed. A petroleum release was reported on 8/2/1995, after remediation a NFA status was designated on 2/19/1998. The site is listed under the SEMS as a non-NPL site under state-lead cleanup. Investigations being conducted under HSRA. Cleanup activity was listed as complete on 8/14/2003. Former USTs were reported removed from the site: one 515-gallon gas UST in 1957; one 1000-gallon gas UST in 1969; one 2000-gallon gasoline UST in 1976; and one 1000-gallon diesel UST in 1976.
7	National Weather Service (Travis Field)	UST	One former 280-gallon diesel UST was reported removed in 1979.
8	Building 131 (54 Service Road)	FRSGA	Registered under the FRSGA system under ID: 110017745001 in the GEIMS program. No other information available.
8	Savannah International Airport *(54 Service Road)* *(see also Map ID #7 and 24)*	LUST, UST	A petroleum release was reported during a UST closure at Building 131. The site was remediated and a NFA Clean Closure was issued on 5/13/2004. One former 500-gallon diesel UST was reported removed on 3/24/2004.
9	Far Winds Corp *(1137 Bob Harmon Road)*	LUST, UST	A petroleum release was reported on 9/11/1998. The site was remediated and a NFA was issued on 8/30/1999. One former 12,000-gallon UST was reported removed on 4/3/1980.
10	Hertz Rent-a-Car	FRSGA, LUST, UST	Registered under the FRSGA system under ID: 110013432106 in the GEIMS program. In 1974 a

Map ID	Site Name	Database(s)	Description
	(Armistead Rd & Davidson Rd)		3,000-gallon UST was removed from the site. In 1976 a 10,000-gallon UST was removed from the site. A petroleum release was reported on 1/13/1995. The site was remediated and a NFA was issued on 4/21/1997.
10	Gulfstream Aerospace Corporation *(Building 1020 Davidson Drive)* *(see also Map ID #'s 1, 28, and 30)*	FRSGA	Registered under the FRSGA system under the OSHA-OIS program with a classification of – 336411 – "Aircraft manufacturing".
10	National Car Rental System Inc. *(Armistead Rd & Davidson Rd)*	LUST, UST	In 1978 two (2) 6000-gallon gas USTs were removed from the site. A petroleum release was reported on 11/23/1993. The site was remediated and a NFA was issued on 6/6/2002.
11	Alamo Rent-a-car Inc *(Short Street & Armstead)*	LUST, UST	In 1986 a 4,000-gallon gas UST was removed from the site. A petroleum release was reported on 7/20/1994. The site was remediated and a NFA was issued on 10/4/1995.
12	Spider Aviation *(1005 Bob Harmon Road)*	SPILLS	Based on a complaint, it was found that the site was conducting airplane reworking (paint stripping, painting, and sanding) without a hazardous waste permit. The complaint was received on 3/2/1999 and the complaint was closed on 4/28/1999.
13	WELL #18 *(Travis Field BLDG 401)*	TIERII	This facility participated in TIER2 chemical reporting for the period of 2014 through 2019 (chlorine and gasoline).
14	Titlemax Aviation Inc. *(36 Corporate Road)*	TIERII	This facility participated in TIER2 chemical reporting for the period of 2014 through 2017 (jet fuel JP-1).
15	WELL #17 *(Travis Field BLDG 311)*	TIERII	This facility participated in TIER2 chemical reporting for the period of 2014 through 2019 (diesel fuel and chlorine).
16	Georgia Air National Guard 168th AW *(Headquarters Rd BLDG 194)*	LUST, UST	On 8/23/2013 a diesel UST of unknown size was removed from the site. A petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/31/2013.
17	Savannah Air Traffic Control Tower *(550 Gulfstream Road)*	TIERII	This facility participated in TIER2 chemical reporting for the period of 2013 through 2019 (diesel fuel #2).
18	Georgia Air National Guard Site 7 *(East of BLDG 1412, along drain ditch)*	HISTNONHSI	This site was given an EPD Risk Score for groundwater of 5.69. Risk Score for on-site soil was not reported. Contaminants of concern are listed as chloroform and lead.
18	Georgia Air National Guard Site 8 *(East of BLDG 1911 in vicinity drainage ditch)*	HSI	Listed as HSI ID: 10553. The site had a known release of lead in groundwater at levels exceeding the reportable quantity. No human exposure via drinking water is suspected from this release. Releases of mercury and PCBs at this site have caused bioaccumulation in fish and shellfish that have resulted in the need to recommend that human consumption be limited. A cleanup and investigation have been initiated at this site, pursuant to a

Map ID	Site Name	Database(s)	Description
			Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) 1.
19	Georgia Air National Guard 165th AW Headquarters Rd BLDG 299 *(see also Map ID #'s 22 and 25)*	LUST, UST	On 8/23/2013 a diesel UST of unknown size was removed from the site. A petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/29/2013.
20	WELL #19 *(Travis Field Behind Hanger)*	TIERII	This facility participated in TIER2 chemical reporting for the period of 2013 through 2019 (diesel and chlorine).
21	Georgia Air National Guard Site 2 *(Southwest of Building 840 in vicinity of drainage)*	DHSI	This site was delisted from the Hazardous Site Inventory on 2/7/2003 and given a NFA Status.
21	Georgia Air National Guard Site 6 *(south of building 1411)*	DHSI	This site was delisted from the Hazardous Site Inventory on 2/7/2003 and given a NFA Status.
21	Georgia Air National Guard Site 10 *(east of building 1910)*	DHSI, HSI	This site (ID: 10555) was delisted from the Hazardous Site Inventory on 2/14/2012, however cleanup is listed as being in progress. The site has been designated as a Class II site. The site has a known release of lead in groundwater at levels exceeding the reportable quantity. No human exposure via drinking water is suspected from this release. Releases of mercury and PCBs at this site have caused bioaccumulation in fish and shellfish that have resulted in the need to recommend that human consumption be limited. A cleanup and investigation have been initiated at this site, pursuant to a CERCLA 1.
22	Georgia Air National Guard 165th AW Headquarters Rd BLDG 199 *(see also Map ID #'s 19 and 25)*	LUST, UST	On 8/23/2013 a diesel UST of unknown size was removed from the site. A petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/30/2013.
23	Circle K #5346 *(2404 Dean Forest Rd)*	LUST, UST	Under the LUST program four (4) petroleum releases were reported. A suspected release was reported on 2/11/1992, however the release was never confirmed. A petroleum release was reported on 5/14/1999. The site was remediated and a NFA was issued on 11/8/1999. A petroleum release was reported on 8/22/2000. The site was remediated and a NFA (Monitoring Only) was issued on 5/3/2004. A petroleum release was reported on 10/11/2005. The site was remediated and a NFA (Monitoring Only) was issued on 10/31/2005. On 5/26/2005 the state issued a NFA – Clean Closure for an unknown on-site UST. The site is listed as having five (5) active USTs installed in 1987 including: a 10,000-gallon gasoline UST, a 10,000-gallon E-10 gasoline UST, a

Map ID	Site Name	Database(s)	Description
			10,000-gallon diesel UST, a 12,000-gallon diesel UST, and a 10,000-gallon premium gas UST.
24	Savannah International Airport *(400 Airways Ave) (see also Map ID #7 and 8)*	ALTFUELS, LUST, UST	This site is listed as having an alternative fueling station for Tesla electric vehicles. Under the LUST program two (2) releases were reported. A petroleum release was reported on 7/7/2017. The site was remediated and a NFA was issued on 8/11/2017. Another petroleum release was reported on 12/13/2016. The site was remediated and a NFA was issued on 12/28/2016. One (1) 2,500-gallon diesel UST, one (1) 1,000-gallon diesel UST, one (1) 1,000-gallon gasoline UST, and one (1) 550-gallon diesel UST were listed as currently being in use.
25	Georgia Air National Guard 165th AW *(1401 Robert B Miller Jr Drive) (see also Map ID #'s 19 and 22)*	LUST, UST	Under the LUST program two (2) releases were reported. A petroleum release was reported on 3/26/1999. The site was remediated and a NFA was issued on 5/28/1999. Another petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/28/2013. Under the UST program three (3) tanks were reported removed: one (1) unknown capacity diesel UST removed in 2013; one (1) steel tank of unknown capacity and unknown contents was reported removed at an unreported date; and one (1) 750-gallon tank of unknown contents was removed in 1984.
26	Delta Airlines *(Travis Field) (see also Map ID # 3)*	LUST	Under the LUST program a petroleum release was reported on 6/27/1990. The site was remediated and a NFA was issued on 9/12/1994.
27	Pier 1 Imports #6021 *(6030 Commerce Blvd.)*	LUST	Under the LUST program a petroleum release was reported on 2/23/1995. The site was remediated and a NFA was issued on 3/23/1998.
28	Gulfstream Aerospace Corp. *(Savannah, GA) (see also Map ID #'s 1, 10, and 30)*	HISTNONHSI	Listed under the HITNONHSI as ID: 155053061. This site was given an EPD Risk Score for groundwater of 8.13 in May of 1994. A Risk Score for on-site soil was not reported. Contaminants of concern are listed as benzene, vinyl chloride, arsenic, and lead.
29	Container Land Associates *(6069 Commerce Blvd.)*	BF, NONHSI	This site is listed under the Brownfield Properties database as a non-Hazardous Site Inventory. This site was mailed a non-HSI letter on 10/7/2010. Another assessment was conducted, and the site was mailed another non-HSI letter on 1/9/2015.
30	Gulfstream Aerospace Corp. *(500 Gulfstream Road) (see also Map ID #'s 1, 10, and 28)*	LUST, NONHSI, RCRAC[4], RCRAT, SEMS	Under the LUST program two (2) releases were reported. A petroleum release was reported on 12/8/1995. The site was remediated and a NFA was issued on 7/30/1999. Another petroleum release was reported on 9/29/1997. The site was remediated and a NFA was issued on 5/18/2001. The site was listed on the non-Hazardous Site Inventory on 4/20/1994. The site is listed as a RCRA Large Quantity Generator. Hazardous wastes include: (D001)

Map ID	Site Name	Database(s)	Description
			ignitable waste, (D002) corrosive waste, (D003) reactive waste, (D005) barium, (D006) cadmium, (D007) chromium, (D008) lead, (D009) mercury, (D011) silver, (D018) benzene, (D035) methyl ethyl ketone, (D040) trichloroethylene, (F001) spent halogenated solvents used in degreasing, (F002) spent halogenated solvents, (F003) spent non-halogenated solvents, (F005) spent non-halogenated solvents, (F009) spent stripping ad cleaning bath solutions from electroplating operations in which cyanides are used in the process, (F011) spent cyanide solutions from slat bath pot cleaning from metal heat treating operations, (F012) quenching wastewater treatment sludges from metal heat treating operations in which cyanides are used in the process, (F017), (F018), (F019) wastewater treatment sludges from the chemical conversion coating of aluminum except from zirconium phosphating in aluminum can washing when such phosphating is an exclusive conversion coating process, (K062) spent pickle liquor from steel finishing operations of plants that produce iron or steel, (U019) benzene (i,t), (U043) chloro-ethene, (U043) vinyl chloride, (U069) 1,2-benzenedicarboxylic acid, dibutyl ester, (U069) dibutyl phthalate, (U080) dichloro-methane, (U080) methylene chloride, (U122) formaldehyde, (U123) formic acid (c,t), (U134) hydrofluoric acid (c,t), (U134) hydrogen fluoride (c,t), (U144) acetic acid, lead(2+) salt, (U144) lead acetate, (U154) methanol (i), (U154) methyl alcohol (i), (U159) 2-butanone (i,t), (U159) methyl ethyl ketone (MEK) (i,t), (U160) 2-butanone, peroxide (r,t), (U160) methyl ethyl ketone peroxide (r,t), (U161) 4-methyl-2-pentanone (i), (U161) methyl isobutyl ketone (i), (U161) 4-methl-pentanol, (U188) phenol, (U211) carbon tetrachloride, (U211) tetrachloro-methane, (U223)1,3-diisocyanatomethyl-benzene (r,t), (U223) toluene diisocyanate (r,t), (U228) trichloroethene, and (U228) trichloroethylene. A total of 87 violations were reported. All of the violations appear to have been resolved. This site was reviewed as a part of the Superfund Enterprise Management System (EPA ID# GAD061022216). A site inspection was completed on 1/23/1990, resulting in the site not being listed on the NPL and being deferred to RCRA (Subtitle C).
31	J C Lewis Inc/AVIS Rent-A-Car *(2215 Travis Field Road)*	LUST	Under the LUST program a petroleum release was reported on 4/4/1997. The site was remediated and a NFA was issued on 2/22/1999.
32	Micro-Med/Stericycle Bunch Truck & Equipment LLC *(5502 Export Blvd.)*	SWF	This site is listed as being an operating solid waste transfer station with permit number (PBR-025-44TS).

Map ID	Site Name	Database(s)	Description
33	SNG – Arcadia Meter Station *(Grange road & Highway 21)*	NONHSI	Review of the site for inclusion on Georgia's Hazardous Site Inventory (HSI) began on 5/25/1997. A decision to not include the site on the HSI was recorded in a letter on 4/23/1999.
33	Clifton Equipment Rental *(Highway 21)*	NONHSI	Review of the site for inclusion on Georgia's Hazardous Site Inventory (HSI) began on 4/8/1994. A decision to not include the site on the HSI was recorded in a letter on 4/8/1994.
34	PCS Nitrogen Fertilizer, L.P. *(5540 Highway 21)*	HISTNONHSI	Listed under the HITNONHSI as ID: 2892478982. This site was given an EPD Risk Score for groundwater of 8.13 and a Risk Score for on-site soil of 11.11 in March of 2007. Contaminants of concern are listed as cadmium and ammonia nitrogen.
35	Air National Guard Phase II (CRTC Aircraft Parking Apron and Buildings 197, 199, 1905, 1923, and 1950)	GANG	An assessment of per- and polyfluoroalkyl substances (PFAS) at SAV found levels of PFAS chemicals associated with Aqueous Film Forming Foam (AFFF) including perfluoro-octanesulfonate (PFOS), perfluorooctanoic acid (PFOA), and perfluorobutanesulfonate (PFBS) above established Project Action Levels (PALs) in both soil and groundwater at several locations across SAV in both soil and groundwater. Assessment activities are ongoing.

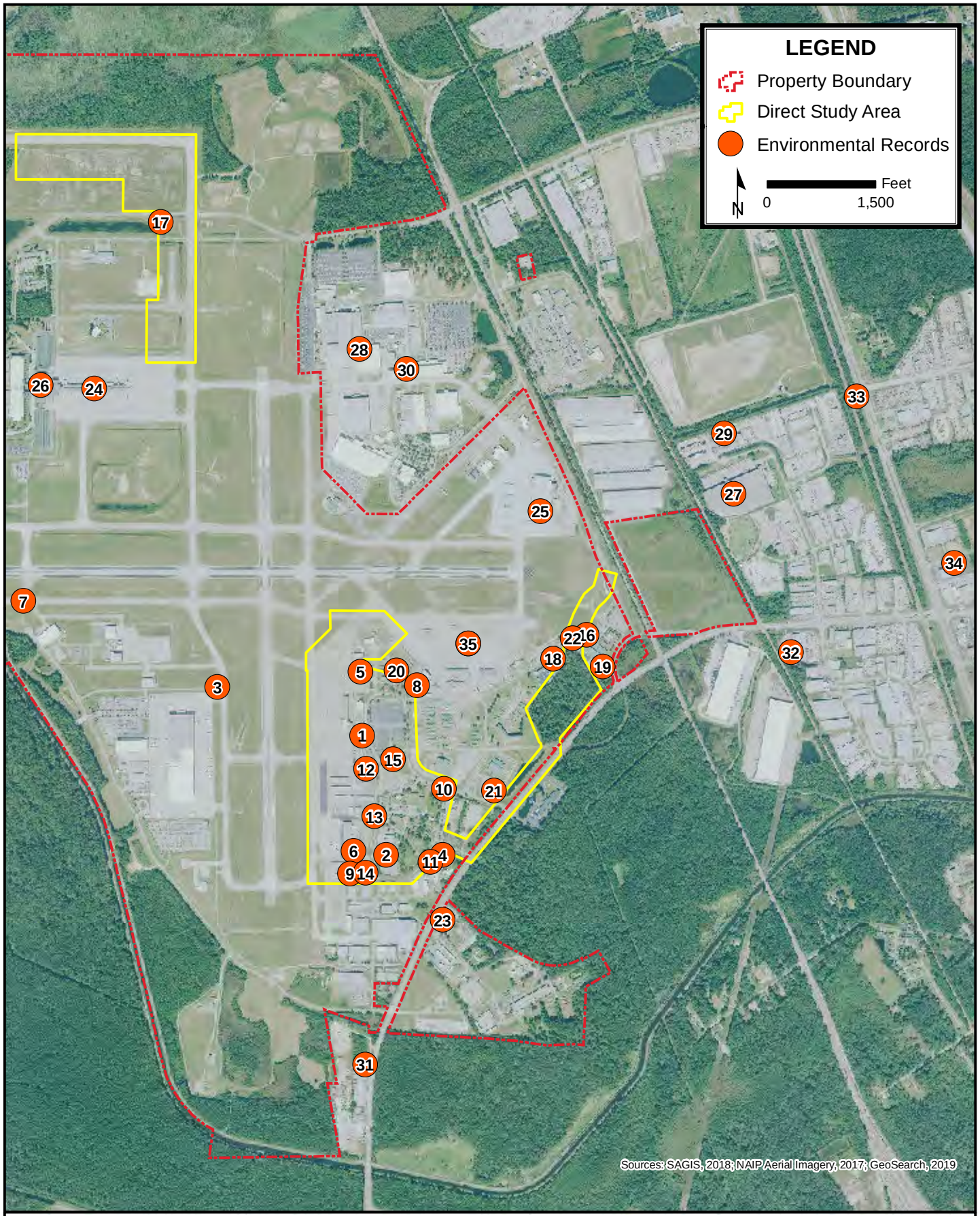
Source: GeoSearch Order #134011. GANG Dec. 2018 report. Records in red occur directly in the DSA or within 150 ft. of the DSA.

[1] Conditionally exempt signifies that the facility generates 100 kg or less of hazardous waste per calendar month, accumulates 1,000 kg or less of hazardous waste at any time, and/or generates or accumulates less than 1 kg of acutely hazardous waste per calendar month.

[2] A non-generator status signifies that hazardous waste not currently generated by the facility.

[3] A SQG generates more than 100 and less than 1,000 kg of hazardous waste during any calendar month and accumulates less than 6,000 kg of hazardous waste at any time, or generates 100 kg or less of hazardous waste during any calendar month and accumulates more than 1,000 kg of hazardous waste at any time.

[4] A LQG generates more than 1,000 kg of hazardous waste, more than 1 kg of acute hazardous waste, or more than 100 kg of acute spill residue or soil during any calendar month or accumulates more than 6,000 kg of hazardous waste.



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SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL RECORDS LOCATION MAP

FIGURE 4.6-1

4.7. HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

Section 106 of the NHPA of 1966 (16 U.S.C. 470f) requires that Federal agencies take into account the effect of their undertakings on any site that is included in or eligible for inclusion in the NRHP, and implementing regulations published at 36 CFR 800 define the measures to be implemented to attempt to identify and mitigate impacts to such historic properties. The Section 106 process consists of four steps: 1) Initiate the Section 106 Process; 2) Identify Historic Properties; 3) Assess Adverse Effects; and 4) Resolve Adverse Effects.

4.7.1. RESOURCE CHARACTERIZATION

A Phase IB Cultural Resources Assessment Survey (CRAS) was conducted for the Proposed Project in October 2019 to identify the potential for cultural resources within the APE established for this EA (**Appendix E**). Field work was conducted on October 14-16, 2019, and included the excavation of four shovel test pits (STPs). No archaeological sites were identified within the APE. An archaeological and historical literature and background information search pertinent to the project APE was conducted to determine the types, chronology, and locations of previously recorded cultural resources and studies within or near the APE.

This included an appraisal of area physiographic and soils information, as well as a search of the Georgia Archaeological Site File (GASF) and Georgia's Natural, Archaeological, and Historical Resources Geographic Information System (GNAHRGIS) online database.

Examination of the GASF and GNARHRGIS indicated that no national register-listed or -eligible sites are present within the Airport property or within a one-mile (1.6-kilometer) radius. The GASF indicated that there are 18 archaeological sites present within one mile of the APE, none of which are located on airport property. These resources and studies are depicted in **Appendix E**.

The current study revealed that areas of disturbed soil, airport dumping, reclaimed land, re-deposited fill, and drainage ditches are present throughout the Airport property, mainly within and adjacent to the runways and hangars. The main Airport property has been cleared of vegetation; however, there are areas containing naturally forested areas, located mainly in the southeastern portion of the Airport property. The built environment mainly includes the runways and access roads. One standing resource was identified within the APE that is 50 years old or older or appears to be of exceptional importance, Building 1220 (refer to **Figure 1.1-3** of this EA for location details). This hangar was constructed between 1952 and 1956. A common and unremarkable building type that has lost its integrity of design, setting, materials, workmanship, feeling, and association, it is recommended as not eligible for NRHP listing.

In addition to the CRAS provided in **Appendix E**, a CRAS was prepared in March 2010 for the North Aviation Development (NAD) Tract located in the northwest portion of the APE. During the survey, no prehistoric or historic archaeological sites were recorded, and no further archaeological work was recommended for the property.

4.8. LAND USE

4.8.1. RESOURCE CHARACTERIZATION

A review of existing and future land use within the EA study areas was conducted using parcel data available from the Chatham County Property Consolidated Tax Commissioner and Board Assessors and SAGIS, the results of which are summarized in the following sections.

4.8.1.1. EXISTING LAND USE

As shown on **Figure 4.8-1** and **Table 4.8-1**, land use within the DSA is predominantly classified as Industrial (224 acres of the 244-acre total). There is substantial coverage of Industrial land use within the ISA as well (1,446 acres of the 1,858-acre area). Refer to **Section 4.9.1.1** for further details on noise compatible land uses within these areas.

Table 4.8-1 Existing Land Use

Category	Acres	
	DSA	ISA
Commercial	2.0	20.3
Government	5.7	6.5
Industrial	224.3	1,446.0
Recreational	0.0	98.7
Vacant - Commercial	0.0	87.0
Vacant - Industrial	0.0	119.1
Vacant – Residential	0.0	6.3
Not specified	11.7	74.5
Total	**243.7**	**1,858.4**

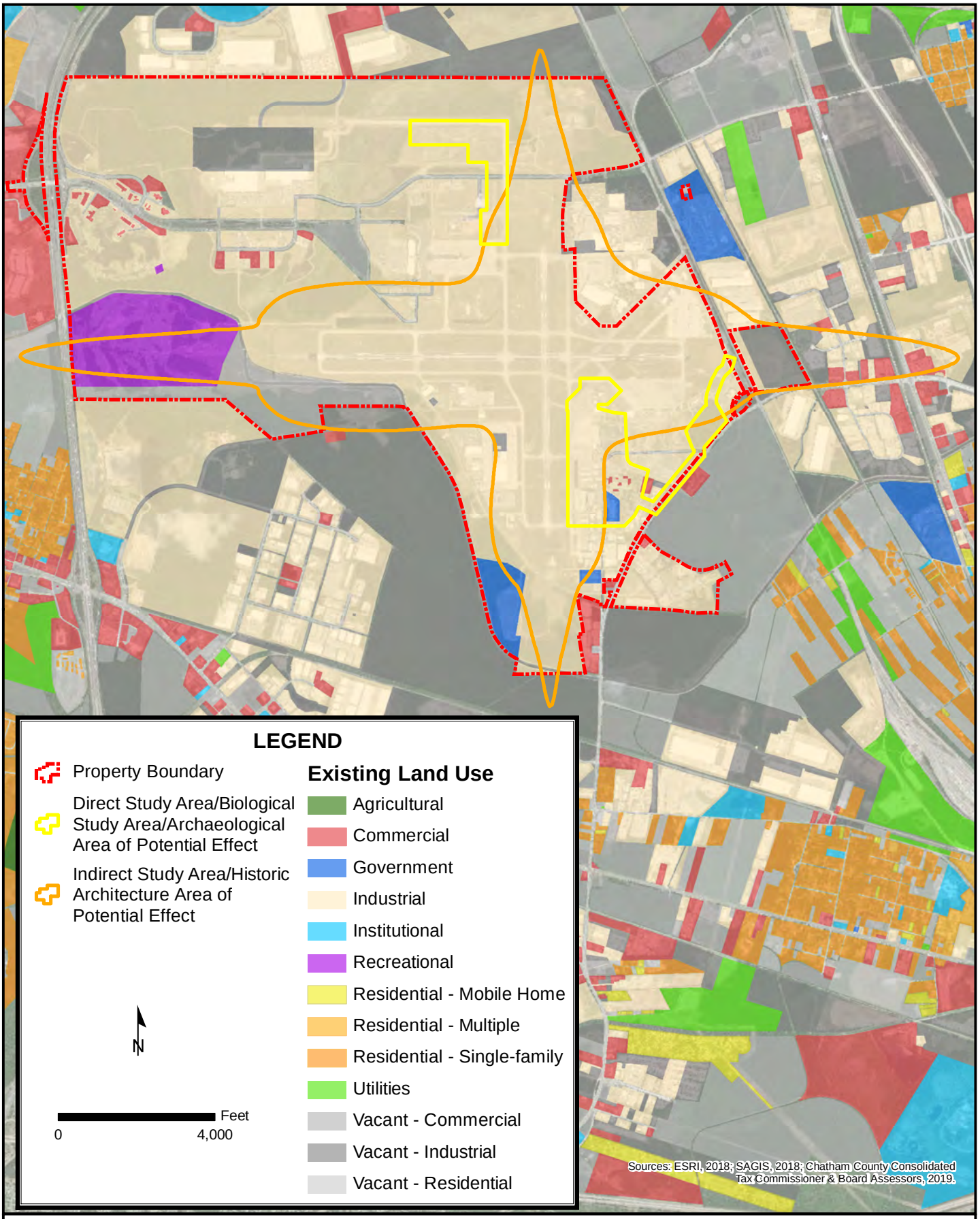
Source: Chatham County Consolidated Tax Commissioner & Board Assessors, accessed on July 10, 2019 from www.chathamtax.org; SAGIS, 2019. Values reflect rounding

4.8.1.2. FUTURE LAND USE

Chatham County and the city of Savannah published the *Chatham County – Savannah Comprehensive Plan 2016 Update*[7] (Chatham County – Savannah, 2016) in August 2016 to guide the communities' collective growth and development decisions over the course of 20 years from the date it was published. The Comprehensive Plan establishes development and preservation priorities, goals, objectives and policies.

The Future Land Use element of the Comprehensive Plan has been established to define areas within the City of Savannah and unincorporated Chatham County that are suitable for various land use activities through the year 2036.

[7] Chatham County and City of Savannah. *Chatham County – Savannah Comprehensive Plan 2016 Update*. August 2016.



SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM
ENVIRONMENTAL ASSESSMENT

EXISTING LAND USE

Figure 4.8-1

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The Comprehensive Plan suggests that interpretation of the Future Land Use be considered along with all zoning requests, local policy reviews, and conclusions when policy-makers consider land development questions or requests.

Future land use information from the Comprehensive Plan indicates that a vast majority the area surrounding SAV is designated as Civic/Institutional land uses, which are areas identified as employment hubs that may consist of office buildings, medical offices, banks, hospitals, and ancillary commercial uses supporting the office community.

4.9. NOISE AND NOISE COMPATIBLE LAND USE

The evaluation of the SAV noise environment, and land use compatibility associated with airport noise, was conducted using methodologies developed by the FAA and published in FAA Order 5050.4B, FAA Order 1050.1F, and Title 14 CFR Part 150.

For aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of yearly DNL which is used as FAA's primary metric. DNL is a 24-hour time-weighted-average noise metric expressed in A-weighted decibels (dBA) which accounts for the noise levels of all individual aircraft events, the number of times those events occur, and the time of day which they occur. DNL has two time periods: daytime (7:00 a.m. to 10:00 p.m.) and nighttime (10:00 p.m. to 7:00 a.m.). In order to represent the added intrusiveness of sounds occurring during nighttime hours, DNL penalizes or weights events occurring during the nighttime periods by 10 dBA.

Title 14 CFR Part 150, Appendix A provides Federal compatible land use guidelines for several land uses as a function of DNL values. The ranges of DNL values reflect the statistical variability for the responses of large groups of people to noise. Compatible or non-compatible land use is determined by comparing the predicted or measured DNL values at a site to the values listed at Title 14 CFR Part 150 (**Table 4.9-1**). It should be noted that Title 14 CFR Part 150 land use compatibility guidelines shown in **Table 4.9-1** do not constitute a Federal determination that a specific land use is acceptable or unacceptable under Federal, state, or local laws. The responsibility for determining acceptable land uses rests with the local authorities through its zoning laws and ordinances.

Table 4.9-1 Land Use Compatibility with Yearly Day-Night Average Sound Levels

	Yearly DNL					
	Below 65 dB	**65-70 dB**	**70-75 dB**	**75-80 dB**	**80-85 dB**	**Over 85 dB**
Residential						
Residential (Other than mobile homes & transient lodges)	Y	N[1]	N[1]	N	N	N
Mobile Home Parks	Y	N	N	N	N	N
Transient Lodging	Y	N[1]	N[1]	N[1]	N	N
Public Use						
Schools	Y	N[1]	N[1]	N	N	N
Hospitals, Nursing Homes	Y	25	30	N	N	N
Churches, Auditoriums, Concert Halls	Y	25	30	N	N	N
Governmental Services	Y	Y	25	30	N	N
Transportation	Y	Y	Y[2]	Y[3]	Y[4]	Y[4]
Parking	Y	Y	Y[2]	Y[3]	Y[4]	N
Commercial Use						
Offices, Business & Professional	Y	Y	25	30	N	N
Wholesale & Retail Building Materials, Hardware & Farm Equipment	Y	Y	Y[2]	Y[3]	Y[4]	N
Retail Trade - General	Y	Y	25	30	N	N
Utilities	Y	Y	Y[2]	Y[3]	Y[4]	N
Communications	Y	Y	25	30	N	N
Manufacturing & Production						
Manufacturing, General	Y	Y	Y[2]	Y[3]	Y[4]	N
Photographic and Optical	Y	Y	25	30	N	N
Agriculture (Except Livestock) & Forestry	Y	Y[6]	Y[7]	Y[8]	Y[8]	Y[8]
Livestock Farming & Breeding	Y	Y[6]	Y[7]	N	N	N
Mining & Fishing, Resource Production & Extraction	Y	Y	Y	Y	Y	Y
Recreational						
Outdoor Sports Arenas, Spectator Sports	Y	Y[5]	Y[5]	N	N	N
Outdoor Music Shells, Amphitheaters	Y	N	N	N	N	N
Nature Exhibits & Zoos	Y	Y	N	N	N	N
Amusement, Parks, Resorts, Camps	Y	Y	Y	N	N	N
Golf Courses, Riding Stables, Water Recreation	Y	Y	25	30	N	N

Source: Title 14 CFR Part 150, Appendix A, Table 1, January 1998.

NOTE:

The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties remains with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land use for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise-compatible land uses.

KEY TO TABLE:

Y (Yes) Land Use and related structures are compatible without restrictions.

N (No) Land Use and related structures are not compatible and should be prohibited.

NLR Noise Level Reduction (outdoor to indoor) are to be achieved through incorporation of noise attenuation into the design and construction of structure.

25, 30, or 35 dB Land use and related structures are generally compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated in design and construction of structure.

[1] Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of

20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems

2 Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of the buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

3 Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of the buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

4 Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of the buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

5 Land use compatible provided special sound reinforcement systems are installed.

6 Residential buildings require an NLR of 25 dB.

7 Residential buildings require an NLR of 30 dB.

8 Residential buildings not permitted.

Noncompatible land use denoted in red highlighting.

4.9.1. RESOURCE CHARACTERIZATION

4.9.1.1. EXISTING CONDITION AIRCRAFT NOISE EXPOSURE AND LAND USE COMPATIBILITY

The Aviation Environmental Design Tool (AEDT version 2d) is FAA's standard tool for determining the predicted noise impact in the vicinity of airports. Statutory requirements for AEDT use are defined in FAA Order 1050.1F, Order 5050.4B, and Title 14 CFR Part 150. AEDT incorporates the number of annual average daily daytime and nighttime flight and run-up operations, flight paths, run-up locations, and flight profiles of the aircraft along with its extensive internal database of aircraft noise and performance information, to calculate the DNL at many points on the ground around an airport. From a grid of points, the AEDT contouring program draws contours of equal DNL to be superimposed onto land use maps. For this document, DNL contours of 65 dBA were developed. DNL contours are a graphical representation of how the noise from the Airport's average annual daily aircraft operations is distributed over the surrounding area. AEDT can calculate sound levels at any specified point so that noise exposure at representative locations around an airport can be obtained.

Because the area of the DNL 65 dB noise contour coincides with the ISA delineated for this EA, a summary of existing land uses within the existing contour can be found on **Figure 4.8-1** and **Table 4.8-1** of the land use section of this EA. As shown on **Figure 4.8-1**, the DNL 65 and higher contour is contained largely on airport property and there are no active residential land uses within the boundary of the noise contours.

Further detail on the noise modeling data is provided in **Appendix G**.

4.10. SOCIOECONOMICS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S HEALTH AND SAFETY RISKS

4.10.1. RESOURCE CHARACTERIZATION

An SSA was established to support the analysis of social and economic conditions in the area of the Proposed Project. The SSA encompasses the U.S. Census Block Groups at least partially located within one mile of the SAV boundary (Block Groups 130510106031,130510108034, 130510108033,130510105012, 130510107002, 130510108031, 130510106012, 130510107001, 130510108032,130510106014, and 130510107003). The SSA serves as the focus of the evaluation of direct, indirect, and secondary and cumulative socioeconomic effects. Refer back to **Figure 4.1-1** for a depiction of the U.S. Census Block Groups in Chatham County that combine to form the SSA.

Information pertaining to the existing social and economic characteristics of the SSA was gathered from data published by the U.S. Census Bureau. Specifically, 2013-2017 American Community Survey (ACS) Five-Year Estimates was used to identify the income/poverty and racial/ethnic characteristics of the population within the SSA and serve as the basis for the assessment of economic activity and employment.

4.10.1.1. POPULATION

Table 4.10-1 describes the population present within the SSA, Chatham County, and the state of Georgia. In 2017, the population of Chatham County was estimated at 285,506 residents. The SSA was estimated to contain 40,110 residents. U.S. Census data shows that the population density within the SSA (485 people per square-mile) is considerably higher than that generally seen in the state (168.4 people per square-mile).[8]

Additionally, ACS estimates show that approximately 53 percent of the adult population within the SSA and Chatham County attained a high school diploma or higher level of education. Approximately 33 percent of the population within the SSA and Chatham County holds a bachelor's or higher degree.[9]

4.10.1.2. AGE, RACE AND ETHNICITY

The racial, ethnic and age composition of the population present within the SSA, Chatham County, and the state is shown in **Table 4.10-1**. Data from the ACS reveals that the White population comprises approximately 55 percent of the SSA's total compared to 53 percent in Chatham County and 59 percent in the State of Georgia. The median age in the SSA is 39.5 years compared to 41 years in Chatham County and 36.4 years in the state of Georgia.

[8] U.S. Census Bureau. *Georgia: 2010 Population and Housing Unit Counts; 2010 Census of Population and Housing (CPH-2-12).* August 2012.
[9] U.S. Census Bureau. 2013-2017 ACS Five-Year Estimates, B15003.

Table 4.10-1 Community Characteristics

Subject	SSA		Chatham County		Georgia	
	Number	Percent	Number	Percent	Number	Percent
Total Population	40,110	100.0	285,506	100.0	10,201,635	100.0
Age						
< 5 years	3,099	7.7	18,861	6.6	657,428	6.4
5 to 17 years	6,581	16.4	43,911	15.4	1,841,775	18.1
18 to 29 years	6,364	15.9	58,876	20.6	1,720,637	16.9
30 to 39 years	7,329	18.3	39,720	13.9	1,371,078	13.4
40 to 49 years	5,564	13.9	32,976	11.6	1,394,682	13.7
50 to 64 years	7,167	17.8	51,207	17.9	1,915,605	18.8
+65 years	4,006	10.0	39,955	14.0	1,300,430	12.7
Median Age	39.5	n/a	41.0	n/a	36.4	n/a
Race						
White	22,023	54.9	150,913	52.9	6,061,821	59.4
Black or African American	14,096	35.1	113,486	39.8	3,195,268	31.3
American Indian and Alaska Native	277	0.7	918	0.3	30,552	0.3
Asian	951	2.4	7,228	2.5	388,946	3.8
Native Hawaiian and Other Pacific Islander	75	0.2	349	0.1	5,237	0.1
Some other race	1,106	2.8	4,854	1.7	282,570	2.8
Two or more races	1,582	3.9	7,758	2.7	237,241	2.3
Ethnicity						
Hispanic	3,204	8.0	17,845	6.3	950,380	9.3
Households						
Average Household Size	2.69	n/a	2.55	n/a	2.71	n/a

n/a = not applicable.
Source: U.S. Census Bureau, 2013 - 2017 ACS, B01001, B01002, B02001, B03003, B25010.

4.10.1.3. HOUSING CHARACTERISTICS

Within the SSA, there are approximately 15,334 residential parcels on 52,963 acres of land. On a parcel basis, residential areas make up 71 percent of the SSA. Of the residential parcels present, approximately 67 percent support single family homes, 25 percent support multi-family homes, and eight percent support mobile homes (see **Table 4.10-2**).

Table 4.10-2 Residential Parcel Types within the SSA

Residential Type	Number	Percent Total
Single-Family Parcels	10,359	67.6
Multi-Family Parcels	3,800	24.8
Mobile Home Parcels	1,175	7.7
TOTAL:	**15,334**	**100.0**

Source: U.S. Census Bureau, 2013 - 2017 ACS, B25024.

4.10.1.4. ECONOMY AND EMPLOYMENT

Estimates from the U.S. Bureau of Labor Statistics indicate that there are approximately 185,600 non-farm jobs within Savannah. **Table 4.10-3** provides a summary of jobs within the Savannah area by employment sector. As shown, the most common industries are based in the Trade, Transportation, and Utilities (23.5 percent), Leisure and Hospitality (14.9 percent), and Education and Health Services (14.3 percent) sectors. Between 2013 and 2018, the average annual unemployment rate in the Savannah Metropolitan Statistical Area fluctuated between 8.0 percent and 3.6 percent. Preliminary data for July 2019 indicates a monthly unemployment rate of 3.4 percent.[10]

Table 4.10-3 Savannah Employment by NAICS Sector

Sector	Estimate	Share
Mining, Logging, and Construction	8,900	4.8%
Manufacturing	19,000	10.2%
Trade, Transportation, and Utilities	43,600	23.5%
Information	2,000	1.1%
Financial Activities	6,500	3.5%
Professional and Business Services	20,200	10.9%
Education and Health Services	26,500	14.3%
Leisure and Hospitality	27,600	14.9%
Other Services	7,300	3.9%
Government	24,000	12.9%
Total	**185,600**	**100.0%**

Source: U.S. Bureau of Labor Statistics. Economy at a Glance, Savannah, GA. July 2019 Data.

4.10.1.5. HOUSEHOLD INCOME AND POVERTY

The 2017 ACS reported the median household income in Chatham County at $52,215.[11] Also, in 2017, the per capita income was estimated at $28,765[12] in Chatham County. **Table 4.10-4** provides a summary of household income within the SSA. Based on the ACS income estimates, approximately 17.3[13] percent of Chatham County residents fell below the poverty level in 2017.

Table 4.10-4 Household Income within the SSA

Income Range	Households
Less than $10,000	419
$10,000 to $14,999	474
$15,000 to $19,999	588
$20,000 to $24,999	380
$25,000 to $29,999	122

[10] U.S. Department of Labor, Bureau of Labor Statistics. On-Screen Data Search accessed on September 19, 2019 from https://data.bls.gov/PDQWeb/ap.
[11] U.S. Census Bureau, 2013-2017 ACS, S1903.
[12] U.S. Census Bureau, 2013-2017 ACS, B19301.
[13] U.S. Census Bureau, 2013-2017 ACS, S1701.

Income Range	Households
$30,000 to $34,999	546
$35,000 to $39,999	525
$40,000 to $44,999	641
$45,000 to $49,999	811
$50,000 to $59,999	1,227
$60,000 to $74,999	1,589
$75,000 to $99,999	2,469
$100,000 to $124,999	1,832
$125,000 to $149,999	897
$150,000 to $199,999	1,220
$200,000 or more	588

Source: U.S. Census Bureau, 2013 - 2017 ACS, B19001.

4.10.1.6. ENVIRONMENTAL JUSTICE

EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN) reports environmental and demographic indicators, drawing from the U.S. Census Bureau's ACS, the National Air Toxics Assessment (NATA), information from the Center for Disease Control and other sources. These indicators are used to assess potential environmental justice issues in planning and decision-making processes.

Environmental and demographic indicators from EJSCREEN are summarized on **Table 4.10-5** below. Indicators are expressed in terms of percentiles compared to similar statistics within the state of Georgia, within the EPA region, and within the U.S.

Table 4.10-5 Socioeconomic Indicators (EJSCREEN)

Category	Percentile		
	Georgia	EPA Region	U.S.
Environmental Indicators			
PM	10	53	59
O_3	5	25	13
NATA· Diesel PM	44	50-60th	<50th
NATA· Cancer Risk	7	<50th	50-60th
NATA· Respiratory Hazard Index	28	50-60th	<50th
Traffic Proximity and Volume	64	63	53
Lead Paint Indicator	46	41	28
Superfund Proximity	67	28	18
Risk Management Plan Proximity	77	78	72
Hazardous Waste Proximity	88	87	66
Wastewater Discharge Indicator	90	91	86
Demographic Indicators			
Demographic Index (composite of minority and low income population statistics)	42	50	55
Minority Population	59	69	68

Low Income Population	17	16	26
Linguistically Isolated Population	58	58	51
Population With Less Than High School Education	34	33	41
Population Under 5 years of age	79	83	81
Population over 64 years of age	31	20	25

Source: EJSCREEN 2019.

A low percentile value signifies that the SAV area scores or ranks better or is at lower risk for that indicator compared to the state/regional/national population; a high percentile value signifies that the SAV area ranks worse or is at elevated risk compared to state/regional/national populations.

In terms of reported environmental indicators, nearly all environmental indicators show that the SAV area ranks better or is comparable to reference populations for risk of environmental exposure. The only notable exceptions are the indicators for proximity to hazardous waste facilities and proximity stream segments with Risk-Screening Environmental Indicators (RSEI) modeled Toxic Concentrations. Demographically, EJSCREEN reports that the level of minority population is comparable to state, regional and national trends, while low income populations are relatively low. The area has a comparatively low elderly population, whereas populations under five years of age are comparatively high.

4.11. WETLANDS

The USACE has authority to regulate activities in Waters of the United States, including certain wetlands, under three laws: the CWA; the Rivers and Harbors Act of 1899; and the Marine Protection, Research, and Sanctuaries Act of 1972, as amended. The Marine Protection, Research, and Sanctuaries Act of 1972, also known as the Ocean Dumping Act, governs transport and dumping of dredged material at sea and is not applicable to this project.

The USACE's regulations define wetlands as:

> "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." (33 CFR 328.3(b))

The USACE uses three characteristics of wetlands when making wetland determinations; vegetation, soil, and hydrology. Unless an area has been altered or is a rare natural situation, wetland indicators of all three characteristics must be present during some portion of the growing season for an area to be defined as a wetland.

4.11.1. RESOURCE CHARACTERIZATION

The BSA was physically assessed for the presence of wetlands and other surface waters during an August 23, 2019 field review conducted by qualified biologists. During the field reviews,

wetland and other surface water boundaries within the BSA were delineated pursuant to the guidelines found within the USACE *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region.*[14]

During the field reviews, each wetland and other surface water within the BSA was visually inspected and attention given to identifying dominant plant species. The presence of nuisance/exotic vegetation and other disturbances, such as channelization, clearing, etc. were also noted.

For NEPA purposes, the wetland and other surface water identification that was conducted during the field review, and the associated research of aerial photographs, maps, databases and other informative material is the basis for the identification of wetland resources in this EA. As a part of the subsequent state and Federal permitting process, a request will be made for a formal Jurisdictional Determination of regulated waters that could be impacted by the Proposed Project.

Based on the collected field data, one forested wetland covering approximately 13.2 acres occurs within the BSA. Other surface water features present within the BSA include upland-cut drainage ditches and stormwater ponds which are associated with the overall stormwater management plan for the Airport. Refer back to **Figure 4.3-1** for locations of these features and **Section 4.3.1.1** for descriptions of these features.

4.12. FLOODPLAINS

Executive Order (EO) 11988 defines floodplains as the lowland and relatively flat areas adjoining inland and coastal waters including flood prone areas of offshore islands. Floodplain areas are differentiated primarily based on flood frequency and intensity. Specifically, areas subject to a one percent or greater chance of flooding in a given year are commonly referred to as the 100-year floodplain. Further, areas subject to a 0.2 percent chance of flooding in a given year are referred to as the 500-year floodplain.

4.12.1. RESOURCE CHARACTERIZATION

The FEMA in part implements the National Flood Insurance Program (NFIP) by developing Flood Insurance Rate Maps (FIRM) to delineate the extent of floodplains across the United States. The current effective FIRM for the SAV area is map number 13051C, panels 0040H, 0127H, 0038J, 0135H, and 0045G with an effective date of August 16, 2018. For flood insurance purposes, FIRM floodplain areas are further classified into SFHA, constituting areas where NFIP floodplain management regulations must be enforced and the area where the mandatory purchase of flood insurance applies.

[14] USACE, Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0), ed. J.S. Wakeley, R.W. Lichvar, and C.V. Noble. ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center. November 2010.

Data from the above-referenced FIRM panels are depicted on **Figure 4.12-1** and summarized on **Table 4.12-1** for the DSA, showing presence of Zone A SFHA. Zone A SFHA is defined as those areas subject to inundation by the one-percent-annual-chance flood event generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply. As shown, approximately 1.5 acres of Zone A SFHA intersect with the northwest portion of the DSA for the Proposed Project. The remaining acreage of the DSA intersect areas considered areas of minimal flood hazard by FEMA (i.e., Zone X).

Table 4.12-1 Floodplains

Flood Zone	Acres (DSA)
A	1.5
X	242.2
Total	**243.7**

Source: FEMA Digital FIRM, accessed July 2019 from SAGIS and https://msc.fema.gov/portal/home.

4.13. SURFACE/GROUNDWATER RESOURCES

4.13.1. RESOURCE CHARACTERIZATION

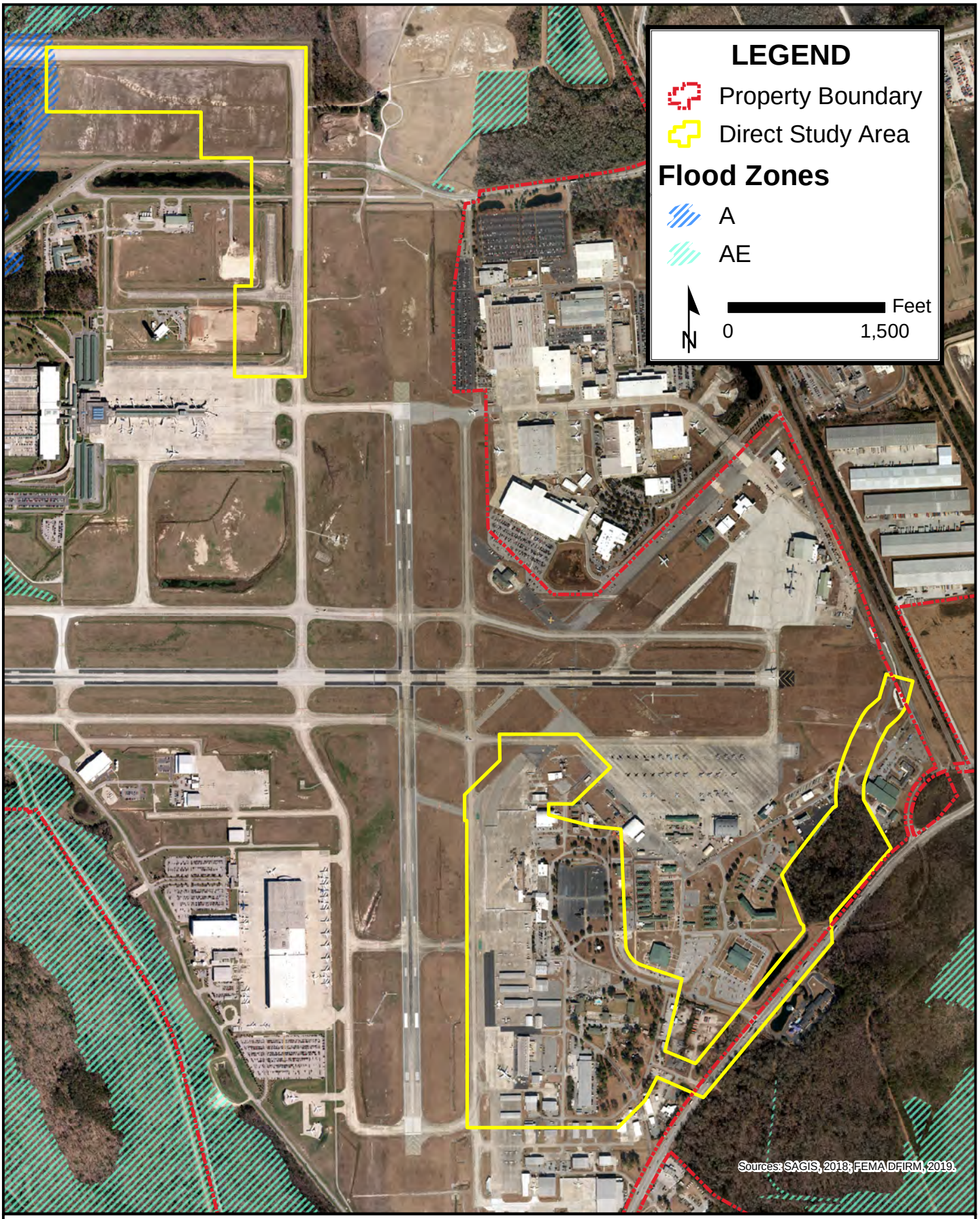
4.13.1.1. HYDROLOGY

Chatham county is located within the boundaries of the Lower Savannah, Lower Ogeechee and Ogeechee Coastal Watersheds; SAV is located within the Lower Savannah watershed[15]. The general drainage pattern within the airfield of SAV is from north to south. The existing stormwater system conveys surface water into a series of borrow pits and existing wetlands that serve as stormwater storage areas and treatment basins. SAV is divided into two drainage basins: Pipemaker's Canal and St. Augustine Creek. The northern portion of SAV is drained by Pipemaker's Canal and the southern portion of SAV is drained by St. Augustine Creek.[16]

4.13.1.2. GROUNDWATER

Groundwater within the City of Savannah is contained within the Florida Aquifer. The depth below the ground surface to reach the top of the Floridan Aquifer increases from less than 150 feet in coastal South Carolina to more than 1,400 feet in Glynn and Camden counties, Georgia.

[15, 7] Chatham County and City of Savannah. *Chatham County – Savannah Comprehensive Plan 2016 Update.* August 2016.
[16] URS Corporation, RS&H, and Ruth and Associates, LLC. *Savannah/Hilton Head International Airport Master Plan Update*. December 2014.



SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM
ENVIRONMENTAL ASSESSMENT

FLOODPLAIN MAP

FIGURE 4.12-1

Path: S:\Projects\S\Savannah Airport Commission\60607233_Short Term CIP EA\900-Work\920 GIS\mxd\PDEA\1909917_Figure 4-12-1_Floodplains_rev1.mxd, Date Saved: 10/18/2019 12:48:42 PM

Ninety-eight percent of the water provided by the municipal or community water systems in Chatham County is pumped from the Floridan Aquifer serving approximately 95 percent of the County's population. Ordinances protecting local wellheads have been passed and the community wells are routinely inspected by the Chatham County Inspections Department to prevent wellhead contamination and to address any stormwater pollutants that have the potential to impact groundwater and drinking water quality through the wellhead. In Chatham County and Savannah, land uses that generate, use, or store pollutants within groundwater recharge areas are restricted and minimum sizes for lots within groundwater recharge areas that are served by on-site sewage management systems have been established. Prior to the issuance of a building permit or a demolition permit, the Zoning Administrator will assess whether a proposed activity is located within a groundwater recharge area as identified by the GADNR and all lands identified as groundwater recharge areas are subject to restrictive development standards.[17]

4.13.1.3. WATER SUPPLY AND TREATMENT

Drinking water is supplied to the City of Savannah from the Florida Aquifer and the Savannah River. The water supply in Savannah is divided into seven systems. SAV is located within the Industrial and Domestic (I&D) Water Supply System where the main source of drinking water is received from the Abercorn Creek, a tributary of the Savannah River. Four groundwater wells pumping from the Florida Aquifer are also maintained in a ready state in this system as a backup source. In the I&D system, alum and polymer are added to the water during the surface water treatment process to settle out fine mud particles and the clear water is filtered, disinfected with chlorine and ammonia, and treated with lime and phosphate to balance the pH and corrosiveness. from there, the clean water is distributed for industrial and domestic consumption.[18]

[18] Savannah Public Works and Water Resources. *2018 City of Savannah Water Quality Report, I&D System.* Accessed from http://sales8978.wixsite.com/water-quality on September 18, 2019.

CHAPTER 5 ENVIRONMENTAL CONSEQUENCES

5.1. INTRODUCTION

The potential environmental impacts resulting from construction of the Proposed Project are presented in this section, as well as operational impacts for CYs 2023 and 2028.

For reference, a summary of air operations per EA study year, for both the No-Action Alternative and Proposed Project alternatives, is provided on **Table 5.1-1**. As shown, the Proposed Project scenario conservatively accounts for the addition of approximately 6,570 additional annual air cargo operations, whereas Alternative 1b conservatively accounts for the addition of approximately 17,520 operations.

Table 5.1-1 Aircraft Operational Summary

Category	Annual Aircraft Operations					
	2023 No-Action	**2023 Proposed Project**	**2023 Alternative 1b**	**2028 No-Action**	**2028 Proposed Project**	**2028 Alternative 1b**
Air Carrier	35,454	42,024	52,974	38,255	44,825	55,775
Air Taxi/Commuter	14,982	14,982	14,982	15,162	15,162	15,162
GA	39,097	39,097	39,097	39,192	39,192	39,192
Military	8,162	8,162	8,162	8,162	8,162	8,162
Total	**97,695**	**104,265**	**115,215**	**100,771**	**107,341**	**118,291**

Source: FAA TAF as amended by AECOM, 2019

5.2. AIR QUALITY

5.2.1. ANALYSIS METHODOLOGY

Air quality impact assessment methodology focuses on satisfying requirements of the CAA and NEPA. All emissions estimates and quantitative analyses were prepared using current, federally-approved emissions models and tools, in a manner consistent with the current FAA guidance. Detailed emissions estimation methodologies are provided within **Appendix C.**

For areas designated as nonattainment or maintenance of the NAAQS for criteria air pollutants by the EPA, the General Conformity Regulations (40 CFR §93.153 et seq.) of the CAA require a determination that air emissions from federally obligated actions are accounted for in a State Implementation Plan to control air quality.

As previously stated in **Section 4.2.1.1**, SAV is located in an area designated by the EPA as attainment/unclassifiable with respect to all current NAAQS. Accordingly, the General Conformity Regulations do not apply to the Proposed Project, and a detailed analysis and Conformity Determination are not required. Nevertheless, annual emissions inventories of construction and operational emissions associated with the Proposed Project are provided for disclosure purposes.

5.2.2. SUMMARY OF IMPACTS

5.2.2.1. CONSTRUCTION EMISSIONS

Tables 5.2-1 through **5.2-6** disclose the construction period criteria pollutant emissions computed for the Proposed Project and Proposed Project Alternative 1b. As shown on **Tables 5.2-1** through **5.2-6**, the peak year of construction is 2020, where estimated emissions under Alternative 1a total 54.1 tons of CO, 37.7 tons of nitrogen oxides (NO_x), 64.5 tons of PM_{10}, 8.6 tons of $PM_{2.5}$, 0.1 tons of sulfur oxides (SO_x), and 38.2 tons of VOC. Estimated emissions under Alternative 1b total 57.6 tons of CO, 42.2 tons of NO_x, 67.7 tons of PM_{10}, 9.2 tons of $PM_{2.5}$, 0.1 tons of SO_x, and 50.0 tons of VOC. Because the area is considered attainment/unclassifiable of all NAAQS, there are no applicable significance thresholds (CAA General Conformity de minimis thresholds) to which these emissions increases can be compared. Because construction emissions are temporary in nature, it is not likely that the construction emissions create a significant or lasting impact on air quality in the area.

Table 5.2-1 Construction Emissions Inventory for CO

Project	CO Emissions[1] (tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project)	16.9	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	20.3	--	--	--
3 - Taxiway G and Bridge - Phase III	--	2.8	--	--
4 - Taxiway Connectors and Improvements	--	1.1	--	--
5 - Taxiway G Extension	--	--	1.1	--
6 - Reconstruct North Apron - Phase I	--	2.1	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	2.6
8 - Southeast Quadrant Drainage Improvements	--	1.5	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	1.0	--	--	--
10 - Aviation-Related Development Area	36.3	--	--	--
11 - General Aviation Redevelopment Area	--	21.7	--	--
Total – with Alternative 1a	**54.1**	**29.3**	**1.1**	**2.6**
Total – with Alternative 1b	**57.6**	**29.3**	**1.1**	**2.6**

Source: AECOM, 2019

[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust.

Table 5.2-2 Construction Emissions Inventory for NO_x

Project	NO_x Emissions[1] (tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project)	12.4	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	16.9	--	--	--
3 - Taxiway G and Bridge - Phase III	--	2.5	--	--
4 - Taxiway Connectors and Improvements	--	1.1	--	--
5 - Taxiway G Extension	--	--	1.1	--
6 - Reconstruct North Apron - Phase I	--	2.2	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	1.9
8 - Southeast Quadrant Drainage Improvements	--	2.5	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	1.0	--	--	--
10 - Aviation-Related Development Area	24.3	--	--	--
11 - General Aviation Redevelopment Area	--	10.1	--	--
Total – with Alternative 1a	**37.7**	**18.4**	**1.1**	**1.9**
Total – with Alternative 1b	**42.2**	**18.4**	**1.1**	**1.9**

Source: AECOM, 2019
[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust.

Table 5.2-3 Construction Emissions Inventory for PM_{10}

Project	PM_{10} Emissions[1] (tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project)	30.0	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	33.2	--	--	--
3 - Taxiway G and Bridge - Phase III	--	5.8	--	--
4 - Taxiway Connectors and Improvements	--	3.1	--	--
5 - Taxiway G Extension	--	--	3.6	--
6 - Reconstruct North Apron - Phase I	--	5.6	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	5.6
8 - Southeast Quadrant Drainage Improvements	--	3.9	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	1.7	--	--	--
10 - Aviation-Related Development Area	32.8	--	--	--
11 - General Aviation Redevelopment Area	--	8.0	--	--
Total – with Alternative 1a	**64.5**	**26.4**	**3.6**	**5.6**
Total – with Alternative 1b	**67.7**	**26.4**	**3.6**	**5.6**

Source: AECOM, 2019
[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust.

Table 5.2-4 Construction Emissions Inventory for $PM_{2.5}$

Project	$PM_{2.5}$ Emissions[1] (tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project)	3.7	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	4.3	--	--	--
3 - Taxiway G and Bridge - Phase III	--	0.7	--	--
4 - Taxiway Connectors and Improvements	--	0.4	--	--
5 - Taxiway G Extension	--	--	0.4	--
6 - Reconstruct North Apron - Phase I	--	0.7	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	0.7
8 - Southeast Quadrant Drainage Improvements	--	0.5	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	0.2	--	--	--
10 - Aviation-Related Development Area	4.7	--	--	--
11 - General Aviation Redevelopment Area	--	1.4	--	--
Total – with Alternative 1a	**8.6**	**3.7**	**0.4**	**0.7**
Total – with Alternative 1b	**9.2**	**3.7**	**0.4**	**0.7**

Source: AECOM, 2019
[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust.

Table 5.2-5 Construction Emissions Inventory for SO_x

Project	SO_x Emissions[1] (tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project)	<0.1	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	<0.1	--	--	--
3 - Taxiway G and Bridge - Phase III	--	<0.1	--	--
4 - Taxiway Connectors and Improvements	--	<0.1	--	--
5 - Taxiway G Extension	--	--	<0.1	--
6 - Reconstruct North Apron - Phase I	--	<0.1	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	<0.1
8 - Southeast Quadrant Drainage Improvements	--	<0.1	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	<0.1	--	--	--
10 - Aviation-Related Development Area	0.1	--	--	--
11 - General Aviation Redevelopment Area	--	<0.1	--	--
Total – with Alternative 1a	**0.1**	**0.1**	**<0.1**	**<0.1**
Total – with Alternative 1b	**0.1**	**0.1**	**<0.1**	**<0.1**

Source: AECOM, 2019
[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust.

Table 5.2-6 Construction Emissions Inventory for VOC

Project	VOC Emissions[1] (tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project)	12.6	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	24.4	--	--	--
3 - Taxiway G and Bridge - Phase III	--	6.1	--	--
4 - Taxiway Connectors and Improvements	--	2.6	--	--
5 - Taxiway G Extension	--	--	3.1	--
6 - Reconstruct North Apron - Phase I	--	4.7	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	4.8
8 - Southeast Quadrant Drainage Improvements	--	0.6	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	1.5	--	--	--
10 - Aviation-Related Development Area	24.1	--	--	--
11 - General Aviation Redevelopment Area	--	4.2	--	--
Total – with Alternative 1a	**38.2**	**18.2**	**3.1**	**4.8**
Total – with Alternative 1b	**50.0**	**18.2**	**3.1**	**4.8**

Source: AECOM, 2019
[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust

5.2.2.2. OPERATIONAL EMISSIONS

Operational emissions associated with the No-Action and Proposed Project alternatives in were computed using AEDT 2d and are provided on **Table 5.2- 7**. As stated previously in this EA, expansion of the air cargo ramp as part of the Proposed Project would be complete by CY 2023. The new facilities would potentially generate approximately 6,570 additional annual air carrier operations compared to their projected operations under the No-Action Alternative **(Table 5.1-1)**. Comparatively, the incremental increase for Alternative 1b would be approximately 17,520 annual air carrier operations. Therefore, the emissions analysis for this EA includes emissions increases associated with the increased cargo carrier activities.

Table 5.2-7 Air Cargo Operational Emissions Inventory

Source	Proposed Project Emissions (tons)[1]						GHG Emissions (metric tons)
	CO	NO_x	$PM_{2.5}$	PM_{10}	SO_2	VOC	CO_2e
Aircraft[2, 3]	54.2	67.1	0.5	0.5	5.4	10.6	14,054.7
GSE[4]	3.1	1.7	0.2	0.2	0.0	0.3	-
Cargo Traffic	5.8	7.3	0.5	0.7	0.0	1.1	2,825.2
Total	63.1	76.1	1.1	1.4	5.5	12.0	16,879.8
Source	**Alternative 1b Emissions (tons)[1]**						**GHG Emissions (metric tons)**
	CO	**NO_x**	**$PM_{2.5}$**	**PM_{10}**	**SO_2**	**VOC**	**CO_2e**
Aircraft[2, 3]	144.6	178.8	1.3	1.3	14.4	28.3	37,479.1
GSE[4]	8.2	4.6	0.4	0.4	0.1	0.7	-
Cargo Traffic	13.4	17.0	1.2	1.7	0.1	2.7	6,592.1
Total	166.3	200.4	2.9	3.4	14.5	31.6	44,071.1

CY = Calendar Year; CO = carbon monoxide; CO_2e = carbon dioxide equivalent; GHG = greenhouse gases; NO_x = nitrogen oxides; $PM_{2.5}$ = particulate matter equal to or less than 2.5 micrometers in diameter; PM_{10} = particulate matter equal to or less than 10 micrometers in diameter; SO_2 = sulfur dioxide; VOC = volatile organic compounds.

[1] NO_x and VOC are considered precursors to criteria pollutant formation (O_3 and $PM_{2.5}$).

[2] Aircraft includes emissions from auxiliary power units (APU)

[3] AEDT 2d does not estimate GHG emissions for APU use

[4] AEDT 2d does not directly estimate GHG emissions for GSE

Sources: AEDT 2d, 2019.

5.2.3. IMPACT SIGNIFICANCE

In terms of NEPA compliance, the significance of potential air quality impacts of development projects at SAV are evaluated on a case-by-case basis according to the criteria on **Table 5.2-8**.

Table 5.2-8 Air Quality Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Air Quality	*The action would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the EPA under the CAA, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.*	None specified.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

As stated previously, there is no applicable quantitative significance threshold against which emissions increases estimated for the Proposed Project could be assessed, because the Proposed Project occurs in a NAAQS attainment/unclassifiable area and the CAA General Conformity *de minimis* thresholds therefore do not apply.

The FAA's Aviation Emissions and Air Quality Handbook states that atmospheric dispersion modeling to convert the emissions estimates in this EA into predicted pollutant concentrations for direct comparison to the NAAQS is not necessary, because it was not requested by a reviewing agency or stakeholder during EA scoping.

From a qualitative standpoint, when reviewing available air monitoring data for Chatham County (see Affected Environment), all monitored ambient air concentrations are well below the NAAQS. So, even if dispersion were required and conducted, any modeled concentrations derived from the emissions disclosed on **Tables 5.2-1** through **5.2-7** would likely not cause a NAAQS violation. Additionally, SAV is adjacent to the Atlantic coast, with average monthly windspeeds ranging from 3.26 meters per second (m/s) in August, to 4.46 m/s in March[19] and therefore it is also possible that prevailing wind patterns can serve to further disperse air pollutants in the surrounding airshed. It is also important to note that sensitive receptors to air pollution within the vicinity of the Airport footprint (e.g., park, hospital, residential area, nursing home, school) are of sufficient distance from SAV emissions sources, such that the likelihood for any localized increases in air concentrations due to the Proposed Project to affect the general public is unlikely.

Because the Proposed Project is not expected generate operational or construction-related emissions that would cause a violation of the NAAQS, the Proposed Project would not exceed significant impact thresholds identified in FAA Order 1050-1F.

5.2.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Mitigation to reduce impacts below the threshold of significance is not required. However, construction-related emissions resulting from the improvements, albeit temporary, can be reduced by employing the following typical emissions reduction measures, in accordance with FAA AC 150/5370-10H, *Standards for Specifying Construction of Airports*:

- Suspension of construction activities during high-wind conditions;
- Creation of dust, odor and nuisance reporting system;
- Reduction of exposed erodible surface area through appropriate materials and equipment staging procedures;
- Cover of exposed surface areas with pavement or vegetation in an expeditious manner;
- Reduction of equipment idling times;
- Ensure contractor knowledge of appropriate fugitive dust and equipment exhaust controls;
- Soil and stock-pile stabilization via cover or periodic watering;
- Use of low- or zero-emissions equipment;
- Use of covered haul trucks and conveyors during materials transportation;
- Reduction of electrical generator usage wherever possible; and
- Prohibition of open burning for waste disposal.

[19] National Resources Conservation Service, National Water and Climate Center, Wind Rose Resources accessed from https://www.wcc.nrcs.usda.gov/ftpref/downloads/climate/windrose/georgia/savannah/ on September 5, 2019.

5.2.5. CUMULATIVE EFFECTS

FAA Order 1050.1F identifies no significance thresholds for the assessment of cumulative air quality impacts.

Reasonably foreseeable development actions on and surrounding SAV (assuming within one mile of Airport) that may have potential to occur concurrently with or after the Proposed Project were qualitatively considered for potential cumulative impacts on air quality (and GHG emissions), the results of which are summarized in **Table 5.2-9** below. All projects listed in **Table 5.2-9** are on-airport projects.

Table 5.2-9 Cumulative Air Quality Impact Assessment

Project	Generates Emissions:		Enabling, Dependent, or Connected Action	Degree of Potential Cumulative Effect
	Construction	Operation		
On-Airport Projects				
Install 5 New Jetbridges for Terminal Expansion	x		No	Low
Expand Inbound Baggage Claim	x		No	Low
Approach Lighting System with Sequence Flashing Lights(ALSF-2) for Runway 10	x		No	Low
Lengthen Runway 1-19	x	x	No	Moderate
Medium Approach Light System with Runway Alignment Indicator Lights (MALSR) for Runway 1	x		No	Low
Medium Approach Light System with Runway Alignment Indicator Lights (MALSR) for Runway 28	x		No	Low
NAVAIDS: Phase 2 - Localizer and MK 20 Glide Slope for Runway 1	x		No	Low
Completion of Taxiway H	x	x	No	Moderate
Connector and Bridge to Land Acquisition	x	x	No	Low
Install Instrument Landing System (ILS) on Runway 28	x		No	Low
Upgrade Runway 10 Instrument Landing System (ILS) to Category II (CAT II)	x		No	Low
Off-Airport Projects				
I-95 Interchange Improvements	x	x	No	Moderate
Site Mitigation for Land Acquisition	x		No	Low
Travis Field Water Reclamation Facility	x		No	Low

Project	Generates Emissions:		Enabling, Dependent, or Connected Action	Degree of Potential Cumulative Effect
	Construction	Operation		
Industrial and Domestic (I&D) Water Quality Improvements	x		No	Low
Install 24-inch Waterline from Dean Forest Road into Savannah Ports Authority	x		No	Low
I&D Water Laboratory	x		No	Low
Savannah Ports Authority Park	x	x	No	Low
Jimmy Deloach Connector I&D 24-inch Water Line	x		No	Low
Expansion of I&D Plant	x	x	No	Low
Sludge Pond Dredging		x	No	Low

Source: AECOM, 2019.

As shown, each project was evaluated according to the following qualitative criteria: (1) will generate an appreciable amount of construction-related or operational-related air emissions; (2) is an enabling or dependent action for, or otherwise connected to, the Proposed Project; and (3) degree of potential cumulative effect.

Based on this analysis, it can be concluded that there is little to no potential for cumulative air quality or GHG impact for many of the listed projects because while they are reasonably foreseeable, they represent minor temporary sources of construction emissions and are not dependent on or connected to the Proposed Project.

Therefore, although there is potential for cumulative air quality or GHG effects due to any construction occurring before, concurrently with, or after the Proposed Project, it is not certain whether or not these effects would actually occur. These and any other potential projects should be evaluated on an on-going basis for compatibility with the Proposed Project and impact on air quality conditions in the area of SAV.

5.3. BIOLOGICAL RESOURCES

This section describes the potential impacts of the Proposed Project on land use/vegetative cover, fish and wildlife, and threatened and endangered species.

5.3.1. ANALYSIS METHODOLOGY

The assessment of potential impacts to biological resources included a review of the areas that could be directly affected by the construction activities associated with the Proposed Project. The resulting information was transferred into a GIS database, which was subsequently used to assess the potential project related impacts on the land use, vegetative community and wildlife within the BSA. Potential impacts to biotic communities as a result of the Proposed Project were assessed by overlaying a plan view of the Proposed Project on the land use/vegetative cover map. Impacts were then calculated on an acreage basis using GIS. Species data were also assessed relative to the Proposed Project. Potential habitat loss was evaluated using GIS

mapping of the BSA. The assessment of potential impacts to state and federally listed species was accomplished by identifying listed species potentially occurring within the BSA, assessing the use of various habitats within the BSA by listed species (e.g., foraging, nesting, etc.), and assessing the loss of habitat potentially used by listed species.

The study also included inter-agency consultation between the FAA and USFWS, as required by Section 7 of the ESA and its implementing regulations at 50 CFR Part 402. The FAA initiated informal consultation with the USFWS by letter dated on August 1, 2019 in which the USFWS responded August 19, 2019 (see Section 4.3.1). The BA was submitted to the USFWS for review on September 23, 2019. On September 30, 2019, the USFWS responded with a letter concurring with findings in the BA and effect determinations listed below for federally listed species. Copies of correspondence related to the consultation undertaken for the Proposed Project is provided in **Appendix A**.

5.3.2. SUMMARY OF IMPACTS

The Proposed Project would result in permanent impacts to approximately 62.4 acres of existing terrestrial and wetland habitats. The Proposed BSA has been previously affected by anthropogenic activities at the Airport, including regular mowing of the grassed infield areas and airport operations. No federally listed species or designated critical habitat are expected to be adversely affected by the Proposed Project. **Table 5.3-1** provides the project impact determination for federally and state listed species. Based on the findings and commitments of the BA, a determination has been made that the Proposed Project is not likely to adversely affect any state or federally listed plant or animal species.

The Proposed Project would result in adverse impacts to habitats potentially utilized by listed and protected species. The potential effect of the habitat impacts on state and federally listed species with potential to occur within the BSA are discussed below. The EDGES program was developed jointly by the Savannah District USACE and the USFWS, Georgia Ecological Services Office, to improve Section 7 consultation pursuant to the ESA and shall be applied to all federally-authorized actions. Therefore, EDGES was used to determine the potential effects on federally listed species resulting from the Proposed Project when applicable. Currently, there are 12 EDGES that have been developed for 41 species listed in Georgia, two of which are applicable to the Proposed Project and contained in the BA provided in **Appendix B**.

Table 5.3-1: Effects Determination Summary

Project Impact Determination	**Federally Listed Species**
May affect, not likely to adversely affect	Eastern indigo snake (*Drymarchon corais couperi*) Wood stork (*Mycteria americana*)
No effect	Listed plant species
Project Impact Determination	**State Listed Species**
Will not affect	Spotted turtle (*Clemmys guttata*) Swallow-tailed kite (*Elanoides forficatus*)

	Gopher tortoise (*Gopherus polyphemus*) Bald eagle (*Haliaeetus leucocephalus*)

Source: USACE, 2018; AECOM, 2019; ESI, 2019.

5.3.2.1. HABITAT CONVERSION

The only natural habitat to occur with the BSA is the Sweetgum Seepage Forest. Implementation of the Proposed Project will result in the conversion of approximately 13.2 acres of the Sweetgum Seepage Forest wetland to Stormwater Management (Pond) as a result of the Proposed Project. In addition, approximately 49.2 acres of Lawn, Garden, and Recreational Vegetation, which consists mostly of mowed/maintained, grassed areas located within the BSA, will be converted to Airport/Transportation land use as a result of the Proposed Project. **Table 5.3-2** lists the vegetative communities and land uses that will be converted to Airport/Transportation or Stormwater Management use by the Proposed Project.

Table 5.3-2: Vegetative Community/Land Use Conversions Resulting from the Proposed Project

Vegetative Community/ Land Use[1]	USFWS Classification[2]	Acres Converted to Airport/Transportation	Acres converted to Stormwater Pond	Total
Uplands				
Lawn, Garden, & Recreational Vegetation (CFO09)	N/A	49.2	--	49.2
Wetlands				
Sweetgum Seepage Forest (CEGL004631)	PFO1/3C	--	13.2	13.2
TOTAL		**49.2**	**13.2**	**62.4**

[1] GADNR, 2010; USNVC, 2017; ESI, 2019.
[2] Cowardin, Lewis M., *et.al.* 1979.

5.3.2.2. LISTED FLORA SPECIES

Most of the BSA has been disturbed as part of ongoing airport activities. Therefore, it is unlikely that any listed plant species will be adversely affected by the project. One federally listed plant species (pondberry) was surveyed for within the only intact forested wetland; however, habitat requirements were not met nor were any individual species observed. General field reviews did not detect the occurrence of any state or federally listed species within the BSA. As a result, it is anticipated that the Proposed Project would have “no effect” on listed plant species.

5.3.2.3. FEDERALLY LISTED FAUNAL SPECIES

While no **eastern indigo snakes** or gopher tortoise burrows were observed during the field review, suitable habitat for this species is available within the BSA. Most of the BSA, however, has been disturbed and/or altered and movement to and from suitable habitat is limited due to the surrounding roadways, fences, and on-going airport operations. Additionally, there are no suitable

soils for gopher tortoise burrows occurring within the BSA. In their September 30, 2019 correspondence, USFWS suggested that the project contractor be directed to avoid disturbing any eastern indigo snakes that may enter the project area during construction activities. If an eastern indigo snake is observed, project activities in the vicinity will cease pending consultation with USFWS. Based on this information and the draft EDGES for the eastern indigo snake (**Appendix B**), it has been determined that the Proposed Project "may affect, but is not likely to adversely affect" the eastern indigo snake.

Though suitable habitat for the **wood stork** occurs within the BSA, the USFWS issued a Biological Opinion in 2018 that included an Incidental Take Statement authorizing SAV to remove a rookery once present near the BSA and remove any future nests that are observed on Airport property. As part of the Proposed Project, adverse wetland impacts will be mitigated as necessary to prevent a net loss of wetland habitat functions and values. Additionally, the Proposed Project is not within 2,500 feet of an active wood stork rookery; however, suitable foraging habitat does occur within the BSA. Based on this information and the draft EDGES for the wood stork (**Appendix B**), it has been determined that the Proposed Project "may affect, but is not likely to adversely affect" the wood stork.

5.3.2.4. STATE LISTED FAUNAL SPECIES

Marginally suitable habitat for the **spotted turtle** is available within the BSA; however, movement to and from this habitat is limited due to the surrounding roadways and on-going airport operations. No individuals were observed within the BSA during the field review. Therefore, no adverse effects on the spotted turtle are anticipated as a result of the Proposed Project.

Suitable habitat does occur within the BSA for the **swallow-tailed kite**; however, no kites were observed within the BSA during the field review. If a nest is observed prior to construction, coordination with the GADNR will occur to develop and implement the appropriate protection criteria. Therefore, no adverse effects on the swallow-tailed kite are anticipated as a result of the Proposed Project.

Marginally suitable habitat for the **gopher tortoise** is present throughout the BSA; however, no gopher tortoise burrows were observed within the BSA during the field review. Most of the BSA, has been disturbed and/or altered from airport activity and movement to and from suitable habitat is limited due to the surrounding roadways and on-going airport operations. Additionally, no suitable soils for gopher tortoise burrows occur within the BSA. If gopher tortoise burrows are observed within the project area prior to construction, coordination with the GADNR will occur to develop and implement the appropriate protection criteria. Therefore, no adverse effects on the gopher tortoise are anticipated as a result of the Proposed Project.

An active **bald eagle** nest was observed within 1,700 feet of the BSA in 2009. During the August 23, 2019 field review, the nest remains intact and appears to be active; however, no eagles were observed in or around the nest, most likely due to seasonality since nesting season in Georgia spans from late October/early November until late April. Pursuant to USFWS bald eagle

guidelines, any disturbance within 1,000 feet of a bald eagle nest requires additional coordination and potential permitting with the USFWS. Either a Non-Purposeful Eagle Take Permit or authorization to remove the nest structure permanently may be required prior to construction of the Proposed Project. Based on this information, commitments to implement the appropriate conservation measures, and the distance of the nest from the BSA, it is unlikely that the Proposed Project will affect the bald eagle.

5.3.3. CONSERVATION MEASURES

In order to avoid, minimize, and mitigate potential impacts to federally and state listed species, the following measures will be implemented by the Commission:

1. During the permitting phase of the Proposed Project, the Commission will provide appropriate compensation for the loss of wetland functions and values;

2. Prior to construction, the Commission will commit to resurvey appropriate habitats within the project area to confirm the presence or absence of gopher tortoises and swallow-tailed kite nests. If any of these listed species or their nests are present, the Commission will coordinate with the GADNR to minimize the Proposed Project impacts and obtain the necessary permits; and

3. Prior to construction, the Commission will resurvey appropriate habitats within 1,000 feet of the Proposed Project area for bald eagle nests prior to construction. If a bald eagle nest is found within 1,000 feet of the Proposed Project, the Commission will coordinate with the USFWS to secure any and all approvals regarding this species.

4. During construction activities, the project contractor will be directed to avoid disturbing any eastern indigo snakes that may enter the project area. If an eastern indigo snake is observed, project activities in the vicinity will cease pending consultation with USFWS.

5.3.4. IMPACT SIGNIFICANCE

During the NEPA process, the FAA considers the factors listed on **Table 5.3-3** in making a determination of an action's potential impact on biological resources.

Table 5.3-3 Biological Resources Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Biological Resources (including fish, wildlife and plants)	*The USFWS or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally-designated critical habitat.*	The action would have the potential for: • A long-term or permanent loss of unlisted plant or wildlife species, i.e., extirpation of the species from a large project area (e.g., a new commercial service airport); • Adverse impacts to special status species (e.g., state species of concern,

Category	FAA Significance Thresholds	Factors to Consider
	The FAA has not established a significance threshold for non-listed species.	species proposed for listing, migratory birds, bald and golden eagles) or their habitats; • Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or • Adverse impacts on a species' reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), or ability to sustain the minimum population levels required for population maintenance.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

The Proposed Project would not jeopardize any federally listed species, would not convert designated or proposed critical habitat, or have substantial impacts to non-listed species. Conservation measures will be implemented for the species that may be affected by the Proposed Project. Therefore, the Proposed Project would not exceed a threshold that would indicate a significant impact.

5.3.5. CUMULATIVE EFFECTS

Past cumulative and other development projects in the vicinity of SAV have resulted in losses to natural habitats as well as impacts to wildlife and listed species. Development projects involving state and/or Federal assistance or approvals would be required to evaluate impacts to federally listed species or their habitats and would be required to provide mitigation to offset impacts. Collectively, these projects will probably result in some future reduction of habitat availability for listed species. These future impacts may be offset, to some degree, by the implementation of appropriate mitigation measures as described in **Section 5.3.4**.

The Proposed Project would have minimal impact on natural habitats, wildlife, and listed plant and animal species. Also, with the proposed mitigation measures, the impact is not expected to be significant. Therefore, the direct and indirect impacts resulting from Proposed Project, when considered in addition to other cumulative projects, are not expected to lead to substantial cumulative impacts to natural habitats, wildlife, and listed plant and animal species.

5.4. CLIMATE

5.4.1. ANALYSIS METHODOLOGY

Construction of the Proposed Project, the resulting increase in aircraft operations would result in an increase in GHG emissions, when compared to the No-Action Alternative. Accordingly, the emissions have been assessed quantitatively per the FAA's 1050.1F Desk Reference. All

emissions estimates and quantitative analyses were prepared using current, federally-approved emissions models and tools, in a manner consistent with the current FAA guidance. Detailed emissions estimation methodologies are provided within **Appendix C**. Emissions inventory results and qualitatively evaluated in terms of compliance with local climate change policy and adaptation strategies.

5.4.2. SUMMARY OF IMPACTS

5.4.2.1. CONSTRUCTION EMISSIONS

Construction emissions of CO2e GHG are presented on **Table 5.4-1** and indicate that roughly 35,749 metric tons and 44,071 metric tons for the Proposed Project with Alternatives 1a and 1b, respectively, would be emitted over the four-year construction period, which peaks in 2020.

Table 5.4-1 Construction Emissions Inventory for CO_2e

Project	CO_2e Emissions[1] (METRIC tons)			
	2020	2021	2022	2023
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1a (Proposed Project	6,917.06	--	--	--
1, 2- Air Cargo Ramp West/East - Phases I & II Alternative 1b	9,328.49	--	--	--
3 - Taxiway G and Bridge - Phase III	--	1,522.75	--	--
4 - Taxiway Connectors and Improvements	--	647.24	--	--
5 - Taxiway G Extension	--	--	750.58	--
6 - Reconstruct North Apron - Phase I	--	1,388.78	--	--
7 - North Apron Construction - Phase II/Vault Relocation	--	--	--	1,396.09
8 - Southeast Quadrant Drainage Improvements	--	1,793.52	--	--
9 - Southeast Taxilane/GA 5 Partial Reconstruction	526.41	--	--	--
10 - Aviation-Related Development Area	13,594.82	--	--	--
11 - General Aviation Redevelopment Area	--	7,211.42	--	--
Total – with Alternative 1a	21,038.29	12,563.70	750.58	1,396.09
Total – with Alternative 1b	23,449.72	12,563.70	750.58	1,396.09

Source: AECOM, 2019
[1] Includes off-road equipment, on-road vehicles, and asphalt paving/fugitive dust.

5.4.2.2. OPERATIONAL EMISSIONS

As discussed in **Section 5.2.2.2**, differences in GHG emissions between the No-Action Alternative and the Proposed Project are due to increases in air cargo carrier operations that would be expected to occur after the proposed expansion of air cargo facilities. The proposed air cargo facility expansion would facilitate an increase of approximately 6,570 and 17,520 operations per year of the Boeing 767 for Alternatives 1a and 1b, respectively. As shown on **Table 5.2-7** a net

increase of up to 16,880 and 44,071 metric tons of CO_2e would occur with the Proposed Project in 2028 for Alternatives 1a and 1b, respectively, when compared to the No-Action Alternative.

5.4.2.3. ADAPTATION

Per the 2016 Chatham County-Savannah Comprehensive Plan, adaptations identified to address the most critical climate change vulnerabilities in the area include updated zoning ordinances, subdivision codes, and stormwater policies; low impact development; open space preservation; discouraging development in flood prone areas; and green infrastructure. The Proposed Project will not have a measurable effect on any measures being undertaken to implement these adaptations, nor would it impede successful implementation of these adaptations.

5.4.3. IMPACT SIGNIFICANCE

The FAA has not established significance thresholds for aviation GHG emissions, nor have they identified specific factors to consider in making a significance determination for GHG emissions. Consequently, there is currently no quantitative or qualitative basis for comparison for the GHG emissions presented in this document, and therefore, emissions presented in this document are for disclosure purposes only. Based on the analysis conducted for this EA, GHG emissions associated with the Proposed Project are minimal and would not exceed any reasonable threshold indicating a significant impact.

5.4.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Although the FAA has not established significance thresholds for aviation GHG emissions, no significant climate impacts are anticipated, and no mitigation measures are warranted. However, many voluntary measures are available to reduce construction- and operational-related air emissions (**Section 5.2.4**) that would also serve to reduce fuel consumption associated with construction equipment and airport mobile sources, which would in turn reduce the level of GHG emissions occurring due to the Proposed Project.

5.4.5. CUMULATIVE EFFECTS

Please refer to the cumulative effects analysis discussion for air quality and GHG emissions in **Section 5.2.5**.

5.5. COASTAL RESOURCES

5.5.1. ANALYSIS METHODOLOGY

As SAV is located in an area subject to the GCMP, consistency of the Proposed Project with the GCMP must be reviewed. Consistency with the GCMP involves the review and consideration of the 33 state Enforceable Policies that collectively provide the framework for the management of Georgia's coastal resources. Project consistency information is coordinated with the GADNR Coastal Resources Division to determine if the state identifies any objections to the Proposed

Project, or if there are any issues to consider during the environmental impact analysis process in order to determine GCMP consistency.

5.5.2. SUMMARY OF IMPACTS

Review of the Proposed Project and alternatives with respect to the 33 state statutes protecting Georgia coastal resources has been accomplished and is summarized on **Table 5.5-1**. As shown, the Proposed Project and alternatives are consistent with the relevant statutes in that it presents no significant impact, or relevant impacts can be minimized or mitigated to levels below significance, as outlined throughout this EA.

Table 5.5-1 GCMP Consistency Review Summary

Enforceable Policy	Scope	Consistency
O.C.G.A. 12-9-1: Air Quality	Requires cooperation and coordination between GADNR Coastal Resources Division and Environmental Protection Division to implement the Georgia Air Quality Act.	Construction-related project emissions increases would be temporary and represent an insignificant impact compared to the No-Action Alternative. Increased operations emissions resulting from the Proposed Project would be below de minimis levels and would not result in or contribute to exceedance of the NAAQS. All new stationary emission sources would be permitted, as required, in accordance with state and federal air quality regulations.
O.C.G.A. 27-4-251: Aquaculture Development	Establishes directive to study aquaculture development in Georgia	The Proposed Project would not affect aquaculture-related resources or impede the State's ability to implement and enforce the policy.
O.C.G.A. 52-7-1: Boat Safety	Provides enforceable rules and regulations for safe boating practices in Georgia's lakes, rivers, and coastal waters.	The Proposed Project would not affect boating or boating practices or impede the State's ability to implement and enforce the policy.
O.C.G.A. 12-5-320: Coast Management	The CZMA provides enabling authority for the State to prepare and administer a coastal management program but does not establish new regulations or laws.	The Proposed Project is consistent with all applicable policies developed and administered by GADNR relative to the CZMA, and therefore is consistent with this Enforceable Policy.
O.C.G.A. 12-5-280: Coastal Marshlands Protection	Provides Coastal Resources Division with the authority to protect tidal wetlands.	The Proposed Project would not include structures or activities in the jurisdictional area, nor would it impede the State's ability to implement and enforce the policy.
O.C.G.A. 12-5-370: Safe Dams	Provides for inspection and permitting of certain dams in Georgia.	The Proposed Project would not affect dams or impede the State's ability to implement and enforce the policy.

Enforceable Policy	Scope	Consistency
O.C.G.A. 12-5-170: Safe Drinking Water	The Georgia Safe Drinking Water Act charges the Environmental Protection Division with responsibility for maintaining a water-supply program and the quality of drinking water.	The Proposed Project would not result in adverse impacts to drinking water supply or impact drinking water sources, relative to the No-Action Alternative, nor would it impede the State's ability to implement and enforce the policy.
O.C.G.A. 27-3-130: Endangered Wildlife	The Endangered Wildlife Act provides for identification, inventory, and protection of animal species that are rare, unusual, or in danger of extinction.	The Proposed Project would result in permanent impacts to approximately 62.4 acres of existing terrestrial and wetland habitats. The proposed areas of direct impact have been previously affected by anthropogenic activities at the Airport, including regular mowing of the grassed infield areas and airport operations. The Proposed Project would have minimal impact on natural habitats, wildlife, and listed plant and animal species. The area's inventory of habitat and vegetative cover types is expected to provide suitable temporary or permanent habitat for common species of displaced wildlife. In order to avoid or minimize potential impacts to listed species that have the potential to occur within the Proposed Project area, measures to be implemented by the Commission in coordination with the USFWS and GADNR as necessary include pre-construction species surveys and compensatory wetland mitigation. The Proposed Project "may affect, but is not likely to adversely affect" state or Federally listed plant or animal species and, in coordination with the USFWS, appropriate mitigations and conservation measures will be adopted as part of the Proposed Project. The Proposed Project will not impact critical habitat designated by Congress in 50 CFR 424.
O.C.G.A. 12-16-1: Environmental Policy	The Georgia Environmental Policy Act (GEPA) requires that all state agencies and activities prepare an Environmental Impact Report as part of the decision-making process. Required for all activities that may have an impact on	GADNR Coastal Resources Division considers all development projects within the coastal area to have direct effects on the coastal zone. Therefore, no major components of the Proposed Project would be considered de minimis or

Enforceable Policy	Scope	Consistency
	the environment. Must include and consider alternatives to the Proposed Action or activity.	environmentally beneficial as defined by regulation at 15 CFR §930.33(1)(3)(i) and 15 CFR §930.33(a)(4), respectively. Therefore, evaluation of direct and indirect effects on Georgia coastal resources through Georgia's Enforceable Coastal Policies is required. The EA for the Proposed Project includes a detailed analysis of direct, secondary, and cumulative environmental impacts from all proposed activities and their alternatives, including the No-Action Alternative, similar to the requirements placed on state agencies by the GEPA.
O.C.G.A. 12-7-1: Erosion and Sedimentation Control	The Georgia Erosion and Sedimentation Act requires each county or municipality adopt a comprehensive ordinance establishing procedures governing land-disturbing activities based on the minimum requirements established by the Act. Requires permits for specified land-disturbing activities, including construction activities, certain activities associated with transportation facilities, activities on marsh hammocks, etc. Provides exemptions for certain airport projects.	The Proposed Project would cause short-term, minor effects on soils during construction due to soil disturbance, resulting from excavation and filling activities required at the various sites. Implementing sediment and erosion control measures consistent with O.C.G.A Section 12-7-6 would minimize erosion, soil loss, and ultimately, sedimentation of surface waters, as well as qualify the Proposed Project for the airport exemption from additional Erosion and Sedimentation Act permitting requirements.
O.C.G.A. 27-1-3: Game and Fish Code	Provides authority for the State to regulate and license hunting, trapping, and fishing activities.	The Proposed Project would not affect hunting, trapping, or fishing activities, nor would it impede the ability of the State to implement and enforce the policy.
O.C.G.A. 12-5-90: Groundwater Use	Provides a regulatory framework regarding groundwater withdrawal and well drilling activities.	The Proposed Project would not include well drilling or groundwater access and withdrawal, nor would it impede the ability of the State to implement and enforce the policy.
O.C.G.A. 12-8-60: Hazardous Waste Management	Provides a comprehensive, State-wide program to manage hazardous wastes through regulating their generation, transportation, treatment, storage, and disposal.	All contractors involved with implementing the Proposed Project would be required to comply with State and Federal laws and regulations regarding hazardous waste management and spill prevention. Hazardous wastes generated at facilities developed by the Proposed Project would be managed according to all applicable laws and regulations.

Enforceable Policy	Scope	Consistency
O.C.G.A. 12-3-70: Heritage Trust	Georgia's Heritage Trust Act of 1975 seeks to preserve certain real property in Georgia that exhibits unique natural characteristics, special historical significance, or particular recreational value.	The Proposed Project is located in a developed area with restricted access and would not impact natural, pristine, recreational, or historically significant areas, and therefore would not impede the ability of the State to implement and enforce the policy.
O.C.G.A. 12-3-50: Historic Areas	Requires the Historical Preservation Division to carry out its mission to promote and increase knowledge and understanding, preservation, and publicizing Georgia state historical resources, with the Coastal Resources Division within the Coastal Zone.	The Proposed Project is not expected to affect historic or archaeological resources. Because there are no significant noise or air quality impacts associated with the Proposed Project, no significant indirect impacts to applicable resources are expected. Completion of Section 106 consultations with the Georgia State Historic Preservation Office (SHPO) is pending review of this Draft EA and the CRAS.
O.C.G.A. 12-3-90: Natural Areas	Charges GADNR with identification, acquisition, and preservations of areas exhibiting unusual ecological, scientific, educational, geologic, ecological, or scenic value.	Implementation of the Proposed Project will result in the conversion of approximately 13.2 acres of a forested wetland to a stormwater pond. However, compensatory mitigation will be provided for impacts to wetland habitat. The majority of the Proposed Project is located in an already developed area and will not impact natural animal or plant communities, rare or valuable members of such communities, or any other natural features of significant scientific, educational, geologic, ecological, or scenic value.
O.C.G.A. 12-4-40: Oil and Gas Deep Drilling	Provides the Board of Natural Resources with authority to implement requirements for drilling, casing, and plugging of wells for oil, gas, or mineral exploration.	The Proposed Project would not include activities associated with oil and gas deep drilling or impede the ability of the State to implement and enforce the policy.
O.C.G.A. 12-4-100: Phosphate Mining	Regulates and licenses extraction of phosphate mineral deposits.	The Proposed Project would not include digging, mining, or removal of phosphate deposits, nor would it impede the ability of the State to implement and enforce the policy.
O.C.G.A. 50-16-61: Revocable License Program	Provides authority to the Coastal Resources Division to issue revocable licenses for recreational docks on State-owned tidal water bottoms.	The Proposed Project would not include development or construction of recreational docks or impede the ability of the State to implement and enforce the policy.

Enforceable Policy	Scope	Consistency
O.C.G.A. 52-1-30: Right of Passage	Declares the right of use of all navigable waterways of the state by all citizens of Georgia. Provides a mechanism to remove structures capable of use for habitation but not used as a means of transportation and not permitted under the Right of Passage Act.	The Proposed Project would not affect navigable waterway use or construct or impact any structures regulated by the Act, nor would it impede the ability of the State to implement and enforce the policy.
O.C.G.A. 12-2-1: River Corridor Protection	Establishes minimum standards for the protection of river corridors for all rivers in Georgia with an average annual flow of 400 cubic feet per second. Establishes jurisdiction of the Coastal Regional Development Center over affected rivers within coastal counties, including the Savannah River in Chatham County.	The Proposed Project would be implemented well outside the 100-foot vegetated buffer required for the Savannah River in Chatham County. Implementation of erosion and sedimentation prevention measures during construction would be consistent with Mountain and River Corridor Protection Act requirements. No other component of, or activity associated with the Proposed Project would be under the jurisdiction of the Act.
O.C.G.A. 12-5-350: Scenic Rivers	The Georgia Scenic Rivers Act names certain sections of rivers and describes the process for designating other sections of Georgia rivers as scenic.	The Proposed Project would not affect designated scenic rivers or stretches of river eligible for scenic designation.
O.C.G.A. 12-3-110: Scenic Trails	Establishes a Scenic Trails System in Georgia.	The Proposed Project would occur in a restricted access area that is not eligible for inclusion in the Scenic Trails System and would not impede the ability of the State to implement and enforce the policy.
O.C.G.A. 31-2-7 and O.C.G.A. 31-3-5.1: Septic Tank Law	Provides a regulatory framework for siting, managing, and regulating septic tanks, including provisions for coordination with other statutes such as the Georgia Water Quality Control Act and the River Corridor Protection Act.	The Proposed Project would not install, manage, or operate any individual sewage management systems (septic tanks).
O.C.G.A. 27-4-190: Shellfish	Establishes requirements and a permitting mechanism for the collection and recreational harvesting of shellfish.	The Proposed Project would not result in or facilitate taking or harvesting of shellfish or impede the ability of the State to implement and enforce the policy.
O.C.G.A. 2-5-230: Shore Protection	Establishes the Shore Protection Act as the primary legal authority for protection and management of Georgia's shoreline features including sand dunes, beaches, sandbars, and shoals, collectively known as the sand-sharing system.	No part of the construction or operation of the Proposed Project would take place within the sand-sharing system, nor would it impede the ability of the State to implement and enforce the policy.

Enforceable Policy	Scope	Consistency
O.C.G.A. 12-8-21: Solid Waste Management	Defines the rules regarding solid waste disposal in Georgia. Sets requirements for selecting and developing municipal waste disposal sites.	The Proposed Project would not include development of municipal waste disposal sites.
O.C.G.A. 12-4-70: Surface Mining	Establishes regulations for all surface mining in Georgia.	The Proposed Project would not include any mining activities or impede the ability of the State to implement and enforce the policy.
O.C.G.A. 52-1-1: Protection of Tidewaters	Establishes the State of Georgia as the owner of the beds of all tidewaters within the State, except where title by a private party can be traced to a valid British Crown or State land grant. Includes provisions for the State to remove certain structures in or adjacent to state tidewaters.	The Proposed Project would not affect areas under the jurisdiction of this statute or impede the ability of the State to implement and enforce the policy.
O.C.G.A. 12-13-1: Underground Storage Tanks	Provides authority for the Environmental Protection Division to define the state criteria for operating, detecting releases, corrective actions, and enforcement of the utilization of underground storage tanks (UST). A Memorandum of Agreement between the Coastal Resources Division and the Environmental Protection Division ensures cooperation and coordination in the implementation of UST standards within the coastal area.	The Proposed Project would not install USTs.
O.C.G.A. 12-5-20: Water Quality Control	Grants the EPD authority to ensure that water uses in the State of Georgia are used prudently, are maintained or restored to a reasonable degree of purity and are maintained in adequate supply. Includes prohibitions of disposal of sewage, industrial wastes, or other wastes, and withdrawal, diversion, or impoundment any surface waters of the State without a permit. Through a Memorandum of Agreement, the rules and permits of the EPD are administered in a manner consistent with the enforceable policies of the GCMP.	The Proposed Project would not include any disposal of sewage or waste into, or withdrawal, diversion, or impoundment of the surface waters of the state. Proposed Southeast Quadrant drainage improvements would consist of new facilities to treat and attenuate the stormwater runoff generated from existing impervious surfaces, as well as any new impervious surfaces associated with the Proposed Project, thereby minimizing potential impacts to surface water quality by the Proposed Project.
O.C.G.A. 12-5-120: Water Well Standards	Provides standards for siting, constructing, operating, maintaining, and abandoning wells and boreholes.	The Proposed Project would not include construction, operation, maintenance, or abandonment of wells or boreholes.

Enforceable Policy	Scope	Consistency
	Compliance with the Water Wells Standards Act is required for all activities that utilize well water.	
O.C.G.A. 12-6-170: Wildflower Preservation	Establishes a framework and authority for the designation of and protection of plant species that are rare, unusual, or in danger of extinction. The protection offered to these species is limited to those that are found on public lands of the State.	The Proposed Project would not occur on public lands of the State and would not impede the implementation and enforcement of the Policy.

Note: O.C.G.A. = Official Code of Georgia Annotated

5.5.3. IMPACT SIGNIFICANCE

Although the FAA has not established a significance threshold for coastal resource impacts, there are a variety of factors to consider when assessing potential impact significance (**Table 5.5-2**). The Proposed Project is not located in a coral reef ecosystem or a CBRS unit, nor would it impact these features; therefore, these factors are not relevant to the Proposed Project. According to the floodplains analysis presented in **Section 5.13** of this EA (among others), the Proposed Project would not adversely impact human safety or property. The coastal environment would not be significantly adversely impacted, as summarized in **Table 5.5-1**.

Early coordination of the Proposed Project was conducted with the GADNR Coastal Resources Division and reviewing agencies. As indicated in **Appendix D**, the Coastal Zone Consistency Determination indicates that the Proposed Project is preliminarily consistent with the GCMP. **Table 5.5-1** provides a review of the Proposed Project's consistency with specific state Enforceable Policies forming the basis of the GCMP and demonstrates that the Proposed Project is consistent with the GCMP. Continued concurrence will be based on the Proposed Project's compliance with the GCMP authorities, including Federal and state monitoring of the activity to ensure its continued conformance and adequate resolution of any issues identified. Final concurrence of the Proposed Project's consistency with the GCMP will be determined during the environmental permitting process, in accordance with 15 CFR 930.

Table 5.5-2 Coastal Resources Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Coastal Resources	The FAA has not established a significance threshold for Coastal Resources	The action would have the potential to: be inconsistent with the relevant state coastal zone management plan(s); impact a CBRS unit (and the degree to which the resources would be impacted; pose an impact to coral reef ecosystems (and the degree to which the ecosystem would be affected); cause an unacceptable risk to human safety or property; or cause

Category	FAA Significance Thresholds	Factors to Consider
		adverse impacts to the coastal environment that cannot be satisfactorily mitigated.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

5.5.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Because no significant coastal resource impacts would be incurred due to the Proposed Project, and the Proposed Project is preliminarily consistent with the GCMP, no mitigation is required. Impact minimization measures and BMPs are referenced on **Table 5.5-1**, and also discussed throughout the environmental consequences chapter of this EA for specific environmental resources. Adopting these measures and practices would serve to reduce or minimize any effects of the Proposed Project on coastal resources.

5.6. HAZARDOUS MATERIALS, POLLUTION PREVENTION AND SOLID WASTE

5.6.1. ANALYSIS METHODOLOGY

Information on existing conditions (**Section 4.6.1**) was further evaluated based on the areas of the Airport that would be disturbed by construction and demolition activities associated with the Proposed Project. In addition, the intended function and operation of the Proposed Project was considered from the standpoint of hazardous materials involvement. The No-Action and Proposed Project Alternatives were evaluated to determine the quantity of Municipal Solid Waste (MSW) generation and construction debris generation, in terms of the quantity of MSW generated by the day-to-day operations of the alternatives and the temporary generation of solid waste due to demolition and construction activities.

5.6.2. SUMMARY OF IMPACTS

Table 5.6-1 summarizes known sites of current/historical contamination or environmental compliance within or adjacent to the DSA, based on the appraisal of environmental records described in **Section 4.6.1**. Records highlighted in red on **Table 5.6-1**, are indicative of a potential to encounter soil or groundwater contamination during construction of the Proposed Project.

Table 5.6-1 Assessment of Known Current/Historical Contamination Sites in the DSA

Map ID[1]	Site Name	Description	Interpretation
1	Gulfstream Service Center East Demolition Plans *(1001 Davidson Drive)*	This facility has an active CWA permit for storm water construction set to expire in 2023. No violations identified in the past 3 years. No record of enforcement actions in the past 5 years. This facility held a Minor Discharge NPDES permit from 9/23/2013 to 7/31/2018.	Historical discharge permits are not indicative of significant contamination potential.

Map ID[1]	Site Name	Description	Interpretation
	(see also Map ID #'s 10, 28, and 30)		
1	Goodwill Industries of the Coastal Empire *(1001 Davidson Drive)*	Registered under the FRSGA system under the classification of – 336413 – Other Aircraft parts and auxiliary equipment manufacturing.	Registration under the FRSGA is historical in nature and is not indicative of significant contamination potential.
1	Signature Flight Support *(1001 Davidson Drive)* *(see also Map ID # 5)*	This facility holds a NPDES permit from 7/27/2017 to 5/31/2022. This facility participated in TIER2 chemical reporting for the period of 2013 through 2019 (Naphtha, light alkylate, 100LL, diesel fuel, gasoline, and kerosene Jet-A)	Historical discharge permits are not indicative of significant contamination potential. Routine chemical reporting is historical in nature and is not indicative of significant contamination potential.
2	Federal Express Corporation *(51 Nicholson Drive)* *(see also Map ID # 6)*	Twenty-one (21) reports of de minimis leaks and spills from shipping containers involving a variety of chemicals including: gasoline, hypochlorite, acids, paint, hexane isopropanol, acetone, and unknown liquids. None of the reported releases prompted assessment and remediation activities. This facility held a NPDES permit from 9/05/2006 to 7/01/2011.	While there are a large number of reported incidents with known or potential hazardous material/waste, each of the incidents were resolved without need for ongoing assessment and remediation. Historical NPES discharge permits are not indicative of significant contamination potential.
4	Chatham County Mosquito Control (*65 Billy B. Hair Drive*)	This facility has an active RCRA Small Quantity Generator permit for "other automotive mechanical and electrical repair and maintenance". No violations identified in the past 3 years. No record of enforcement actions in the past 5 years. As a part of the ERNSGA – 1081977 - A spill of approximately 1-gallon of diesel was reported in 2014 that reportedly reached the storm drain. A spill kit was used to remediate remaining fluids. Registered under the FRSGA system under the classification of – 811118 – "other automotive mechanical and electrical repair and maintenance". This facility participated in TIER2 chemical reporting for the period of 2014 through	Because, no violations or enforcement actions have been recorded in the past 5 years, the RCRA registration is not indicative of significant contamination potential. The one report of a release was of limited volume and not likely to have significantly impacted soil or groundwater. Registration under the FRSGA system and Routine chemical reporting are historical in nature and are not indicative of

Map ID[1]	Site Name	Description	Interpretation
		the present (Scourge, Trumpet, diesel fuel #2, unleaded gasoline, and kerosene Jet-A). The site is listed as having four (4) active USTs: a 5000-gallon aviation gas/AV gas tank, a 6000-gallon aviation gas/AV gas tank, a 4000-gallon gas tank, and a 4000-diesel tank.	significant contamination potential. Although the site contains in-service tanks, there are no active assessment or remediation activities.
5	Signature Flight Support *(1006 Bob Harmon Road)*	This facility has an inactive RCRA Unspecified Universe permit. No violations identified in the past 3 years. No record of enforcement actions in the past 5 years. As a part of the ERNSGA – Incident date 2/10/1996 reported an underground storage tank/ overfilled due to mechanical malfunction on-valve of 450-gallons of Jet Fuel JP-1 (Kerosene). Remedial action cleanup is listed as complete. Registered under the FRSGA system as a RCRA facility. Under the LUST system, petroleum releases were reported on 4/2/1991, 9/9/1991, 2/13/1996, and 11/1/1990. NFA was issued for each of the releases. Eight (8) petroleum USTs were listed as being removed in 1966 and six (6) petroleum USTs were removed in 1974.	Because, no violations or enforcement actions have been recorded in the past 5 years, the RCRA registration is not indicative of significant contamination potential. Because remedial action for the 1996 release is reported as completed, it is no longer a significant contamination potential. Because an NFA was issued for each of the other four (4) previous releases, they are not considered to have significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing.
6	Federal Express Corp *(1222 Bob Harmon Road)* *(see also Map ID # 2)*	This facility has an inactive RCRA Unspecified Universe permit as a non-generator a former handler of hazardous waste. Hazardous wastes include: (D001) ignitable waste, (D018) benzene, (D039) tetrachloroethylene, (F001) spent halogenated solvents, and (F005) nonhalogenated solvents. The current non-generator status signifies that hazardous waste not currently generated by the facility. No violations reported. Registered under the FRSGA system under the classification of – 48851 – "freight transportation arrangement". A release was reported on 4/26/2011 of an unknown amount of jet fuel, storm drains	Former RCRA registration is historical in nature and is not indicative of significant contamination potential. Registration under the FRSGA is historical in nature and is not indicative of significant contamination potential. The reported 2011 release was designated for cleanup which has been closed and is no longer indicative of significant contamination potential.

Map ID[1]	Site Name	Description	Interpretation
		affected, caused by overfilling of the jet. Eagle SWS was contracted for cleanup. The complaint was reported closed on 5/3/2011.	
7	Travis Field *(400 Airway Avenue)*	The Army Air Corps used a portion of the site from 1941 to 1950. Three (3) landfills were created at the site totaling approximately 34 acres and located adjacent to SAV. The landfills are currently under investigation. Heavy metals have been found to moderately exceed Georgia Standards.	Due to the potential for elevated heavy metals, when conducting construction activities on or near the former landfills care should be taken when handling and/or disposing of soils. Additional soil analysis may be needed to properly classify the soils.
7	Savannah International Airport *(see also Map ID # 8 and 24)*	The site is listed on Georgia's HSI #10091, with pending corrective actions. The site has a known release of chromium in groundwater exceeding the reportable quantity. The site also has a known release of lead in soil at levels exceeding the reportable quantity. Under the LUST program two (2) releases were reported. A petroleum release was reported on 12/11/1992, however the release was not confirmed and no cleanup was performed. A petroleum release was reported on 8/2/1995, after remediation a NFA status was designated on 2/19/1998. The site is listed under the SEMS as a non-NPL site under state-lead cleanup. Investigations being conducted under HSRA. Cleanup activity was listed as complete on 8/14/2003. Former USTs were reported removed from the site: one 515-gallon gas UST in 1957; one 1000-gallon gas UST in 1969; one 2000-gallon gasoline UST in 1976; and one 1000-gallon diesel UST in 1976.	Due to the presence of groundwater impacts, care should be taken to determine contaminant concentrations prior to use or disposal of site groundwater. Due to the potential for elevated heavy metals, when conducting construction activities on or near areas with pending corrective actions, care should be taken when handling and/or disposing of soils. Additional soil analysis may be needed to properly classify the soils. Because an NFA was issued for both the 1992 and 1995 releases, these releases are not considered a significant contamination potential. Because the cleanup of the SEMS listing was listed as complete in 2003, this is not considered a significant contamination potential. Specific locations of site soil and groundwater impacts will be needed to properly address potential issues.

Map ID[1]	Site Name	Description	Interpretation
8	Building 131 (54 Service Road)	Registered under the FRSGA system under ID: 110017745001 in the GEIMS program. No other information was available.	Registration under the FRSGA is historical in nature and is not indicative of significant contamination potential.
8	Savannah International Airport *(54 Service Road)* *(see also Map ID #7 and 24)*	A petroleum release was reported during a UST closure at Building 131. The site was remediated and a NFA Clean Closure was issued on 5/13/2004. One former 500-gallon diesel UST was reported removed on 3/24/2004.	Because an NFA was issued for the 2004 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing.
9	Far Winds Corp *(1137 Bob Harmon Road)*	A petroleum release was reported on 9/11/1998. The site was remediated and a NFA was issued on 8/30/1999. One former 12,000-gallon UST was reported removed on 4/3/1980.	Because an NFA was issued for the 1998 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing
10	Hertz Rent-a-Car *(Armistead Rd & Davidson Rd)*	Registered under the FRSGA system under ID: 110013432106 in the GEIMS program. In 1974 a 3,000-gallon UST was removed from the site. In 1976 a 10,000-gallon UST was removed from the site. A petroleum release was reported on 1/13/1995. The site was remediated and a NFA was issued on 4/21/1997.	Registration under the FRSGA is historical in nature and is not indicative of significant contamination potential. Because an NFA was issued for the 1995 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing
10	Gulfstream Aerospace Corporation *(Building 1020 Davidson Drive)* *(see also Map ID #'s 1, 28, and 30)*	Registered under the FRSGA system under the OSHA-OIS program with a classification of – 336411 – "Aircraft manufacturing".	Registration under the FRSGA is historical in nature and is not indicative of significant contamination potential.

Map ID[1]	Site Name	Description	Interpretation
10	National Car Rental System Inc. *(Armistead Rd & Davidson Rd)*	In 1978 two (2) 6000-gallon gas USTs were removed from the site. A petroleum release was reported on 11/23/1993. The site was remediated and a NFA was issued on 6/6/2002.	Because an NFA was issued for the 1993 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing
11	Alamo Rent-a-car Inc *(Short Street & Armstead)*	In 1986 a 4,000-gallon gas UST was removed from the site. A petroleum release was reported on 7/20/1994. The site was remediated and a NFA was issued on 10/4/1995.	Because an NFA was issued for the 1994 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing
12	Spider Aviation *(1005 Bob Harmon Road)*	Based on a complaint, it was found that the site was conducting airplane reworking (paint stripping, painting, and sanding) without a hazardous waste permit. The complaint was received on 3/2/1999 and the complaint was closed on 4/28/1999.	Because the complaint was closed with no on-going assessment or remediation this is not considered a significant contamination potential.
13	WELL #18 *(Travis Field BLDG 401)*	This facility participated in TIER2 chemical reporting for the period of 2014 through 2019 (chlorine and gasoline).	Routine chemical reporting is historical in nature and is not indicative of significant contamination potential.
14	Titlemax Aviation Inc. *(36 Corporate Road)*	This facility participated in TIER2 chemical reporting for the period of 2014 through 2017 (jet fuel JP-1).	Routine chemical reporting is historical in nature and is not indicative of significant contamination potential.
15	WELL #17 *(Travis Field BLDG 311)*	This facility participated in TIER2 chemical reporting for the period of 2014 through 2019 (diesel fuel and chlorine).	Routine chemical reporting is historical in nature and is not indicative of significant contamination potential.
16	Georgia Air National Guard 168th AW *(Headquarters Rd BLDG 194)*	On 8/23/2013 a diesel UST of unknown size was removed from the site. A petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/31/2013.	Because an NFA was issued for the 2013 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this

Map ID[1]	Site Name	Description	Interpretation
			location. No remedial actions are ongoing
17	Savannah Air Traffic Control Tower *(550 Gulfstream Road)*	This facility participated in TIER2 chemical reporting for the period of 2013 through 2019 (diesel fuel #2).	Routine chemical reporting is historical in nature and is not indicative of significant contamination potential.
18	Georgia Air National Guard Site 7 *(East of BLDG 1412, along drain ditch)*	The site was listed in the Historic Non-Hazardous Site Inventory. This site was given an EPD Risk Score for groundwater of 5.69. Risk Score for on-site soil was not reported. Contaminants of concern are listed as chloroform and lead.	Listing on the Historic Non-Hazardous Site Inventory indicates that the EPD had no reason to believe a release of a regulated substance exceeding a reportable quantity had occurred and is therefore not indicative of significant contamination potential.
18	Georgia Air National Guard Site 8 *(East of BLDG 1911 in vicinity drainage ditch)*	Listed as HSI ID: 10553. The site had a known release of lead in groundwater at levels exceeding the reportable quantity. No human exposure via drinking water is suspected from this release. Releases of mercury and PCBs at this site have caused bioaccumulation in fish and shellfish that have resulted in the need to recommend that human consumption be limited. A cleanup and investigation have been initiated at this site, pursuant to a CERCLA 1.	Due to the presence of groundwater impacts, care should be taken to determine contaminant concentrations prior to use or disposal of site groundwater.
19	Georgia Air National Guard 165th AW Headquarters Rd BLDG 299 *(see also Map ID #'s 22 and 25)*	On 8/23/2013 a diesel UST of unknown size was removed from the site. A petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/29/2013.	Because an NFA was issued for the 2013 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing
20	WELL #19 *(Travis Field Behind Hanger)*	This facility participated in TIER2 chemical reporting for the period of 2013 through 2019 (diesel and chlorine).	Routine chemical reporting is historical in nature and is not indicative of significant contamination potential.
21	Georgia Air National Guard Site 2 *(Southwest of Building 840 in*	This site was delisted from the Hazardous Site Inventory on 2/7/2003 and given a NFA Status.	Because the site was delisted from the HSI and an NFA was issued in 2003, this site is not considered a significant contamination potential.

Map ID[1]	Site Name	Description	Interpretation
	vicinity of drainage)		
21	Georgia Air National Guard Site 6 *(south of building 1411)*	This site was delisted from the Hazardous Site Inventory on 2/7/2003 and given a NFA Status.	Because the site was delisted from the HSI and an NFA was issued in 2003, this site is not considered a significant contamination potential.
21	Georgia Air National Guard Site 10 *(east of building 1910)*	This site (ID: 10555) was delisted from the Hazardous Site Inventory on 2/14/2012, however cleanup is listed as being in progress. The site has been designated as a Class II site. The site had a known release of lead in groundwater at levels exceeding the reportable quantity. No human exposure via drinking water is suspected from this release. Releases of mercury and PCBs at this site have caused bioaccumulation in fish and shellfish that have resulted in the need to recommend that human consumption be limited. A cleanup and investigation have been initiated at this site, pursuant to a CERCLA 1.	Although the site has been delisted from the HSI, cleanup is still ongoing. Due to the presence of groundwater impacts, care should be taken to determine contaminant concentrations prior to use or disposal of site groundwater.
22	Georgia Air National Guard 165th AW Headquarters Rd BLDG 199 *(see also Map ID #'s 19 and 25)*	On 8/23/2013 a diesel UST of unknown size was removed from the site. A petroleum release was reported on 10/11/2013. The site was remediated and a NFA was issued on 10/30/2013.	Because an NFA was issued for the 2013 release, it is not considered a significant contamination potential. Historically registered tanks have been removed from this location. No remedial actions are ongoing
24	Savannah International Airport *(400 Airways Ave)* *(see also Map ID #7 and 8)*	This site is listed as having an alternative fueling station for Tesla electric vehicles. Under the LUST program two (2) releases were reported. A petroleum release was reported on 7/7/2017. The site was remediated and a NFA was issued on 8/11/2017. Another petroleum release was reported on 12/13/2016. The site was remediated and a NFA was issued on 12/28/2016. One (1) 2,500-gallon diesel UST, one (1) 1,000-gallon diesel UST, one (1) 1,000-gallon gasoline UST, and one (1) 550-gallon diesel UST were listed as currently being in use.	Alternative fueling reporting is historical in nature and is not indicative of significant contamination potential. Because an NFA was issued for both the 2016 and 2017 release, this is not considered a significant contamination potential. Although the site contains in-service tanks, there are no

Map ID[1]	Site Name	Description	Interpretation
			active assessment or remediation activities.
26	Delta Airlines *(Travis Field)* *(see also Map ID # 3)*	Under the LUST program a petroleum release was reported on 6/27/1990. The site was remediated and a NFA was issued on 9/12/1994.	Because an NFA was issued for the 1990 release, it is not considered a significant contamination potential.
35	Air National Guard Phase II (CRTC Aircraft Parking Apron and Buildings 197, 199, 1905, 1923, and 1950)	An assessment of PFAS at SAV found levels of PFAS chemicals associated with AFFF, including PFOS, PFOA, PFBS, above established PALs in both soil and groundwater at several locations across SAV. Assessment activities are ongoing.	Due to the presence of soil and groundwater impacts in the project areas, soil and groundwater should be treated/handled according to the Department of the Air Force's 5 September 2019 memorandum AFGM2019-32-01.

Source: Records in Red indicate a site with potential impacts to planned CIP activities.
See Figure 4.6-1

5.6.2.1. CONSTRUCTION IMPACTS

During construction, contractor staging areas will be located at various locations in the DSA. The staging areas will likely include portable ASTs for fuel storage. The construction contractor(s) will be required to implement pollution prevention, spill prevention, and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact.

An estimate of one (1) vertical yard for every one (1) square yard of building demolition, was used to calculate the estimated total volume of proposed construction debris produced for the site. An estimated total of 57,000 cubic yards (CY) of construction debris and 302,000, CY of soil and vegetative debris would be generated over the five years of the Capital Improvement Program (CIP) activities. The construction debris would result from typical demolition activities and the soil and vegetative debris would result from grubbing, clearing, stripping, and excavation for construction projects.

Chatham county operates four landfills: Dean Forest Road Landfill, Sharon Park Landfill, Chevis Road Landfill, and the Wilmington Island Landfill. In addition, two privately owned landfills are in the area: Waste Management Superior Landfill and Republic Regional Industrial Landfill. Between the six local landfills construction debris produced from the Project should not significantly impact overall landfill capacity. Excavated soils that are not contaminated can be used at local landfills as daily cover and provide a benefit to the accepting landfill.

5.6.2.2. OPERATIONAL IMPACTS

The use of fuel, and other regulated substances necessary for routine operations at the Airport will continue and will minimally increase to correspond to the forecast growth in operations at the

Airport and development of the Proposed Project. The SAV 2014 Master Plan predicts that airport operations will grow at an average annual rate of 0.9 percent through the year 2035. The Plan also predicts an average annual rate increase of air cargo volumes of 1.7 percent. Improvement activities associated with this Proposed Project are consistent with previous predicted growth predictions and should therefore not significantly impact the capacity of the Chatham County solid waste management systems.

5.6.3. IMPACT SIGNIFICANCE

Although FAA has not established a significance threshold under NEPA for the evaluation of hazardous materials and solid waste impacts, the environmental consequences for a proposed development project should be evaluated on a case-by-case basis in consideration of the factors identified on **Table 5.6-2**.

Hazardous Materials/Solid Waste Generation and Management

Based on the foregoing discussion, the Proposed Project would not generate a considerable or appreciable amount of hazardous materials or solid waste that would violate applicable regulations or exceed available handling capacity. The Proposed Project would not enable new activity types and would not result in new types of solid waste generated or hazardous materials in use at SAV.

In general terms, solid wastes and hazardous materials generated during the construction phase of any project would be handled in accordance with all applicable Federal, state and local regulations. Construction waste not diverted, recycled, or re-used would be transported to and disposed of in local permitted construction/demolition waste facilities or in local waste-to-energy plants in accordance with applicable state and local requirements. Construction contractor(s) would be required to implement pollution prevention, spill prevention, and response plans documenting the measures that will be taken to prevent accidental releases to the environment and, should they occur, the actions that will be undertaken to minimize the environmental impact. In addition, new aviation-related tenants would, in most cases, be required to implement site-specific pollution prevention plans (i.e., Spill Prevention Control and Countermeasures Plan [SPCC]) that reduce the potential for substantial impacts associated with regulated materials.

Contaminated Site Involvement

Based on review of available environmental records and historical aerial photography, the majority of environmental contamination events or compliance issues documented at SAV are historical or otherwise minor in nature. No sites on or around SAV are listed on the National Priority List of contaminated sites. Overall, the potential for contaminated site involvement during the construction or implementation of planned projects is generally low. However, special care should be taken when conducting construction activities in the highlighted areas of **Table 5.6-1**. Hazards are specific to each area. Mapped Environmental Locations are approximate and additional resources may be needed to delineate specific areas of concern

Table 5.6-2 Hazardous Materials Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Hazardous Materials, Pollution Prevention and Solid Waste	The FAA has not established a significance threshold for Hazardous Materials, Pollution Prevention and Solid Waste.	The action would have the potential to: • Violate applicable Federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management; • Involve a contaminated site (including but not limited to a site listed on the National Priorities List). Contaminated sites may encompass relatively large areas. However, not all of the grounds within the boundaries of a contaminated site are contaminated, which leaves space for siting a facility on non-contaminated land within the boundaries of a contaminated site. An EIS is not necessarily required. Paragraph 6-2.3a of this Order allows for mitigating impacts below significant levels (e.g., modifying an action to site it on non-contaminated grounds within a contaminated site). Therefore, if appropriately mitigated, actions within the boundaries of a contaminated site would not have significant impacts; • Produce an appreciably different quantity or type of hazardous waste; • Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or • Adversely affect human health and the environment.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

Other Considerations

FAA Order 1050.19B*, Environmental Due Diligence Audits in the Conduct of FAA Real Property Transactions* outlines conditions where Environmental Due Diligence Audits may either be required or waived. Based on available information from the Chatham County Property Appraiser, taken together with the results of the environmental database searches, Order 1050.19B would not apply to the Proposed Project.

5.6.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

The Proposed Project is not anticipated to result in significant hazardous material impacts. Therefore, mitigation measures are not warranted and have not been developed by the Airport Sponsor for this EA.

In the event that existing clean-up sites or previously unknown contaminants are discovered during construction activities, or a spill occurs during construction, construction contract provisions would specify that work would stop until the National Response Center is notified. Depending on the parameters of potential soil contamination, the soil could be reused on-site. If the soil could not be used on-site, the soil would be manifested and transported off-site to an authorized disposal facility. Facilities are available in the coastal Georgia region to accept contaminated soils.

Entities participating in the storage, use, transportation, and disposal of hazardous materials at SAV would be required to prepare a SPCC documenting the measures that have been taken to prevent accidental release to the environment and, should they occur, the corrective actions that are in place to minimize the environmental impacts.

5.6.5. CUMULATIVE EFFECTS

Neither the Proposed Project nor reasonably foreseeable planned projects are projected to have any significant impacts on hazardous materials, pollution prevention, and solid waste. Therefore, no cumulative impacts on this environmental category are projected from combined projects.

5.7. HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL AND CULTURAL RESOURCES

5.7.1. ANALYSIS METHODOLOGY

The Proposed Project and alternatives have been evaluated in compliance with Section 106 of the NHPA, which requires Federal agencies to consider the effects of their actions on properties that may be eligible for listing or are listed in the NRHP. The Section 106 process generally requires four steps: 1) Initiation of the process through early coordination with the SHPO and other interested parties; 2) identification of cultural resources that are listed in or are eligible for listing in the NRHP; 3) assessment of the effects the project will have on eligible or listed properties; and 4) resolution of adverse effects in consultation with the SHPO and, if necessary, the Advisory Council on Historic Preservation. Resolution of adverse effects (e.g., avoidance/minimization/mitigation steps) is typically outlined in a Memorandum of Agreement between the SHPO, Federal agency, and interested parties.

The methodology for identifying potential historic resources is that of 36 CFR 800.4, *Identification of Historic Properties*. The methodology for assessing the effects the Proposed Project might have on NRHP-listed or -eligible resources is that of 36 CFR 800.5, *Assessment of Adverse*

Effects. The methodology for providing a resolution for any such adverse effects is that of 36 CFR 800.6, *Resolution of Adverse Effects*.

As mentioned in **Section 4.7**, a Phase 1B CRAS was conducted at SAV that included background research and field survey (see **Appendix E**). The archaeological survey was performed from October 14-16, 2019. The archaeological investigations included ground surface reconnaissance and subsurface testing in all areas of proposed ground disturbance, and resulted in the excavation of four STPs. STPs measured 30 centimeters (cm) in diameter and excavated to subsoil or 80 cm below ground surface. All soil excavation was performed with a long-handled round (spade) shovel. STPs were excavated in 10-cm arbitrary levels, and soils were screened through a 0.635-millimeter (1/4-inch) mesh. STP data were recorded on standardized forms, including information on depth of each individual STP, the number of artifacts, provenience, and soil conditions. Munsell soil charts were used to describe soil color. Standard soils nomenclature was used to describe soil textures.

5.7.2. SUMMARY OF IMPACTS

As described in **Section 4.7**, background research identified 18 previously recorded archaeological sites within one mile of the APE, none of which are on Airport property. One standing resource was identified within the APE that is 50 years old or older or appears to be of exceptional importance, Building 1220. Based on the CRAS, it is recommended that Building 1220 is not eligible for National Register listing as a historic structure due to a virtual complete loss of integrity. Its exceedingly low level of integrity would not support significance under any of the National Register Criteria.

During the archaeological survey, no archaeological resources were encountered for any of the Proposed Project areas. In the case of the proposed air cargo relocation, the current study confirms previous studies conducted in 2010 that no archaeologically significant sites are present. Therefore, no further archaeological work is recommended within the APE as no direct or indirect impacts are expected. Further, no Historic Properties will be affected by the Proposed Project.

For reference, copies of the SHPO consultation materials supporting this EA are contained within **Appendix A.**

The FAA has determined that there are no federally-recognized tribes that have interest in Federal actions within Chatham County. Therefore, no further tribal coordination is required.

5.7.3. IMPACT SIGNIFICANCE

The FAA has not established a significance threshold for historical, architectural, archaeological, and cultural resources; however, a factor to consider has been identified for evaluating the intensity of potential impacts and is listed in **Table 5.7-1**.

Table 5.7-1 Historical, Architectural, Archaeological, and Cultural Resources Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Historical, Architectural, Archaeological and Cultural Resources	The FAA has not established a significance threshold for Historical, Architectural, Archaeological and Cultural Resources.	The action would result in a finding of Adverse Effect through the Section 106 process. However, an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact).

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

As stated, no NRHP-listed or -eligible resources are contained within the APE of the Proposed Project; therefore, there would be no direct effects on listed or eligible resources. The Proposed Project would not cause indirect effects that would be considered out of character with listed resources located outside of the APE. Consequently, the Proposed Project and retained alternatives would not present a significant impact with respect to historic architectural, archaeological or other cultural resources.

5.7.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Should future construction activities uncover any archaeological remains, it is recommended that activity in the immediate area of the remains be stopped while a professional archaeologist evaluates the remains. In the event that archaeological or historic remains are found during construction or maintenance activities, the provisions of O.C.G.A. §12-3-52 will apply. O.C.G.A. §12-3-52 states that all findings of such ruins, artifacts, treasure, treasure-trove, and other similar sites and objects shall be reported to the GADNR Historic Preservation Division within two days after being found. In the event that human remains are found during construction or maintenance activities, the provisions of O.C.G.A. §31-21-6 will apply which states that any person who accidentally or inadvertently discovers or exposes human remains shall immediately notify the local law enforcement agency with jurisdiction in the area where the human remains are located. Any law enforcement agency notified of the discovery of human remains will report to the coroner or medical examiner of the county where the human remains are located, who will determine further investigation requirements. If the remains are believed to be those of one or more aboriginal or prehistoric ancestors of or American Indians, then the GADNR will notify the Council on American Indian Concerns.

5.7.5. CUMULATIVE EFFECTS

It is possible that other area development actions could have direct or indirect impacts upon NRHP-listed or eligible historic resources. Federal and state funded projects with such potential impacts upon historic properties would require coordination with the SHPO, documentation, and mitigation measures, if warranted. The Proposed Project and retained alternatives are not expected to generate impacts to historic resources. Therefore, when considered in addition to

potential impacts of other on- or off-airport projects, the Proposed Project and alternatives are not expected to lead to significant cumulative impacts upon historic resources.

5.8. LAND USE

5.8.1. ANALYSIS METHODOLOGY

Within this section, effects of the Proposed Project to off-airport land uses, including potentially necessary changes to local comprehensive plans/zoning maps, are discussed. Compliance with FAA AC 150/5200-33B is also addressed to the extent applicable to the Proposed Project. Land use compatibility, in terms of Airport Sponsor assurances to control land uses in areas designated to maintain safe airport operation are also discussed. For a discussion of noise-compatible land use impacts, refer to **Section 5.10.**

5.8.2. SUMMARY OF IMPACTS

In general, the Proposed Project is consistent with applicable Federal, state and local land use plans and zoning ordinances.

Per 49 U.S.C. § 47107(a)(10) and if determined necessary by the FAA, the Airport Sponsor must provide assurance that appropriate action, including adopting 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 Airport to activities and purposes compatible with normal airport operations, including the landing and takeoff of aircraft.

5.8.3. IMPACT SIGNIFICANCE

The FAA has not established significance thresholds for land use, nor have they identified specific factors to consider in making a significance determination for land use (**Table 5.8-1**). Significant impact determinations typically depend on the significant impacts of other resource categories.

The Proposed Project would be consistent with current and future land use plans and zoning ordinances established for the area surrounding SAV. Therefore, based on the foregoing, land use impacts described throughout this EA are not considered to be significant.

Table 5.8-1 Land Use Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Land Use	The FAA has not established a significance threshold for Land Use.	There are no specific independent factors to consider for Land Use. The determination that significant impacts exist in the Land Use impact category is normally dependent on the significance of other impacts.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

5.8.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

No significant impacts were identified in terms of land use changes, and therefore no avoidance, minimization and/or mitigation measures have been considered.

5.8.5. CUMULATIVE EFFECTS

Other planned development actions in the area of SAV would either be located entirely on Airport property or are not connected actions with respect to the Proposed Project. Reasonably foreseeable development actions on and surrounding SAV (assuming within one mile of the Airport) that may potentially occur concurrently with or after, the Proposed Project were qualitatively considered for potential cumulative impact on land use, the results of which are summarized in **Table 5.2-10.** An analysis based on preliminary planning information currently available indicates no expected disruption of communities or substantial residence or business relocations. Impacts resulting from other non-airport related projects in the area are anticipated, and major projects would be implemented in light of land use and zoning plans established for the area. In summary, the land use impacts associated with the Proposed Project, when considered in addition to land use impacts of other on- or off-airport projects are not expected to result in additional substantial land use impacts.

5.9. NATURAL RESOURCES AND ENERGY SUPPLY

5.9.1. ANALYSIS METHODOLOGY

FAA Order 1050.1F identifies a significant impact on natural resources and energy supply "[w]hen an action's construction, operation or maintenance would cause demands that would exceed available or future (project years) natural resources or energy supplies". To the end of determining impact significance, the Proposed Project was considered in the following contexts:

- Utility Impacts: identify any large demand on local existing or planned utilities;
- Consumable Materials Impacts: estimate the volume(s) of any scarce or unusual materials needed to implement the Proposed Project; and
- Fuel Consumption Impacts: identify any changes to existing fuel usage attributable to changes in aircraft operations, ground procedures, or service vehicle utilization.

5.9.2. SUMMARY OF IMPACTS

Utility Impacts

Georgia Power supplies electricity to SAV at the McIntosh generation facility located approximately 13.5 miles north of SAV. Natural gas is provided to SAV by the Atlanta Gas Light Company. The City of Savannah provides potable water supply to SAV. The closest water/wastewater treatment plant is the I&D Water Treatment Plant located approximately 1.1 miles northeast of SAV, which has a permitted wastewater capacity of 62.5 million gallons per

day, of which only about half is currently used. Operationally, the expanded air cargo and GA development areas associated with the Proposed Project would create additional demand for potable water, sewer services, electricity and other utilities at SAV, but it is not expected that this increased demand would surpass current capacities. Lighting associated with the proposed taxiway expansions and new access roads and parking areas may marginally increase electrical energy needs of SAV; however, this increase would not exceed available supplies provided by Georgia Power.

Consumable Materials Impacts

Construction of all project components of the Proposed Project would require totals of approximately 107,000 CY of fill material, 258,000 SY of asphalt, 260,000 SY of rock base course (aggregate), 251,000 CY of concrete, and 49,000 CY of topsoil. Two construction aggregate suppliers, Martin Marietta and Vulcan Materials Company, are within one mile of SAV. Southeast Ready Mix provides ready mix concrete supplies in Savannah and is located approximately one mile from SAV. Several suppliers of asphalt and construction materials are located within two miles of SAV.

The Proposed Project would not create a demand for construction materials that would be in excess of available area supplies, produce scarcity of high-commodity resources or deplete rare or valuable sources of raw materials unique to the area.

Fuel Consumption Impacts

Two types of fuel are available at SAV: Aviation gasoline (AvGas) (100 Octane Low Lead, or 100 LL) and Jet-A. AvGas is primarily used by piston engines and Jet-A is used by aircraft with turboprop or turbine engines.

The Energy Information Administration reports that Georgia has no proven petroleum reserves and no active crude oil refineries. Two interstate petroleum product pipelines serve the state and the Port of Savannah receives petroleum product inputs from around the world.

Based on information provided for this EA, the expanded air cargo facilities would likely increase the number of Boeing 767 operations at SAV, which would in turn increase the consumption of Jet-A at the Airport. However, with the Proposed Project, fuel consumption associated with the additional cargo aircraft operations is not expected to increase significantly and the existing storage capacity at SAV will sufficiently accommodate the increase in Boeing 767 operations.

5.9.3. IMPACT SIGNIFICANCE

The FAA has not established a significance threshold for natural resources and energy supply; however, a factor to consider has been identified for evaluating the intensity of potential impacts and is listed in **Table 5.9-1**.

Table 5.9-1 Natural Resources and Energy Supply Impact Significance Criteria

Category	FAA Significance Threshold	Factors to Consider
Natural Resources and Energy Supply	The FAA has not established a significance threshold for Natural Resources and Energy Supply	The action would have the potential to cause demand to exceed available or future supplies of these resources

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

Changes in energy demands or other natural resource consumption for most FAA projects will not result in significant impacts. If an EA identifies problems such as demands exceeding supplies, additional analysis may be required in an EIS. Otherwise, it may be assumed that impacts are not significant.

Significance determinations can be made by estimating the amount of natural and energy resources needed for a project and comparing that estimate to local supply and demand information. Local supply and demand information for the assessed resources can be obtained from local utilities and suppliers.

The Proposed Project would not cause unsupportable demands on available natural resources or energy supplies, and construction and operation of the Proposed Project would not require consumable natural and energy resources that would be considered in short supply in Chatham County. Therefore, the Proposed Project is not anticipated to result in a significant impact on this resource category.

5.9.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Because no significant impacts to energy or natural resources are anticipated, mitigation measures are not warranted. To the extent applicable and practical, SAV would consider design measures that reduce energy consumption, solid waste generation, and water consumption, and would apply sustainable construction and engineering practices wherever possible.

5.9.5. CUMULATIVE EFFECTS

Based on available information, it is unlikely that reasonably foreseeable planned development actions on or in the vicinity of SAV would present a cumulatively significant impact on natural resources and energy supply in the future.

5.10. NOISE AND NOISE COMPATIBLE LAND USE

5.10.1. ANALYSIS METHODOLOGY

The noise exposure analyses conducted for this EA included identifying and determining noise impacts for noise-sensitive areas that would be exposed to noise levels of yearly DNL 65 dB or higher. Noise-sensitive land uses typically include residential, educational, health, religious, certain parks and recreational, and cultural (including historical). Areas within the DNL 65 dB or

higher noise exposure contours were evaluated to determine their compatibility with such levels of noise. As discussed in **Section 4.8**, no noise sensitive land uses are included within the current noise contour at SAV. Further, there are no Section 4(f) properties within or near the contour that would need to be evaluated under the constructive use criterion of the Section 4(f) regulation. Last, there are no NRHP-listed or eligible properties within or adjacent to the contour that would need to be evaluated.

Accordingly, a noise screening analysis was conducted for the Proposed Project and retained alternatives using the FAA Area Equivalent Method (AEM) spreadsheet tool (Version 2c SP2). AEM is a mathematical procedure that provides an estimated change in noise contour area for an airport given the types of aircraft and the number of operations for each aircraft. The noise contour area is a measure of the size of the landmass enclosed within a level of noise as produced by a given set of aircraft operations. The AEM produces noise contour areas (in square miles) for the DNL 65 dB noise level and the purpose of AEM is to screen for significant impact within the 65 dB contour area.

AEM is a screening tool for AEDT and a quick way to assess the impact of changes in aircraft mix or number of operations as part of an EA, FONSI, or other environmental noise study. If there is a 17% increase in DNL 65 dB contour area then further analysis is necessary using AEDT. Inputs to AEM were developed in accordance with the operational information and assumptions described in this EA for the Proposed Project and alternatives (**Section 3.2** and **5.1**). **Appendix G** contains AEM screening spreadsheets developed for this EA.

With regard to aircraft-related noise and land use compatibility, the FAA's land use compatibility guidelines contained in Title 14 CFR, Part 150 were used to evaluate noise compatibility. However, the FAA guidelines do not constitute a Federal determination that a specific land use is acceptable or unacceptable under Federal, state, or local laws. The responsibility for planning and defining acceptable land uses for a community rests with local authorities through their zoning laws and ordinances.

5.10.2. SUMMARY OF IMPACTS

5.10.2.1. CONSTRUCTION NOISE

Construction noise would temporarily increase ambient acoustic levels in the immediate vicinity of the construction and land clearing activities. Grading and scraping operations are the noisiest, with such equipment generating noise levels as high as 70 to 95 dB within 50 feet of their operation. Distance rapidly attenuates noise levels, so area residents would likely experience a modest increase in ambient noise conditions during construction hours. The potential noise impact associated with the operation of machinery on-site would be temporary and can be reduced using construction timing and staging. To further minimize noise impacts, construction equipment would be maintained to meet manufacturers' operating specifications. Impacts related to the delivery of materials may be minimized by requiring that the contractor use designated haul

routes to avoid residential and other noise-sensitive receptors. Overall, construction noise is expected to have a minor and temporary impact.

5.10.2.2. AIRCRAFT NOISE AND LAND USE COMPATIBILITY

Table 5.10-1 summarizes the CY 2023 and 2028 AEM screening results for the air cargo relocation Proposed Project and Alternative 1b. The estimated area of the DNL 65 dB noise contour for the Proposed Project is approximately 0.1 square mile greater than the No-Action Alternative in 2023 and 0.2 square mile greater in 2028, for an approximate increase of 6.1%. Further, the estimated area of the DNL 65 dB noise contour for Alternative 1b is approximately 0.4 square mile greater than the No-Action Alternative in both 2023 and 2028, for an approximate increase of approximately 16.1%.

Table 5.10-1 Noise Screening Results

Year	DNL 65 dB Area (square mile)			Percent Change
	No-Action	Proposed Project	Change	
2023	2.4	2.5	0.1	6.1%
2028	2.4	2.6	0.2	6.1%
Year	**DNL 65 dB Area (square mile)**			**Percent Change**
	No-Action	**Alternative 1b**	**Change**	
2023	2.4	2.8	0.4	16.1%
2028	2.4	2.8	0.4	16.1%

Sources: AEM version 2d SP2, 2019.
Values reflect rounding.

5.10.3. IMPACT SIGNIFICANCE

Table 5.10-2 reiterates the significance thresholds and factors to consider established by the FAA for evaluating the intensity of potential noise impacts. If a Proposed Project or alternative(s) results in a significant noise increase and is highly controversial on this basis, a NEPA analysis should include, as appropriate in light of the specific proposal under analysis, information on the human response to noise.

An appraisal of existing noise conditions at SAV indicates that no noise sensitive land uses are included within the current noise contour at SAV. Further, there are no Section 4(f) properties within or near the contour that would need to be evaluated under the constructive use criterion of the Section 4(f) regulation. Last, there are no NRHP-listed or eligible properties within or adjacent to the contour that would need to be evaluated.

The results of the AEM screening indicate that percentage increase in the DNL 65 dB contour area due to the Proposed Project and retained alternatives is less than the threshold value of 17%. Therefore, per FAA regulations no further analysis of noise impacts to noise sensitive areas using AEDT is required for this EA. Based on the foregoing, it can reasonably be concluded that no noise sensitive areas are exposed to an increase of 1.5 dB or more in the 65 DNL dB contour, and no areas would become newly exposed to the 65 DNL dB sound level due an increase of 1.5 dB or greater from the Proposed Project. Therefore, no thresholds indicating significant noise

impact are exceeded and land use compatibility outlined at Title 14 CFR Part 150 is maintained with the Proposed Project.

Table 5.10-2 Noise and Noise-Compatible Land Use Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Noise and Noise-Compatible Land Use	*The action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe*. For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB.	Special consideration needs to be given to the evaluation of the significance of noise impacts on noise sensitive areas within Section 4(f) properties (including, but not limited to, noise sensitive areas within national parks; national wildlife and waterfowl refuges; and historic sites, including traditional cultural properties) where the land use compatibility guidelines in Title 14 CFR Part 150 are not relevant to the value, significance, and enjoyment of the area in question. For example, the DNL 65 dB threshold does not adequately address the impacts of noise on visitors to areas within a national park or national wildlife and waterfowl refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

5.10.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Because the Proposed Project would not result in significant aircraft noise impacts in 2023 or 2028, no mitigation is required or proposed.

5.10.5. CUMULATIVE EFFECTS

The Proposed Project and retained alternatives would not generate substantial aircraft noise impacts and short-term construction noise increases are not expected to be severe. With respect to the ongoing CIP, planned facility expansions in the intermediate term constitutes reasonably foreseeable project(s) that may have a more noticeable impact on noise in the vicinity of SAV when combined with the Proposed Project. However, at this early stage it is uncertain as to whether aircraft operational activity associated with additional associated operations would exceed established significance criteria. Therefore, noise analysis of potential impacts would be subject to additional analysis, inclusive of noise conditions documented in this EA, in a future NEPA study. If additional analysis shows that significant noise impacts are generated by aircraft in the future, these impacts would be mitigated appropriately. Otherwise, reasonably foreseeable development projects in Chatham County have little potential to result in a substantial increase in noise in the vicinity of SAV.

5.11. SOCIOECONOMICS, ENVIRONMENTAL JUSTICE AND CHILDREN'S HEALTH AND SAFETY RISKS

5.11.1. ANALYSIS METHODOLOGY

Socioeconomic impacts having potential to result from the Proposed Project were evaluated based on the thresholds of significance outlined in FAA Order 1050.1F to include:

- Extensive relocation of residents and availability of replacement housing;
- Extensive relocation of community businesses that would create severe economic hardship for the affected communities;
- Disruptions of local traffic patterns that substantially reduce the levels of service (LOS) of the roads serving the Airport and its surrounding communities; and
- A substantial loss in community tax base.

Impacts were determined through the evaluation of the areas affected. Potentially affected land use, residences, commercial buildings, and transportation facilities were identified through GIS analysis.

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that Federal agencies include environmental justice as part of their mission by identifying and addressing as appropriate, the potential for disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations, low-income populations, and Native American tribes (DOT, 1997). DOT Order 5610.2, *Environmental Justice in Minority and Low-Income Populations,* implements EO 12898 (DOT, 1997) and was used by FAA for this analysis.

For purposes of this analysis, minority populations and low-income populations were defined as follows:

- A minority is defined as a person of Hispanic or Latino origin of any race; Black or African American; Asian; American Indian or Alaskan Native; and Hawaiian or Pacific Islanders.
- A low-income person is defined as a person living below poverty. The U.S. Census Bureau uses a set of money income thresholds that vary by family size and composition to determine who is in poverty. If a family's total income is less than the established threshold, then that family and every individual in it is considered in poverty. The official poverty thresholds do not vary geographically, but are updated annually to account for inflation.

Environmental justice impacts were evaluated through quantification of populations and households affected by land acquisition and potential noise impacts for the Proposed Project to

determine if there would be a disproportionately high adverse impact on minority and low-income populations and households. Census data was used to determine the populations and households affected by the Proposed Project.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risk*, requires Federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children and ensure that its actions address any disproportionate risks. Environmental health risks and safety risks include risks to health or to safety that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they might use or be exposed to. This evaluation was based on the Proposed Project's potential to result in direct impacts to children in a residential or business setting within the DSA.

5.11.2. SUMMARY OF IMPACTS

5.11.2.1. SOCIOECONOMICS

The Proposed Project would temporarily increase traffic on area roads during the construction phase as a result of construction employee commuting, construction material delivery, and demolition debris haul-off. Local area roadways and intersections currently operate within their design capacities and at acceptable Levels of Service (LOS). The temporary increase in traffic due to construction-related vehicle trips would not be expected to reduce LOS to unacceptable levels during the construction phase. Each individual project would include design elements to minimize impacts to traffic by designating the most efficient construction vehicle routes with the least impact to local traffic patterns.

Both retained Proposed Project Alternatives would be expected to increase traffic on Gulfstream Road on an ongoing basis due to an increase in air cargo operations and the resulting truck trips generated by increased cargo volume being delivered to regional destinations. Additional staffing may be required for on-airport air cargo loading and unloading activities, resulting in increased traffic due to additional employee commute trips. **Table 5.11-1** summarizes traffic conditions at the intersection of Gulfstream Road and Graham Drive, both for current conditions and under the maximum traffic conditions expected with implementation of Alternative 1B. Because traffic disperses with increasing distance from the facility, it can be assumed that impacts and more distant locations would similar in nature or less than what is summarized here.

The Proposed Project would result in minimal delay increases for the northbound right-turn approach at the affected intersection during the AM peak hour (0.2 second per vehicle), which would not reduce the LOS. All other approaches at the affected intersection would not experience increased delay times or reduced LOS.

Table 5.11-1 Traffic Volume Summary

Movement	Control Type	Existing Conditions			Alternative 1B Conditions		
		Volume (Vehicles/Hour)	LOS	Delay (Seconds)	Volume (Vehicles/ Hour)	LOS	Delay (Seconds)
A.M. Peak Hour							
Eastbound Through and Right Turn	Free	864	A	0	864	A	0
Westbound Through	Free	500	A	0	522	A	0
Westbound Left Turn	Free	204	B	12.3	204	B	12.3
Northbound Right Turn	Stop Sign	105	C	23.2	105	C	23.4
P.M. Peak Hour							
Eastbound Through and Right Turn	Free	561	A	0	561	A	0
Westbound Through	Free	1050	A	0	1072	A	0
Westbound Left Turn	Free	407	B	12.1	407	B	12.1
Northbound Right Turn	Stop Sign	77	B	14	77	B	14

LOS = Level of Service
Sources AECOM 2019

5.11.2.2. ENVIRONMENTAL JUSTICE

Section 4.10 lists the Census Block Groups present within the SSA and a summary of race, ethnicity, and poverty characteristics. As discussed in **Section 4.10**, within the SSA the level of minority population is comparable to state, regional and national trends, while low income populations are relatively low. The area has a comparatively low elderly population, whereas populations under five years of age are comparatively high. Noise screening evaluations using the FAA Area Equivalent Method indicate that the size and extent of the DNL 65 dB noise contour will not increase substantially compared to the No-Action Alternative (see **Section 5.10**). Given that the existing/No-Action contours remain largely on airport property and do not impact noise-sensitive land uses surrounding the airport, significant noise impacts would not occur with the Proposed Project and there would be no disproportionate noise impacts on these populations.

Based on the analysis completed, the Proposed Project would not result in a disproportionately high and adverse impact on minorities, ethnic groups, Tribal nations, or low-income populations.

5.11.2.3. CHILDREN'S HEALTH AND SAFETY

The Proposed Project would not result in the acquisition or relocation of any schools, child care centers, or other similar facilities. Because the DNL 65 dB noise contour would not increase substantially compared to the No-Action Alternative/existing conditions, no schools or child care facilities would be affected by significant changes in noise levels associated with the Proposed Project. Since there are no schools, daycare centers, or other similar facilities within or adjacent to the DSA and the proposed improvements would be located entirely on the restricted Airport property, the Proposed Project is not anticipated to increase environmental health and safety risks or exposures to children in the surrounding community. There would be no disproportionate health and safety risk to children resulting from the Proposed Project.

5.11.3. IMPACT SIGNIFICANCE

There is no FAA impact significance threshold for evaluation of socioeconomic, environmental justice or risk to children's health and safety under the NEPA. FAA considers the factors listed on **Table 5.11-2** during NEPA evaluations in accordance with Federal regulations and programs such as the Civil Rights Act of 1964, EO 12898, EO 13045 and the Uniform Relocation Assistance and Real Property Acquisitions Policy Act.

Table 5-11.2 Socioeconomic, Environmental Justice and Children's Health Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Socioeconomics, Environmental Justice, Children's Health and Safety Risks	The FAA has not established significance thresholds for Socioeconomics, Environmental Justice, Children's Health and Safety	Socioeconomics: The action would have the potential to: • Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area); • Disrupt or divide the physical arrangement of an established community; • Cause extensive relocation when sufficient replacement housing is unavailable; • Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities; • Disrupt local traffic patterns and substantially reduce the LOS of roads serving an airport and its surrounding communities; or • Produce a substantial change in the community tax base.

Category	FAA Significance Thresholds	Factors to Consider
		Environmental Justice: The action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population, i.e., a low-income or minority population, due to: • Significant impacts in other environmental impact categories; or • Impacts on the physical or natural environment that affect an environmental justice population in a way that the FAA determines are unique to the environmental justice population and significant to that population. Children's Health/Safety: The action would have the potential to lead to a disproportionate health or safety risk to children.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

According to FAA Order 1050.1F, significant impacts would occur if there were disproportionately high and adverse impacts on low-income and minority populations; disproportionate health and safety risks to children; extensive relocation of residents without sufficient relocation housing available; relocation of businesses that would create severe economic hardship; disruption of traffic patterns affecting the LOS on area roads; and a substantial loss in community tax base. The analysis presented above does not indicate that any of these thresholds would be exceeded.

5.11.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Since significant socioeconomic, environmental justice, and children's health and safety risks impacts would not occur under the Proposed Project, mitigation measures are not warranted.

5.11.5. CUMULATIVE EFFECTS

Other past, present, and reasonably foreseeable development projects in Chatham County have little potential to generate extensive residential and business relocations, alter or degrade local transportation patterns, or disrupt established or planned communities. The limited socioeconomic, environmental justice, and children's health impact of the Proposed Project, when considered in addition to those associated with other development projects, is not expected to lead to substantial cumulative impacts on any of these management activities.

5.12. WETLANDS

The implementation of the Proposed Project would result in approximately 13.2 acres of impacts to wetlands and compensatory mitigation is proposed to offset these impacts.

5.12.1. ANALYSIS METHODOLOGY

Pursuant to Federal and state wetlands regulations, impacts to wetlands must first be avoided to the greatest extent practicable and for those impacts which cannot be avoided, they must be minimized. Assessment of unavoidable wetland impacts includes those areas that would be directly affected by construction activities such as paving, grading, and clearing activities (impact boundary). The resulting information was incorporated into a GIS database, which was subsequently used to assess the potential project related impacts on the wetland communities within the BSA.

Potentially impacted wetlands were further assessed using the *Savannah District's 2018 Standard Operating Procedure for Compensatory Mitigation* (2018 SOP). This methodology is applicable in the geographic boundaries of the State of Georgia and provides instructions to aid applicants in the calculation of credits associated with proposed impacts to waters of the U.S. as regulated under Section 404 of the CWA. Specifically, this document provides a methodology for quantifying the functional impairments (i.e., mitigation credits owed) to aquatic resources in accordance with the requirements set forth in the Compensatory Mitigation for Losses of Aquatic Resources; Final Rule (2008 Rule; 33 CFR Parts 325 and 332). The existing qualitative functional capacity (FC) score of freshwater wetlands proposed for impacts is measured by assessing the following functions:

- Water Storage
- Biogeochemical Transformation
- Maintain Wetland Vegetative Community
- Maintain Wetland Faunal Community

Based upon the results, a wetland is assigned a categorical FC score of High, Moderate, or Low. The FC score of the existing wetland is then put through a Qualitative Assessment for Adverse Impacts, which considers the following factors to calculate mitigation credits owed:

- Type of Impact
- Duration of Impact

The amount of mitigation credits owed will then influence selection of a mitigation bank that adequately compensates for an aquatic resource loss. Appendix 11.1 within the *2018 SOP*, entitled *Guidelines to Evaluate Proposed Mitigation Bank Credit Purchases* provides recommendations to aid permittees when selecting credits at USACE approved mitigation banks, which mainly considers:

- Similar aquatic resource type

- Distance between impact site and mitigation bank

5.12.2. SUMMARY OF IMPACTS

Construction of the Proposed Project would result in approximately 13.2 acres of impacts to wetlands. Impacts to other surface waters (ditches) located within the infield area are not anticipated. As part of the state and Federal permitting process, there have been two formal verifications of and/or permits for regulated jurisdictional waters within the BSA.

The first of which was for the NAD Department of the Army Permit (SAS-2010-00289), which is valid through June 30, 2021 (**Appendix I**). The northwest portion of the proposed project study area overlaps with a portion of the NAD permit, which previously authorized impacts to several wetlands within the footprint, which have since been cleared, filled, and graded for site development. Therefore, no wetlands exist within this area. The area currently contains non-wetland stormwater ponds and ditches.

The second federal verification, from the USACE was for a jurisdictional determination (JD) for the GANG leased areas, which covers a portion of the southeast quadrant of the proposed project study area (SAS-2015-00634). This JD verification remains valid until July 15, 2021 (**Appendix I**). The area contains non-wetland stormwater ponds and ditches in addition to a 13.39 acre wetland, which is the main wetland that would be impacted by the Proposed Project.

Figure 5.12-1 is a graphical depiction of the above described areas. Portions of the study area are not currently covered under a valid permit or JD from the USACE, however there are no wetlands within those areas. The only aquatic features within those areas not covered by the above-mentioned NAD permit and ANG JD would be stormwater ditches, associated with airport drainage plan.

Table 5.12-1 shows the results of the acres of impact, the 2018 SOP assessment FC score, the impact category, and the duration of impact. Assuming that the 13.2 acre impact for the stormwater pond would be considered a direct impact, The functional loss of wetland values as a result of the 13.2 acres of impact would be compensated with the purchase of 79.2 grandfathered wetland mitigation credits from a USACE-approved mitigation bank that services the project area and provides appropriate functional replacement credits. Credit requirements were calculated using the *2018 SOP* worksheets and are provided in **Appendix I**.

Table 5.12-1 2018 Standard Operating Procedure for Compensatory Mitigation Resulting from the Proposed Project

Acres of Impact	Functional Capacity (FC) Score	Impact Category	Duration of Impact	Product – 2018 Wetland Credits Owed	Conversion to Grandfathered Wetland Credits Owed
13.2	Moderate 0.75	Hydrologic Alteration – Impound 1.0	Permanent/ Reoccurring 1.0	9.9	79.2

Source: USACE, 2018.

5.12.3. IMPACT SIGNIFICANCE

During the NEPA process, the FAA considers the factors listed on **Table 5.12-2** in making a determination of an action's potential impact on wetlands. Each individual project and alternative at SAV would be evaluated against these criteria during NEPA review.

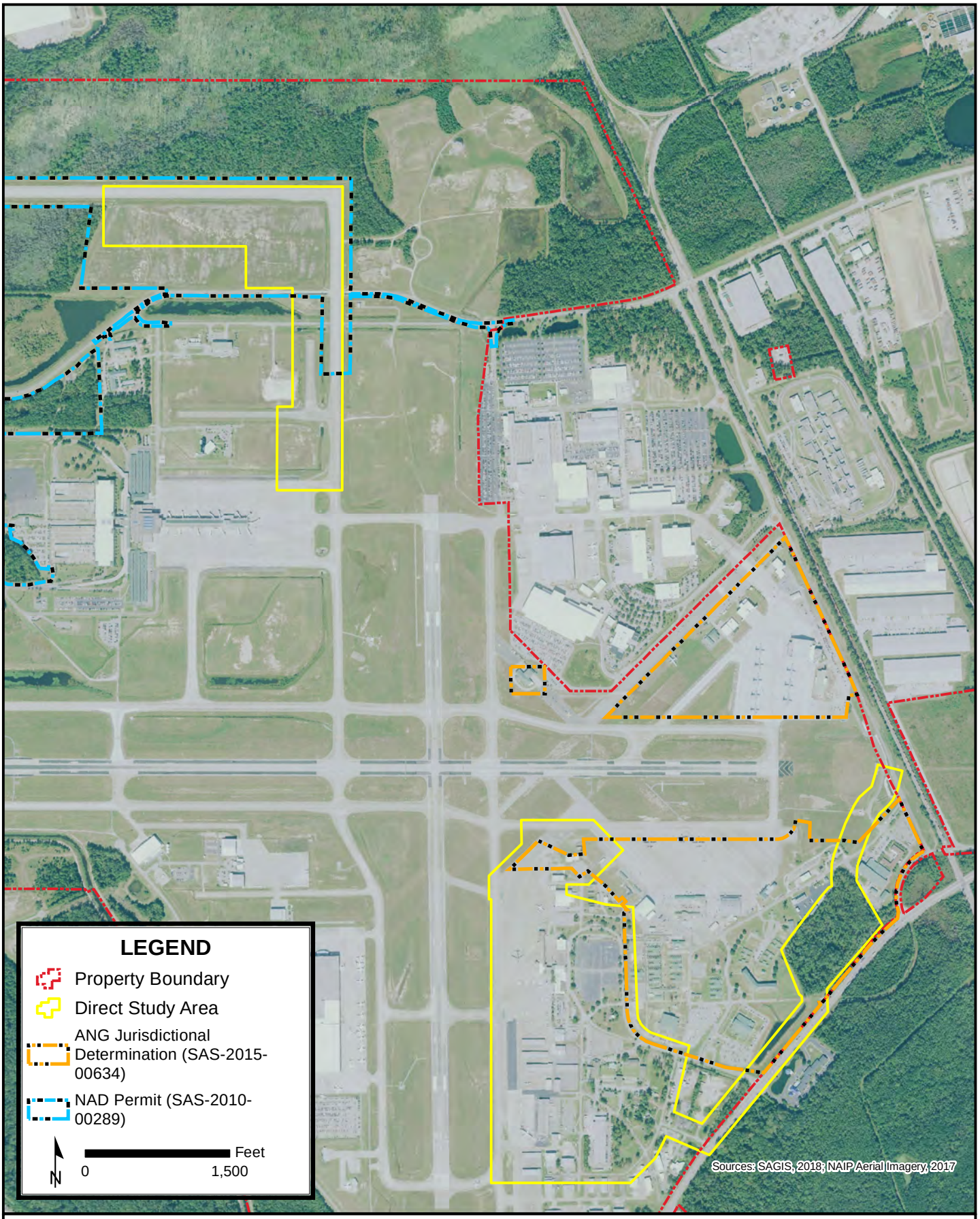
With regard to impact thresholds provided in **Table 5.12-2**, the following statements can be made:

- The Proposed Project would not adversely affect the function of wetlands to protect the quality of municipal water supplies, including sole source, potable water aquifers.

- The Proposed Project would not substantially alter the hydrology needed to sustain the functions and values of the affected wetlands or any wetlands to which they are connected. Although 13.2 acres of wetlands would be impacted by the Proposed Project, it would not substantially alter the hydrology needed to sustain the functions and values of connected wetlands.

- Through the use of mitigation measures, the Proposed Project would not substantially reduce the affected wetlands' ability to retain floodwaters or storm-associated runoff. Because the project is designed to accommodate additional stormwater runoff with additional storage capacity, The Proposed Project would increase the affected wetlands' ability to retain floodwaters. Therefore, threats to public health, safety, and welfare are not expected. Therefore, threats to public health, safety, and welfare are not expected.

- The Proposed Project would not adversely affect the maintenance of natural systems that support wildlife and fish habitat or economically-important timber, food, or fiber resources in the affected or surrounding wetlands.



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SAVANNAH/HILTON HEAD INTERNATIONAL AIRPORT

SHORT-TERM DEVELOPMENT PROGRAM ENVIRONMENTAL ASSESSMENT

USACE FORMAL WETLAND VERIFICATIONS MAP

FIGURE 5.12-1

The Proposed Project would be consistent with applicable state wetland strategies. Pursuant to Federal and state wetlands regulations, impacts to wetlands have been avoided to the greatest extent practicable and for those impacts which could not be avoided, they were minimized.

Table 5.12-2 Wetland Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Wetlands	*The action would:* *1. Adversely affect a wetland's function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;* *2. Substantially alter the hydrology needed to sustain the affected wetland system's values and functions or those of a wetland to which it is connected;* *3. Substantially reduce the affected wetland's ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare;* *4. Adversely affect the maintenance of natural systems supporting wildlife or fish habitat or economically important timber, food or fiber resources of the affected or surrounding wetlands;* *5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or* 6. *Be inconsistent with applicable state wetland strategies.*	None specified.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

5.12.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

Numerous stormwater management alternatives were identified (see **Chapter 3**), and it was determined that only the Proposed Project fully responded to the stated purpose and need and was considered practicable for the purposes of NEPA. Therefore, there are currently no practicable alternatives available that avoid impacts to wetlands per EO 11990.

Using the *Guidelines to Evaluate Proposed Mitigation Bank Credit* Purchase (Appendix 11.1 of the *2018 SOP*), the Proposed Project would require 79.2 compensatory mitigation credits which would most likely be purchased from AA Shaw Mitigation Bank (depending upon credit availability at time of purchase). According to the guidelines, preference should be given to banks with similar resource types that occur within the same 8-digit HUC and Primary Service Area (PSA). The Proposed Project occurs in 8-digit HUC 03060109 and PSA as the AA Shaw mitigation bank. Furthermore, there are no other mitigation banks that meet these parameters and have availability of credits within the same resource type. Analyses are provided in **Table 5.12-3**.

Wildlife Hazard Management

Converting the forested wetland to an open stormwater pond has the potential to attract nuisance wildlife. The BA coordinated with USFWS defined habitats throughout the BSA. Current habitats located within BSA include unvegetated developed areas, hard road surfaces, maintain lawns – streetscapes, maintained ditches – roadside swales, an approximate 1.6-acre stormwater POND 96, approximately 3.1-acres of intact hardwood upland forest and an approximate 13.2-acre sweetgum seepage forested wetland.

These habitats are currently monitored and part of the current Wildlife Hazard Management Plan (WHMP) maintained by Airport Operations and USDA APHIS Wildlife Services biologists. The WHMP provides staff with appropriate tools to manage the goal of minimizing wildlife populations on site.

The above-referenced habitats within the BSA offer little habitat for wildlife except for POND 96, and mixed hardwood upland / wetland areas. These areas provide typical habitats associated with all bird species, along with whitetail deer, wild turkey, alligators, fox and coyotes. These areas are currently maintained to help minimize the potential of them becoming wildlife attractants. As depicted on the project figures and ALP, there are a series of buildings located between POND 96 and the mixed forested upland/wetland area. These buildings are part of the GANG leasehold and provide for a visual and partial physical barrier between these areas and the aircraft movement areas.

According to design guidelines in FAA AC 150/5200-33B, *Hazardous Wildlife Attractants On or Near Airports*, wet detention areas, as proposed with POND TH_25 of the Proposed Project, are recommended to be more than 10,000 feet from an active Air Operations Area that accommodates turbine-powered aircraft operations. None of the alternatives identified for the stormwater pond can accommodate the recommended 10,000 foot separation distance and the Proposed Project is the only alternative that fully achieves the stated purpose and need and meets all applicable alternatives evaluation criteria (see **Chapter 3**).

Because the southeast quadrant drainage improvements cannot be located outside the FAA recommended separation distance, design measures will be required to minimize wildlife attraction pursuant to Section 3-7 of the FAA AC 150/5200-33B by utilizing steep-sided, rip-rap lined pond edges for wet detention where practicable. In addition, remaining fringe vegetation

consisting of mature hardwoods located east of the BSA will be evaluated and removed should they offer roost habitat adjacent to POND TH_25.

Further, once POND TH_25 is constructed, Airport Operations and USDA APHIS Wildlife Services biologists will specifically monitor this area for nuisance wildlife. As with other similar wet detention ponds on the airport, the tools available to staff in the WHMP will be employed to reduce wildlife use. Should these drainage improvements present atypical attractants, SAV will evaluate the need for the use of physical barriers which may include, for example, overhead wires or line, or synthetic cover or floating devises that cover the exposed surface to further avoid and / or reduce wildlife hazards.

Table 5.12-3 Resource Analysis

IMPACT SITE DATA				
Resource Category	**Service Area; HUC**	**Distance to Impact Site**	**Credits Needed**	
Freshwater Wetland	PSA; 03060109	--	79.2	
MITIGATION BANK DATA				
Resource Category	**Service Area; HUC**	**Distance to Impact Site**	**Sufficient Credits Available**	**Recommended for Use**
Primary Service Area (PSA) Banks				
AA Shaw				
Freshwater Wetland	PSA; 03060109	28 miles	Yes	**X**
Bath Branch				
Stream	PSA; 03060106	102 miles	Out of kind	
Brushy Creek				
Freshwater Wetland	PSA; 03060108	96 miles	No	
Stream	PSA; 03060108	96 miles	Out of kind	
Secondary Service Area (SSA) Banks				
Black Creek				
Freshwater Wetland	SSA; 03060202	23 miles	Partial (62.72)	
Margin Bay				
Freshwater Wetland	SSA; 03070201	14 miles	Yes	
Ogeechee River				
Freshwater Tidal Wetland	SSA; 03060202	13 miles	out of kind	
Old Thorn Pond				
Freshwater Wetland	SSA; 03060202	26 miles	Partial (58.19)	
Wilhelmina Morgan				
Freshwater Wetland	SSA; 03060204	5 miles	Yes	
Yam Grandy				
Freshwater Wetland	SSA; 03070107	74 miles	Yes	
Stream	SSA; 03070107	74 miles	Out of kind	

Source: ESI, 2019.

5.12.5. CUMULATIVE EFFECTS

While past and present development projects in the vicinity of SAV have resulted in modification to the existing landscape and a reduction in wetlands, reasonably foreseeable projects are not expected to generate substantial changes in natural habitats or result in an appreciable further reduction in wetlands. The potential addition of residential, commercial and transportation developments could result in additional impacts to wetlands; however, the net effect of these projects is expected to be minimal and mitigation for these impacts would be required by both state and Federal agencies. Required mitigation would off-set these impacts and result in minimal to no overall impact to wetlands.

The 13.2 acres of wetland impacts associated with the Proposed Project, when considered with past, present and reasonably foreseeable wetland impacts, is not expected to lead to substantial cumulative wetland impacts.

5.13. FLOODPLAINS

5.13.1. ANALYSIS METHODOLOGY

Potential floodplain encroachments associated with the Proposed Project were determined from a comparison of conceptual project drawings and FEMA FIRM. DOT Order 5650.2, *Floodplain Management and Protection*, and FAA Orders 1050.1F and 5050.4B contain policies and procedures for implementing EO 11988 and evaluating potential floodplain impacts. These orders require the FAA to review potential floodplain impacts, and where encroachment would occur, take steps to minimize potential harm to or within the base floodplain. In case of significant encroachment, a finding is required to confirm there is no practical alternative and all measures to minimize harm are included in the project.

5.13.2. SUMMARY OF IMPACTS

As described in **Section 4.12.1**, approximately 1.5 acres of Zone A SFHA intersect with the DSA for the Proposed Project. The specific project planned within this encroachment area is the Project #1 (Air Cargo Ramp West – Phase I). As part of the EA process, a study of a range of reasonable alternatives, including different locations for these facilities, was performed. No practicable alternative avoiding floodplain impacts, which met the project purpose and need, was identified.

The Proposed Project would not result in a measurable increase in flood elevation as the floodplains are characterized by shallow flooding over a somewhat large area. Compared to the No-Action Alternative, the Proposed Project would generate no measurable change in flood elevations. Adverse indirect impacts to beneficial floodplain values, cultural features, or wildlife habitat is not expected.

Based on FEMA and NEPA guidance, floodplain impacts are considered significant if the Proposed Project would result in: 1) a high probability of loss of human life, 2) substantial encroachment-related costs or damage or cause interruption of aircraft service or loss of a vital

transportation facility, and 3) notable adverse impacts on natural and beneficial floodplain values. The analysis of potential floodplain impacts indicates that the Proposed Project would encroach upon a 100-year floodplain. However, this unavoidable encroachment is not considered to exceed any one of the criteria listed above and a Federal finding is not required based on the following conclusions:

- **The Proposed Project does not have a high probability of loss of human life**. The Proposed Project would not increase flood potential or have a high probability of loss of human life.

- **The Proposed Project does not have substantial encroachment-related costs or damage and would not cause interruption of aircraft service or loss of a vital transportation facility**. Substantial encroachment-related costs or damage are not expected. The Proposed Project would not increase the likelihood of interruption of aircraft service or loss of a vital transportation facility.

- **The Proposed Project would not have an adverse impact on natural and beneficial floodplain values**. The Proposed Project would not erode or contaminate floodplain substrate in a manner that would reduce the floodplain's agricultural value.

  There are no nearby aquacultural activities occurring in the floodplain that would be disrupted by the Proposed Project. Further, coordination with the USFWS for this EA confirms that the 1.5 acres of floodplain loss would not be expected to significantly disrupt the floodplain's ability to provide food, water and cover to aquatic or terrestrial organisms.

  The impacted floodplain area provides limited value for flood volume storage and infiltration due to its high water table and poorly-drained soils. Existing flood control capabilities in the area of would be retained and the Proposed Project would not constitute a significant alteration in water flow that would result in unacceptable upstream or downstream flooding. Because the Proposed Project would include above-grade construction, drainage system improvements would be designed to properly convey and store the stormwater associated with the new facilities. The improvements would be designed such that the Proposed Project would not be expected to impede floodwater flows during major storm events. To the extent practical, compensatory storage could be provided by excavating material within or adjacent to the same floodplain to be used as fill.

  The Proposed Project's design would comply with local floodplain management policies and regulations, which promote designs to minimize flood impacts. Further, implementation of the minimization and mitigation measures listed at **Section 5.13.4**, as well as related measures identified throughout this EA, would serve to further minimize or eliminate any adverse effects. Therefore, the Proposed Project would not have an adverse effect on natural and beneficial floodplain values

5.13.3. IMPACT SIGNIFICANCE

FAA's NEPA significance threshold for floodplains (**Table 5.13-1**) was established in accordance with DOT Order 5650.2*,* as well as EO 11988, which each compel Federal agencies to avoid significant floodplain encroachments associated wherever practicable, minimize the effects of Federal actions on floodplains, and preserve natural and beneficial floodplain values that are adversely affected.

Significant floodplain encroachments involve actions that result in: 1) considerable probability of loss of human life; 2) likely future damage that could be substantially costly or widespread, including loss of a vital transportation facility; and/or 3) notable adverse impact on natural and beneficial floodplain values. Paragraph 4.k of Order 5650.2 qualifies "natural and beneficial floodplain values" as those including, but not necessarily being limited to: natural moderation of floods; water quality maintenance; groundwater recharge; fish, wildlife, and plants; open space; natural beauty; scientific study; outdoor recreation; agriculture; aquaculture and forestry. As indicated in preceding sections, the Proposed Project would not violate established significance criteria.

Table 5.13-1 Floodplain Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Floodplains	*The action would cause notable adverse impacts on natural and beneficial floodplain values*. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, *Floodplain Management and Protection.*	None specified.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

5.13.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

As referenced in the preceding sections, Proposed Project drainage system improvements would be designed to properly convey and store stormwater flows and would not impede floodwater flows during major storm events. The Proposed Project's design would comply with local floodplain management policies and regulations, which promote designs to minimize flood impacts. Adverse effects could be further minimized by elevating all facilities above the base flood elevation, applying construction period erosion and sedimentation controls, and using pervious surfaces for stormwater retention and treatment where possible. **Section 5.14.4** further discusses the state and local stormwater design requirements applicable to the Proposed Project.

5.13.5. CUMULATIVE EFFECTS

Given the physical setting of Chatham County, other proposed airport and off-airport development actions have the potential to involve 100-year floodplains. However, because the area surrounding the Airport is subject to growth management and flood management regulations, the

number of new encroachments is expected to be low. Development project sponsors would be required to comply with local floodplain management regulations. As such, no substantial cumulative impacts to base flood elevations from the Proposed Project, when considered in conjunction with other development actions, are anticipated.

5.14. SURFACE/GROUNDWATER RESOURCES

5.14.1. ANALYSIS METHODOLOGY

The analysis of potential impacts to water quality was prepared in accordance with the principal objectives of the Federal *Water Pollution Control Act* and subsequent *CWA,* which are to restore and maintain the chemical, physical, and biological integrity of national waters. A qualitative evaluation of potential water quality impacts was performed by reviewing Federal, state, and county regulations, and analyzing the current drainage system.

5.14.2. SUMMARY OF IMPACTS

Construction

The general drainage pattern and drainage systems for the Proposed Project drainage area would remain as described in **Section 4.12.2**. Changes to the existing drainage system within the DSA would occur as a result of the Proposed Project. Within the 244-acre DSA, approximately 46 acres of new impervious area would be constructed at the Airport initially; approximately 2.5 additional acres of new impervious area would be constructed as a result of the max buildout of the Air Cargo Relocation project. Approximately 244 acres of land (i.e., the Proposed Project DSA), would be disturbed by clearing, excavation, and construction activities associated with the Proposed Project. Therefore, short-term and temporary water quality impacts may result from construction activities. The potential impacts may include increases in sedimentation and turbidity during rainfall events. Since these activities would also involve the use of vehicles and equipment, fuels and lubricants, and the storage of construction materials, there is a risk of release or spills of construction-related hazardous materials or petroleum substances. In this regard, the Proposed Project has the potential to exceed applicable state of Georgia water quality standards promulgated in Georgia's Rules and Regulations for Water Quality Control (Chapter 391-3-6-.03). This potential exists as areas of disturbed land would be exposed to rainfall, which could result in stormwater discharges with suspended solids and sediment transport in excess of applicable water quality standards. Turbidity and sedimentation have the potential to adversely affect water quality, aquatic organisms, and benthic habitats. The Proposed Project is also expected to involve the use of fuels, lubricants, solvents, paints, and other materials during construction. A release, spill, or improper storage would have the potential to introduce these materials and substances into surface waters in excess of state of Georgia water quality standards.

Operations

The pollutants associated with stormwater runoff from parking lots, roadways, aircraft aprons, runways, and taxiways such as oils, greases, heavy metals and other pollutants associated with

industrial activity at airports are expected to increase with the construction of the Proposed Project. Most of the pollutants from stormwater runoff due to the Proposed Project will be from areas where industrial activity occurs such as aircraft fueling, maintenance facilities, storage facilities, parking lots, roadways, etc. Pollutants from stormwater runoff from the proposed taxiway improvements and aprons will be in low concentrations where it can be considered a minimal impact.

The closest water/wastewater treatment plant is the I&D Water Treatment Plant located approximately 1.1 miles northeast of SAV, which has a permitted wastewater capacity of 62.5 mgd, of which only about half is currently used.[20] The Proposed Project would not significantly increase water consumption and wastewater volumes at SAV compared to existing conditions. Overall, based on available information it is not anticipated that substantial changes to water supply/demand and wastewater discharge capacity would occur due to implementing the Proposed Project.

In addition, the construction of Project #8 (SE Quadrant Drainage Improvements) will consist of new facilities to treat and attenuate the stormwater runoff generated from existing impervious surfaces, as well as any new impervious surfaces associated with the Proposed Project.

5.14.3. IMPACT SIGNIFICANCE

Table 5.14-1 states the significance thresholds and factors to consider established by the FAA for evaluating the intensity of potential impacts to surface water and ground water resources.

Table 5.14-1 Surface Water/Groundwater Resources Impact Significance Criteria

Category	FAA Significance Thresholds	Factors to Consider
Surface Waters	*The action would:* 1. *Exceed water quality standards established by Federal, state, local, and tribal regulatory agencies; or* 2. *Contaminate public drinking water supply such that public health may be adversely affected.*	The action would have the potential to: • Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values; • Adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or • Present difficulties based on water quality impacts when obtaining a permit or authorization.
Groundwater	*The action would:*	The action would have the potential to:

[20] Ecological Planning Group, LLC. *Red Zone Water Supply Management Plan*, prepared for the Chatham County – Savannah Metropolitan Planning Commission. January 2018.

Category	FAA Significance Thresholds	Factors to Consider
	1. Exceed groundwater quality standards established by Federal, state, local, and tribal regulatory agencies; or 2. *Contaminate an aquifer used for public water supply such that public health may be adversely affected.*	• Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such values; • Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or • Present difficulties based on water quality impacts when obtaining a permit or authorization.

Sources: FAA Order 1050.1F, Exhibit 4-1, July, 2015.

The Proposed Project has some potential to exceed applicable water quality standards during construction as described in **Section 5.14.1.2**. However, project-specific BMPs; implementation of erosion control measures specified in FAA AC 150/5370-10H; acquiring necessary permits (**Section 5.14.4**); and the implementation of project-specific design criteria to minimize erosion and sedimentation would prevent and/or minimize potential water quality impacts. As a result of these control measures, significant and long-term water quality impacts resulting from construction activities associated with the Proposed Project would not occur.

There is a possibility of the release of contaminants to groundwater during construction. However, project-specific BMPs and Stormwater Pollution Prevention Plans (SWPPPs) to be designed for the Proposed Project would prevent or minimize the potential release of contaminants into groundwater. The BMPs and SWPPPs would require measures to prevent spills, provide swift response to accidental spills, and define acceptable on-site storage of fuel and lubricants. Given the availability of regionally-accepted BMPs and the design of project-specific plans, the Proposed Project would not have a substantial impact on groundwater resources.

5.14.4. IMPACT AVOIDANCE, MINIMIZATION AND MITIGATION

As described in preceding sections, measures to maintain water quality are available and would be implemented to minimize construction and operational impacts. These measures include project-specific design measures, BMPs, and pollution control plans designed to prevent a project from exceeding applicable water-quality standards. The public drinking water supplies and wastewater treatment systems would accommodate increases in water resource demands associated with the development of the project site.

For construction activity related to the Proposed Project, a NPDES stormwater permit implementing appropriate pollution prevention techniques will be obtained from the GADNR's

Environmental Protection Division pursuant to Georgia's Rules and Regulations Chapter 391-3-6-.16.

All proposed modifications to existing stormwater ponds, or the construction of new stormwater wet ponds, will consider the design guidelines provided in the FAA AC 150/5200-33B, the CSS to the GSMM, and the City of Savannah Stormwater Management Local Design Manual. Chatham County's Stormwater Management Ordinance requires that a stormwater management plan (SWMP) be developed for all projects required to have a permit for land disturbing activities. These SWMPs must include better site design practices for stormwater management, treat stormwater runoff quality, provide stream channel protection, and provide downstream overbank flood protection. The SWMPs must also provide extreme flood protection such that there is no increase in flood elevations upstream or downstream from the 100-year flood. The City of Savannah Stormwater Management Ordinance mandates the following minimum stormwater design standards for development projects:

1. There shall be no increase in the base flood elevation within the special flood hazard area (SFHA), as delineated by the latest National Flood Insurance Program (NFIP) maps, or in any areas that are known to have flooded repetitively, or areas where a hydrologic model predicts flooding will occur in the 100-year, 24-hour event. Where hydrologic model results are conflicting, the stormwater management director shall decide which model will be used.

2. Finished floor elevations for structures not included in the SFHA shall be equal to or higher than that shown on the original subdivision plat or neighborhood grading and drainage plan or as determined by a registered civil engineer.

3. The post-development peak rate of runoff shall not exceed the predevelopment peak rate of runoff for the 1-, 5-, 10-, and 25-year, 24-hour events.

4. If drainage calculations indicate that post-development runoff will exceed predevelopment runoff, then on-site detention for the 1-, 5-, 10-, and 25-year, 24-hour events is required at a discharge rate equal to the pre-developed 24-hour peak rate of discharge for all storm events from the 1-, 5-, 10-, and including the 25-year event, or the capacity of the existing downstream conveyance system must be upgraded in capacity to accommodate the additional 25-year, 24-hour discharge generated by the new development.

Based on the previous analysis, Project #8 will satisfy the requirements of the City of Savannah and Chatham County Stormwater Management Ordinances.[21]

[21] AECOM. *Savannah/Hilton Head International Airport, SE Quadrant Drainage Area Stormwater Master Plan.* May 2019.

5.14.5. CUMULATIVE EFFECTS

Future development at SAV and other reasonably foreseeable development projects in the vicinity of the Proposed Project could result in impacts to water quality that exceed applicable water quality standards. Temporary impacts may result from land clearing, site disturbance, and grading associated with construction activities. Temporary construction impacts could be minimized through the use of project specific BMPs and applicable Federal, state, and local construction mitigation guidelines. Permanent water quality impacts could result from stormwater runoff from newly constructed impervious surfaces. Each component of the Proposed Project would be expected to comply with applicable state regulations that require on-site attenuation and treatment of stormwater. In summary, the cumulative development projects have potential to generate water quality impacts. However, it is expected that existing programs, policies, permits and regulatory requirements would prevent and/or minimize the potential water quality impacts to a level below a substantial impact. Therefore, the water quality impacts of the Proposed Project and the potential impacts of other development projects are not expected to lead to substantial cumulative water quality impacts.

CHAPTER 6 COORDINATION AND PUBLIC INVOLVEMENT

6.1. INTRODUCTION

Early agency coordination and a public involvement program were implemented to ensure information regarding the proposed airport development and potential environmental impacts were made available to the general public and public agencies and that input from interested parties was received and considered in the development of this EA. The primary components of the agency and public participation program for this EA include:

- Public and agency Scoping at the beginning of the NEPA process,
- Publication of the Draft EA for public and public agency review,
- A combined Public Information Workshop and Public Hearing on the Draft EA, and
- Public notice of the FAA's decision of whether to issue a FONSI or to prepare an EIS.

The following summarizes the public involvement and review process.

6.2. AGENCY EARLY COORDINATION

Several Federal, state and local agencies were provided early notice of the Proposed Project and preparation of this EA on August 1, 2019. Comments on the early notice were received from the USFWS, EPA, GADNR Historic Preservation Division, Georgia DOT, and the GADNR Coastal Resources Division. The early notice, agency distribution list, and agency responses to the early notice are provided in **Appendix A**.

6.3. DRAFT EA AVAILABILITY FOR REVIEW

This Draft EA will be made available for review by the general public and interested parties. The public comment period on the Draft EA will then extend for at least 30 days from the date that the public is notified of the document's availability. Notification of the document's availability will be accomplished through legal advertisements in local newspaper *Savannah Morning News* and on the Airport's website. The Notice of Availability will be published no less than 30 days prior to the date of the Public Hearing and Public Information Workshop. **Appendix H** contains a copy of the Notice of Availability. The Draft EA will also be made available for review at the locations listed below, and electronically for viewing or download from the project web site at https://savannahairport.com/business/airport-business/commission-meetings/.

- Savannah/Hilton Head International Airport, Third Floor – Engineering Department, 400 Airways Avenue, Savannah, Georgia 31408
- Pooler Library, 216 South Rogers Street, Pooler, Georgia 31322

- Southwest Chatham Library, 14097 Abercorn Street, Savannah, Georgia 31419
- Garden City Library, 104 Sunshine Avenue, Garden City, Georgia 31405
- Bull Street Library, 2002 Bull Street, Savannah, Georgia 31401

Copies of the Draft EA will also be distributed to Federal, state and local agencies. A list of agencies receiving the Draft EA is provided in **Appendix H**.

6.4. HOW TO COMMENT

Anyone wishing to comment on the information and conclusions in the Draft EA may do so in writing at any time during the advertised public review and comment period. All comments should be mailed to: Mr. George Fidler, Director of Engineering, Savannah/Hilton Head International Airport, Third Floor – Engineering Department, 400 Airways Avenue, Savannah, Georgia, 31408.

6.5. PUBLIC HEARING

A combined Public Information Workshop and Public Hearing will be held from no less than 30 days after the Notice of Availability of the Draft EA is published. The purpose is to consider the social, economic, and environmental effects of the Proposed Project, and to receive comments from the public and government agencies. Information, maps, and diagrams explaining the Proposed Project and potential impacts to the environment will be made available for inspection. Airport representatives and their consultant will be on hand to discuss the Proposed Project and answer questions. Comment forms and court reporters will be available for the public to submit written comments or provide verbal comments during the proceedings. No formal presentation will be made during the proceedings.

6.6. FINAL EA

The Draft EA will be revised as necessary to summarize and incorporate all comments received during the public and agency review period. The Commission and the FAA will consider all comments received from the general public, agencies, and organizations in development of the Final EA. Summaries of comments received, responses, and any necessary revisions to the EA will be incorporated into the Final EA. The Commission will submit the Final EA to the FAA for review and the FAA's decision of whether to issue a FONSI or to prepare an EIS.

CHAPTER 7 LIST OF PREPARERS

As required by FAA Order 5050.4B, the names and qualifications of the principal persons contributing information to this EA are identified. It should be noted, in accordance with § 1502.6 of the CEQ regulations, the efforts of an interdisciplinary team, consisting of technicians and experts from various fields of study were required to accomplish this study. Specialists involved in this EA included those in such fields as airport planning; biology; historic/archaeological; water resources; and other disciplines.

AIRPORT SPONSOR

George Fidler – Director of Engineering, Savannah Airport Commission

Greg Kelly – Executive Director, Savannah Airport Commission

Jessica Smith – Engineering Department, Savannah Airport Commission

Mark Denmark – Assistant Director of Engineering, Savannah Airport Commission

AECOM - PRIME CONSULTANT

Daniel Botto –Airport Environmental Planner. B.S. Aviation Business Administration. 21 years of experience. Responsible for technical writing, and noise modeling and noise impact analysis.

Daniel Cassedy – Archaeologist. Ph.D., M.A., and B.A. Anthropology. 35 years of experience. Responsible for archaeological evaluation and technical review.

Gregory Hicks – Sr. Field Technician/GIS Specialist. 10 years field experience. Responsible for implementation of field activities and assisting in the completion of Environmental Documents.

Howard Klein – Project Manager/Airport Planning. MBA and B.S. Air Commerce/Transportation Technology. 34 years of experience. Responsibilities include technical review, airport planning advisory and client coordination.

Kevin Gu – Traffic Engineer PE, PTOE. M.S. Civil Engineering. Responsible for traffic analysis using SYNCHRO/SIMTRAFFIC, and contributed to report documentation.

Mark Martinkovic – Senior Archaeologist. M.A. and B.A. Archaeology and Historical Archaeology. 15 years of experience. Responsible for archaeological evaluation and preparation of CRAS.

Marvin Brown – Senior Architectural Historian and Historian**.** B.A. and M.A. American Civilization, J.D. Law. 35 years of experience. Responsible for historic and architectural-historic evaluation and Section 106 coordination.

Paul Sanford – Project Manager/Airport Environmental Planner. B.S. Environmental Science and Policy. 11 years of experience in environmental assessment and impact analyses. Responsible for project management, agency and public coordination, GIS mapping, document production, technical writing, and environmental impact analysis for a variety of categories.

Robert Morris – Senior CAD Specialist. 34 years of experience. Responsible for CAD, project drawings, and analysis.

Russell Pratt, P.E. – Project Engineer. B.S. Civil Engineering. 31 years of experience. Responsibilities include evaluation of water resources and development of southeast quadrant drainage analysis.

Sam Hartsfield – Aviation Environmental Planner. M.S. Environmental Science and Management. B.S. Biology. 14 years of experience in aviation environmental planning, air emission inventories, and air quality studies. Responsible for coastal consistency determination, technical writing, and environmental impact analysis for a variety of categories including socioeconomics and environmental justice.

Tia Norman – Aviation Environmental Planner. B.S. Environmental Science. 11 years of experience. Responsible for field investigations, biological resources evaluations, mitigation strategies, and technical writing. Assisted with air quality analysis, biological resources evaluation, wetland evaluation, floodplain analysis, GIS mapping, and document production.

ENVIRONMENTAL SERVICES, INC., A TERRACON COMPANY - SUBCONSULTANT

Kristen Deason –Sr. Staff Scientist. B.S. Wildlife Management with a minor in GIS services. 6 year of experience in environmental consulting. Responsible for field assessment work to include site specific wetland delineation, projected species habitat assessment and survey, mitigation credit evaluation and mitigation bank selection, and technical writing for natural systems document contribution, and GIS graphics preparation.

Mike DeMell – Sr. Associate / Department Manager Ecological Services. B.S. Marine Science. 30 years of experience in environmental consulting. Responsible for project management, QAQC of natural systems review to include wetland assessment, listed species assessment, mitigation evaluation and habitat assessment. Additional responsibility includes input associated with agency coordination, document preparation, alternatives assessment and Section 404 Permitting.

Spencer Mitchell – Senior Scientist. M.S. Geology. 19 years of experience in environmental assessment and remediation. Responsible for project management, client, agency, and staff

coordination, field services direction, document production, technical writing, Phase I, Phase II, contamination assessment, and remedial action.